



B O O K O N E

Introduction  
to  
Bodybuilding

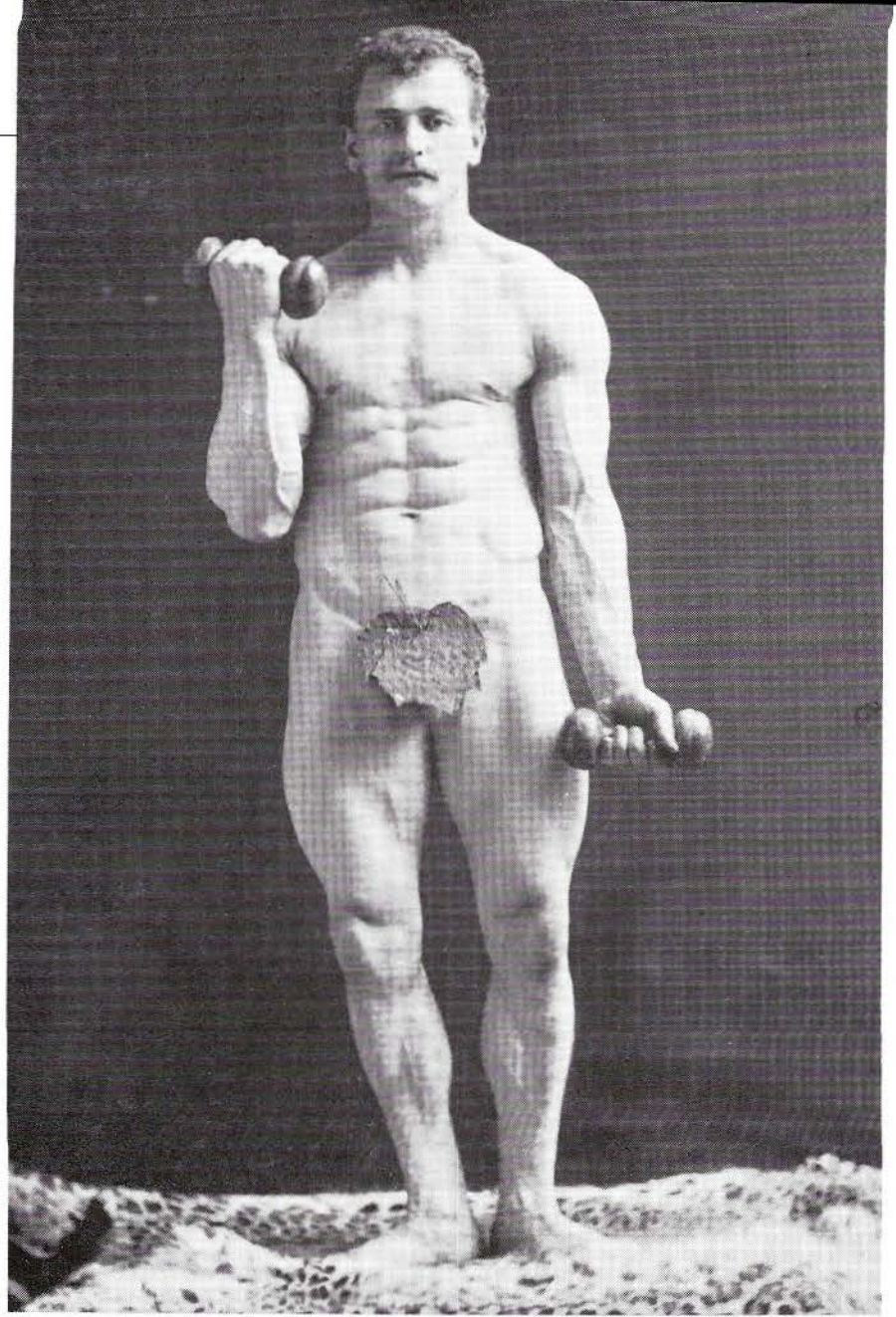
# Evolution and History

AT THE END of the nineteenth century a new interest in muscle-building arose, not muscle just as a means of survival or of defending oneself; there was a return to the Greek ideal—muscular development as a celebration of the human body.

This was the era when the ancient tradition of stone-lifting evolved into the modern sport of weightlifting. As the sport developed, it took on different aspects in different cultures. In Europe, weightlifting was a form of entertainment from which professional strongmen emerged—men who made their living by how much weight they could lift or support. How their physiques looked didn't matter to them or to their audience. The result was that they tended to develop beefy, ponderous bodies.

In America at this time, a considerable interest in strength in relation to its effect on health developed. The adherents of physical culture stressed the need for eating natural, unprocessed foods—an idea that took root in response to the increasing use of new food-processing techniques. Americans were beginning to move from farms and small towns to the cities; the automobile provided a new mobility. But at the same time, life was becoming increasingly sedentary, and the health problems that arise when a population eats too much of the wrong food, doesn't get enough exercise, and exists in constant conditions of stress were just becoming apparent.

The physical culturists were battling this trend with a belief in overall health and physical conditioning, advocating moderation and balance in all aspects of life. The beer-drinking, pot-bellied strongmen of Europe were certainly not their ideal. What they needed was a model whose physique embodied the ideas they were trying to disseminate, someone who more closely resembled the idealized statues of ancient Greek athletes than the Bavarian beer hall bulls of Europe. They found such a man

*Eugen Sandow*

in the person of Eugen Sandow, a turn-of-the-century physical culture superstar.

Sandow made his reputation in Europe as a professional strongman, successfully challenging other strongmen and outdoing them at their own stunts. He came to America in the 1890s and was promoted by Florenz Ziegfeld, who billed him as “The World’s Strongest Man” and put him on tour. But what really set Sandow apart was the aesthetic quality of his physique.

Sandow was beautiful, no doubt about it. He was an exhibitionist and enjoyed having people look at his body as well as admire his strongman stunts. He would step into a glass case and pose, wearing nothing but a fig leaf, while the audience stared and the women oohed and aahed at the beauty and symmetry of his muscular development. This celebration of the aesthetic qualities of the male physique was something very new. Dur-

ing the Victorian age men had covered themselves in confining clothing, and very few artists used the male nude as a subject for their paintings. This is what made Sandow's appeal so amazing.

Due largely to Sandow's popularity, sales of barbells and dumbbells skyrocketed. Sandow earned thousands of dollars a week and created a whole industry around himself through the sale of books and magazines. Contests were held in which the physical measurements of the competitors were compared, then Sandow awarded a gold-plated statue of himself to the winners. But, ultimately, he fell victim to his own macho mystique. It is said that one day his car ran off the road and he felt compelled to demonstrate his strength by single-handedly hauling it out of a ditch. As a result the man whom King George of England had appointed "Professor of Scientific Physical Culture to His Majesty" suffered a brain hemorrhage that ended his life.

Around the same time George Hackenschmidt earned the title "The



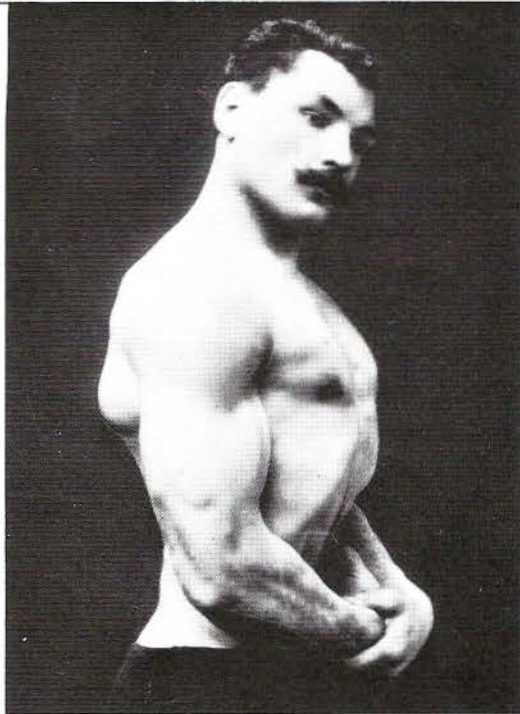
*Eugen Sandow*



NEW YORK, SATURDAY, JANUARY 27, 1884.

THE LADIES IDOLIZE SANDOW.

THE STRONG MAN EXHIBITS HIS FORM AT SELECT RECEPTIONS TO THE PRETTY CREATI



Arthur Saxon

**BELIEVE IT OR NOT**

**ARTHUR SAXON**  
 LIFTED  
 448 POUNDS  
 TO ARMS LENGTH  
 OVER HIS HEAD  
**Tele**  
**1-4-24**

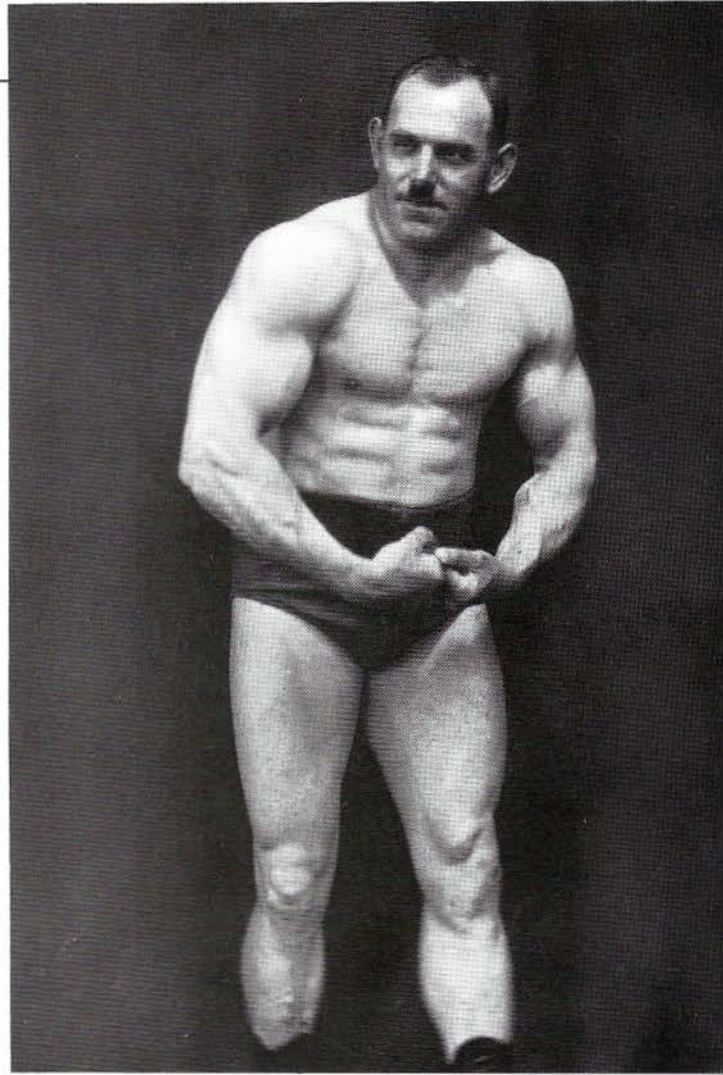
**PRINCE LAURIE**  
 SWALLOWED A SWORD  
 31 INCHES LONG

**TACOMA - Northwestern League THIS**  
**MADE 92 HITS**  
**IN 4 CONSECUTIVE GAMES**

*Rip*



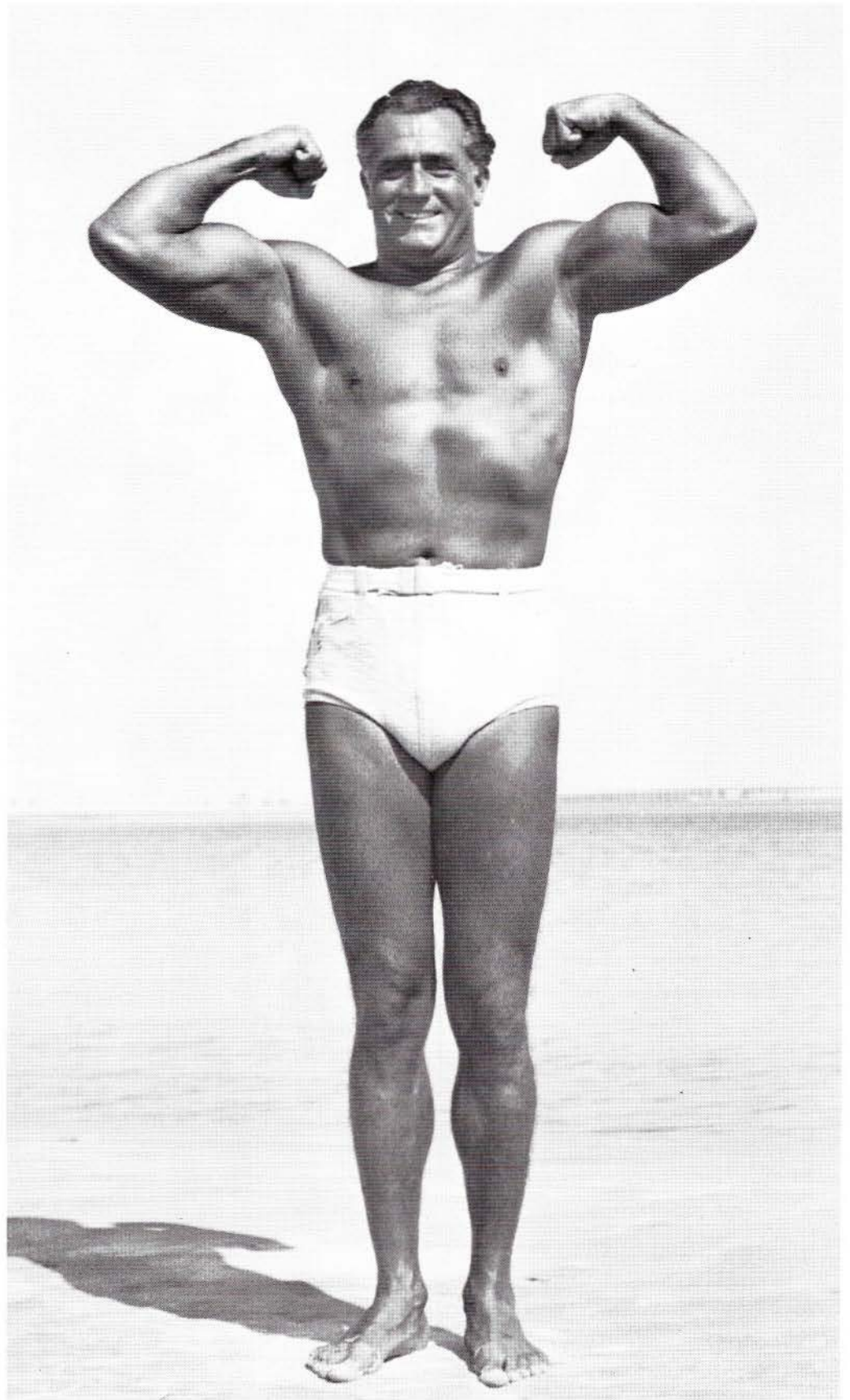
*Hermann Goerner*



offered a prize of \$1,000—a small fortune in those days—along with the title. Both the contests and the magazine were successful for decades. And Macfadden practiced what he preached, walking barefoot every morning from his home on Riverside Drive in New York City to his office in midtown and appearing bare-chested in his own magazine. He was an example of health and fitness until well into his seventies.

Macfadden probably would not have approved of modern bodybuilding, with its emphasis on the visual development of the body rather than athletic skill. However, he and other physical culturists played a big part in the evolution of bodybuilding. His contests helped to promote interest in how the body looked rather than simply how strong the muscles were, and there emerged from these contests a superstar who was to become one of the most famous men in America for decades to come.

The winner of Macfadden's contest in 1921 was Angelo Siciliano. To capitalize on his growing fame, this magnificently developed man changed his name to Charles Atlas and acquired the rights to a mail-order physical fitness course called dynamic tension. For more than fifty years boys have grown up seeing the ads for this course in magazines and comic books, including the one where the scrawny kid gets sand kicked in his face, sends

*Charles Atlas*

away for a muscle-building course, then goes back to beat up the bully and reclaim his girl. "Hey skinny, your ribs are showing!" became the most memorable slogan of one of what author Charles Gaines calls the most successful advertising campaign in history.

## THE TRANSITION TO BODYBUILDING

By the 1920s and 1930s, it had become evident that health and the development of the physique were closely connected, and that weight training was the best way to produce the greatest degree of muscular development in the shortest possible time. Despite his advertisements even Charles Atlas used weights rather than the dynamic tension of isometrics to produce his outstanding body. Training knowledge was limited, but bodybuilders of that day were learning a great deal simply by comparing their physiques with those of the stars of the previous generation.

For example, one of the most famous turn-of-the-century strongmen was Louis Cyr, 300 massive pounds, thick, chubby, huge around the middle and every inch the barrel-shaped strongman. But by the twenties there appeared men like Sigmund Klein, who exhibited a physique with beautiful muscular shape, balance, and proportion, as well as low body fat and extreme definition. Klein became very influential as a gym owner and writer on training and nutrition. His physique, compared to Cyr's, was as day to night. Klein, along with Sandow and influential physical culturists like Macfadden, gradually began to convince people that the look of a man's physique—not just his ability to perform feats of strength—was worthy of attention because the kind of training that produced the aesthetically muscular body also contributed to overall health. But the era in which the male physique would be judged purely on an aesthetic basis was still a few years away.

Strength developed by weight training was still somewhat suspect in the 1930s, as if weightlifters were not truly worthy to be called athletes. It was almost considered cheating to build up your body by training in a gym instead of participating in a variety of sports. In his earliest writing, the late John Grimek, an Olympic weightlifter who served as the model for so many aspiring bodybuilders, volunteered the information that his magnificent muscles were created by weightlifting, although you'd think that anyone seeing that physique on a beach would have realized that no amount of hand-balancing or water polo could have led to such development.

However, the tradition of physique competition continued, and by the late thirties occasional shows brought together boxers, gymnasts, swimmers, weightlifters, and other athletes. These contestants had to perform some sort of athletic feat as well as display their physiques, so it was



*Louis Cyr*

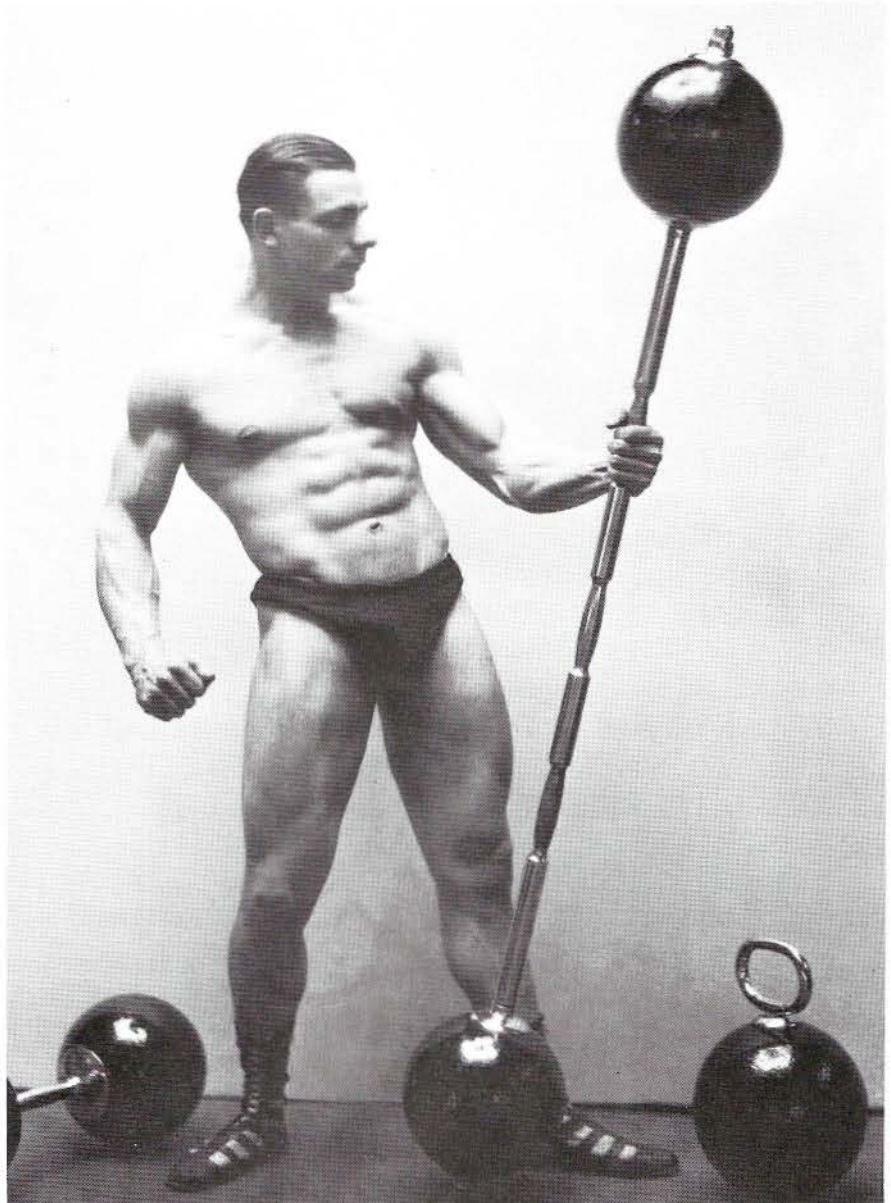


common for weightlifters of the day to be able to do hand-balancing and other gymnastic moves.

In 1939 things started to change. The Amateur Athletic Union (AAU) stepped in and created a Mr. America contest of its own in Chicago on July 4. The winner was Roland Essmaker. The participants were still not full-fledged bodybuilders, but came from all sorts of athletic backgrounds and posed in everything from boxer shorts to jock straps.

But as more and more emphasis was put on how the physique looked, the weightlifters began to enjoy a distinct advantage. Weightlifting changed the contours of the body more than any other kind of training, so they were able to make a very strong and increasingly favorable impression on the judges.

*Sigmund Klein*





*John Grimek*

In 1940 the AAU produced the first real modern bodybuilding event. Mr. America that year and the next was John Grimek, who trained primarily by lifting weights in a gym. This served notice to anyone who wanted to compete against him that they would have to follow a similar training program. Grimek also put the lie to the idea that men who trained with weights were muscle-bound and unable to perform well athletically. During exhibitions, he was able to stay on the stage doing lifting and posing that involved an extraordinary degree of strength, flexibility, and coordination.

## **BODYBUILDING IN THE FORTIES AND FIFTIES**

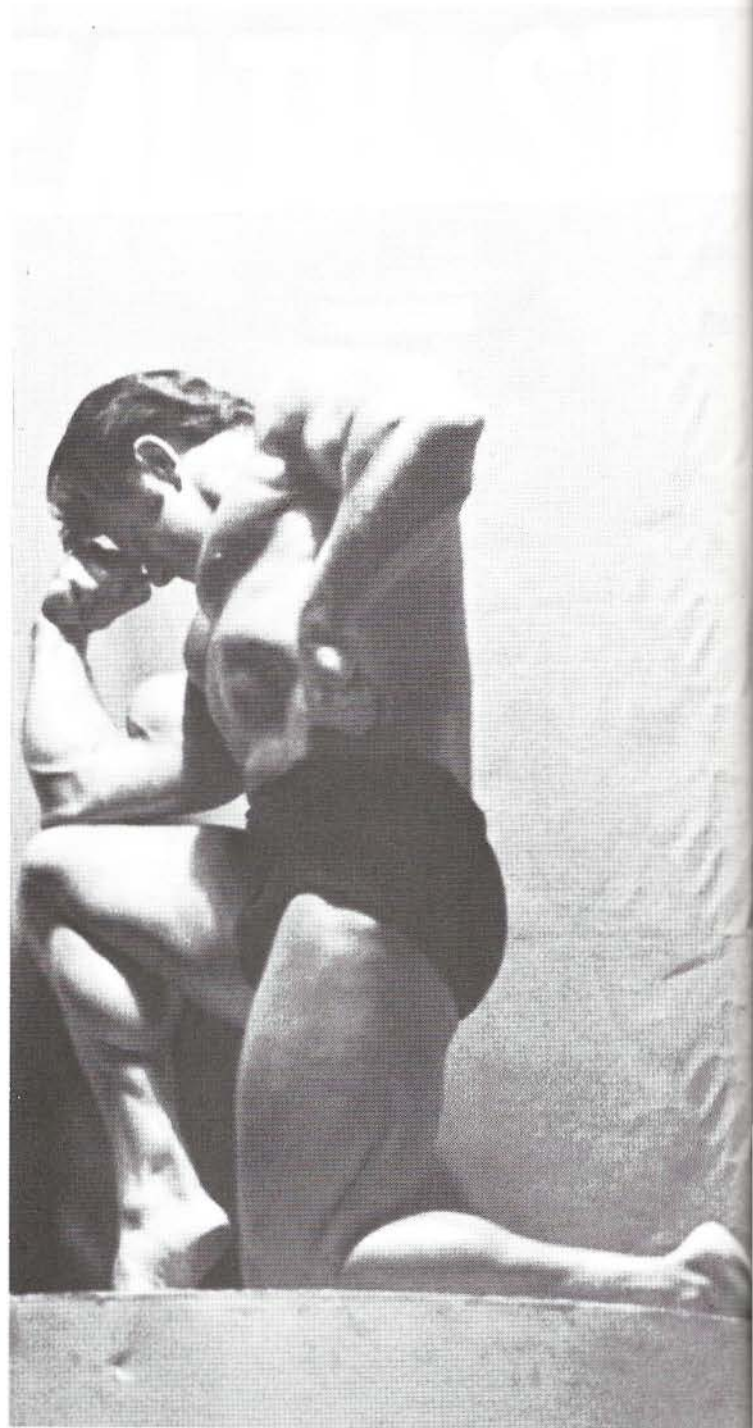
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The winner of the Mr. America title in 1945 was a man whom many believe to be the first truly modern bodybuilder. Clarence "Clancy" Ross's physique would not look out of place on any stage today—wide shoulders, flaring lats, narrow waist, good calves and abs. By this time the distinction between lifting weights purely for strength and training with weights to shape and proportion the body had been clearly made. The bodybuilder's physique, as opposed to other types of muscular development, was now recognized as something unique.

However, bodybuilding still remained an obscure sport. No champion was known to the general public until Steve Reeves came along. Reeves



*Reg Park in his early twenties*



*Reg Park at forty*

planet had ever achieved the level of development of men like Grimek, Ross, and Reeves. Because they were training harder and more methodically than anyone else ever had, bodybuilders began to learn things about the physical potential of the body that even medical scientists could not have predicted. The word spread and soon there were more and more great bodybuilders coming along every year—Bill Pearl, Chuck Sipes, Jack Delinger, George Eiferman, and one of my great idols, Reg Park.

I remember how incredible it seemed when I met Reg Park in 1967. I was almost speechless with awe. One reason I have always admired him is that he is a big man, very strong, with a powerful-looking physique. When I was just getting started I knew I wanted to build the kind of mass and density that I had seen in his photos—big, rough, and Herculean. Reg was the next major champion to emerge when Reeves left competition for his movie career. He became Mr. Universe in 1951 and became Professional Mr. Universe in 1958 and in 1965. At this point, everyone recognized that Reg was far above all other leading bodybuilders. He dominated the bodybuilding scene for two decades.

## BODYBUILDING IN THE SIXTIES

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I first came on the international bodybuilding scene in 1966. At that time most of the top bodybuilders I read about in magazines lived and trained in California.

Beating Dennis Tinerino in 1967—Mr. America of that year—in the National Amateur Body Builders' Association (NABBA) Mr. Universe contest was my first big international victory, but that meant I would now have to go against the other champions of the day. There was certainly some fierce competition around—Frank Zane, a man who prepares as thoroughly for a contest as anyone else in bodybuilding; my good friend Franco Columbu, who went from being a great powerlifter to a Mr. Olympia practically by sheer determination of will; and, of course, Sergio Oliva.

Anytime people discuss who might be the best bodybuilder of all time, the name Sergio Oliva inevitably comes up. He and I had some unbelievable confrontations onstage. The only way I could beat him was to be in absolutely perfect shape—massive, dense, and cut—and then not make any mistakes. Sergio was so good he could beat you in the dressing room if you weren't careful. His shirt would come off, and there would be that incredible mass. He would transfix you with a look, exhale with a kind of animal grunt, and suddenly the lats would begin to flare . . . and just when you thought they were the most unbelievable lats you ever saw, BOOM—out they would come, more and more, until you began to doubt that this was a human being you were looking at.



*In 1967 Bill Pearl won the pro Mr. Universe title and I won amateur Mr. Universe.*



*Joe Weider and Sergio Oliva—1967 Olympia*

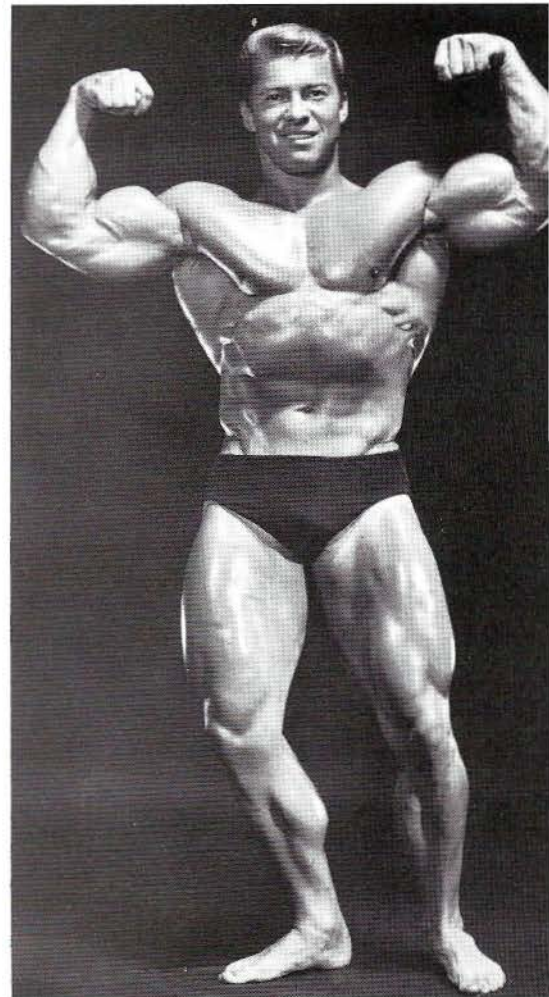
While I was battling for titles in Europe, I was very much aware of the competitions in the United States. Larry Scott had won the first two Mr. Olympia contests, and I knew I would eventually have to beat Larry and other top stars like Chuck Sipes. But one bodybuilder I was also impressed with, not just because of his outstanding physique but also because of the image he was able to create, was Dave Draper.

Draper represented the epitome of California bodybuilders—big, blond, and sun-tanned, with a personable manner and winning smile. Surrounded as I was by three feet of snow in the middle of an Austrian winter, the image of Dave Draper on a California beach was a very attractive one indeed. And Dave's roles in movies like *Don't Make Waves* with Tony Curtis and his appearances on television shows made me aware of the possibilities of bodybuilding beyond the competition arena.

In the 1960s there were two distinct worlds in bodybuilding: Europe and America. My Universe titles in '67 and '68 established me as the pre-eminent bodybuilder in Europe (Ricky Wayne wrote in an article, "If Hercules were to be born today his name would be Arnold Schwarzenegger"), but the question still remained as to how well I would do against the American champions.

I looked across the ocean and saw Dave Draper, Sergio Oliva, Chet Yorton, Frank Zane, Bill Pearl, Freddy Ortiz, Harold Poole, Ricky Wayne, and others. My challenge was to compete against these great bodybuilders and defeat them.

My awareness of the world had expanded tremendously in just a few years. While training in Austria, I had considered winning the Mr. Universe contest in London to be the highest achievement I could aspire to. Now I found that taking that title was only the beginning! I still had a long journey ahead of me and many bodybuilders to defeat before I could con-



*Larry Scott*



*Dave Draper*



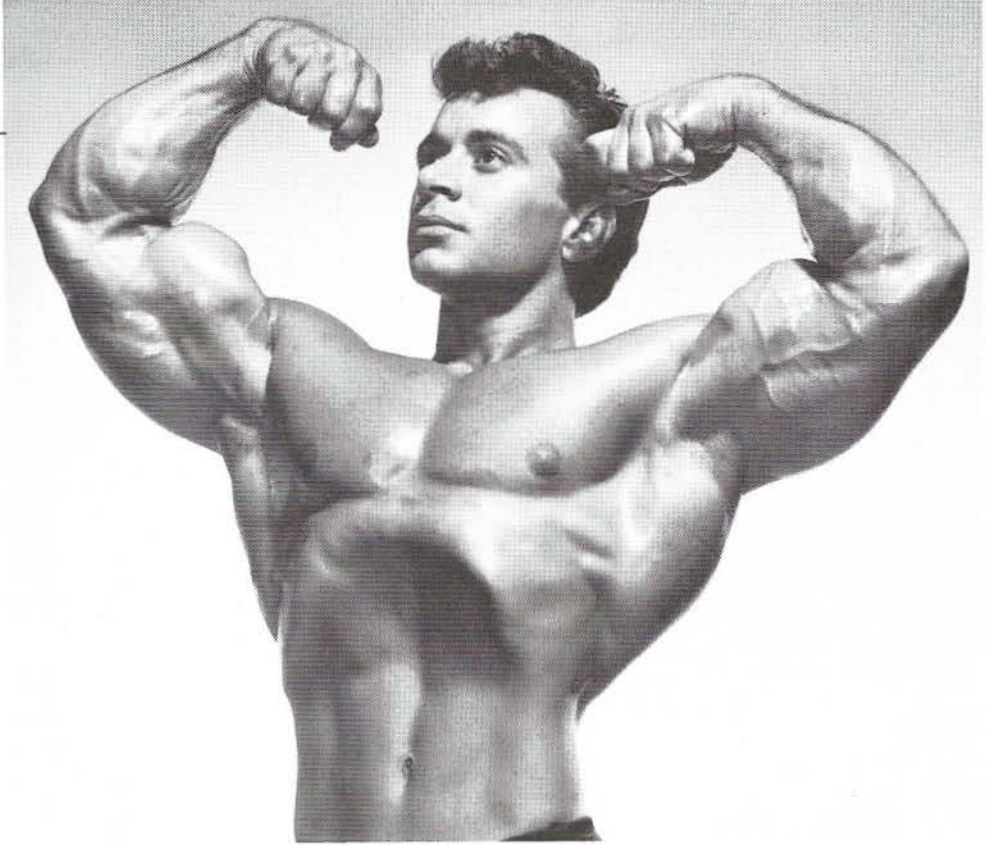
*In 1967 Bill Pearl won the pro Mr. Universe title and I won amateur Mr. Universe.*



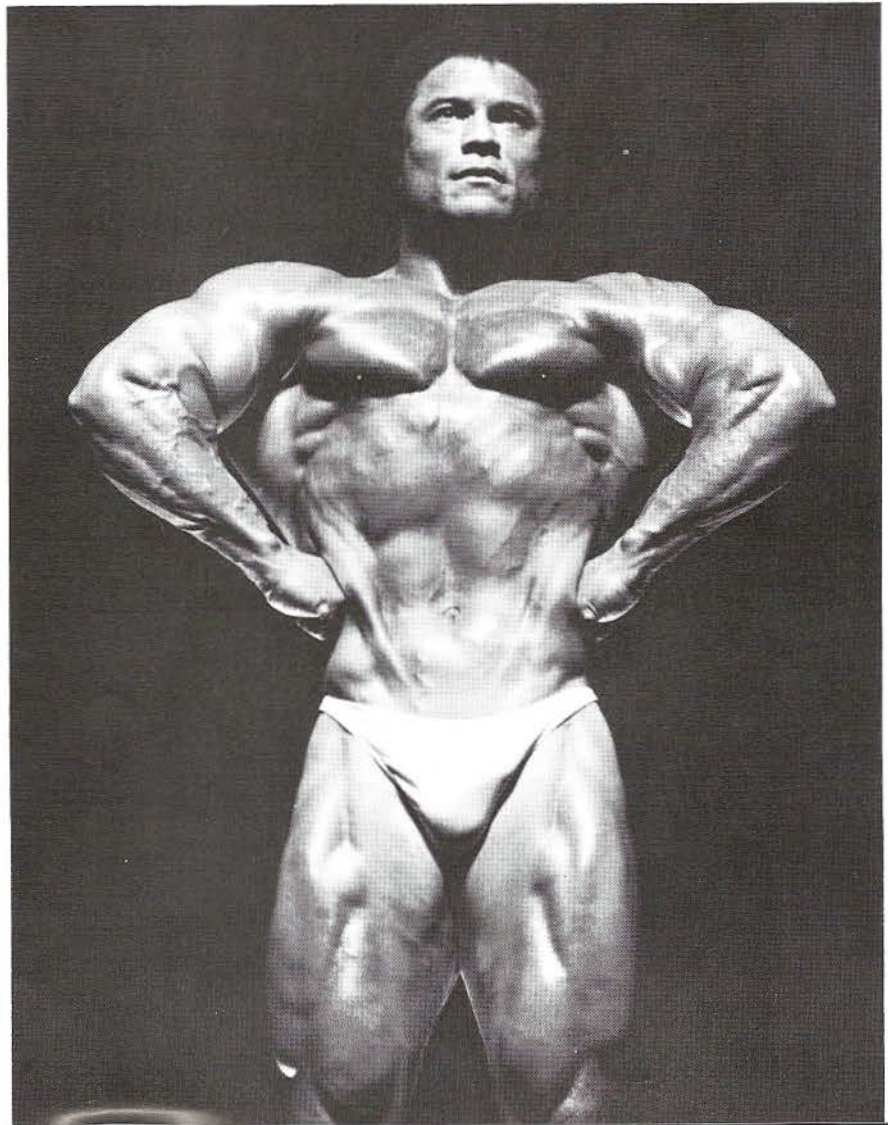
*Joe Weider and Sergio Oliva—1967 Olympia*



*Harold Poole*



*Freddy Ortiz*



*Rick Wayne*





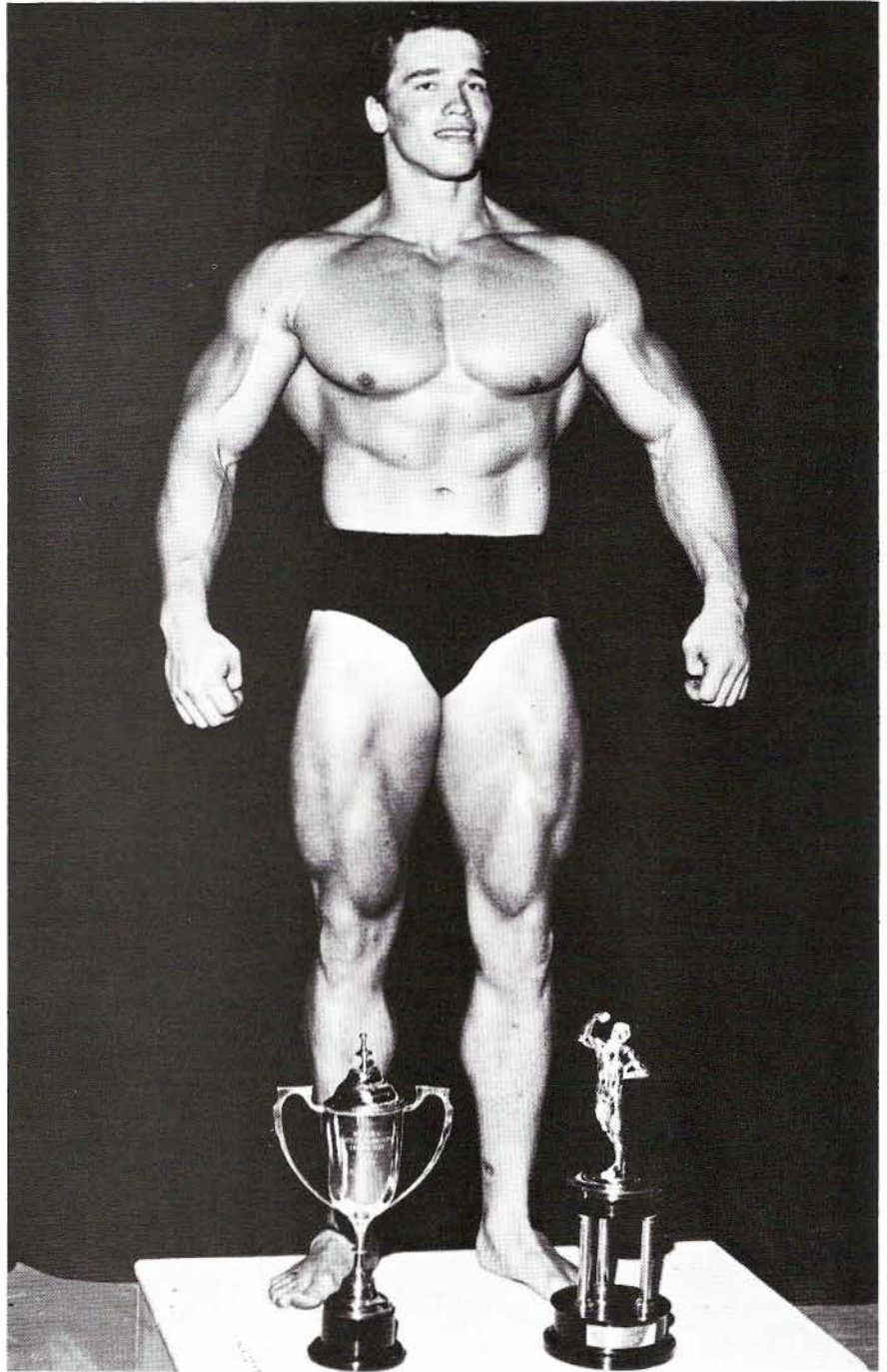
*With Dennis Tinerino at the 1968  
Mr. Universe contest*

sider myself the best. And that meant confronting the top American bodybuilders. So after winning my second NABBA Mr. Universe title in 1968, I set off for the States.

In 1969, I devised a plan that involved winning three top titles in one year, the championships of all the important federations. I competed in the International Federation of Bodybuilders' Mr. Universe



*With Roy Velasco at the 1968  
Mr. International in Mexico*

*1968 NABBA Mr. Universe*

contest in New York and then went immediately to London for the NABBA Universe—which gave me two titles in one week! But even with these victories I had not beaten everyone, so I planned to do even more the next year.

As the sixties drew to a close, six names emerged as dominant among the ranks of those who had been competing in the championship events: Dave Draper, Sergio Oliva, Bill Pearl, Franco Columbu, Frank Zane, and me.



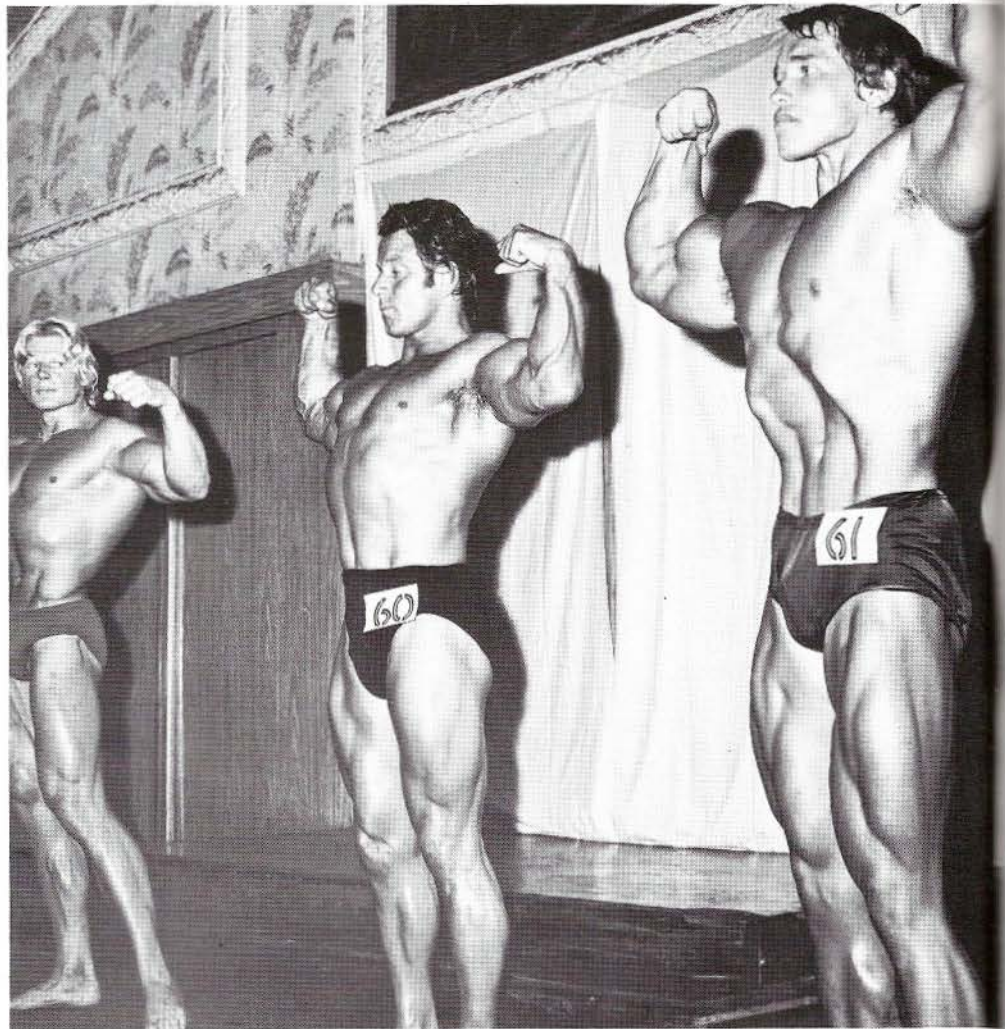
1969 Mr. Universe

## BODYBUILDING IN THE SEVENTIES

*In 1970, I went all out—I won the Pro AAU Mr. World, the NABBA Mr. Universe, and the IFBB Mr. Olympia titles. Finally, I had defeated everybody, and now felt I could justifiably call myself world champion. The year 1971 marked the high point of the remarkable career of Bill Pearl. Pearl first won Mr. America in 1953, then went on to victories in the Universe in 1953, 1961, and 1967. At the 1971 Mr. Universe, eighteen years after his Mr. America title, he came back to defeat the awesome Sergio Oliva and prove, once more, that he was one of the greatest bodybuilders of all time. Unfortunately, he did not continue on and enter the Mr. Olympia that year, so I never had a chance to compete against him, which prevented us from seeing who would come out as the top champion.*

*I won six Olympia titles between 1970 and 1975, but it was not without considerable opposition. In 1972, for example, the formidable Sergio gave me a battle that is still talked about today. Serge Nubret emerged as*

*1970 Mr. Universe posedown with  
Dave Draper and Reg Park*

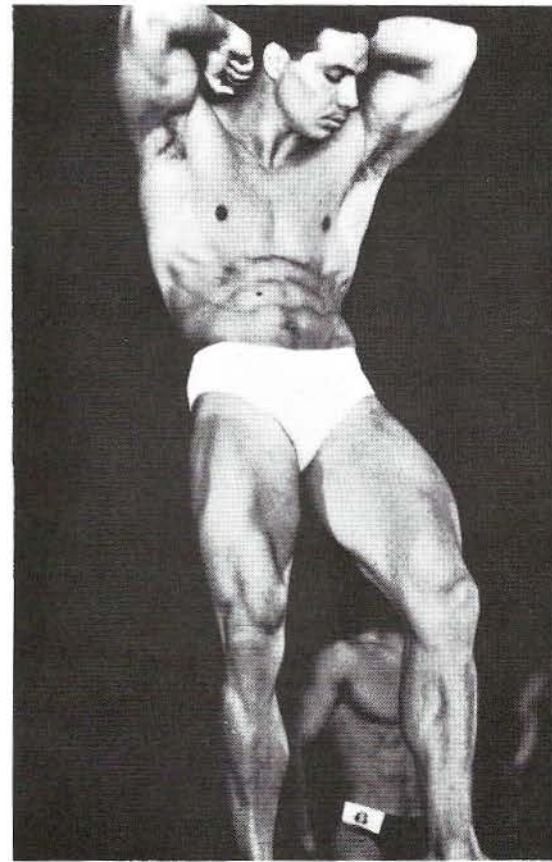


a potent force during this period, and at the 1973 Olympia he was amazing in his ability to create such size and definition on what was essentially a small frame.

In 1973 a new monster came on the scene. Lou Ferrigno won the IFFB Mr. Universe title and gave notice that a new force in bodybuilding was on the horizon. Lou went on to win the IFFB Universe title again the next year and then entered the Olympia. He may have admitted he had always idolized me, but that did not keep him from doing his best to take the Olympia title away from me.

The 1975 Mr. Olympia was something of a high point in the history of this great event. Ferrigno returned, determined to achieve victory; Serge Nubret was also back and in top shape. For the first time, there were six or seven absolutely first-rate champions contending for the title, and I was especially proud of this victory, after which I retired from competition.

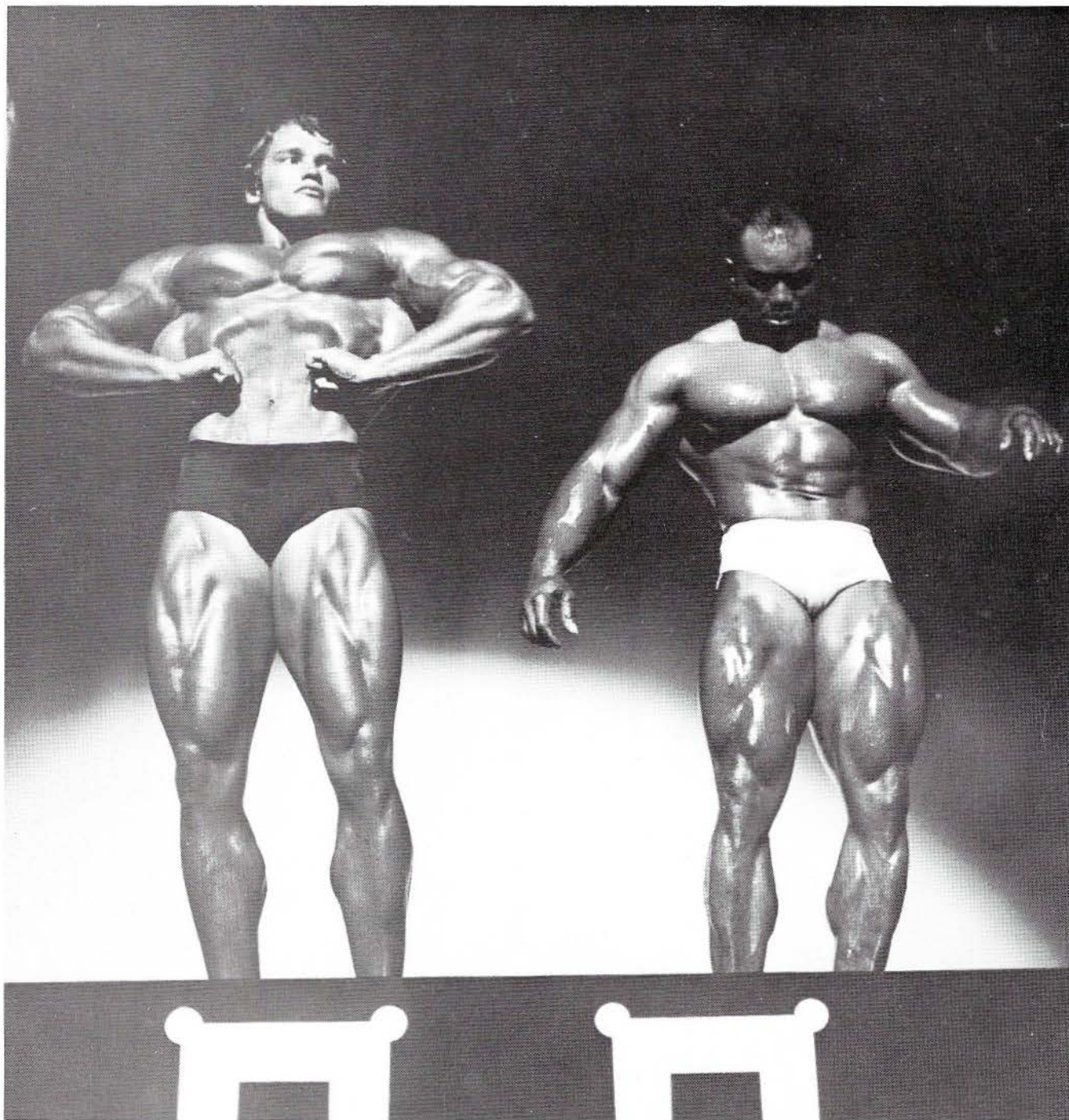
The next year saw a truly earthshaking event in the history of bodybuilding: Franco Columbu won the 1976 Mr. Olympia title, the first small



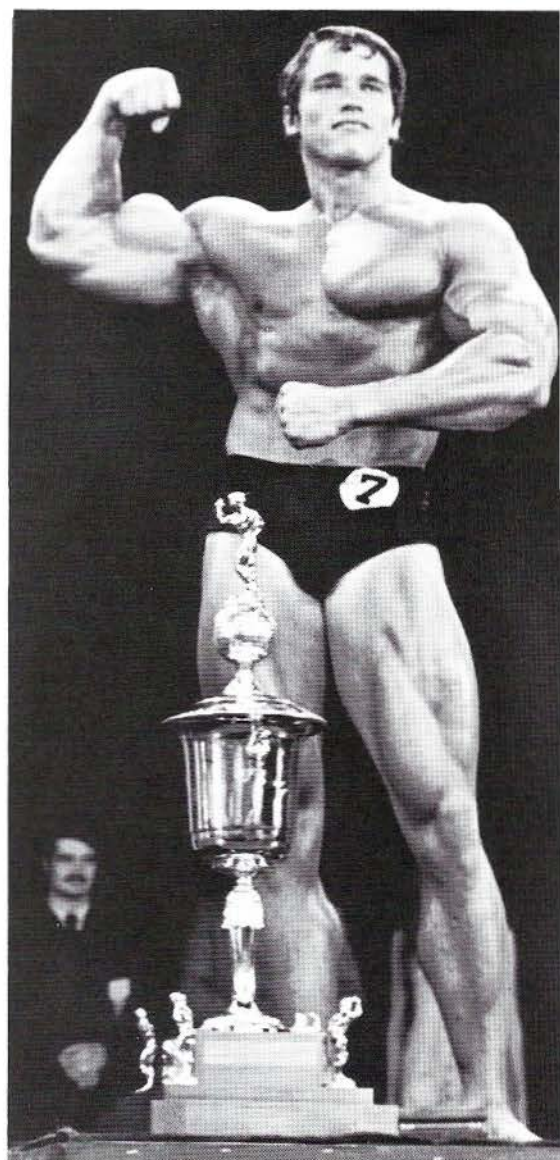
*Bill Pearl*



*In 1970 Frank Zane won the amateur Mr. Universe and I won the pro Mr. Universe. Christine Zane won Ms. Bikini.*

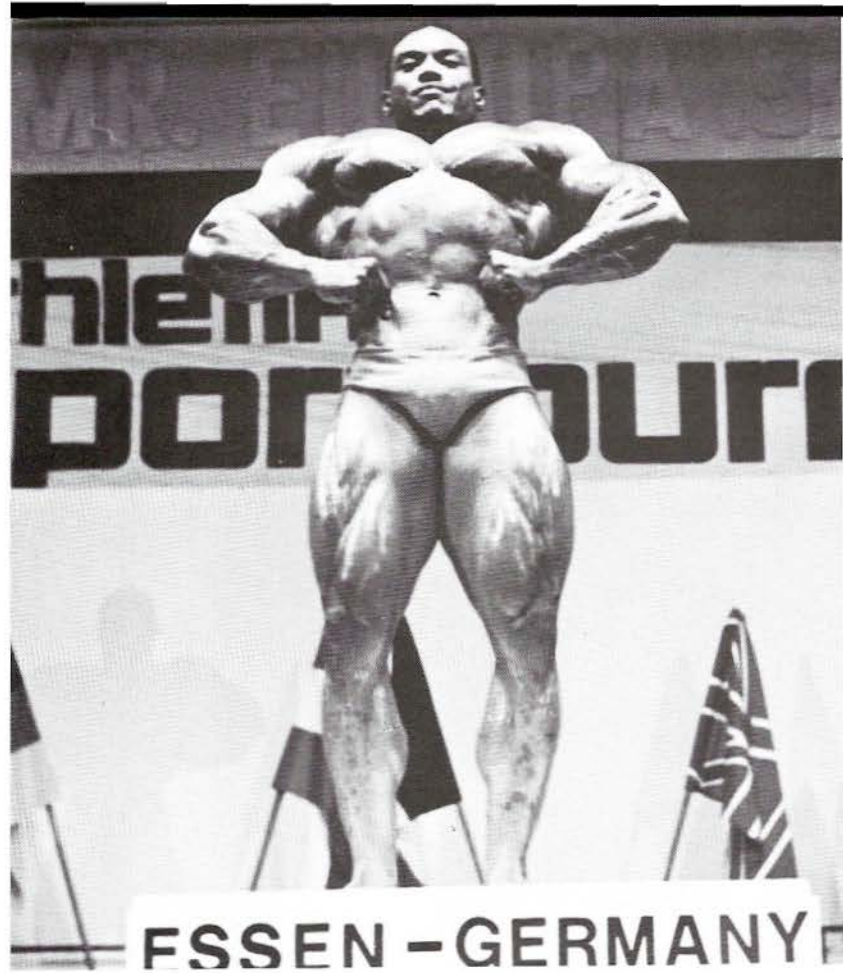


*1970 Mr. Olympia posedown with Sergio Oliva*



*1970 Mr. World*

*With Serge Nubret and Joe Weider at the 1971 Olympia*



*Sergio Oliva*

*Posedown at the 1972 Olympia with Serge Nubret and Sergio Oliva*



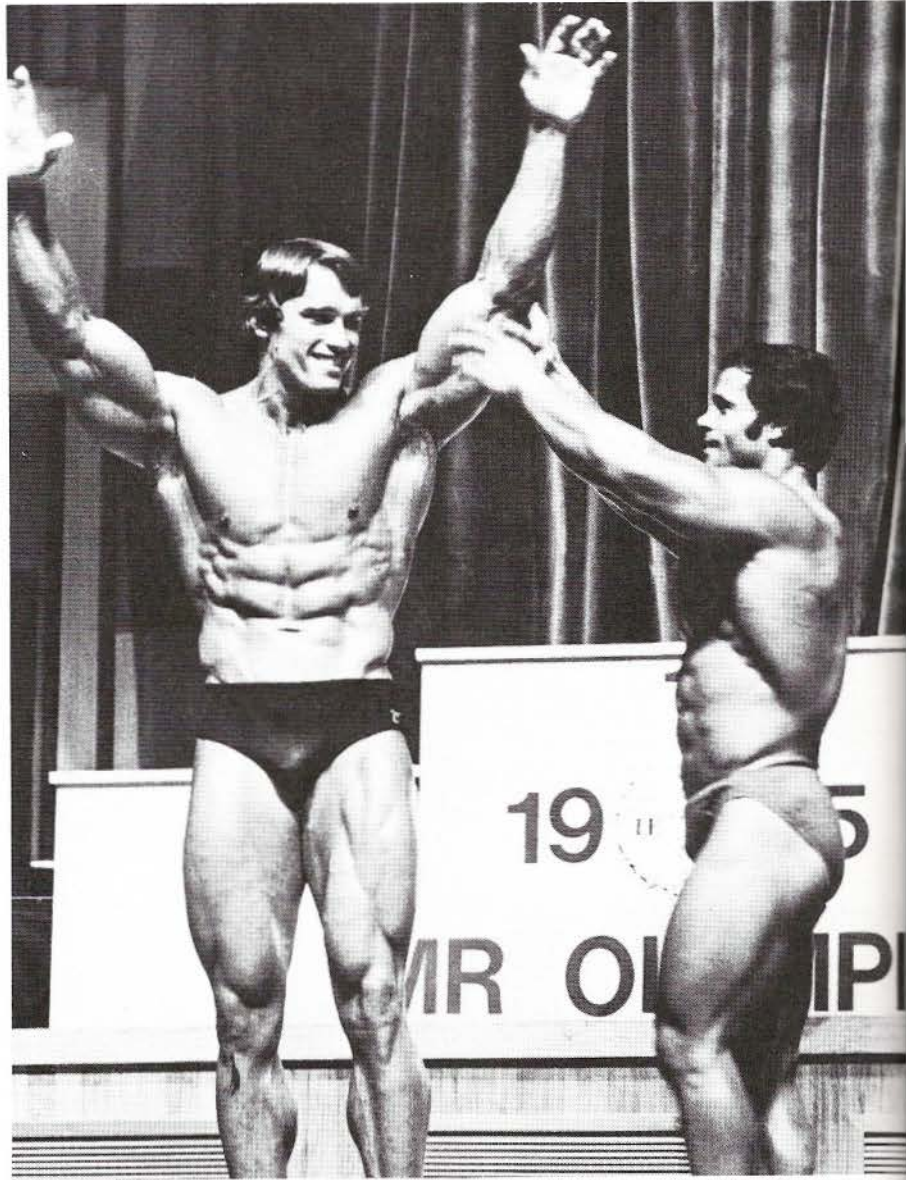




*Joe Weider handing out trophies to the 1973 winners—Ken Waller, Mr. World;  
Lou Ferrigno, Mr. America; and me, Mr. Olympia*

*1975 Olympia with Franco  
Columbu*

*Franco Columbu*

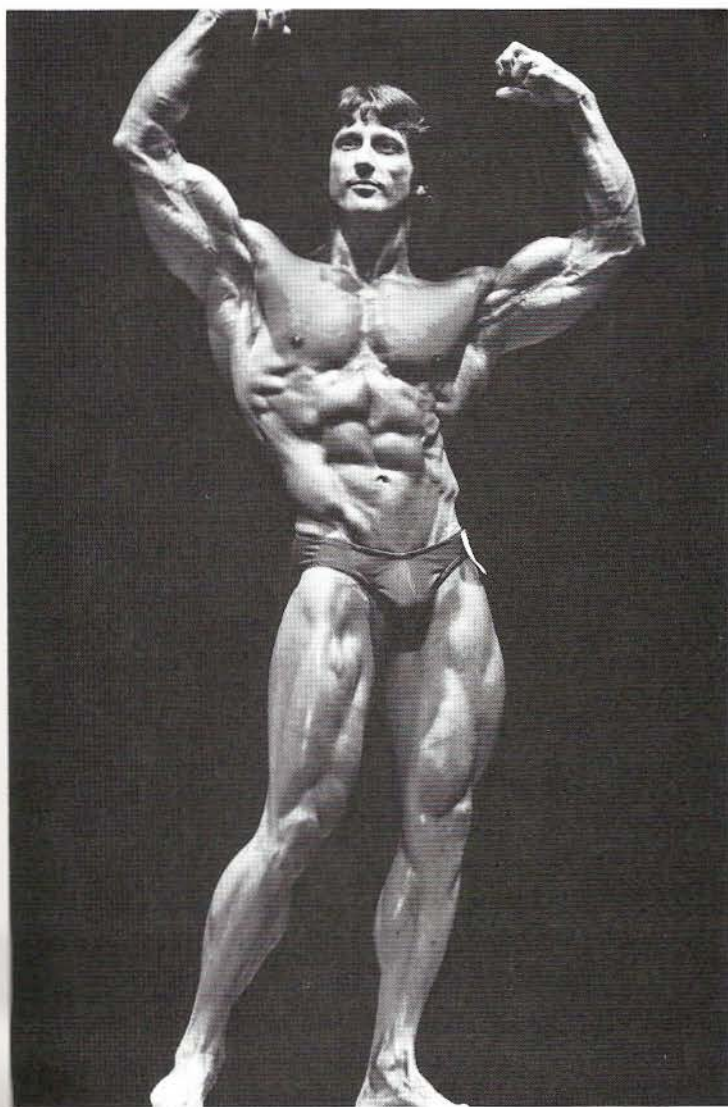


man to do so. Until this time, the big man always won, but from '76 on the small man came into his own. Muscularity and extremely low body fat became the winning factor, and this required an almost scientific approach to training and diet to achieve. The late seventies saw Frank Zane hit his prime, winning three consecutive Olympia titles with his aesthetic physique. Robby Robinson also achieved world-class status and displayed both highly aesthetic and muscular qualities. In contrast, when Kal Szkalak won the 1977 World Amateur Bodybuilding Championship, it was more by virtue of an incredible development of mass than a Zane-like symmetry.

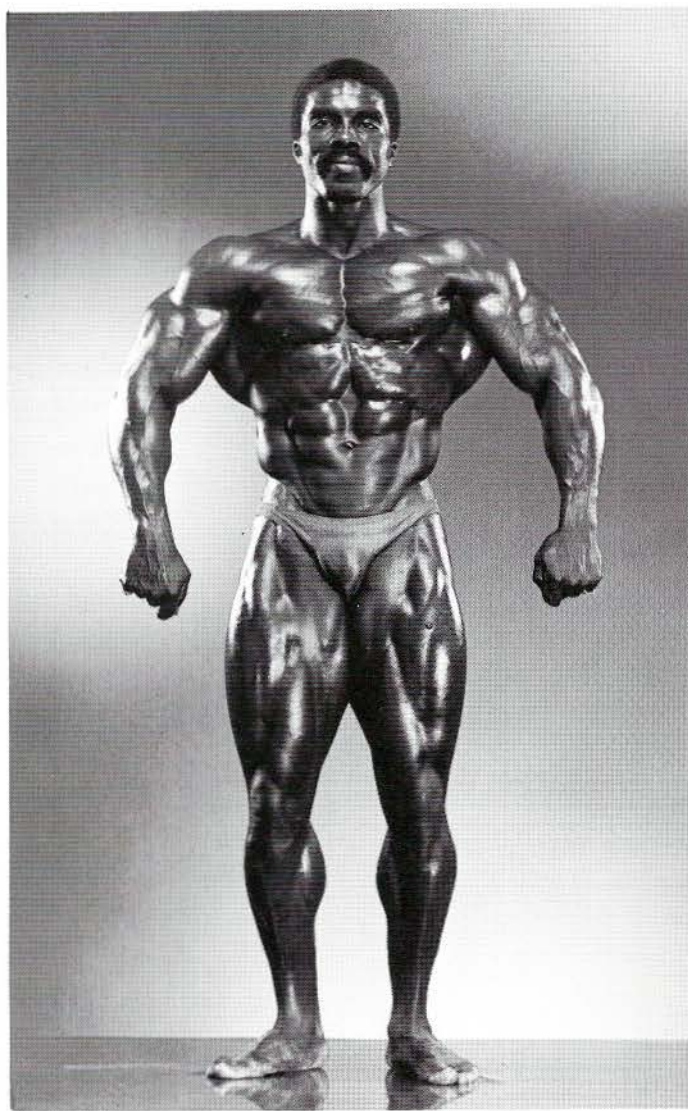
In 1980, I came out of retirement to win the Mr. Olympia contest in Sydney, Australia. I could hardly believe how competitive the sport had become by then, or that I would be pushed so hard by a bodybuilder as small as Chris Dickerson. All around me I saw examples of once unthink-

able development, from Tom Platz's legs to Roy Callender's lats, unbelievable thickness, incredible density. My career has lasted longer than most (due in part, I believe, to the fact that I started competing so young), but in the 1970s the growing popularity of the sport meant that many of the stars of the sixties could stay active in competition to contend against the rising champions of the seventies.

The 1970s also saw the rise of the International Federation of Bodybuilders as the dominant bodybuilding organization. Under the guidance of its president, Ben Weider, the IFBB consisted of more than a hundred member countries and had become the sixth largest sports federation in the world. In addition, the Mr. Olympia title was now recognized as the top professional championship in bodybuilding, comparable to Wimbledon in tennis and the U.S. Open in golf.



*Frank Zane*



*Robby Robinson*

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## PUMPING IRON

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One of the greatest influences on bodybuilding in the seventies was the book, and later the movie, *Pumping Iron*. Charles Gaines and George Butler took a subject most people knew virtually nothing about and made it one of the hot topics of the decade. It was the first time that anyone had given the general public insight into what bodybuilding was all about and what bodybuilders were really like. Gaines and Butler were able to attract the public to a sport that had long been neglected and misunderstood, and the success of *Pumping Iron* set the stage for two decades of explosive growth in the popularity of bodybuilding. The success of the book not only gave my career a big boost and helped bodybuilding find its way into network sports broadcasts and big-budget movies, but it was also influential in taking bodybuilding from the local high school gym to culture palaces like the Sydney Opera House and New York's Whitney Museum. Bodybuilders have been featured on countless magazine covers and bodybuilding is the subject of numerous best-selling books.

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## BODYBUILDING IN THE EIGHTIES AND NINETIES

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Once, I could stand on the Olympia stage and be challenged by one or two other competitors. In 1980 the Olympia stage included Frank Zane, Chris Dickerson, Boyer Coe, Ken Waller, Mike Mentzer, Roger Walker, Tom Platz, Samir Bannout, and Roy Callender, among others. That lineup of talent would have been unthinkable in 1967, although a Sergio Oliva, Larry Scott, Reg Park, or Harold Poole in top shape would have been as impressive as ever in the 1980 Olympia. It isn't that the best are better, but that there are so many more top contenders than ever before.

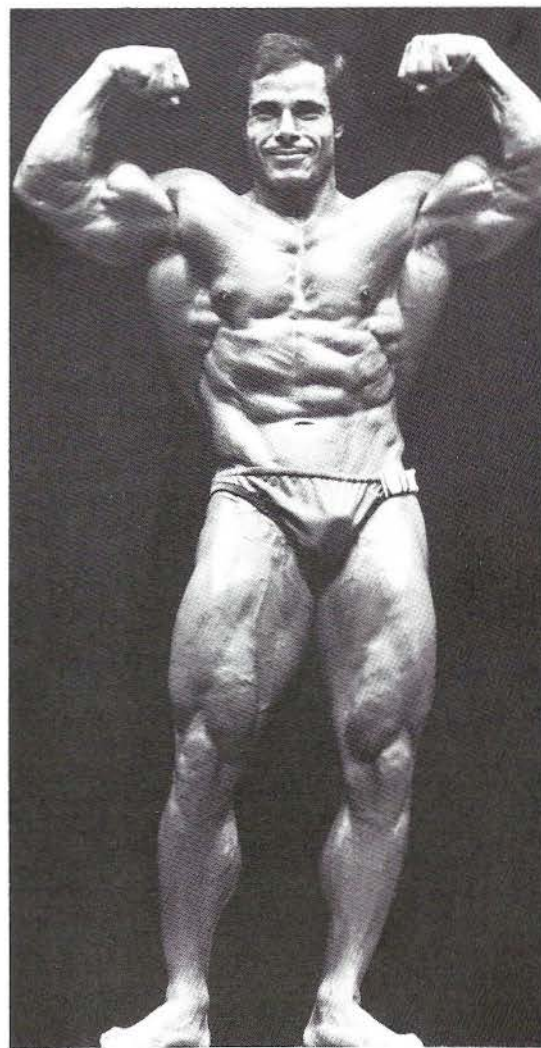
As the eighties got fully under way, it was clear that this breadth of competition was here to stay. The 1981 and 1982 Olympia winners were experienced competitors—Franco Columbu and Chris Dickerson, respectively—but within a few years these champions had retired and we entered an era in which massive physiques would dominate the Mr. Olympia. Until this time the smaller man had had just as good a shot at winning the Mr. Olympia as the bigger competitor. At the beginning of the 1980s there had been more Mr. Olympias won by under-200-pound bodybuilders (Scott, Zane, Columbu, Dickerson) than by competitors bigger than 200 pounds (Oliva, Bannout, and me)—and Samir weighed just slightly over 200 pounds at that.

Then Lee Haney came along and was able to make use of his massive and aesthetically well-proportioned physique to win eight Mr. Olympia titles, breaking my record of seven wins. After Lee came Dorian Yates,



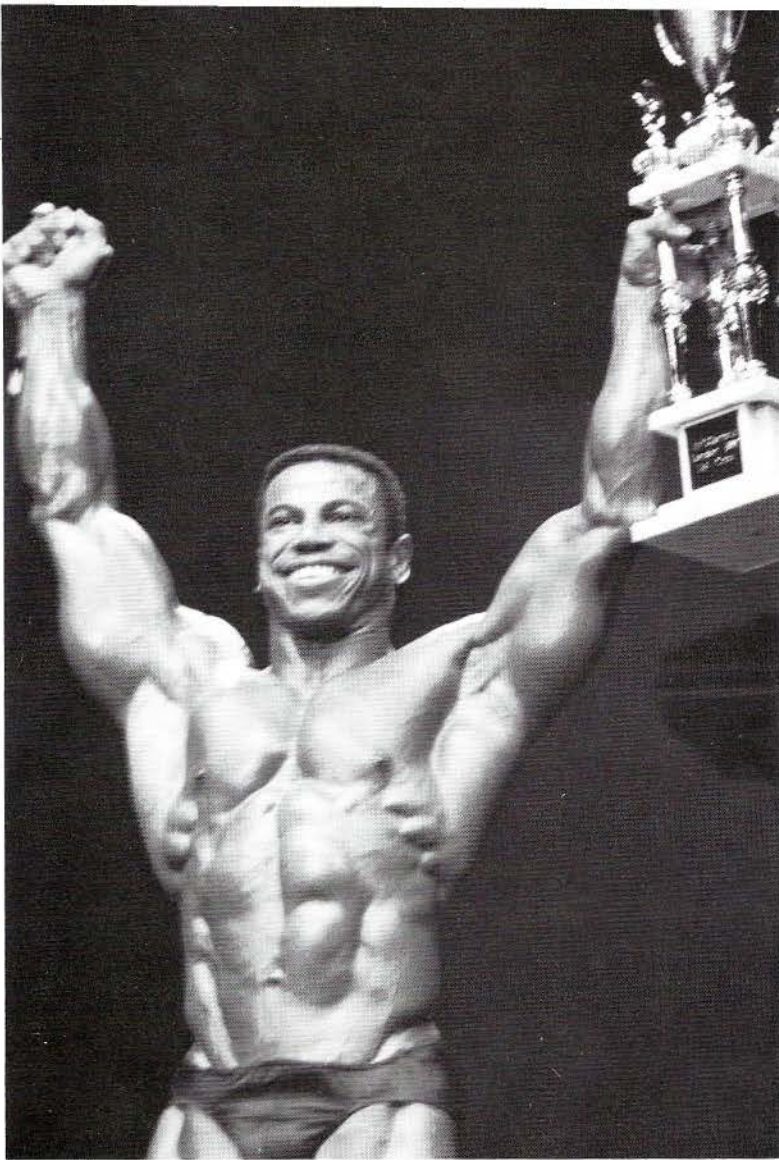
*1980 Olympia posedown with Boyer Coe and Frank Zane*

*1981 Olympia—Franco Columbu*



England's answer to Mount Rushmore, who was able to win his multiple Mr. Olympia titles by dominating his competition with a Herculean physique of 265 pounds or more of hard, ripped muscle. Any bodybuilding fan journeying by time machine from the mid-1960s to the mid-1990s and looking at the modern Mr. Olympia lineup might well have thought we had been invaded by an alien species, so huge were the competitors. Alongside Dorian he would see Nasser El Sonbaty, almost the same size, along with Paul Dillett, Jean-Pierre Fux, and Kevin Levrone—all so massive that only near-perfect development allowed smaller bodybuilders like Shawn Ray (an Arnold Classic champion) and Lee Priest to hold their own onstage. A sign of the times in the 1990s has been that aesthetically awesome Flex Wheeler, weighing about what I did in my final Mr. Olympia victories, has never been one of the biggest competitors onstage.

Obviously, this represented a trend that could not go on indefinitely. A 270-pound Mr. Olympia, yes, but the competitive physique is getting to the point where the necessity of maintaining symmetry, proportion, and detail will not allow much more increase in size. It's just physically impossible for a 320-pound bodybuilder to have the same aesthetic quality of one weighing 220 pounds. Not only that, but as the 1990s progressed the bodybuilding audience itself showed increasing dissatisfaction with the judges' choice of sheer mass over traditional ideals of aesthetics and



symmetry. But bodybuilding goes in cycles as do most other things, so a pendulum that swings one way will inevitably swing back to center and then to the other extreme.

### **THE EXPLOSIVE GROWTH OF BODYBUILDING**

The 1980s witnessed explosive growth in bodybuilding, not just as a competitive sport, but in terms of its effect on our culture and the public in general. When the decade began, the International Federation of Bodybuilders was already a successful organization, boasting more than one hundred member nations. By the 1990s the IFBB included 160 countries and, according to IFBB president Ben Weider, had become the fourth-largest sports federation in the world.

The Soviet Union became an IFBB member in the mid-1980s, and after the breakup of the Soviet Union the various countries that had made it up also petitioned for IFBB membership, which also helped to swell the ranks of the organization. In 1990, China joined the IFBB as well and



*Competitors in the '90s have become massive.*



*They still must maintain symmetry, proportion, and detail, as shown in this Mr. Olympia posedown.*

began hosting competitions, not just for men but for women bodybuilders as well.

The culmination of this success came when bodybuilding received official recognition from the International Olympic Committee in 1997, making the sport of physique competition a full member in the international amateur sports community.

The impact of bodybuilding on modern culture also became apparent as we began to see more and more muscular physiques represented in both print and television advertising. One bank trumpeted its strength as a financial organization by including a muscular arm curled in a biceps shot. Viewers were encouraged to use a particular collect-call service in an ad featuring Arnold Schwarzenegger look-alike, sound-alike bodybuilder Roland Kickinger. Bodybuilding has certainly changed the physiques of movie action heroes. Once the public got used to seeing the kinds of bodies featured in films like *Conan*, *Rambo*, and Jean-Claude Van Damme martial arts movies, young movie and television actors, print and runway models all got the message that you'd better be in shape if you want to impress the public.

Of course, all this growth presented problems of its own. The bigger you get, the more attention you draw—both positive and negative. While President Bush was pushing the idea of bodybuilding training through the vehicle of the President's Council on Physical Fitness, and publications like *USA Today* published articles praising the benefits to be gained from training with weights as the bodybuilders do, bodybuilding's detractors devoted increasing energy to attacking the sport.

The worst beating bodybuilding had to take was over the issue of the use of anabolic steroids and other performance-enhancing drugs. There is certainly no doubt that drug abuse exists in the sport of bodybuilding, but too often it was overlooked that these same problems also exist in a wide variety of other sports. At one point *Sports Illustrated* published what many felt was a highly irresponsible article holding up the misdeeds of a former bodybuilder, who had not competed in some fifteen years, as somehow representative of behavior to be expected from physique competitors because of their penchant for drug use.

However, in response to both public pressure and the requirements set forth by the IOC, the IFBB announced the federation would be instituting an ambitious drug-testing program, expanding upon the testing already being performed regularly at the IFFB World Amateur Bodybuilding Championships (formerly Mr. Universe). I hope this program will not only help to educate young bodybuilders about the dangers of using proscribed substances and dissuade them from experimenting with these drugs, but will also help persuade the public that bodybuilding is indeed a legitimate, exciting sport and its champions legitimate, admirable athletes.



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## THE ARNOLD CLASSIC WEEKEND

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One innovation in competitive bodybuilding, beginning in 1994, has been the series of events I have promoted with my longtime associate Jim Lorimer in Columbus, Ohio. As I moved from the world of bodybuilding into the movie industry, I became more and more aware of how little bodybuilding has been treated as the exciting spectacle it could be. So Jim and I developed a whole package of events that included the Arnold Classic for men, the Ms. International for women bodybuilders, a fitness competition for women, a major fitness industry trade show, and exciting martial arts competition and exhibitions.

This full weekend of excitement has attracted so many physique fans to the city that Jim Lorimer has informed me that it is the third-highest attended annual event in Columbus, with only a national and international horse show drawing larger attendance. "It's no wonder they attract more of a crowd," I told Jim. "They have bigger competitors than we do."

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## THE PROFESSION OF BODYBUILDING

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The success of the Arnold Classic is only one indication of the degree to which bodybuilding has grown into a major professional sport. As bodybuilding has gained in popularity, the money to be made from the sport has also increased. Some bodybuilders have always been able to make money from their physiques—for example, John Grimek, Bill Pearl, and Reg Park were in demand for seminars and exhibitions back in the 1950s—but very few physique stars were able to make a full-time living from the sport. Even as late as the mid-seventies I think the only two bodybuilders making a full-time living from bodybuilding were Franco and me. You have to remember that in 1965 the prize awarded at the first Mr. Olympia was only a crown. In 1998, a top pro winner could expect to walk away with \$110,000, and the total prize money available in a Mr. Olympia or Arnold Classic has climbed to six figures.

Of course, whenever a lot of money suddenly becomes involved, everything starts to change and success breeds even more opportunities. Many physique stars have opened gyms, begun manufacturing equipment, or created clothing or supplement lines. Most have augmented their incomes through mail-order sales of all these products and, of course, seminars and exhibitions.

The growth of bodybuilding has paralleled the increased awareness of fitness in the mainstream culture. Interest in fitness has expanded explosively in the last few years, as indicated by the tremendous increase in the

number of gyms and gym members around the country and in the remarkable increase we have seen in the sales of workout clothing, exercise equipment, and diet supplements.

Throughout the 1980s bodybuilding became more and more visible on television, covered by all three major networks as well as ESPN and other cable sports outlets. Unfortunately, this interest on the part of the media did not continue to expand as the 1990s progressed. The reason was the drug controversy. Although many other sports are also plagued by problems with anabolic steroids and other performance-enhancing drugs, the attention of the public has tended to focus disproportionately on the world of physique competition. Obviously, both the problem itself and the public perception of bodybuilding will have to be dealt with in the future if bodybuilding is to achieve the success it is capable of.

## JOE WEIDER

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Any discussion of bodybuilding would be incomplete without mention of the contribution of Joe Weider and his magazines *Muscle & Fitness* and *Flex*. Since the early 1940s, Joe has done more than simply provide good articles and photos detailing bodybuilding competitions, how-to training articles, and personality profiles of the top physique stars. He has also managed to gather and preserve enormous amounts of valuable training information and to use his magazines, books, and videotapes to make this information available to one new generation of young bodybuilders after another.

Joe has spent an enormous amount of time over the years going into gyms around the country and observing how the stars trained. For instance, back in the 1960s he noticed that Larry Scott used a preacher bench to do Curls, and that the super-strong Chuck Sipes continued to do set after set with great intensity by quickly taking weight off the bar between sets. He took note of these methods, wrote them down, then gave them names. Scott didn't call his technique Scott Curls, and Sipes didn't realize he was using the Stripping Method. But, through Joe, soon everyone had access to these valuable training techniques.

In Austria, I trained in the morning and again in the evening because that's what my daily schedule demanded. Now, this is known as the Weider Double-Split System, and is being used by bodybuilders all over the world. The Weider Training Principles are a collection of the best bodybuilding techniques ever created. Joe Weider recognized these principles, tagged them with his own name (the Weider Instinctive Principle, the Weider Priority Principle, the Weider Peak-Contraction Principle, and so on), and promoted them in his magazine. It would be impossible to count the number of bodybuilders who have benefited from Joe's ideas on training, nutrition, diet, and everything else it takes to make oneself a success in bodybuilding.



*Joe Weider with bodybuilders*

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## THE EVOLUTION OF MODERN TRAINING

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One reason that bodybuilders have continued to get bigger, harder, and more cut over the decades is that they have figured out over time, largely by trial and error, better ways of training and more effective methods of dieting. *Every* sport has improved during the past five decades and bodybuilding is no exception. In fact, some would argue that the level of fitness in *every* sport has improved as bodybuilding techniques have become more widely known and adopted.

In the days of John Grimek, bodybuilders still trained largely like weightlifters and tended to work the whole body three times a week. Bodybuilding training is much more sophisticated than that today. Bodybuilders train each body part more intensely, hit all the muscles from different angles, use a wider variety of exercises and equipment, and are much more aware of the need to train hard in relatively short bursts and then allow the body to rest, recuperate, and grow. Where once just getting “big” was the main goal, now bodybuilders try to achieve “quality”—creating a physique with spectacular shape and symmetry, with every muscle defined and separated—a level of definition that makes today’s top competitors look like walking anatomy charts.

As bodybuilders developed new techniques, the tools used to shape their bodies also changed. Gyms in the thirties and forties were primitive places by today’s standards. Gym owners like the late Vic Tanny, one of the creators of the modern health club, experimented with various types of cable and pulley devices to give their patrons a wider choice of exercises, but the barbell and dumbbell still dominated the gym. In the early sixties, the introduction of exercise machines made a greater variety of exercises possible. Today Cybex, Hammer Strength, Body Masters, Paramount, Universal, Nautilus, and many other manufacturers produce training equipment that is essential to supplementing a bodybuilder’s free-weight training. At World Gym, Joe Gold (founder of Gold’s Gym as well) designed and built equipment so successfully that his designs have been widely copied and imitated around the world.

Bodybuilders have also learned to master the principles of diet and nutrition. Lean muscularity was not always the important factor in bodybuilding competition that it is today; pure muscle mass was considered more important. But bodybuilders realized along the way that the bulk produced by body fat had no place in a quality physique, and that it was necessary to get rid of as much fat as possible in order to fully reveal their muscular development.

So bodybuilders stopped bulking up. They learned to follow strict diets while still training very hard, and to take vitamin, mineral, and protein supplements to enhance their progress. They investigated the effect on the body of steroids, thyroid, and a whole range of biochemical agents.

And they began using motivational techniques and even hypnosis to harness the power of the mind to force the body's development beyond previous limits. And in doing so, bodybuilders began attracting the attention of doctors and medical scientists, who came to realize that the ability of these athletes to develop the human body represented a major breakthrough in our understanding of exercise and its effect on the body. This led to a revolution in exercise and fitness techniques available to the general public.

A clear sign of the growth of the popularity of weight training in the United States and around the world is the proliferation of serious gyms. When I was a young bodybuilder traveling around it was frequently all I could do to find one local gym in which I could do a real workout. Now no matter where I go there is a World Gym, a Powerhouse Gym, a Gold's Gym, a Bally's, a Family Fitness Center, or some other well-equipped local training facility. There is no longer much difference in the equipment available in a hardcore bodybuilding gym or a so-called health spa. People have learned that muscle is muscle and you need the same range of exercise equipment whether you are training to stay fit and healthy or to win the Mr. Universe or Mr. Olympia contest.

## **THE FUTURE OF BODYBUILDING**

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As I travel across the country and around the world, seeing more and more good bodybuilders develop in the United States and an increasing number of competitors from Europe winning international contests, I have great hope for the future of the sport. Bodybuilding is so specialized and so difficult that only a small percentage of people will ever want to do what it takes to become an international champion, but athletes who once would have been drawn to other sports are now beginning to consider a career in bodybuilding. This is one of the things that will ensure that the sport will continue to grow, that the level of competition will remain high, and that the public's interest will continue to increase.

There is no doubt that the top competitors will tend to be much bigger in the future than they were in the past. I like to use boxing as an analogy. Years ago, heavyweight champions frequently weighed under 200 pounds—look at Joe Louis and Rocky Marciano as cases in point. Today the smallest heavyweight contenders weigh more than 200 pounds, and 230-pound heavyweights like, say, Riddick Bowe are becoming more common. But despite the huge size being attained by football players, weightlifters, and other athletes, there are no 260-pound heavyweight contenders—and there may never be. At a certain point, gaining more size detracts from rather than increases your ability to perform in a given sport. That is true in boxing, tennis, and soccer, to name a few examples, and it is probably true in bodybuilding as well.

Bodybuilding means so much more today than it did when I first fell in love with it. Then, there was only competition, but now it has developed a recreational side—bodybuilding for physical fitness, health, and as a means for developing confidence and a better self-image. Orthopedists are beginning to use it as a means of rehabilitation for patients with certain types of physical problems. It is being used by the elderly as a means of combating many of the debilitating effects of aging. It is also becoming more important in sports training as many athletes find that bodybuilding can greatly enhance their performance. Women, children, and even whole families are becoming involved in bodybuilding programs. This is not a fad; it is obviously here to stay.

But as the ranks of professional bodybuilders increase, and bigger cash prizes become available, it should not be forgotten that the primary reason for bodybuilding is a fundamental love for the sport. Without this love, the camaraderie between bodybuilders is lost and the athletes compete without joy or satisfaction. If you consider only the financial side, then when another bodybuilder beats you, he has not just bested you in a contest, he has taken away part of your living, and it is difficult for anyone in this position to have anything but negative feelings for other competitors, and eventually for bodybuilding itself.

But I would like to see bodybuilding introduced to many more people than just those who are considering competition. Bodybuilding training is one of the best methods of achieving physical fitness, and the more people who understand this and benefit from it the better. Organizations like the IFBB often forget there is a world out there beyond organized bodybuilding, and put restrictions on bodybuilders as to where, when, and for whom they can give bodybuilding seminars. My view is that bodybuilding should be energetically encouraged on any occasion and for any audience. Enhancing all aspects of life through better physical fitness is a need that takes priority over any jurisdictional considerations.

One relatively new development in bodybuilding is that of the bodybuilder as personal trainer. While many people look at a bodybuilder and say, "I don't want to look like that," they also seem to realize that these individuals would not look as they do unless they knew something very special about how to train the body. And so bodybuilders are increasingly in demand as personal trainers, a trend that began in California and has now spread across the country and around the world. The techniques of bodybuilding apply to every body and can be adapted for every purpose. And who could be more capable of teaching you the best and most efficient way to train than a dedicated bodybuilder? So although I never expect bodybuilding to be a mass sport (although in the future, who can tell?), I am confident that the real impact of bodybuilders on the culture as a whole will be in the role of personal trainers.

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## WOMEN'S BODYBUILDING

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One major development in bodybuilding has been the advent of bodybuilding competition for women, as well as the increasing number of women using bodybuilding training for the development of fitness, health, and strength.

Modern bodybuilding competition for women had its tentative beginnings in the late 1970s, with George Synder's "The Best in the World" contests perhaps the most successful (despite the fact that women still appeared onstage in high heels). In 1980 the National Physique Committee held its first National Championships for women, and the International Federation of Bodybuilders sanctioned the first Ms. Olympia contest. Bodybuilding for women as a recognized national and international sport for both amateurs and professionals was officially on its way.

The first well-publicized female bodybuilder was Lisa Lyon, who essentially invented the kind of combination muscle-posing and dancelike movements that characterizes presentation in women's contests to this day. Lisa also sought out top-name photographers like Helmut Newton and Robert Mapplethorpe, and their photos of her were the introduction many people had to the aesthetically developed muscular female body. Bodybuilding was extremely fortunate when Rachel McLish became the first Ms. Olympia. Rachel's combination of sleek, sexy looks, muscularity, and personality set a standard of excellence that female bodybuilders have used as a benchmark ever since. Cory Everson and Lenda Murray dominated the 1980s and 1990s, winning six Ms. Olympia titles apiece. They were followed by Kim Chizevsky, three-time winner of the Ms. Olympia crown. Kim's incredible levels of hardness and muscularity immediately began generating the same sorts of controversy regarding muscle vs. aesthetics as we saw during the course of Dorian Yates's dominance of the Mr. Olympia.

Bodybuilding for women is such a new idea that it is no wonder there is controversy surrounding it. Never before in history have women developed their muscles for aesthetic purposes. *Pumping Iron* author Charles Gaines calls this look a "new archetype." Many don't approve of this activity for women and don't like how it looks. Everyone is entitled to an opinion, but in my view women have the same skeletal muscles as men and should be free to develop them as they wish. Bodybuilding is a sport both men and women participate in it. This is why I hold both the Arnold Classic and the Ms. International in Columbus each year. We live in a time in which women are becoming involved in all manner of activities and professions that were once denied to them. As the father of two daughters, I couldn't be more pleased that this is happening. I am happy to see women increasingly overcoming the artificial barriers that have limited them in the past. Bodybuilding for women is just one more example of this cultural transformation.

But as far as I'm concerned, the most significant aspect of bodybuilding for women is its impact on health and fitness. Women in our society too often suffer from loss of strength, lean body mass, and physical ability, especially as they grow older, because they don't exercise their muscles properly. Too many women concentrate on aerobic exercise at the expense of resistance training because they have been convinced that working their muscles will make them look unfeminine. Additionally, they often go on extreme and unhealthy diets that cause a loss of both bone and muscle mass. I have great hopes that the example of female bodybuilders will help to teach women the benefits of bodybuilding workout and diet programs so that as many women as possible can enjoy the benefits to their health and well-being of a fit, strong, and shapely body.

Why, then, it might be asked, aren't there any programs developed specifically for women in this encyclopedia? The primary reason is that the fundamentals of muscle training and diet programs are essentially the same for both sexes. Though women may have different goals from men—to tone up rather than build maximum muscle size—this is reflected not in how they execute particular exercises but in sets and reps, combinations, and choices of some exercises that target a woman's particular problem areas. Diet is a matter of the appropriate intake of the various necessary nutrients and the correct number of calories. True, it's a fact that the female body responds somewhat differently, but *every* individual is going to find the need to adjust training and diet programs to suit his or her personal needs. So my advice to women is to learn the bodybuilding techniques in this book and put them into practice to the best of your ability and, once you've been on these programs long enough to see results, just stand in front of your mirror and admire what you've achieved!



# The ABCs of Bodybuilding

## **SPORT VS. EXERCISE SYSTEM**

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Bodybuilding as a system of exercise is the most effective and efficient way to strengthen and develop the muscles of the body. Some think bodybuilding is only an intense form of competition but not a sport. However, I think bodybuilding qualifies as a sport for a number of reasons. One is the incredible amount of athletic effort involved in training, in developing the physique to prepare it for competition. Another is the high level of athletic demand involved in the performance part of bodybuilding—that is, posing and flexing onstage. As we'll go into in more detail later, to be able to pose during a contest, to squeeze and flex your muscles, be able to hold poses for as much as an hour or more at a time—and to do it really well, with high energy levels and full control of your entire body the whole time—is an athletic feat comparable to a boxer going twelve rounds for the heavyweight championship of the world.

One reason people have trouble understanding the nature of bodybuilding is that there are two basic kinds of sports—those judged by measurement (how far, how fast, how high, and so forth) and those judged by form (diving, gymnastics, ice skating). *Bodybuilding is a sport of form*, but instead of movement the form involved is that of the body itself—the size, shape, proportion, detail, and aesthetic quality of the physique as developed in the gym, prepared by dieting, and displayed by performing bodybuilding poses.

In any event, although bodybuilding has not yet become an Olympic sport, it has been accepted by the international amateur sports community

and been included in such events as the Asian Games and Pan American Games. So I am not alone in my opinion that bodybuilding is a sport.

## **PROGRESSIVE-RESISTANCE TRAINING**

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Of course, the majority of people who train with weights are never going to compete (just as most people who play tennis or golf don't expect to enter Wimbledon or the Masters Invitational). But whether you bodybuild with the aim of sculpting a competition physique or are training to improve your performance at sports, to be healthy and fit, to look and feel better, or to rehabilitate an injury, all muscle-building done correctly depends for its results on the same basic exercise principle, that of progressive-resistance training.

Progressive-resistance training works because the body is designed to adapt and grow stronger in response to greater amounts of stress than it is used to. If you are used to running two miles a day, then running five miles puts more demand on your muscles and the ability of your cardiovascular system to supply enough oxygen and nutrients to keep the muscles functioning under the stress of this greater demand. You may be in shape to run two miles, but you have to get in better shape to run five miles. Improving your conditioning in this case is a matter of increasing how far you run and giving the body time to change and adapt to this increase.

When it comes to muscle-building the same principle applies. The muscles are adapted to dealing with a certain level of demand, specifically to a certain amount of weight in your exercises lifted with a certain degree of intensity. When you increase the amount of weight and/or intensity, your muscles have to become bigger and stronger to deal with it. Once they have adapted to the new level of demand, you increase the amount of weight and/or intensity in your workouts so that they will *continue* to get bigger and stronger. In other words, you progressively increase the demands you make on your muscles over time.

Dr. Lawrence Golding of the University of Nevada explains it this way: "If you have a 10-horsepower motor and you subject it to a 12-horsepower load, it will burn out. But when you have a human body that is the equivalent of a 10-horsepower motor and you subject it to a 12-horsepower load, it eventually becomes a 12-horsepower motor."

But not every kind of training you do with weights is going to end up creating a bodybuilding physique. You have to do the right kind of exercises, using the right techniques, so that you send a *specific message* to the nervous system that tells the body what kind of adaptation you wish to achieve. This is called specificity of training and it is why learning how to train the right way is so important. I like to compare this with working on a computer. Anyone who has used a computer for any length of time has

probably had the experience of the machine not doing what you wanted or expected it to. You try over and over and the same thing happens. You figure there is something wrong with the machine or the software. Then you realize you made some very small mistake, maybe just putting in a period where you should have put a semicolon. But the computer can't think; it just follows your instructions. So if you aren't very specific in what you tell it to do, you're in trouble. The computer doesn't know what you *think* you're telling it to do, only what you are actually telling it to do.

Bodybuilding is based on that same principle. The body doesn't know what you *think* you are telling it to do; it only registers and adapts to the specific instructions you are giving it by the way you are working out. You may feel you are building muscle, you can be working hard, sweating, getting tired and sore, but unless you are sending the right code to the body, you are going to be disappointed in your results. And the code in this case is a correct understanding of the principles of progressive-resistance bodybuilding training.

## WEIGHTLIFTING, RESISTANCE TRAINING, AND BODYBUILDING

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I have been asked many times whether bodybuilders are really strong or whether their big muscles are just for show. The answer is that some bodybuilders are indeed strong but that strength for physique competitors is a means to an end rather than the ultimate goal. The athletes who are most concerned with ultimate strength are weightlifters.

Weightlifting is a sport which is judged by the amount of weight a competitor can handle for any given type of lift. Over the course of history there have been many types of strength-testing and weightlifting competition. Today there are two basic types of recognized competition weightlifting: Olympic lifting (involving the snatch and clean and jerk) and powerlifting (with three events—the deadlift, bench press, and squat).

Nowadays, weightlifters do a lot of bodybuilding training—that is, they work on balanced development of all the muscle groups—but their primary goal is *strength training*. This is even more true of powerlifters than Olympic weightlifters because their lifts involve a lot less technique, timing, and coordination, and are designed to be a more specific test of strength and power.

The major difference in programs between a weightlifter's strength training and bodybuilding is that the lifter works in a much lower rep range. That is, while bodybuilders (as we shall see in the sections of this encyclopedia on how to train) use less weight and do higher repetition sets, weightlifters are training to do *one maximum rep* in competition, so they frequently pile on the weight in their workouts and do triples (three

reps), doubles (two reps), or singles (one rep) to prepare them for handling huge poundages in a meet.

### The Bodybuilding Physique

There are other sports in which athletes develop big muscles, but bodybuilding is about the *maximum aesthetic development of the entire physique*. The ideal bodybuilding physique would look something like this: Wide shoulders and back tapering down to a tight waist; legs in proper proportion to the torso. Big, shapely, and proportionate muscular development, with full muscles tapering down to small joints. Every body part developed, including such areas as rear delts, lower back, abdominals, forearms, and calves. Good muscular definition and muscle separation.

Of course, there is no such thing as a perfect athlete in any sport. Athletes always have strengths and weaknesses. In bodybuilding, all of us who have competed in the sport have had weak points that we strove to overcome by specific types of training and posing techniques. Nature makes some physiques better than others, more ideally proportioned, more responsive to training.

In past years, there have been champions like Frank Zane, who had beautiful aesthetics and was a master poser, but who many thought lacked the mass and density they would like to see in a champion. Franco Columbu won two Mr. Olympias in spite of being much shorter than you'd think would be possible in a champion competing at that level. Dorian Yates won many Mr. Olympias, deservedly, but he has also been continually criticized by some for being much too thick and blocky and lacking the overall aesthetic and athletic look they feel bodybuilding ought to be about.

It may seem strange that having too much muscle can be a drawback, but although bodybuilding is about big muscles, it can be a disadvantage to be too mesomorphic, with thick slabs of muscle rather than aesthetic tapering ones. Many seemingly massive bodybuilders actually have fairly small skeletons and joints, which help to give muscles that more aesthetic shape. Most people are surprised that, even at my heaviest competition weight, the average individual could still nearly close his fingers around my wrist. I had big muscles, not big bones, which is one reason I was so successful in my competition career. Lee Haney, who dominated the Mr. Olympia in the 1980s, got into bodybuilding after twice breaking his leg playing football. Again, he has huge, powerful muscles, but a lighter and more aesthetic skeletal structure.

In any sport—in fact, in any area of life—it's a fact that some people have more talent in specific areas than do others. In the same way, bodybuilding champions are made, but also born. You have to have the right kind of genetics. You can't train to change your skeletal type or proportions (although you build bone strength and size when you do muscle

training). Keep in mind, however, that what kind of genetic potential you have is not always obvious. Sometimes you need to train for a few years to see what kind of potential you may ultimately have.

And it's also a fact that the "race doesn't always go to the swift." Sometimes you need to overcome obstacles to develop to your full potential and it is often the case that the most gifted athlete does not always learn to work hard enough to rise to the top in a sport. Olympic decathlon champion Bruce Jenner told me that when he was in high school he wasn't the best in any sport in which he participated. But by hard work over the years and learning all of the skills involved in the decathlon's ten events he was ultimately able to win the coveted title of "Best Athlete in the World." Sometimes, it pays to remember the story of the tortoise and the hare.

But whatever your genetics, the kind of training you do is what influences the type of muscular development you achieve. To be a really good bodybuilder, you need to create muscle shape, and this happens when you train every part of a muscle or muscle group, at every angle possible, so that the entire muscle is stimulated and every possible bit of fiber is involved. Muscles are really aggregates of many smaller units—bundles and bundles of fiber—and every time you use the muscle in a slightly different way you stimulate different combinations of these bundles and activate additional fibers. The bodybuilder attempts to achieve total development of every muscle in the body, to create the fullest possible shape in each muscle, to have the muscles proportionate to one another, and to achieve an overall symmetry that is as aesthetically pleasing as possible.

Developing the body this way requires a complete knowledge of technique. You may want to change the shape of your pectoral muscles, peak the biceps more fully, or achieve a better balance between upper and lower body development, but these results do not come about by accident. So the best bodybuilders are those who understand how muscle tissue works, how training actually affects the body, and what sort of techniques lead to specific results.

## **How Bodybuilding Training Works**

Imagine you have a barbell in your hands and you press it up over your head. Several things happen at once: First, the muscles of the shoulder (the deltoids) lift your arms upward; then the muscles at the back of the upper arm (the triceps) contract and cause the arms to straighten. Any movement you make, whether pressing a weight overhead, walking, or simply breathing, is the result of any number of complex combinations of muscle contractions.

The action of individual muscle fibers, on the other hand, is quite simple—a fiber contracts when stimulated and relaxes when the stimulation ceases. Contraction of an entire muscle is the result of the contraction of many tiny, individual muscle fibers. Fibers contract on an all-or-nothing

basis. That is, they always contract as hard as they can, or they don't contract at all. However, after a series of contractions a fiber begins to get tired and the amount of effort it can generate diminishes. When you lift a maximum amount of weight one time, you use only a fraction of the total amount of fiber in the muscle. The amount of weight you can lift is determined by three things: (1) how much fiber you are able to recruit; (2) how strong the individual fibers are; and (3) your lifting technique.

When you do only one or two repetitions of a lift, your body never gets a chance to recruit fresh fiber to replace what is getting weak and tired. Weightlifters learn to recruit an unusually large number of fibers in one maximal lift. But they put such an immense strain on those fibers that the body adapts and protects itself by making those fibers bigger and thicker. This is called fiber *hypertrophy*.

No matter how many fibers the weightlifter involves in one maximal lift, he still uses fewer than he would if he used less weight and did more repetitions. Therefore, he trains and strengthens only part of the muscle structure. Also, the weightlifter does a limited number of different kinds of lifts, so there are many angles at which the muscle is never trained at all.

Bodybuilders have learned that you can create greater visual change in the body by a different kind of training. Instead of one maximal lift, a bodybuilder uses less weight and does more repetitions, and does each set to failure—until the muscles are unable to do even one more repetition. Then he rests briefly and continues on to do more sets, perhaps as many as 15 to 20 sets of various exercises for any given body part.

How did bodybuilders arrive at this knowledge of how much weight to lift, and how many sets and reps to do? After all, the legendary Eugen Sandow, who pioneered weight training in the nineteenth century, used to do hundreds of reps! The basic answer is that bodybuilders discovered this training system by trial and error. No expert in the early years of bodybuilding told them to do this; they invented it on their own.

The proof they were on the right track was the bodybuilding physique itself. Could anyone look at the physiques of Steve Reeves, Bill Pearl, Reg Park, Sergio Oliva, Lee Haney, or me and claim we didn't know something pretty special about building muscle? More recently, exercise physiology has confirmed the bodybuilding method. As a general rule, the best way to get maximum development of muscle volume is by lifting about 75 percent of your one-rep capacity—that is, the maximum amount you could lift for one repetition. It should come as no surprise that, for most people, using a weight that is 75 percent of your one-rep maximum allows you to do—that's right—about 8 to 12 reps for the upper body and 12 to 15 reps for the legs.

Of course, stimulating growth isn't enough. To grow, a muscle also needs to rest and to absorb sufficient nutrients for it to recover and recuperate. That's why learning how to do specific exercises and how to put

them together in sets is only part of the information you'll find in this encyclopedia. We will also talk about your overall training program, how much to do in a training session, how often to schedule training sessions, and what kind of diet provides the raw materials your body needs to grow in response to your workouts.

## **Bodybuilding and Aerobic Endurance**

There are two fundamentally different kinds of endurance: muscular and cardiovascular.

- Muscular endurance is the ability of the muscle to contract over and over during exercise and to recruit the maximum number of fibers to perform that exercise. For example, while doing heavy Squats, you fatigue muscle fibers in the leg so quickly that if you want to get through an entire set you need muscle fibers that recuperate quickly and you need to be able to bring many additional fibers into play during the course of the set.
- Cardiovascular endurance is the ability of the heart, lungs, and circulatory system to deliver oxygen to the muscles to fuel further exercise and to carry away waste products (lactic acid).

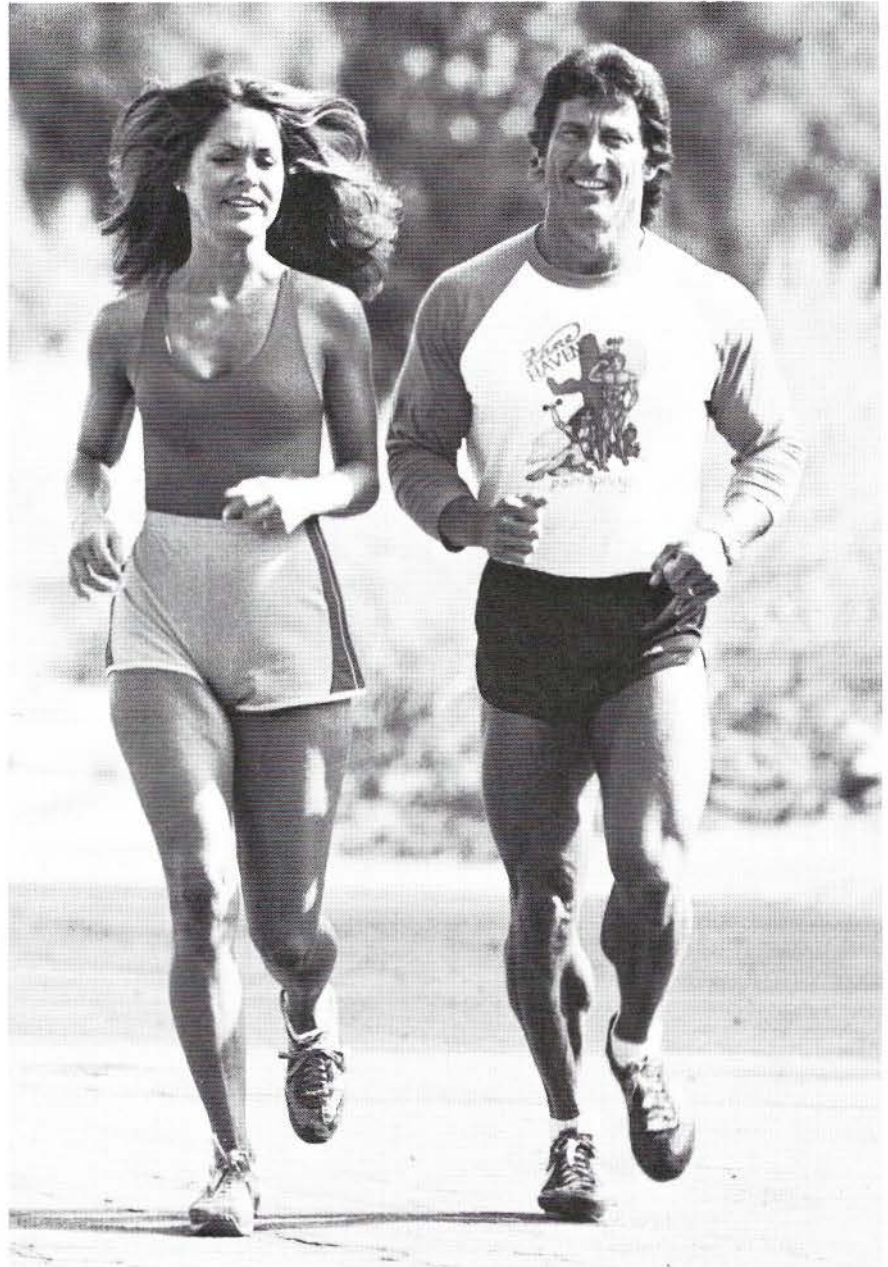
While these two aspects of endurance are distinct, they are also connected. What good is having a well-developed cardiovascular capacity if the muscles you are using in some effort can't keep up the pace and give out? And how well can you perform if your muscles have tremendous endurance ability but your circulatory system can't deliver the oxygen they need?

Just about everyone understands that you increase cardiovascular capacity by doing high volumes of aerobic exercise—exercise that makes you breathe hard, causes your heart to race, and that you can keep up for long periods of time. When you do this you:

- increase the ability of your lungs to take oxygen from the air and transfer it to the bloodstream;
- increase the capacity of your heart to pump large volumes of blood through the circulatory system and to the muscles;
- increase the number and size of the capillaries that bring blood to specific muscles;
- increase the capacity of the cardiovascular system to flush lactic acid (which causes the feeling of burning in the muscles during intense exercise) out of the muscles.

You increase muscular endurance by performing a relatively high volume of muscular contractions. When you do this you:

*Frank and Christine Zane*



- increase the size and number of capillaries to the specific muscles being exercised;
- increase the ability of the muscles to store glycogen (carbohydrate), which is needed to create energy for muscular contractions;
- increase the mass of the muscle mitochondria (energy factories) that create substances like ATP out of glycogen which are used to fuel muscular contraction;
- increase the development of the type of muscle fiber mostly involved in endurance exercise.



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As a reminder, there are basically two types of muscle fiber (as well as a lot of intermediate, in-between fiber types):

1. White, fast-twitch fiber is nonaerobic power fiber that contracts very hard for short periods but has little endurance and a relatively long recovery period.
2. Red, slow-twitch fiber is 20 percent smaller than and not as powerful as white fiber, but is aerobic and can continue to contract for long periods as long as sufficient oxygen is available.

Because bodybuilding training relies on a higher volume (sets and reps) of effort than, say, weightlifting, it has some cardiovascular benefit and also leads to an increase in muscular endurance. Bodybuilders tend to train at a pace which is just below the threshold of cardiovascular failure—that is, they train as fast as they can without overwhelming the ability of the body to provide oxygen to the muscles. This doesn't automatically make them good at endurance activities, such as running or riding a bicycle, but it keeps them in pretty good cardiovascular shape. When it comes to those other types of activity, you are dealing with *both specificity of training and specificity of physical adaptation*. You have to train on a bicycle to be good on one. You have to work at running to improve your ability as a runner. However, a well-trained bodybuilder will usually be in good enough shape to do well at these kinds of exercises and to show considerable improvement very rapidly, providing his size and bodyweight are not too much of a negative factor.

I have always believed that cardiovascular endurance is almost as important to a bodybuilder as muscular endurance. Hard training results in a buildup of lactic acid in the muscles being used—a waste product of the process that produces the energy for muscular contraction. If the heart, lungs, and circulatory system have been able to provide enough oxygen to the area, the lactic acid will be reprocessed by the body into a new source of energy; if not, the buildup will eventually prevent further contraction, leading to total muscular failure.

I have always liked to run several miles a day to develop my aerobic capacity. Some bodybuilders, however, find that running does not suit them or causes them to have problems with their legs and ankles, so they seek other ways of developing cardiovascular conditioning—using Lifecycles, treadmills, steppers, and other types of aerobic equipment. The fact is, the better conditioned your heart, lungs, and circulatory system, the more intense training you will be able to do in the gym and the more progress you will make as a bodybuilder.

## AEROBICS AND MUSCULAR DEFINITION

In addition to helping them to stay in top aerobic shape, bodybuilders use aerobic exercise as a way of burning up extra calories in order to achieve the ripped, contest definition they desire while still being able to take in the extra calories necessary to sustain their nutritional needs. So every serious bodybuilder interested in being both massive and lean—that is, developing muscularity as well as size—should do a sufficient amount of aerobic training to help burn off unwanted calories. I remember that Tom Platz, whose leg development was legendary, would work his legs to exhaustion in the gym, then get on a bicycle and ride for twenty miles. In spite of this high volume of training, his legs remained incredibly huge, and his quad definition and muscular separation were awesome.

Using aerobic activity to help you get cut up makes sense. If you metabolize an extra hundred calories doing cardiovascular exercise, that is another hundred calories contributing toward reducing the body's fat stores, or another hundred calories of, say, valuable protein you can eat while continuing to lose weight on your contest preparation diet.

However, the body's ability to tolerate the stresses of aerobic exercise is not unlimited. As we will discuss later, too much cardiovascular exercise can end up being detrimental. *Excessive* aerobics (and there are those who have tried doing endless hours prior to a contest, to their later regret!) can cut into the recuperative ability of the muscles involved and the physical system as a whole, leading to the scavenging of muscle tissue for energy (using the larger white fiber as fuel for the smaller red fiber), and resulting in inducing a state of *overtraining*.

"Overtraining" doesn't mean simply being tired from too much training. It is a condition you get into from too much exercise over too much time in which certain mechanisms in the body that supply you with energy and allow your body to recuperate are depressed or shut down. Overtraining is a chronic state in which you just can't perform no matter how hard you try. If you find yourself overtrained, the only good remedy is rest, sometimes weeks of it. But you can avoid the overtraining syndrome by properly scheduling your training, making sure you get enough rest and enough nutrients in your food. Instructions on how to do all this will be offered in Book 5.

But one good way of preventing overtraining is not to go overboard on the cardiovascular training. Remember, to look like a bodybuilder you need to train like one. To benefit from the concept of specificity of adaptation, you need to make sure that the main influence shaping and developing your body is progressive-resistance weight training—pumping that iron, not aerobics.

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## BODYBUILDING FOR ATHLETES

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Athletes are bigger, stronger, and faster than ever before, and records continue to be broken or even smashed to bits. In my opinion, one cause of this overall improvement in athletic performance is that it's hard to find serious athletes in any sport who don't do at least some kind of resistance training.

But it wasn't very long ago that coaches not only discouraged but pretty much *forbade* athletes to do any kind of training with weights. Iron pumping, it was thought, made athletes "muscle-bound," interfering with their agility and flexibility. It was considered somehow "unnatural," whereas building up your body by straightforward hard work—on a farm or ranch, logging, something outdoors and "manly"—was encouraged. Think of Sylvester Stallone training for the fight with Dolph Lundgren in *Rocky IV*, scrambling through the snow dragging a heavy log, chopping wood in subzero weather, and you've got the picture.

"The belief that weight training would slow you down," explains Frederick C. Hatfield, Ph.D., and Fellow of the International Sports Sciences Association (ISSA), "make you muscle-bound, ruin your touch and coordination, was the prevailing view for decades. This stemmed from associating weight training with weightlifting—that is, increasing your limit strength, your ability to do a one-rep, maximum lift. This kind of weightlifting or powerlifting training is inappropriate for most athletes, who rely much more on speed for increasing performance rather than on absolute strength."

The role of weight training in sports today, Dr. Hatfield says, is to develop the strength of the various muscles to a basic, minimum level that allows the athlete to perform at optimum levels. But this "optimal" strength training should not focus on creating muscle mass or limit strength for their own sakes unless they are specifically required for success in a specific athletic activity. "If you worship strength for its own sake," he adds, "then you can indeed run into problems with speed, mobility, flexibility, agility, coordination, and so forth."

Some sports have been faster to accept the benefits of "optimal" weight training than others. Fred Dryer, actor and former NFL football player, recalls that virtually nobody was training with weights when he began his pro football career in the 1960s, but by the time he retired in the late 1970s *everyone* on the team was spending at least some time in the weight room.

Bruce Jenner, 1976 Olympic decathlon champion, realized in the early 1970s that achieving optimum performance in such a wide variety of different athletic events would require his using weights to substantially increase both his strength and his muscle mass. "The decathlon is designed to test all-around athletic ability," Jenner points out, "with a variety of running, jumping, and throwing events. Starting out, I was very

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lean and strong for my size, but I realized I would have to be bigger and stronger to score the kind of point totals I would need—yet developing size and strength past a certain point would be detrimental to my overall performance.” In those days, track-and-field athletes were only beginning to rely on weight training to build up their bodies, so Jenner tried to be very careful in what kind of program he followed and how much effort he put in with the weights. “Actually,” he recalls, “because a lot less was understood about training back then, I did a lot of exercises that were more like weightlifting than weight training, they felt much more ‘athletic’ to me. But however inefficient some of what I did might have been, my strength did improve, I was able to gain enough solid muscle mass so I was successful in the 1976 Olympic Games in Montreal.”

There tends to be an ideal type of body for any sport (although, as we’ve seen, we can sometimes be surprised by what kinds of bodies succeed in various sports), and any kind of training you do should develop the body in the direction of this ideal rather than away from it. “Body composition assessment has revealed that athletes generally have physique characteristics unique to their specific sport,” report physiology experts William McArdle and Frank and Victor Katch in their 1994 book *Exercise Physiology: Energy, Nutrition and Human Performance*, 4th ed. (Williams & Wilkins). “For example, field-event athletes have relatively large quantities of lean tissue and a high percent body fat, whereas long-distance runners have the least amount of lean body weight and fat weight. . . . Physique characteristics blended with highly developed physiologic support systems provide important ingredients for a champion performance.”

Although getting “too big” can be a problem in many sports, in some instances, athletes need to pack on a substantial amount of muscle mass in order to be successful. For example, if you compare the average size of football linemen in the 1960s with the size of football players today the difference is amazing, not only in size, but also in body composition. A 300-pound football player thirty years ago might well have had a body composition that was 15 to 25 percent body fat. Today, any number of powerful, 300-pound players measure in at under 12 percent body fat, and a few are much leaner than that.

Boxing as well as wrestling is a sport which has traditionally shied away from training with weights. One reason is that building up your muscle mass puts you in a heavier weight division, which means you may be in combat against opponents who are naturally bigger and stronger. Another is that too many young boxers who have worked with weights tend to try to “muscle” their punches, rather than relying as they should on speed, timing, and coordination. But the world of boxing was astonished when Evander Holyfield, originally fighting at the cruiserweight/light-heavyweight level, gained something like thirty pounds of solid muscle and became

Heavyweight Champion of the World—with the help, to a large extent, of Lee Haney, Mr. Olympia.

“Most boxers rely almost entirely on traditional approaches to training and nutrition,” says Haney. “But Evander was very open to new ideas. To become a real heavyweight, he had no choice but to get bigger, and he saw that bodybuilders are the best athletes when it comes to packing on substantial amounts of lean body mass. So he adopted a lot of bodybuilding techniques, as well as a variety of scientific approaches to such things as diet, cardiovascular fitness, and agility.”

Holyfield was successful in part because he never forgot that boxing is a speed sport, as well as one that depends a great deal on muscular and cardiovascular endurance. He recognizes the importance of bodybuilding: “Part of my success comes from maintaining a consistent weight program, which gives me confidence and enables me to be both mentally and physically fit.” So, for Holyfield, building his body up with weights and proper nutrition was simply the first necessary step; then he concentrated on maximizing his boxing skills.

Magic Johnson came to the NBA in an era in which young basketball players were already fully aware of the benefits of strength training to their performance on the court. But interestingly enough, Magic has explained in a number of interviews that exercising and staying in shape have become even more important to him since his retirement as a means of



*Evander Holyfield  
defends his title against  
Michael Moorer.*

keeping in peak health in his battle to stave off the potential debilitating effects of his illness. I thought I had an active life, but Magic describes a daily regimen that makes even me tired—aerobics classes, weight training, pickup basketball games with an intensity just shy of the NBA, even as he maintains a killer pace in his other business and media activities.

There was an L.A. Lakers coach who for years brought players into World Gym in order to work on their strength and muscular development, Magic Johnson among them. When I worked with Wilt Chamberlain on the sequel to *Conan*, I learned he had started training with weights long before it was generally accepted, when coaches were still warning players to stay out of the weight room. I believe that's one reason why he was such a dominant player during his career.

Even before that, golfer Frank Stranahan was known in the 1950s for using weight training to build up his body and improve his game. Nowadays, a lot of golfers do resistance training as part of their overall conditioning program, although weight training for golf is not yet as accepted as it is in many other sports. So Stranahan was a good thirty years or more ahead of his time when it came to understanding the benefits of training with weights to improve athletic performance.

Another sport which traditionally resisted weight training is baseball. Not very long ago, most baseball players tended to be small and wiry, fast and coordinated, and there weren't many big guys over 200 pounds to be found in the upper ranks of the sport. Today, baseball is full of 230-pound home run hitters who can also run and field their positions. Just look at Mark McGwire, a player so strong that he turns what would have been pop flies into four-baggers. The difference, of course, is the prevalence of weight training, to which athletes are now frequently introduced at the high school or junior high levels, as well as advanced knowledge of how to eat to maximize performance—the science of diet and nutrition.

Traditionally, football teams' weight rooms have been filled with linemen and linebackers who depend on muscle to give them the bulk they need to play their positions. But Dallas Cowboys quarterback Troy Aikman also depends on weight training as part of his conditioning program. Aikman does weight training to increase his upper body strength, including arms and shoulders, but as he explained in *Men's Journal* (September 1998), he also works his legs and hips, since that is where much of the power required to throw the "long bomb" comes from. Aikman wisely does a wide range of exercises for all of the major body parts, which not only strengthens the muscles involved in throwing hard but also creates a better balanced, all around physique that has no areas of weakness that could be overwhelmed and produce injury.

Another believer in the benefits of weight training is the legendary wide receiver for the San Francisco 49ers Jerry Rice. After undergoing knee surgery, Rice dedicated himself to a program of fitness designed to



*Mark McGwire hits his record-tying sixty-first home run.*

allow him to come back to football better than ever. His six-day-a-week program includes two hours of cardio work in the morning and three hours of weight training in the afternoon.

Weight training for sports is on its way to becoming universal. Michael Schumacher, Formula 1 racing phenomenon, pursues a very disciplined conditioning program that includes training with weights. Soccer great Diego Maradona discovered the possibilities of increased athletic performance through weight training late in his career. Tennis players, swimmers, pole vaulters, and even jockeys are turning to training with weights to improve their chances of athletic success.

Weight training and other conditioning programs are valuable to elite athletes in particular because there is frequently little they can do to further hone their specific abilities in their chosen sports. For example, during the latter part of his competitive career, Dwight Stones, one of the great high jumpers of all time, devoted several days a week to a training program which included training with weights and only short periods to practicing his sport. Why? Because, after all the years of effort he had put into perfecting his jumping technique, he reached a point of diminishing returns. He was so close to his absolute potential in terms of technique and neuromuscular coordination that he couldn't expect much improvement no matter how hard he tried. Instead, what he needed was a better "instrument" through which to express his ability and technique. And that's why he devoted a lot of time to pumping iron.

In addition to making muscles strong, weight training is particularly beneficial in building up areas sufficiently weak that the resulting imbalance could be detrimental to execution of various sports movements. As



Dr. Laurence Morehouse observed in his 1974 book *Maximum Performance* (Simon & Schuster), “The nervous system uses the path of least resistance. If you try to execute a motion with weak muscles, your nerves will tend to enlist stronger ones to take over if possible. . . . The result: muscle imbalance, less than ideal movement—and possible deformity.”

When you learn, practice, and play a sport, the muscles involved develop up to the level required, but no more. The muscles not involved, or less involved, tend to *deteriorate* over time, leading to even more muscular imbalance. As a result, after years of playing a particular sport, athletes develop a level of imbalance which makes injury extremely likely. Moreover, performing a sport over time at an intense level tends to wear the body down, and unless some kind of exercise program is used to counteract this, you increase your risk of injury as well as a deterioration in your athletic performance.

For example, runners often tear hamstrings because their quadriceps become too powerful in comparison to the leg biceps. Golf does little to build a lot of muscular strength, and because of the powerful twisting motion of the golf swing golfers often experience back problems, especially as they grow older. Sprinters find their performance is improved when their upper bodies are somewhat more muscular, but sprinting by itself won't give them this kind of development. Tennis tends to develop one side of the body much more than the other—notice how tennis pros have one arm obviously larger than the other—and this kind of imbalance in strength can easily cause physical difficulties and performance problems over time.

Doing generalized weight training—that is, following a basic program of exercises, techniques, sets, reps, and workout schedules outlined in this book—builds up the body, gives the athlete a *better overall physique* to work with, and in doing so tends to even out the imbalances caused by the specific demands and stresses of individual sports. Iron pumping allows you to create, shape, and sculpt the kind of body *best suited to your sport*—mass, strength, overall body weight—as is possible with no other exercise program.

“Making the body stronger,” says Mark Verstegen, director of the National Performance Institute, located in Bradenton, Florida, “not only increases performance in sports—in terms of strength, speed, and endurance—but also decreases the chances of injury. It allows the athlete to change his body composition to better suit the demands of his sport—that is, to become bigger and stronger if that's what is called for, or to maintain or reduce body weight but create the maximum amount of strength for any given body size.” Verstegen creates individual programs for the pro athletes he trains, programs that can include everything from calisthenics to agility drills to the medicine ball to resistance training with free weights and exercise machines.

Verstegen's clients include NCAA basketball top scorers, an American League rookie of the year, NFL football players, and Los Angeles

Lakers phenom Kobe Bryant. “Once you’ve fully developed your skills,” Verstegen adds, “all you can do is improve your physical ability. You want increased power output for both endurance and explosive sports, core strength so you have better posture, and joint stability to reduce injury.”

But knowing exactly what kind of weight-training program to follow for any particular sport is not that simple. As exercise physiologists George Brooks and Thomas Fahey explain it, “The intensity and duration of tension are the most important factors eliciting strength increases. The strength requirements of each sport must be assessed in order to develop an appropriate, specific program. In general, sports requiring muscular endurance employ strength-training schedules involving a great number of repetitions, while those requiring strength use fewer repetitions.”<sup>1</sup> Therefore, serious athletes need to work under the direction of strength-training coaches who have the knowledge and experience to create the kinds of programs appropriate to any given sport. However, whatever sport you may be training for, there are a few general ideas that I think will apply:

1. Generalized, bodybuilding-type weight training is the ideal system for controlling your body composition—getting bigger and more massive, getting stronger without gaining mass, or losing excess body fat to get lean and hard. This training should be tailored to create the kind of body best suited to your sport. Being “too big” or “too massive” for your sport can be as bad as not being big or strong enough.
2. Diet and nutrition are as important to controlling your body composition as is weight training. You have to eat right to gain, eat right to lose, and eat right to get strong.
3. The basic purpose of weight training for an athlete is to create a better body, a better instrument, to build strength to appropriate levels and to build up weak areas. Weight training done to improve specific sports movements should be done under the direction of a qualified coach.
4. Since the benefit of bodybuilding-type weight training to athletes is due to its “nonspecific” nature, keep in mind that training with free weights produces a much more general adaptive response than does working out with machines.
5. Remember that weightlifting is a specific sport, involving specific techniques and the development of maximal one-rep strength. The purpose of weight training for athletes, on the other hand, is to develop optimal rather than maximum strength, and to bring up weak areas and achieve a better balance of strength among the various muscle groups.

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<sup>1</sup> George A. Brooks and Thomas D. Fahey, *Fundamentals of Human Performance* (New York: Macmillan, 1987).

## Weight Training and Fitness

Did you realize that, according to *Time* magazine, training with weights has become the number-one athletic activity in the United States? The most popular form of exercise in the whole country?

In the years since this encyclopedia was first published I have seen more and more people making use of weight training who are not competition bodybuilders or professional athletes, but simply want to get fit, to look good and feel better, and to keep their bodies as young and strong as possible as they get older.

Doing bodybuilding to get in great shape and to keep your body fit and strong makes sense. After all, if this method can produce Mr. Olympia winners, it can certainly do wonders for the majority of people whose goals are so much more modest. And if you're going to do something, why not do it the best way possible. To people who say to me, "I want to get fit and firm up, but don't want to get too big," I say in reply, "Do you go to your tennis pro and say you want to learn tennis but don't want to play well enough to qualify for Wimbledon?" Would you tell a golf pro, "Teach me golf, but don't make me as good as Tiger Woods?"

The fact is, most people don't have the genetics, the time, or the energy to create really massive, bodybuilding-type physiques. So if you are bringing less to the table, isn't it important to use the most efficient and effective means of developing your body possible? After all, who wants to waste time and effort exercising without results?

Why is muscular fitness so important? Well, as we have seen, muscles are adaptive; they change according to what and how much they are asked to do. Throughout most of human history, labor was done primarily by the human body. People didn't need exercise; they needed a rest! A hundred years ago the physical exertion of even a relatively sedentary individual would exhaust most people today. In the 1950s and 1960s when I was a kid, we used to run around, climb hills, and engage in all kinds of sports, not sit around and watch television or type on a computer.

So what happens to muscle in our modern, sit-all-day-behind-a-desk world? Our why-should-I-walk-300-yards-when-I-have-a-car culture? Our hand-me-the-remote-control-so-I-don't-have-to-get-up-and-change-channels universe? Simple—when we don't use our muscles they atrophy and shrink. We don't use them, we lose them. This happens slowly in our twenties, more quickly in our thirties, and accelerates after that. "The average man," explained the late Dr. Ernst Jokl, "loses fifty percent of his muscle mass between the ages of eighteen and sixty-five." But the body doesn't have to deteriorate in this fashion. We can do something about it. And the specific program that best counteracts this deterioration of youthful muscle mass is bodybuilding.

Don't worry about "getting big." Concern yourself instead with keep-

ing what you already have. As Alice found in *Alice in Wonderland*, sometimes you have to run faster and faster to stay in the same place.

Having strong and fit muscles keeps you looking and feeling good. It increases your ability to play sports, even if you are only a weekend athlete. Bodybuilding training also tends to stabilize or lower blood pressure over a period of time (using sustained, high-volume training rather than heavy weightlifting), to strengthen the back and so reduce the chances of back problems, and to increase the flow of blood to the skin, keeping it younger-looking and more flexible. Exercise is a stress reducer, and the benefits of lower stress can range from better functioning of the immune system to lowering your risk for cancer or heart disease.

It is a fact that the number of calories you burn up during the day is not just a function of how much exercise you do, but how much muscle you have as well. Muscle burns calories. That's what "burn" means—the oxidation process in the cells that creates energy for exercise. So the more muscle you have, the easier it is to get and stay lean.

Obviously, there are dangers associated with the lifting of excessively heavy weights, and serious weightlifters are prone to any number of more or less serious physical problems due to the demands of their sport. But bodybuilding involves the *controlled* use of weight training, with submaximum levels of resistance and a relatively high volume of training. Therefore, if done properly, with sufficient attention to technique, there is no reason a bodybuilder should ever suffer a training-related injury beyond common muscle soreness or the occasional minor strain or sprain that any athlete comes to expect.

Finally, I'd like to point out that bodybuilding training is also a very good way of introducing more discipline and control in the rest of your life. When you develop your body with training you tend to pay much more attention to your diet and eating habits. After all, why cover up all that nice muscle with unsightly fat? You have to take control of your schedule to make sure you get your workouts in, and that means organizing your time better the rest of the day as well. Bad habits? Smoking, drinking too much, things like that, also tend to interfere with your training discipline and physical progress. Got an early morning workout tomorrow? Don't stay up and waste so much time watching late-night television. If you use bodybuilding as an organizing principle in your life, it can change not only your body and your energy levels, but what you do and whom you do it with as well.

# The Training Experience

EVERY BODYBUILDER GETS tremendous satisfaction from looking in the mirror, hitting some poses, and watching his developing muscles pop out all over his body. Or using a measuring tape to calculate exactly how many inches he has put on in each body part. But for me, the training experience itself was always very rewarding and pleasurable. The hours I spent in the gym were the high point of my day. I liked the way training felt, the pump I would get during my workout, and the relaxed sensation of near exhaustion that came afterward. I not only enjoyed *being* a bodybuilder, I really got off on actually *doing* bodybuilding.

Training with this kind of enthusiasm is vital. Going into the gym every day and subjecting yourself to workouts that would fell an elephant is too difficult unless you really love it. Bodybuilders who have to force themselves to go to the gym and work out will never achieve the kind of success possible for those who can't wait to hit the gym and start pumping iron. Some athletes need to be encouraged to train more intensely and others have to be cautioned not to do too much. As far as I'm concerned, the athlete who has to be held back is going to come out on top every time.

## **WHAT YOU THINK IS WHAT YOU GET**

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When it comes to bodybuilding, the mind is almost as important as the body. The champion bodybuilders I have known have been so motivated that they practically *willed* their muscles to grow. But the mind is impor-

tant for another reason. To succeed in bodybuilding or in any other sport, you need to learn to think. You have to understand what you're doing. You have to master training techniques. You have to go beyond the basic principles of bodybuilding and find out what really works for *you*. You must develop your own instincts just as you develop your muscles and learn to listen to them. Sure, you have to train hard, but it won't do that much good unless you also train smart.

Of course, that all comes with time. In the beginning, every bodybuilder should stick pretty much to the basics. When you are starting, you can't train according to "how you feel" because you have no idea what correct training feels like. That takes experience. The trick is to master the correct training techniques, get used to how working out this way feels, and then you can begin to rely on "feel" or "instinct" to guide you.

Like other bodybuilders, I started out doing the basic exercises. Over time, experimenting in my own workouts, thinking about what I was doing, I found that I could do many sets for chest or for lats, train these muscles with as much intensity as possible, but I still didn't get as good a result as when I superseded the back and chest—combined a pulling movement with a pressing movement. But this same technique does not necessarily apply to every muscle, nor will every bodybuilder get the same good results training like this that I did. You must learn all of the relevant techniques, and then study how each technique affects you as an individual. *This is the true art of bodybuilding.*

The first step in this process is to understand exactly what you are doing in the gym, and to learn to interpret the feelings you experience from day to day as you go through your training routine. Remember, if you contemplate ever becoming a competitive bodybuilder, your opponents will probably know just as much about technique as you. What will make the difference is the degree to which you have been able to utilize your own instincts and feelings.

No matter how advanced a bodybuilder gets, there are still questions that arise, which is another reason you have to use your mind—to analyze what you're doing and evaluate your progress. Even a Mr. Olympia can find himself unhappy with his progress in the gym and begin to experiment with various training principles to find something that works better. This is all the more reason to learn as much as possible about different principles and ways of training, so you will understand what alternatives are available to you.

All of this is the reason I have created an *encyclopedia* of bodybuilding rather than just another book on how to exercise. I describe how to do a Bench Press or a Barbell Curl, how to choose which exercises to do, and how to put them together in a program. I deal with basic training and then go on to give you the information you need to move on to advanced training and, if that's your goal, to competition. You'll also find instruction on

how to eat to gain muscle, how to diet to lose fat, how to pose, to tan, and everything else involved in the sport and exercise activity of bodybuilding. But, as I've said, this isn't just a matter of hard work, although that's necessary. It also involves thinking and learning—training smart, using the mind and acquiring the knowledge you need to achieve your personal bodybuilding goals.

But before you go on to begin learning the basic principles of exercise, I think it's important that you understand some of the *specific* experiences you will be going through in your workouts, things like the “pump,” the nature of training intensity, muscular soreness and muscular pain (and how to tell the difference), and the huge benefits you can get from having the help of a good training partner—all of which I will deal with in the rest of this chapter.

## The Pump

One of the first things you will experience when you start training is the pump. Your muscles swell up well beyond their normal size, your veins stand out, you feel huge, powerful, and full of energy. The pump is usually felt after about 4 or 5 sets. Often you can keep this sensation throughout your workout, feeling an increased pump over time as more and more blood is forced into the area being exercised, bringing in fresh oxygen and nutrients for continued intense, muscular contraction.

What causes the pump is that blood is forced *into* the area by the action of the muscles and the pressure of the cardiovascular system, but there is no comparable force drawing the blood *out* of the muscle. Therefore, this extra blood stays in the muscle for some period of time, swelling it up to a much bigger size. The fact that your muscles get bigger and more impressive when you have a pump is why bodybuilders like to pump up before they pose. When you're in a tough competition, every little bit of advantage helps.

Getting a great pump is one of the best feelings in the world. It's so good that it's been compared to sex—by me, now that I come to think of it, in the movie *Pumping Iron*. According to Dr. Fred Hatfield (“Dr. Squat” to his fans), champion powerlifter and exercise physiology expert, “Quantities of blood flooding a muscle stimulate any number of proprioceptive sensors. Exercise and the resulting pump create a whole cascade of hormonal responses, including the release of endorphins and enkephalins, which are nature's painkillers.” This is the bodybuilder's version of the runner's high, which also occurs due to the release of hormones such as endorphins. In addition, an association develops over time, Dr. Hatfield explains, between the exercise and the positive feeling you get from it, so your pleasure centers are stimulated even more as your body relates the sensation of exercise with the good outcome.

This combination of the physical and the psychological can have a

tremendous effect on how you feel and how hard you can train. When you are pumped up, you feel better and stronger, and it is easier to motivate yourself to train hard, to achieve a high level of intensity. Sometimes, you think you're King Kong walking around the gym! Of course, this feeling may differ from day to day. From time to time you will walk into the gym feeling tired and lazy, but when you get a fantastic pump after a few minutes of work suddenly you feel big, strong, energetic, and ready to lift every weight in sight.

However, there are days when you don't feel very energetic, when the pump just doesn't happen no matter what you do. Sometimes there's a physical reason for this. You haven't gotten enough sleep, you've done too many workouts in a row, or you are dieting and your body simply lacks the nutrients it needs to get a good pump easily. But in most cases, I have found that a lack of pump indicates a lack of full concentration. Sure, it's better to get enough rest, not to overtrain, and to eat well enough to fuel your workouts, but no matter how bad you feel or how much energy you lack I have found you can still get the pump to come if you focus and concentrate hard enough.

## Training Intensity

I consider myself a bottom-line kind of guy. What I'm interested in when I undertake something is *results*. In that regard I figured out very early in my bodybuilding career that, as with most things, what you get out of training depends on what you put into it. The harder you work, the more results you will see, *assuming that your training methods are as effective as possible*.

But at a certain point it becomes very difficult to get more out of your workouts. You're working as heavy as you can, so you can't add more weight. You're already doing as many sets as possible and training as often as you can without overtraining. So what do you do now?

Getting better results at this point is a matter of increasing your training intensity. What do I mean by that? Simple. *Intensity is a measure of what you get out of your training, not what you put into it*. What kinds of techniques can you use to increase intensity? For example, you can:

- add weight to your exercises;
- increase the number of reps in your sets;
- cut down on your rest period between sets;
- do two or more in a row of an exercise without resting (supersets).

There are also a number of special-intensity training techniques, many depending on the participation of your workout partner. They include forced reps, burns, forced negatives, supersets, giant sets, partial reps, and rest/pause. They will all be described in detail when we look at how to do bodybuilding exercises in Book 2.



Cardiovascular endurance is one limiting factor in increasing intensity. If you outrun your ability to supply oxygen to the muscles, they will fail prematurely and you will not fully stimulate them. However, if you cut down on rest periods and speed up your training on a gradual basis, you will give your body time to adapt and your ability to train both hard and for longer periods will increase.

It is also a fact that, as you increase your training intensity, you tend to tire more quickly. That is, when you train very hard it's difficult to train very long, even when you are in great condition. This is why modern bodybuilders split up their body part workouts, hitting only a few muscles in each workout rather than trying to train the entire body in a single session. A further increase in intensity occurs when you do a double-split workout, dividing up your day's training into two different sessions, giving yourself plenty of time to rest in between. When I was competing and wanted to train with even *more* intensity I always liked to schedule my heaviest training in the morning, when I felt strongest, rather than trying to handle huge poundages later on in the day. (All the different ways of organizing your workouts will be dealt with in detail in Book 2.)

Of course, there is a big difference in the level of intensity that beginning, intermediate, or competition bodybuilders need—or, in fact, can achieve. When you are starting out, just getting through your workouts can be such a shock to the body that additional intensity is not required. Intermediate bodybuilders, however, may find that they have to give some thought about how to shock the body into further growth. And competition bodybuilders, who are striving for the ultimate in physical development, must generate an unbelievable amount of intensity.

The more advanced you become, the harder it is to continue developing and the harder you have to train. This is known as *the law of diminishing returns*. In 1971, when I was doing thirty sets for shoulders and wanted to shock them into even more development, my training partner, a professional wrestler, told me I didn't have to add more reps, but just to follow him. We started with 100-pound Dumbbell Presses, then went on down to 90-pound, 80-pound, and 40-pound weights—and then without resting we started doing Lateral Raises. After a one-minute rest we went back and did the whole thing over again. In one hour I did so many more repetitions and sets than normal that my shoulders felt as if they had been tortured! But the bottom line was that it worked.

### **Pain vs. Muscle Soreness**

Every bodybuilder has heard the phrase “No pain, no gain,” but it is important to be able to differentiate the (almost) enjoyable pain of an intense workout from pain resulting from actual physical injury.

Muscle soreness following a heavy workout is common among bodybuilders. This soreness is the result of microdamage to muscles, ligaments,

or tendons—nothing that really constitutes an injury, but is often painful nonetheless. A certain amount of soreness is inevitable, a sign that you have really trained intensely.

Another common cause of soreness is the buildup of lactic acid in the muscle, which tends to accumulate in the area being exercised when muscular activity produces it faster than the circulatory system can take it away. The presence of an excessive amount of lactic acid is what gives you the burn when you do a lot of hard repetitions, and it also tends to produce a certain amount of post-workout soreness.

Soreness is not a bad thing and, in fact, can be taken as a good sign, an indication that you have trained intensely enough to produce results. However, should you get so sore that it interferes with your training or other areas of your life, you should ease up for a while. Being a little bit sore does indicate you've had a good, hard workout; being very, very sore simply means you've abused your body and should take things a little easier.

Of course, I haven't always followed my own advice. When I was sixteen years old I was such a fanatic about training that no amount of soreness could possibly have deterred me. In fact, after my very first workout in a gym, after blasting my body as hard as I was able, I actually fell off my bicycle riding home because I was so numb with fatigue. The next day I was so sore I could hardly lift a coffee cup or comb my hair. But I took pleasure in this feeling because it meant I had really gotten something out of my training. Many times since I have deliberately bombed a certain body part—done Chin-Ups all day or countless sets of Squats—and ended up sore for a week! I never minded the inconvenience if it meant I had shocked my muscles into growth.

Surprisingly, soreness seems to result more from “negative” repetitions—that is, when you are lowering a weight—than from positive repetitions, lifting the weight. The reason for this is that eccentric contraction of muscle—lowering a weight—puts a disproportionate amount of stress on the supporting tendons and ligaments, and this is what seems to cause the damage.

In general, you can train despite soreness. In fact, you will start to feel better when you begin working out because you pump more blood into the painful area. Saunas, massage, and other treatments can also make you feel better, but ultimately you will have to wait several days for the overstressed tissue to heal before you fully recover.

But pain can also signal injury, which is much different from simple soreness. It can be a warning that you have damaged yourself in some fairly serious way. The very real pain of a strain, sprain, or other stress-related injury is telling you to STOP—immediately! There is no working through this kind of pain. Anything you do that causes you to feel the pain is just going to make the injury worse. Your only recourse is to rest the area in question, and to seek medical help if the injury is serious or if it persists.

(For more information on injuries, how to recognize them and what to do about them, see *Injuries and How to Treat Them*, page 774.)

Eventually, you have to learn to tell the difference between “good” pain and the pain of injury if you want to succeed in bodybuilding. Trying to train through a real injury can put you out of action for a considerable time or can even cause an acute injury to become a chronic one that you have to battle against for years.

But some kinds of pain are not only inevitable in bodybuilding, they are practically essential. After all, it is those last few reps that you perform after your muscles are burning and telling you to stop that often mean the difference between progress and the lack of it. The tenth or eleventh repetition of Barbell Curls, while your biceps are screaming in agony, may be the only way to develop championship arms. This phenomenon of working until your muscles are burning with pain isn’t something that happens just in bodybuilding. When the legendary Muhammad Ali was asked how many Sit-Ups he did in preparing for a championship fight he replied that he didn’t know. “I don’t start counting till it starts to hurt,” he explained.

## **Obstacles and Setbacks**

Progress in bodybuilding usually does not come about in a smooth, upward curve. But when it does, the results can be very gratifying. I remember a time when I could count on seeing a one-inch increase in the size of my arms every couple of months, regular as clockwork; those were the days I could count on putting on more than twenty pounds of muscle every year no matter what.

But events can conspire to put obstacles in the way of your training progress. There is getting sick, for example. When most people get the flu it is a matter of inconvenience. But for a bodybuilder with eight weeks left to go to a contest it can be a disaster. You can’t just lie in bed and throw away months of effort, but you don’t feel well enough to train. The solution in this case, at least in part, is finding a sports medicine-oriented doctor who understands your situation and will do what he can to help you get well while you continue trying to get in the best shape you can under the circumstances. There can be worse obstacles. I’ve known bodybuilders with severe juvenile diabetes who nonetheless managed to train and diet hard enough to win amateur bodybuilding titles. And there is the case of Dennis Newman, the USA Bodybuilding Champion, who battled successfully with leukemia and was eventually able to resume his career in the professional division of the IFBB.

Overcoming obstacles is often a matter of being able to make adjustments. I remember being in New York in the dead of winter and not being able to go out and run to get in my cardiovascular training. What did I do? I ran up and down the fire stairs of the Park Lane Hotel, and the amount of soreness I felt the next day showed me what a terrific type of

exercise this really was. Nowadays, most good hotels have at least some kind of training facility, and it's a lot easier to find gyms in cities all over the world than it used to be, so getting in a workout when you're traveling is not as difficult as it used to be. But as much as I recommend training in a gym with good equipment, if you are really pressed for time or somewhere no gym is available, taking along some kind of exercise device with rubber bands or springs or whatever is a lot better than doing nothing. Again, bottom line, if you don't do the work, you don't get the results, no matter what your excuse is.

There are environmental factors you will sometimes be faced with, too. For example, I remember being in Denver on a book promotion tour and going into the gym with a television crew. With the lights and camera on, I got all psyched up and did lots of Bench Presses and other exercises, but at the end of twenty minutes I was so out of breath I could hardly stand up. The television producer told me, "Okay, we have enough," and all I could think of was, I've had enough too! I realized that my difficulty came from being over a mile above sea level and not being able to get enough oxygen. I knew I would have to pace myself carefully if I ever tried to really work out at that altitude before becoming fully adapted to the thinner air.

High humidity is another difficult environmental condition. Try training in Florida or Hawaii in the summer with no air-conditioning and you will find you cannot hit your workouts nearly as hard as normal. I once went to South Africa to train with Reg Park—it was the middle of winter in Austria and the middle of a very hot and humid summer below the equator—and I found myself using thirty pounds less on most exercises, fifty pounds less on others, until I had been there for a week or two and my body became acclimatized to those very different conditions.

Cold does the same thing. During a break in the filming of *Conan* I flew from Spain to Austria at Christmastime, accompanied by Franco Columbu, and we trained every day in freezing weather in an unheated garage with one door open to the outside environment. That was the coldest I have ever been working out and I learned that training when it is very cold requires very specific kinds of adaptation—you have to warm up more thoroughly and keep your warm clothes on even after you start to sweat. You also have to be careful because it can get so cold that your hands will literally stick to the metal dumbbells and barbells. I adapted fairly quickly to this environment because I had trained in fairly cold conditions before, but it still required an effort to get a good workout without the sunny California climate helping me along.

Another obstacle that can produce severe setbacks is injury. Many bodybuilders never experience a serious injury, but you have to consider the possibility. My worst injury did not happen while training, but occurred when a posing platform slipped out from under me during a competition in South Africa. My knee was so badly injured that it was feared

for a while that my bodybuilding career was over. The first doctor I saw advised me not to continue training, but I soon realized that he did not understand athletes and sports injuries, so I simply went and found another doctor.

This was a very discouraging period. I had worked for five years to build my thighs up from twenty-three to twenty-eight inches, but two months after the accident my thighs measured twenty-three inches again! I felt as if five years of sweat and sacrifice had been thrown out the window.

Luckily, I found a specialist, Dr. Vincent Carter, who was able to help me. He told me, "Don't you know that the body is stronger after an injury than before? That a broken bone heals stronger than before the break? We'll whip you into shape in no time!" That positive attitude cheered me up right away. I had an operation, but when the cast came off I still had that twenty-three-inch thigh.

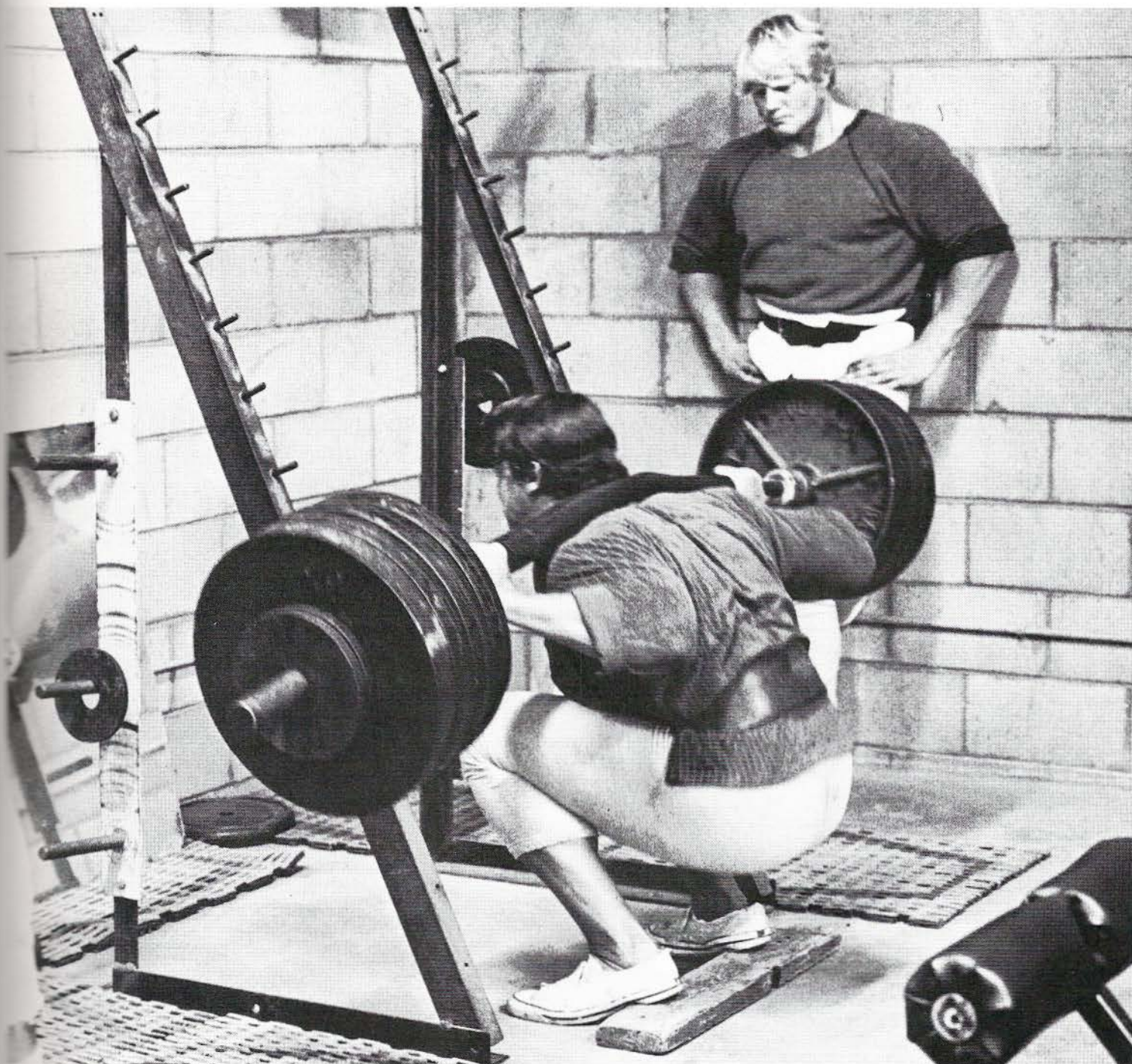
Now I had to not only rehabilitate the injured knee but deal with the psychological setback as well. I found a physical therapist, Dave Berg, who put me on a serious exercise program and wouldn't let me baby myself. In only three weeks I gained 1½ inches on my thigh and soon was starting to do Squats again. When I went back to Dr. Carter, he asked me how much I was squatting with, and I told him 135 pounds. "Why?" he said. "What's wrong with you? The injury is healed, it's all finished with. You told me you could squat with four hundred pounds, so it's time to get back into it."

My injury and operation had taken place in November 1971, and by March 1973, I was healed and ready to train seriously again. It was seven months until the Mr. Olympia contest, so I decided to forget about the injury and train for the competition, and this led to another Olympia title. However, if I had not kept a positive attitude, sought out the medical help I needed to completely recover, and fought against the discouragement that comes with any serious setback, my career might really have ended right then.

### **Your Training Partner**

Throughout my bodybuilding career, having the right training partner was essential to my success. Franco Columbu is one of the best training partners I ever had. In the years Franco and I trained together, I know I made much more progress than I would have training alone.

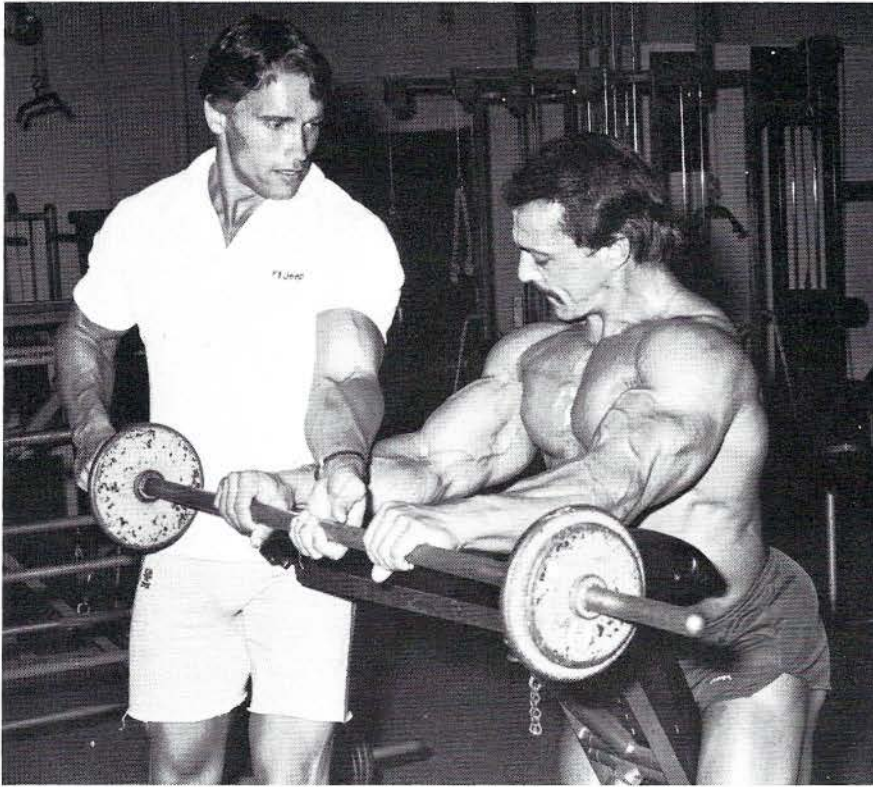
What are the necessary qualities of a good training partner? For one thing, he has to be giving. He has to care about your success as well as his own. He can't just do his set and walk away while you do yours. He has to be there with you. "Okay, yesterday you did eight reps, today let's go for nine!" A good training partner wants to train at the same time you do—not at six if you want to train at five. A good training partner calls you and asks, "How are you feeling today?" He not only shows up on time for your



*Dave Draper was the original "golden boy" of the sport. To Europeans he represented the classic California-type bodybuilder.*



*My training was always first-rate when I had training partners like Franco Columbu and Ken Waller to push me.*



*Casey Viator was one of the most powerful training partners I've ever had.*

workout but also suggests, "Hey, let's get together and do some posing practice." Ideally, he should have the same goals as you. If you're training for competition, if you're trying to build up to a 400-pound Bench Press, if you're on a strict diet and trying to lose a lot of body fat, it all goes much easier if your training partner is focused on achieving the same kinds of things.

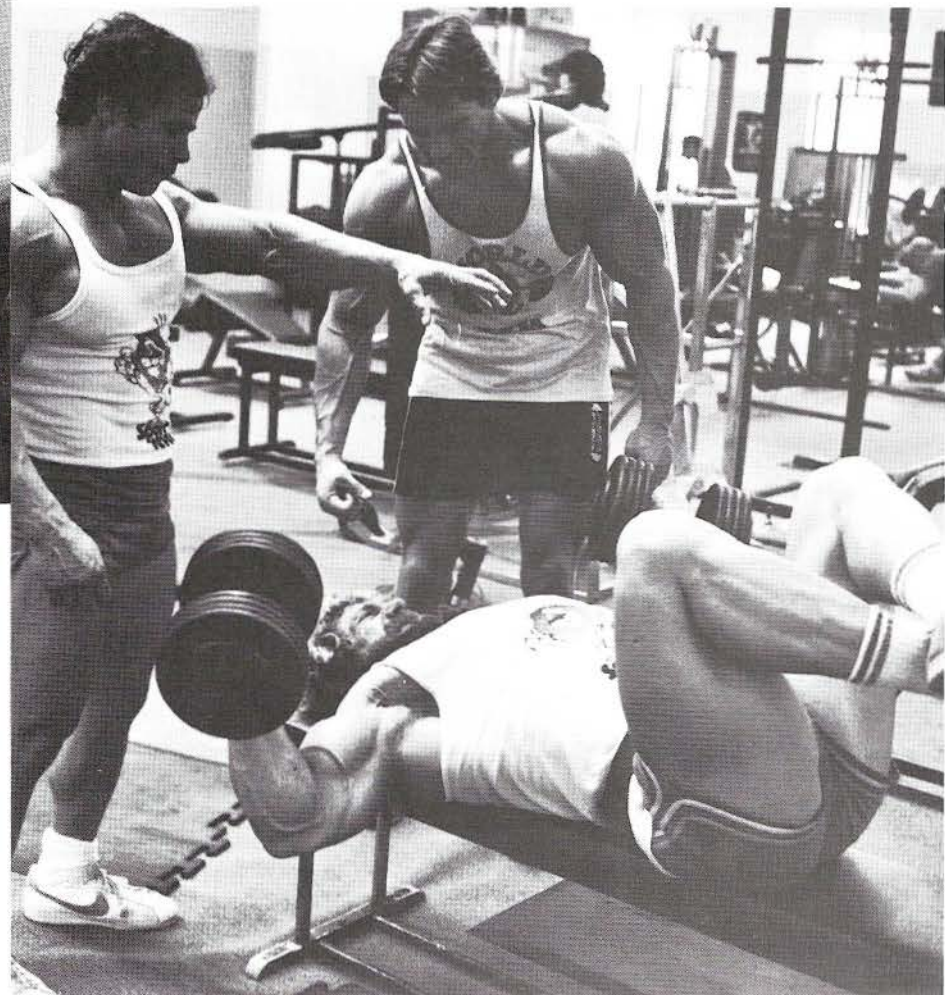
A training partner should bring a lot of energy to your workouts. Nobody is at 100 percent every time he walks into a gym, and if you're having a low-energy day your training partner should be there to kick you into gear and get you going, and you should do the same thing when you're the one with the most energy. It's also a great advantage to have somebody waiting in the gym expecting you to show up no matter what the weather is like, how much sleep you got the night before, or how you happen to be feeling.

Franco and I used to compete constantly, each trying to lift more weight than the other and do more sets and reps. But we weren't competing in order to defeat each other. We simply used competition to create an atmosphere in which any incredible effort seemed possible.

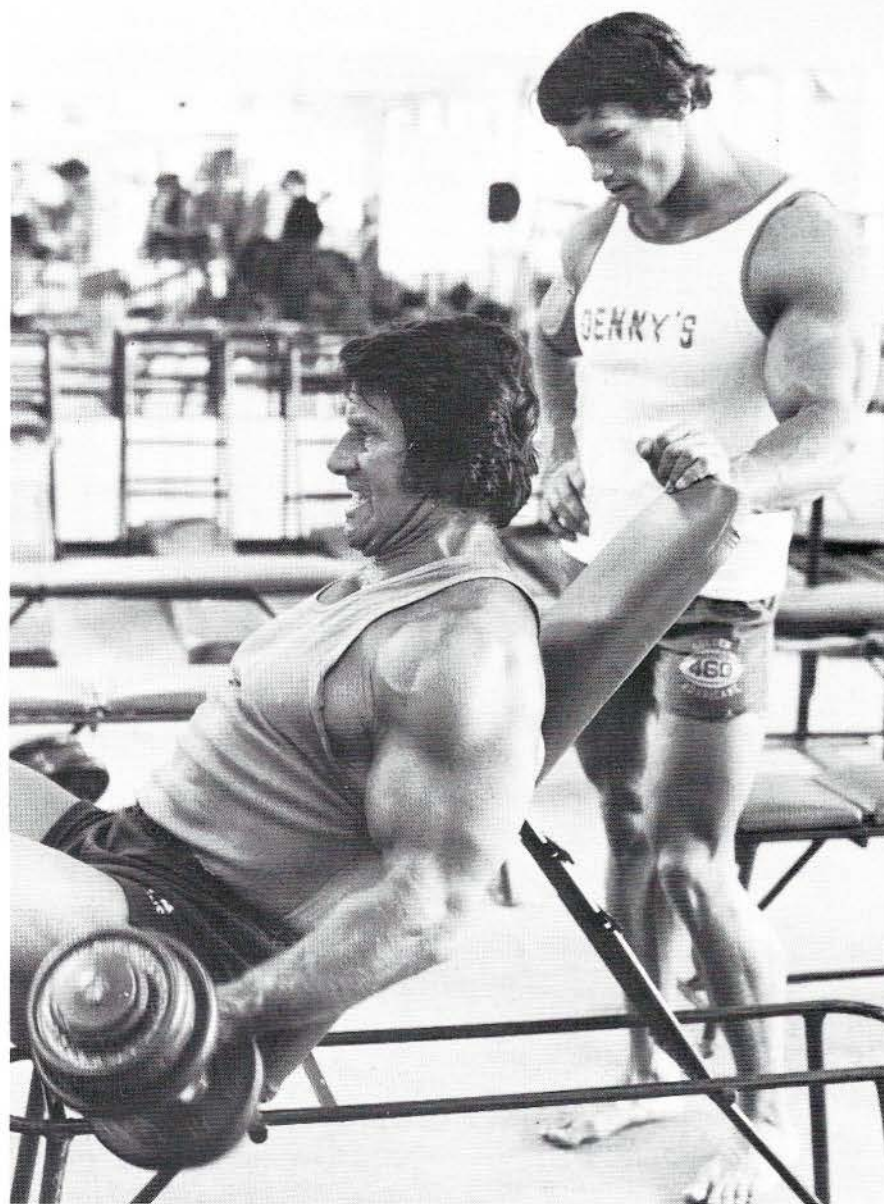
I have relied on different training partners for different results, depending on their individual characteristics. I trained with Franco in the morning, since he trained only once a day, and we did mostly power training. I trained with Dave Draper for lats because I wanted extra sets for



*Training with Ed Corney got me in my best possible shape for the 1975 Mr. Olympia in South Africa.*



*Franco Columbu, Jusup Wilkosz, and I all started out as weightlifters, which gave us a muscle density that bodybuilders who have not done power training lack.*



*One of the biggest thrills of my life was when I actually got to train with and compete against my bodybuilding hero, Reg Park.*

these muscles; Dave just loved working in the gym and would train for hours doing endless sets. Frank Zane was a good training partner for isolating specific muscle groups. Each training partner has his own particular value, so you may want to train with more than one person in order to get a whole range of benefits.

Choosing a training partner is a lot like a marriage, and you want to marry somebody who is an addition to your life, who makes it better, not somebody who causes you to say, "Whew, this marriage stuff. What did I get myself into?" This is not just a matter for competition bodybuilders. A beginning bodybuilder might want to train with someone more advanced, but that advanced bodybuilder may be working on refining his physique

rather than creating a basic, powerful muscle structure, and the beginner would not profit much from that kind of workout. A businessman who wants to train to stay in shape might find himself overtaxed trying to train with a full-time bodybuilder. It's all very simple: A training partner who helps you make faster and better progress is a good one; a partner who holds you back in any way is a poor one.

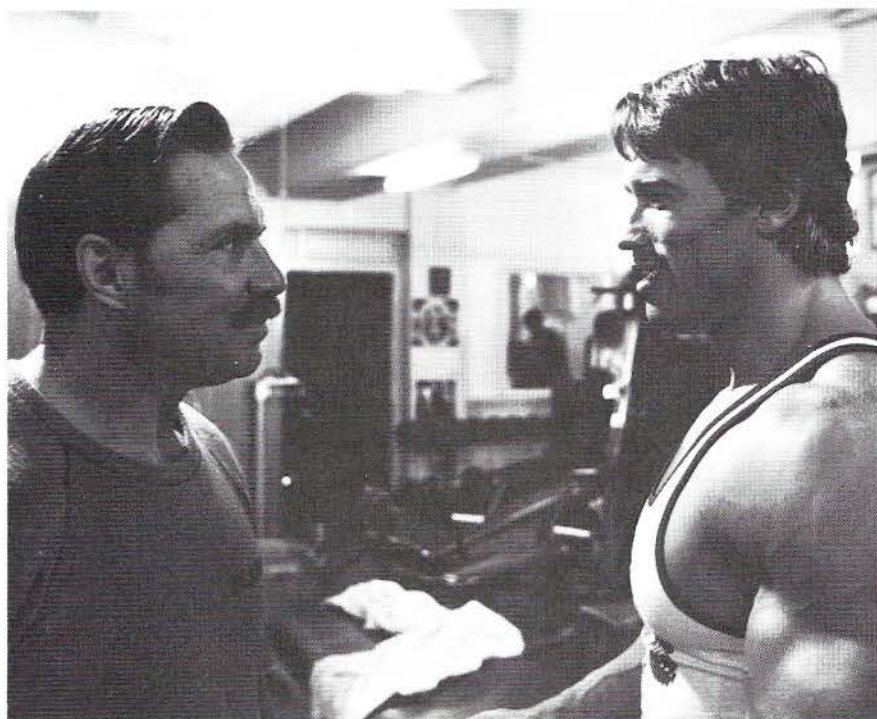
### Scheduling Training

If you are motivated enough, you will find a way to make sure you get in your training sessions, no matter what.

One of the most common complaints I hear is from people who say they just can't find the time to get in their workouts. Some are young bodybuilders who are in school or have jobs that make scheduling workouts difficult. "I envy the pro bodybuilders," they say, "who have nothing to do all day but train, eat, and sleep." When I hear that I remember Sergio Oliva working all night as a butcher and then going to the gym for killer workouts. Or what Franco and I had to deal with when we were first in this country and trying to maintain our training schedules while working during the day laying bricks.

I made much of my best early progress when I was in the Austrian Army and had a lot of other demands on my time. When out on maneuvers for six weeks along the Czechoslovakian border and driving tanks fifteen hours a day, I had to pump in fuel with a hand pump, wrestle with huge fuel drums, change wheels, and do maintenance. We slept in

*Bill Pearl never talked me into becoming a vegetarian, but he did convince me that a vegetarian could become a champion bodybuilder.*



trenches under the tanks until we were awakened each morning at six. But I had another idea: My buddy and I would get up at five, open the tool compartment of the tanks where we had stored our barbells, and exercise for an hour before everybody else woke up. After we finished maneuvers for the day, we would train for another hour. I can't imagine any more difficult circumstances in which to train, so I submit that finding the time and energy for your workouts is simply a matter of motivation plus imagination. Each bodybuilder has to find a time to train that suits his particular situation.

Even today I still have to deal with the same scheduling problems. For example, when I was filming *Batman and Robin*, I had to begin makeup at 5 A.M., which took three hours and there was no time to train in the morning. But during the day when there was a change of setup I would ask how much time it would take. "An hour and a half," I was told. So I would take the time to get out of all my "Mr. Freeze" armor, go to the exercise trailer and do light exercises, enough to give me a pump, but nothing that would make me sweat too much and ruin all that makeup. Filming other movies, where we got an hour for lunch, I figured that it doesn't take an hour to eat. So I would go and work out for half an hour, spend fifteen minutes eating, and then the final quarter hour have my makeup fixed for the next take.

All the actors I work with in the movies know I work out early in the morning or during the course of the day, and that I will always try to get them to come along and do some exercising with me. On talk shows, when they are asked about the difficulty of filming, they always say things like, "Making the movie was easy. What was hard was having to work out every day with Arnold!"

So I am fully aware that scheduling workouts can also be a problem for those not dedicated to pursuing a competitive bodybuilding career. Busy with jobs, careers, family, or raising kids, people think, There is not a single hour in the day I can put aside for working out. But the bottom line is this: If you don't find the time, if you don't do the work, you don't get the results. Are you sure there's no time to spare? For example, I've read reports that said the time most wasted during the day is the period between 10 P.M. and midnight. Is your favorite late-night television program more important to you than building a great body? Why not go to bed and get up an hour early? I've trained a lot at 5 A.M., and while it takes some getting used to, I've had some of my best workouts at that time of the morning.

When my wife, Maria, and I had an audience with the Pope in the 1980s, he told me that *he* worked out every morning at five. Ronald Reagan and George Bush both managed an hour workout a day when they were in office. Most of the most successful men in business and the movie industry tell me that they do their best never to go a day without exercising. These are the busiest men in the world! How do they manage? They

are good at organizing their time and they recognize the importance of including training in their lives.

Sometimes it's hard to keep on a schedule because people around you, sometimes with good intentions and sometimes not, seem to do everything they can to dissuade you from attaining your goals. For example, how supportive of your training ambitions are your family, friends, or spouse? Negative vibes from the people in your life can be difficult to handle. It takes extra effort to retain your confidence and stick to your routine when those close to you don't accept your chosen goals. "Why can't you come out for beer and pizza?" they may ask. And the answer that you are on a diet and have to get up early may not meet with a positive reception. You can end up being called egotistic or self-centered by those who don't realize that *they* are the ones being self-centered by not appreciating how important training is to you and what it costs to pursue this kind of effort. And I am sure I am not the only one who has had his girlfriend complain about his getting up at five o'clock in the morning to go to the gym.

Your diet regimen can create problems, too. Eating with friends is a very pleasant social ritual, but one you will have to forgo much of the time. When somebody who should know you are in training keeps offering you food that is not on your diet, you know they don't understand or, worse, don't have your best interests at heart.

Many serious bodybuilders who work take food with them to the job, or even keep a hot plate at the workplace so they can make meals during the day. Having a supportive boss who understands what you are trying to do can be very helpful. If you don't, then you will simply have to make whatever adjustment is necessary.

## **TRAINING FOR WOMEN**

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How different is bodybuilding training for women than it is for men? In my opinion, not very—which is why I am not devoting space in this book to dealing with training for women separately.

Some people have trouble grasping this concept. Women are smaller. They have different hormones. They aren't as strong. Sure, but muscle is muscle and a Bench Press is a Bench Press. Women have less upper-body muscle than men do, so it generally takes them longer to develop this area than it does the legs. They usually can't handle the same poundages as men (although plenty of women in the world can bench over 300 pounds!). But what differentiates a woman's training are her goals: She's probably more interested in shaping and tightening her body than in building big muscles. So, even though she'll commonly do the same exercises as a man (with additional exercises thrown in to target problem areas like hips, thighs, and triceps), her program setup will probably differ rather dramatically from a man's. The most likely difference will be that

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her workout consists of fewer sets per muscle group but more reps per set. This builds muscle endurance while sacrificing maximum muscle size. The *execution* of those exercises, though, remains exactly the same. We all need to develop programs that suit our own individual needs, our strengths and weaknesses. The goal for men and women is the same: to create the maximum possible *aesthetic* development of the physique.

Women can benefit from training partners, need to deal with soreness and setbacks, should avoid overtraining, can feel a great pump, have to cope with injury—just as men do. In fact, I often trained with female training partners, which I found both motivating and challenging. So my advice to women interested in serious training is simple: Your muscle cells don't know you are a female. They will respond to progressive-resistance weight training as does a man's. If you admire physiques such as those of Rachel McLish, Cory Everson, Anja Langer, or Lenda Murray, don't forget that they worked long and hard to develop those bodies. They sweated in gyms right alongside men. Bodybuilding is a sport, and both men and women do it, just as both men and women play tennis, basketball, and volleyball. And as far as the training experience is concerned, all that counts is getting through the next rep, the next set, the next workout. The correct approach to training is what produces the best results.

# The Gym

**W**HEN YOU ARE a bodybuilder, the gym is your office. It's where you take care of business. You can easily end up spending three or four hours in a gym, which means it should have the kind of equipment you need, the kind of people training around you that add energy to your workouts, and an overall atmosphere that will motivate you to achieve your personal goals.

## THE GYM EXPLOSION

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When I began serious bodybuilding training it was hard to find adequate training facilities. Good gyms were few and far between. For example, when I was working out in Austria as a young man we had no standard incline bench, the kind you lie back on. Instead, there was a *standing* incline bench, which was quite a different piece of equipment. In order to do incline barbell presses, rather than being able to lift the bar off a rack we had to pick it up off the floor, clean it up to shoulder height, and then fall back against the bench before being able to do a set. That, I can tell you, is doing it the hard way.

When I later went to live in Munich, I had the advantage of being able to train at my good friend Albert Busek's gym, which was very advanced for the time and provided all the equipment I needed to train to become Mr. Universe and Mr. Olympia. In California, I trained at Joe Gold's gym, which had equipment like no other because most of it was designed and fabricated by Joe himself.

Today, it is relatively easy to find a well-equipped gym. World Gym, for example, has franchises all over the United States and the world. Gold's Gym and Powerhouse both have numerous franchises as well.

Bally's, Family Fitness Centers, and many other excellent gyms are located both in big cities and smaller towns. Of course, most health clubs and spas are not oriented toward serious bodybuilding, but they generally provide at least some free-weight facilities in addition to their inventory of machines, cables, and other workout equipment. There are also training facilities in schools and universities, military bases, YMCAs, hotels, corporate office buildings, and upscale apartment complexes.

Gym memberships are generally available by the day, week, month, and year. When you join a gym that is part of a chain, you frequently get reciprocal training privileges, which means you can train at other gyms that are part of the chain at no additional cost or for a small fee.

## WHAT TO LOOK FOR IN A GYM

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The first thing to consider in choosing a gym is ascertaining what kind of equipment and facilities it provides:

1. A gym should not be too big or too small. If it is too small, you constantly have to wait for equipment and you can't keep up the rhythm of your training. But if it is huge, you can feel dwarfed by too much space, which makes it hard to keep up your concentration.
2. If you want to make the best progress, the gym you train in has to have a full complement of free weights and benches. It should have sets of dumbbells heavy enough for most intense lifts. There should be exercise machines and cable setups that allow you to work all the major body parts.
3. There should be equipment for doing your cardiovascular training—treadmills, exercise bicycles, steppers, aerobic classes, whatever you need for your individual aerobic workouts.
4. Some gyms and health clubs have other facilities like saunas, steam rooms, staff massage therapists, swimming pools, and even indoor running tracks, so if any of these things is important to you check what's available before you sign up for a membership.

## ENVIRONMENT AND ATMOSPHERE

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Along with the "hardware" a gym has to offer, you need to consider whether it provides the kind of environment that will help to energize and motivate your workouts, whether the atmosphere of the gym makes you comfortable or ill at ease.

Bodybuilders for the most part are not interested in training in a gym



they feel is too “fancy.” Training, after all, is tough and sweaty, not refined like an afternoon tea party. After winning my second NABBA Universe in 1968, I trained for a while in a health spa in London—very elegant and posh—and I found I couldn’t get a pump no matter how hard I tried. It felt like a living room, nice carpeting, chrome equipment, as antiseptic as a doctor’s office. I was concentrating on training while trying to block out conversations going on around me about the stock market or what kind of car somebody was thinking of buying. I can accept that a spa with that kind of atmosphere is probably perfect for most of the people who work out there, who merely wanted to shape up their bodies and maybe lose a few inches around the waist. But it is not appropriate for those with serious bodybuilding ambitions.

Of course, even for the hard-core competition bodybuilder, it is no fun training in a smelly dungeon either, so don’t be afraid to call a dump a dump, although I have had some very good workouts in some very definite dumps! Again, what counts is not aesthetics but how the gym makes you feel. Also, there is the matter of music. I like to train to really loud rock ‘n’ roll, but others prefer different music or none at all. Check to see what kind of music is played in any gym you intend to train in.

Personally, I could never be comfortable in a gym in a basement, someplace you have to go *downstairs* to get to. I also preferred gyms at street level or on an upper floor. Atmosphere is important. You are going to be spending as much as three or four hours in a gym and you don’t want to be looking around and asking yourself, What am I doing in this place? I always liked a serious, industrial kind of look, something that made me feel “I’m here to work.”

Being in the right environment is very important in many areas of life. Why do people prefer to go to certain restaurants or bars than others? The food isn’t that different from one good restaurant to the other and the drinks are the same. It’s the atmosphere, how the overall environment makes you feel, what kind of mood it puts you in. You furnish and decorate your home to create a certain environment. Great museums like the Getty Center in Los Angeles create a special atmosphere which makes viewing the art they contain that much more rewarding. Restaurants, clothing stores, your home, a gym—you get certain vibes that you often can’t explain but that can make a very big difference in the experience of being there.

At the Arnold Seminar held as part of the weekend of events in Columbus each year including the Arnold Classic, I frequently make a comparison between how environment affects the development of a child and how the gym environment can affect the development of a bodybuilder. If you grow up among successful, motivated people, you yourself will tend to be successful and highly motivated; growing up in an impoverished environment, among people with little hope and little motivation, you are going to have to fight that influence all your life.

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## WHO ELSE IS TRAINING IN THE GYM?

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I remember coming to California in 1968 and training at Joe Gold's gym in Venice. I was already a two-time NABBA Mr. Universe, but training every day among bodybuilders like Frank Zane and Dave Draper—Mr. Americas and Mr. Universes all over the place—and bodybuilders like Sergio Oliva showing up from time to time, I practically had no choice but to become better.

The kind of people who train alongside you in a gym makes a difference. If you are surrounded by people who are serious and train with a lot of intensity, it's easier for you to do the same thing. But it can be pretty hard to really blast your muscles while the people around you are just going through the motions. That is why good bodybuilders tend to congregate in certain gyms. By having the example of other serious bodybuilders constantly in front of you, you will train that much harder.

That is what made Joe Gold's original gym in Venice, California, such a great place—a small gym with just enough equipment, but where you would constantly be rubbing shoulders with the great bodybuilders against whom I had the privilege of competing—like Franco Columbu, Ed Corney, Dave Draper, Robby Robinson, Frank Zane, Sergio Oliva, and Ken Waller. Nowadays, it's rare to find that many champions in the same place, but if you aren't sharing the gym floor with great bodybuilders like Flex Wheeler, Shawn Ray, Nasser El Sonbaty, or Dorian Yates, it can be very motivating if there are pictures or posters of these individuals on the walls or championship trophies displayed.

In 1980, training at World Gym for my final Mr. Olympia competition, I showed up at the gym at seven o'clock one morning to work out and stepped out on the sundeck for a moment. Suddenly the sun came through the clouds. It was so beautiful I lost all my motivation to train. I thought maybe I would go to the beach instead. I came up with every excuse in the book—the most persuasive being that I had trained hard the day before with the powerful German bodybuilder Jusup Wilkosz, so I could lay back today—but then I heard weights being clanged together inside the gym and I saw Wilkosz working his abs, Ken Waller doing shoulders, veins standing out all over his upper body, Franco Columbu blasting away, benching more than 400 pounds, Samir Bannout punishing his biceps with heavy Curls.

Everywhere I looked there was some kind of hard, sweaty training going on, and I knew that I couldn't afford not to train if I was going to compete against these champions. Their example sucked me in, and now I was looking forward to working, anticipating the pleasure of pitting my muscles against heavy iron. By the end of that session I had the best pump I could imagine, and an almost wasted morning had turned into one of the best workouts of my life. If I hadn't been there at World Gym, with these

other bodybuilders to inspire and motivate me, I doubt that day would have ended up being so productive.

Even today, when I'm training for other reasons, such as getting into top shape for a movie role, or just trying to stay in shape, I absorb energy from people working out around me. That's why I still like to go to gyms where bodybuilders are training for competition. Even today, after all this time, it still inspires me.

## **YOU DON'T HAVE TO TRAIN IN LOS ANGELES**

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I've been asked many times whether young bodybuilders need to come to California in order to become champion bodybuilders or whether a young physique competitor can create a great physique working out in Des Moines, Pittsburgh, Seattle, or elsewhere. My response is simple: If you are motivated, train hard, have adequate workout facilities available, and learn the fundamentals of training detailed in this encyclopedia, you can build your body to its genetic potential almost anywhere in the world.

In the early days of my career it was somewhat different. There weren't as many bodybuilders, bodybuilding media, or great places to work out, so there were good reasons for a lot of top champions to gather in Venice, California. There was also tradition. The famous Muscle Beach of the late 1940s was located right next to Venice in Santa Monica. The physique stars of that era created a whole new kind of lifestyle based on bodybuilding, sun, and fun. I can remember some fifteen years after that seeing photographs of "golden boy" Dave Draper on the beach in the pages of Joe Weider's magazines (often with Joe's lovely wife, Betty) and I became determined to go to Los Angeles someday to live and to train.

Nowadays, there are still a lot of champions in the Venice area, but most of them developed their physiques elsewhere and came to California to promote their careers—to live in a nice, warm climate, of course, but also to have access to both the bodybuilding and the mainstream media.

A lot of young bodybuilders come out to train in places like World Gym or Gold's Gym for short periods and then go back home, inspired by having worked out shoulder to shoulder with a Mr. Universe or Arnold Classic champion, and I think that's great. But I don't recommend that young would-be champions come out to Los Angeles to live at early points in their careers. While working out next to the top professionals is exciting, it can also be discouraging since most of them are likely to be years ahead of a young bodybuilder in development. For most young hopefuls, it makes more sense to train in your hometown, begin by entering local and regional contests and working your way up, and scheduling occasional visits to California just to "dip your toe in the water," get your dose of motivation, and then return home.

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## GYMS FOR NONCOMPETITORS

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A major difference in bodybuilding between now and when I started training is the number of people training like serious bodybuilders—that is, following a hard-core, muscle-building program—who have no intention of getting into competition. This category includes everyone from doctors and lawyers to accountants, teachers, businessmen, military personnel, and a lot of actors I've worked with in the movie business. The question is whether these individuals, since they have no ambition to be Mr. or Ms. Olympia, need the same sort of serious training facilities as do would-be physique champions.

The answer, of course, is not absolutely, but it really helps. After all, if you have a good swing you can play a decent round of golf with almost any clubs, but if your equipment is modern and state of the art you are going to get better results, no matter what your level of expertise might be.

The point of bodybuilding training is to develop every body part in a proportionate, balanced way. It takes a certain amount of different kinds of equipment to do that, no matter who you are or what your training goals might be. Sure, you may not need a gym with sets of dumbbells going up to 150 pounds or more. But there should be an adequate amount of free weights and benches for you to do the basic exercises. A certain gym may not have a great number of choices of machines for particular exercises, but you have to have a certain minimum or you can't do what you're trying to do. So if you're using a gym that doesn't meet these standards, by all means try to find one that does.

Remember, muscle is muscle, and *your* muscles respond to the same training techniques and require the same exercise equipment to do a full workout as anyone else's. So if you are serious about the results you want to obtain, find a gym with the right equipment, an atmosphere that suits you, and people training around you that will inspire and motivate you to do your best.

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## TRAINING AT HOME

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I have some rudimentary training facilities at home. Joe Weider has a fully equipped gym in his garage. So does Lou Ferrigno. A few years ago Hugh Hefner built a nice little gym in the basement of the Playboy Mansion. Although there is really no substitute for training at a good gym, some training at home can be useful. You can do extra ab work, for example, with just an abdominal board. With a simple bench and a basic set of weights, you can do reps and sets whenever you feel like it. This can be very valuable if you occasionally have trouble getting to the gym or if you run out of time in the gym and can't get a full workout. And, of course, aerobic work on a

treadmill, stepper, or stationary bicycle can be done at home as well as anywhere else.

For those with more money to invest, there is quite a bit of good equipment available for the home. Most sporting goods stores carry benches and weight sets starting at a few hundred dollars. Stores like Sears, Montgomery Ward, and JC Penney sell weight-training equipment as well. Also, nowadays specialty stores in most cities sell everything from dumbbells and barbells to complex multi-station machines costing thousands of dollars; they usually advertise in the Yellow Pages. Walk into a store like this and you'll see brand names like Para-Body, Pacific Fitness, Vectra, Hoist, and Ivanko. Equipment is also available by mail order through the various physique magazines.

But training at home vs. the gym is a little like working on a car in your backyard compared to a fully equipped automotive garage. Sure, you can repair simple car problems under a shade tree, but more demanding and complex repairs are much more difficult, if not impossible. In the same sense, a home gym is not going to provide you with the same training facilities as a fully equipped facility—unless, of course, your home gym *is* as well equipped as a World Gym, which is something that is not very common.

Most people with equipment at home do *some* training, supplementing their gym training rather than trying to duplicate a full gym-oriented workout. If you are planning to do some training at home, the questions to consider are what areas of the body you plan to train at home. Major muscles, or just things like abs? Do you want a set of free weights, or are you more interested in machines? Individual machines or a single machine that allows you to do a lot of different exercises? How much space do you have? If you plan to do cardiovascular training, what kind—treadmill, exercise bike, stepper? And, of course, how much do you want to spend? Remember, the equipment you are used to in a gym generally costs thousands of dollars for each piece. You may not need an “industrial-strength” piece of equipment, but some of the cheaper stuff doesn't give you a very good “feel” compared to the state-of-the-art equipment you find in good gyms. Make sure you try a piece of equipment before you buy it to make sure it feels right to you.

Also, the least expensive pieces, such as treadmills, for example, tend to break down more easily than you might want. If you buy a top-notch treadmill by a company like Trotter or a stationary bike by Lifecycle you can be assured of getting good quality. But if you buy a lesser brand at more of a bargain price, be sure you know where to go to get it repaired if you run into problems. Of course some inexpensive pieces of equipment work just fine. I use a simple ab-training device at home that I take with me on my airplane and do two hundred reps before I eat dinner.

Very few bodybuilders have been able to boast of making much progress training at home. And if top champions, who have better genet-

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ics, energy, and motivation than almost anyone else, have not benefited much from home training, this fact should give pause to others considering going that route. There are some exceptions, of course. Frank Zane, for example, had some success training at home during his career. Franco Columbu and I used to use his home gym for training specific body parts. But I have always preferred the energy level of the gym, the excitement and interaction with the rest of the bodybuilders. In any event, even if you've made good progress by training at home, I recommend that you get thoroughly familiar with a gym and be able to make full use of the facilities you find there. To my knowledge there has never been a champion bodybuilder who developed his physique anyplace other than in a good gym, and I recommend that you find one to train in if you have any serious aspirations.

# Getting Started

**T**O A DEDICATED bodybuilder, the time spent training in the gym is the high point of his day. He's always thinking about his next workout, planning what he is going to do. As soon as he finishes one training session he is immediately looking forward to the next. So while I am a great believer in learning all you can about bodybuilding programs and technique, at a certain point you just have to get into the gym and get started. As the famous ad slogan says, "Just do it."

If you are just getting started in bodybuilding, remember the old saying, "The longest journey begins with a single step." The more you know the better, but you don't have to master every bit of information in this encyclopedia before you begin your own workouts. What counts most when you're getting started is energy and enthusiasm. A student in medical school is not expected to perform open-heart surgery on her first day and a beginning pilot is not required to fly combat missions in an F-14 Tomcat like an experienced "Top Gun." When you climb Mount Everest you start at the bottom, not the top. Life is a process that involves continual learning and bodybuilding is no exception.

Most young bodybuilders have no trouble motivating themselves to start. They are like I was—so anxious to get going that they'll stand outside the door almost before the sun comes up waiting for the gym to open. But being enthusiastic doesn't mean you begin training without a plan. The thing to do right at the start is to set a clear goal for yourself. Why do you want to train with weights? When I was a beginner, the only reason anyone worked out in the gym was for bodybuilding, powerlifting, or Olympic weightlifting. These are still important reasons to pump iron, but nowadays people train for all sorts of other reasons as well:

- to improve their ability at a variety of sports;
- to become stronger for physically demanding jobs;
- to better overall health and fitness;
- to help gain or lose weight;
- to create a harder, more attractive body;
- to follow a physical rehabilitation program.

Setting these kinds of goals helps to determine where you should train, how often and how hard, what kind of training partner to have, and what famous bodybuilders to use as models. Remember, you can always alter your training goals later on. Many champion bodybuilders began working out with weights without any intention of becoming physique stars—to gain size and strength for sports like football, for example, or because they got out of school, were no longer playing sports, and just wanted a way to stay in good shape.

I recommend that before you begin, have photographs taken that show your physique from all four sides. Write down all your important measurements—neck, chest, biceps, forearms, wrists, waist, thighs, and calves—as well as your weight. This way you can always check back to find out what kind of progress you have made. Incidentally, if you are embarrassed to have body photos taken because you don't like your body very much, that is all the more indication of how much bodybuilding can do for you. We all want to look good on the beach, to stand naked in front of a mirror and be pleased with what we see—and, of course, have others be pleased with what they see when they look at us! Why not look good out of clothes as well as in them? You certainly don't want to take off your clothes and, as my friends "Hans and Franz" would say, set off a "flabberlanch."

As we discussed, you need to find a place to train that suits your goals. Additionally, you have to master the basic bodybuilding exercises in this book. Keep in mind that your first task is to create a solid, quality muscle structure. Advanced bodybuilders are concerned with improving muscle shape, achieving separation, and tying in various muscle groups—none of which need concern the beginner.

When I was starting out, I found it very important to find somebody on whom to model myself. A businessman training for fitness would be wasting his time trying to create a physique to rival Shawn Ray's; a serious bodybuilder with a frame and proportions like Dorian Yates's shouldn't spend his time studying physique photos of Flex Wheeler, and a bodybuilder six feet tall or more should probably not use a shorter competitor like Lee Priest as a role model. And if you are training to create a lean, muscular physique of the type you see so often nowadays with young actors or male fashion models, it wouldn't be very appropriate to tape a photo of a "no-neck" super-heavyweight powerlifter to your refrigerator door, would it?



In my case, it was Reg Park, with his great size and muscularity. I would put up photos of Reg all over the walls, then study them endlessly, picturing in my mind how that kind of development would look on my own frame. So much of bodybuilding is mental that you have to have a clear idea of what you want to be and where you are going if you want to achieve extraordinary results.

Too many young bodybuilders try to run before they learn to walk. They copy my routine or pattern their workout on some other champion's example, and end up doing exercises that are inappropriate to their stage of development. However, if after six months or so of training the idea of competing begins to appeal to you, start to work toward that goal: Learn your body, what makes it grow, its strengths and weaknesses; create a picture in your mind of what you eventually want to look like.

When I talk about sticking to the fundamentals, I don't mean doing anything less than a real bodybuilding program—whether you are training for competition or not. Remember, the exercise programs in this book are for *every body*. I only mean that you should limit your training to those exercises and methods that build the most mass in the shortest time, and then go on later, after you have achieved a certain degree of basic development, to carefully sculpt and shape that mass into championship quality. Again, even if you have no intention of becoming a competition bodybuilder, if you are only training for health and fitness, there is never any reason to waste time by training in any but the most effective and efficient way possible.

You build a basic structure, learn how to train correctly, acquire a knowledge of diet and nutrition, and then just give the body time to grow. In a year, maybe a little less or a little more, you will begin to see radical changes in your physique and will have enough experience to begin to develop an individualized training program based on your own instincts of what is right or wrong for your particular body.

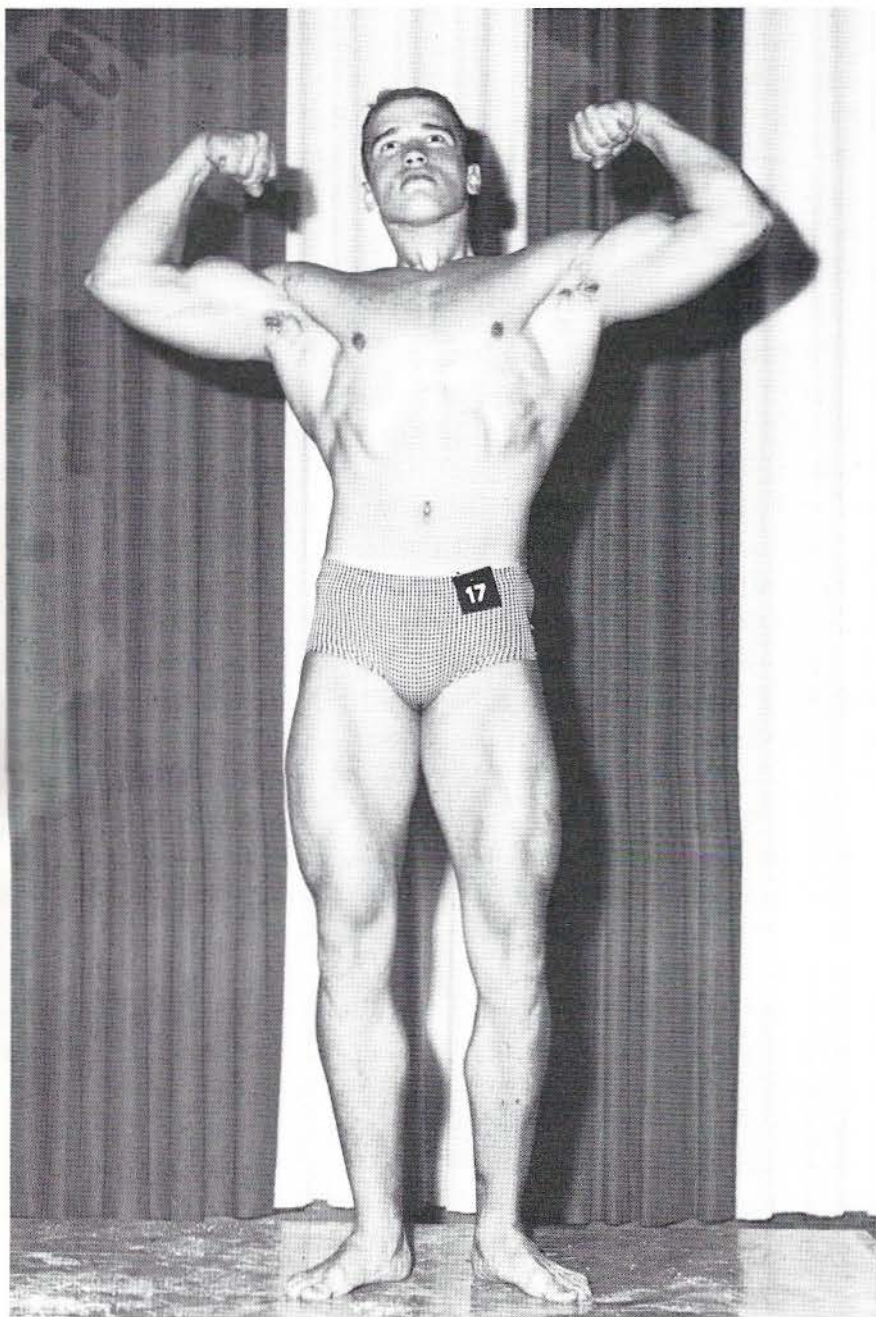
And just as you write down your physical measurements and keep track of your development with photos, I would recommend that you keep a *training diary*. Write out a training program that is appropriate to your goals, noting how many sets of each movement you do and with how much weight, so that anytime in the future you can check back to find out how much you have really done and compare that with the actual progress you have made.

You should also learn to keep track of your eating habits, how many protein drinks you had during any given week, how long you dieted, and what kind of diet you followed. All of this will allow you, perhaps five years down the line, when memory no longer recalls these facts, to be certain exactly what you did or did not do in pursuing your bodybuilding development.

## FAST AND SLOW DEVELOPERS

Some people believe that developing muscle happens slowly but surely over time, so the longer you train, the bigger you get. That's why they will frequently ask a bodybuilder, "How long have you been training?" Or, "How long will it take me to get that big?" The way they see it, one bodybuilder is bigger than another simply because he or she has been training longer. But the reality is that not everybody gains muscle at the same rate and not everyone has the talent to create the same level of development.

Your individual genetics have a lot to do with how your body will respond to training. For example, I started training at fifteen, and photos taken after only a year reveal the beginnings of the physique that won me



*Me at sixteen*

seven Mr. Olympia titles. Every month or two I gained  $\frac{1}{2}$  inch on my arms, so people told me right away, "You should be a bodybuilder." Casey Viator turned from powerlifting to bodybuilding at an early age and at nineteen became the first and only teenage Mr. America. Look at photos of Mr. Olympia Lee Haney at nineteen or twenty years of age and he already had a mature physique. Texas police officer and bodybuilder Ronnie Coleman won the World Amateur Bodybuilding Championships title only two years after he began serious physique training.

But not all successful bodybuilders were early bloomers. Frank Zane was good enough to win his share of victories in the sixties, but it wasn't until the seventies that he achieved the perfection of development that allowed him to be victorious in three Mr. Olympia competitions. Female bodybuilder Yolanda Hughes broke through and won her first pro show—the Ms. International that I promote every year in Columbus—after twelve years of amateur and pro competition. The problem for slow developers like this is that they don't get the immediate success, the positive feedback, that helps so much to keep you motivated. But bodybuilding is like the race between the hare and the tortoise: Ultimately, determination and endurance over a long period of time can win out over a quick start and headlong sprint for the finish line.

You should also be careful about being discouraged by comparing yourself to somebody who is a so-called overnight success. Nowadays, when you see a great young bodybuilder of, say, twenty-four or twenty-five, it is quite probable that he has been training since the age of twelve or thirteen, and if he started entering contests as a teenager could be the veteran of eight or nine years of competition. In golf, when Tiger Woods broke through and won the Masters tournament in his early twenties, a lot of people talked about how quickly he became a champion, forgetting that he had been practicing golf since he was a preschooler, and by the time he became a teenager had already hit hundreds of thousands of practice shots.

But I also remember seeing Tiger Woods *lose* a play-off to a golfer who was a late bloomer and had never won a pro tournament until his thirties. Winning that event was a matter of who shot the lowest score, not which golfer was the youngest or had had the earliest success. Victory was a matter of who put the ball in the hole with the fewest strokes, not who was the most famous or had the biggest reputation.

Remember, it is not how quickly you develop that will finally make the difference, but *how far you are able to go*. The judges don't look at competitors onstage and say, "That contestant has been training for eight years but the other one is better because he's only been training for three!" No, all that counts is how good you get, and you can't make your body develop any faster than your own biological makeup will allow.

But it is possible to develop *more slowly* than your biology would allow, simply by not believing that rapid gains are possible and not training to

develop as far and as fast as you can. I remember watching Franco Columbu train for two years with only moderate gains. Then he saw me win the NABBA Mr. Universe and he suddenly decided that he too wanted to win that title. After that, he trained really hard for two or three hours a day and began to make unbelievable gains in a very short time. His mind believed he could develop a fantastic physique, create gigantic muscles, and be up on-stage holding the championship trophy in his hands, so his body responded.

## FREE WEIGHTS VS. MACHINES—A MATTER OF GRAVITY

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For a beginning bodybuilder, the majority of training should be done with free weights. We live in a technological age, and the exercise machines being designed and manufactured today are better than ever. But your muscles were designed by evolution to overcome the pull of gravity rather than to work against machine resistance, so the biggest gains you will make in building size and strength will come from pumping iron—using a barbell and dumbbells—rather than by exercising on machines.

Moreover, most of the really good bodybuilders I know have also been powerlifters—a subject I will explore in more detail later. Forcing the body to lift against gravity, to coordinate and balance masses of iron, gives it a structure and quality that high-repetition, relatively light training alone does not provide. Additionally, a report in the *Journal of Strength and Conditioning Research* indicates that testosterone production is increased when you do large-muscle-group, free-weight exercises in which you use and coordinate a number of major muscle groups at the same time, like the Squat, Deadlift, and exercises you see performed less often today like the Power Clean. Testosterone production is not similarly increased by isolation free-weight exercises—or training on machines. Testosterone is anabolic, and with more testosterone in your system you get stronger and can build larger muscles more easily.

But bodybuilding is about sculpting the muscles as well as making them big and strong. Free weights give the experienced bodybuilder the freedom to isolate certain muscles and to work the body in any number of creative ways. They also enable people of different heights, weights, and physical proportions—long-armed, short-armed, long-legged, short-legged, etc.—to get a complete workout, while many machines seem to be designed only to satisfy those who represent the “average” customer of a commercial health spa.

Again, let me emphasize that I am not against machines. Joe Gold, who is a master craftsman when it comes to building exercise equipment, has filled World Gym with many useful machines and devices. Nowadays, when I go to different gyms and use a variety of different machines I find them to be marvels of technology. We’ve been through air- and water-

resistance machines, and are now back to a more basic design, but a hundred times better than ever before. The people at companies like Cybex and Hammerstrength, as well as the other top manufacturers, work extremely hard to create machines that work well and feel good to use. Gone are the days when somebody would just weld some pieces of metal together and expect people to use a machine that didn't operate smoothly, that hit the end stops before moving through a full range of motion, was awkward to use, and always had something wrong.

I use a lot of machines in my own workouts. It is obviously impossible to get full thigh development, for example, without a Leg Extension or Leg Curl machine or to fully isolate the inner chest without using a pec deck or cables. And it is possible to shock the body into accelerated growth if you occasionally use a machine or circuit of machines you are not used to in place of your normal free-weight exercise for that body part. But I believe that a good bodybuilding program should include no more than 30 to 40 percent training (at most!) with machines. Certainly, a Curl gets better results done with dumbbells or a barbell because of the way you can isolate and stimulate the biceps, but it would be hard to really work the lats without a Lat Pulldown machine or to do Triceps Pressdowns without cables.

Also, when you think about it, machines keep the resistance working along one plane only, meaning that the muscle has to do things the machine's way or not at all. With no need to balance and control the resistance, you end up with less muscle. But the whole idea of bodybuilding and strength training is to use *as much* muscle as possible, so this is no real advantage at all! It is true that a muscle doesn't "know" what kind of resistance it is working to overcome. In that sense resistance is resistance. But the muscle does indeed react differently if it is constantly subjected to resistance that comes from varying angles and different directions as opposed to resistance that is always along a predictable line. And Franco tells me that in his chiropractic practice most of the muscle strains and joint injuries he sees come about as the result of using machines that put unnatural stresses on the body, that lock you into too rigid a position.

Muscle was developed to work against the pull of gravity. If we lived on the moon, we'd need only one-sixth the amount of muscle we need on earth, with its greater gravity. On Jupiter, we'd have to be built like elephants to move at all! Lifting something gives us the experience of "heavy." Pushing a weight along a track is not the same thing. Neither is pressing against a stationary wall—you're encountering a lot of resistance, but it isn't "heavy." And that means your muscles are not responding as fully as they are capable of doing.

If you are training somewhere that does not have the free weights you need for your workout, and there is nothing you can do about it, use whatever you have in order to accomplish your training! The bottom line is to get that workout, no matter how you have to do it. Whatever works, works—and, as a bodybuilder, that's all you need to worry about.

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## SHOES

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The importance of shoes in training is simply to stabilize your feet and improve your balance. In that regard, all shoes are not created equal. Many running shoes are made so soft and light—great if you plan to run ten miles or so—that they don't give you much support. But support is not always what you want. Competitive powerlifters doing Deadlifts generally wear very thin slippers because being even a fraction of an inch lower can make the difference between success and failure lifting a huge poundage off the ground.

You can also find athletic shoes that are thick-soled, solid, and with good arch support. I've seen bodybuilders work out wearing hiking boots, combat boots, and a wide variety of other footwear. Remember how much pressure is borne by the feet when you are doing exercises like heavy Squats, and how hard that can be on the arches. So choose the appropriate shoe for whatever kind of workout you have planned.

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## GLOVES

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Many good bodybuilders wear gloves while training to protect their hands. Others use pieces of rubber cut from inner tubes to improve their grip. This is okay, but I have always trained barehanded and used chalk whenever my grip felt too slippery. Powerlifters work with enormous amounts of weight and don't use any of these aids. If you have particularly sensitive skin, or if you are a chiropractor, concert pianist, or in some other profession which requires that you take special care of your hands, by all means wear gloves. However, I recommend most bodybuilders simply grip the weights with bare hands and let them toughen up and develop calluses. Don't worry about sponges, gloves, and other aids.

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## STRAPS

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Straps are fastened around your wrist and then twisted around a bar to effectively strengthen your grip, although my personal feeling is that using aids like these keep hand strength from fully developing naturally. Straps are used because with bare hands it is often difficult to hold on to a weight that will really challenge your back in a heavy workout. However, champion powerlifters don't use straps, and they lift enormous amounts. Franco and I have always lifted heavy weights without the use of straps. If you lift without straps, your grip will gradually strengthen. If you continually use straps, you may never develop this kind of strength. However,



whether or not to use straps in your workouts is mostly a matter of personal preference.

## **BELTS**

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The purpose of wearing a heavy belt is supposed to be to support the muscles of the lower back when you are lifting very heavy weights. The waist belt was originally used by weightlifters doing heavy Overhead Presses. However, belts are often considered necessary by those doing heavy Squats, pressing heavy weight, or doing heavy standing Calf Raises.

Research in the past few years has indicated that weight belts may not protect the spine to the degree it was once thought, although they probably help stabilize the upper body by increasing pressure in the abdominal cavity. However, in my opinion too many bodybuilders wear belts too much of the time they are in the gym, which has the effect of binding the lower back muscles and preventing them from developing the strength they ought to have. This is a high price to pay for an illusory feeling of security. So I recommend you use a belt only when you feel you really need one, for very heavy lifts, and not as a kind of bodybuilding fashion accessory.

## **WRAPS**

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Wraps are used to support weak or injured joints and muscles. You will occasionally see a bodybuilder who has wrapped one or both elbows due to some physical problem. More commonly, wraps are used around the knees when doing very heavy Squats, or around the elbows when doing heavy Bench Presses. But wraps aren't something you need to use every day. Unless you have an injury or joint problem (for which you should seek medical attention), you will not need to wrap your knees until you have progressed to the point where you are using very heavy weights. Ace bandages are most frequently used, wrapped firmly, but not too tightly, around the area. Remember that whenever you wrap an area tight enough to give it additional support, you are also limiting its flexibility of movement.

## **HEAD STRAPS**

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A few years ago it was common for bodybuilders to use a kind of harness that fits around the head to which you can attach a dumbbell or weight plate so you can do progressive-resistance exercises for the neck. The "Barbarian Twins," David and Peter Paul, used to amaze people at Gold's Gym with the enormous amount of weight they could train their necks



with—and sometimes they even attached the head strap to a car and pulled the vehicle across the parking lot.

This type of exercise seems to have fallen out of fashion, but maybe that's a mistake. If you feel your neck is too small, by all means find a way to train it. Indeed, some companies now make machines for this purpose. However, a complete workout routine tends to build the neck muscles along with everything else, so don't waste your time with these exercises unless you really see a need for them. In other words, if it ain't broke, don't fix it.

## **GRAVITY BOOTS**

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Here's another piece of equipment that used to be common but is seen much less often these days. Gravity boots enable you to hang upside down and stretch out the spine. Those who advocate using this device point to the fact that our bodies are constantly being compressed by the force of gravity—the spine is compressed, the internal organs are pulled earthward. As a result, over a lifetime, most of us are an inch or two shorter at age sixty than at age twenty-five. Stretching out the spine by hanging upside down and taking the strain off the internal organs is supposed to help counteract this process, and I can tell you that it feels very relaxing.

However, hanging upside down has no direct effect on building up your body, and it does tend to put a lot of strain on the lower back, so this remains an adjunct to training rather than a fundamental part of bodybuilding. If you use gravity boots, start out by hanging for only short periods—no more than a minute or so—until you get used to the unusual sensation of being upside down. Then gradually increase your suspension periods a little at a time as you feel necessary. Better, check out one of the bench-type gravity devices that let you keep your knees bent and take some of the strain off the lower back.

## **RUBBER SUITS**

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The primary use a competition bodybuilder would have for these suits would be to help lose water weight just before a contest. However, wearing a suit like this on a hot day when you are training hard could lead to hyperthermia, a dangerous increase in body temperature, and bodybuilders have ended up in the hospital or worse due to dehydration, so I don't really recommend this type of device. Keep in mind that any water loss due to the use of a rubber suit is only temporary.

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## TRAINING DIARY

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Explorers use maps, sea captains rely on charts, astronauts navigate by the stars, and bodybuilders keep track of where they are and where they are going by keeping a training diary.

When I began to train, I wrote everything down—training routines, sets and reps, diet, everything. And I kept this up right through my 1980 Mr. Olympia victory. I would come into the gym and put a line on the wall in chalk for every set I intended to do. I would always do five sets of each movement. So, for example, the marks ////////////// on my chest day would stand for five sets of Bench Presses and five sets of Dumbbell Flys. I would reach up and cross each line as I did the set. So when I finished Benches the marks would look like XXXXX//, and I would never think to myself, Should I do three sets today, or four? I always knew it was five and just went ahead and did them. Watching those marks march across the wall as I did my workout gave me a tremendous sense of satisfaction and accomplishment. They were like an invading army crushing all opposition in its path. This visual feedback helped me to keep my training goals clearly in mind, and reinforced my determination to push myself to the limit in every workout.

Totally by instinct, I stumbled onto a concept widely accepted by educators and psychologists: Human beings work best and learn best when they are given the right kind of feedback. Knowing that you have accomplished something is one thing; seeing what you have accomplished is another. It makes your accomplishment all the more real and exciting, and therefore motivates you to try even harder the next time.

Feedback also lets you know when you are not on the right track. Memory can play tricks on you, but the information in the pages of a training diary is right there for you to see. If you are suddenly getting good results, you can look back to see what kind of exercise program and diet regimen helped you. If you begin to develop problems—your progress slows or you seem to be losing strength—you can check your records to try to determine where you might be making your mistake.

Continuing to keep a training diary over long periods helped my development tremendously. I would sit down at the beginning of the month and outline my program for the next thirty days—what days I would work out, what body parts I would train, and what exercises I would do. After a while, if a body part was lagging behind somewhat in development or I decided that certain muscles needed more training than I had been giving them, I would make an adjustment in my thirty-day plan and add the necessary exercises.

I would try various supplements to see what seemed to make a difference to how I looked and felt, and I would write all this down. Was I feeling full of energy or tired and fatigued? I would make note of this and then

later go back through my diary to see how I could account for the differences in how I felt between one day and the next. I kept track of the days I canceled a training session, or when I had a particularly good workout.

I also kept a careful record of my body weight and would take measurements every month—neck, shoulder width, biceps (hanging and flexed), forearms, waist (standing relaxed and hitting a vacuum), and so forth—so that I could make comparisons of how much I had progressed from one period to another.

So be sure to keep a training diary. Write down your entire program; make note of sets, reps, and weights; record your physical measurements, and take periodic photographs of your physique to keep track of your development. This way you will always know what your training program is supposed to be, and can always look back and check to see how you were training in the past and what kind of success that program brought you.

## **BODYBUILDING AND THE VERY YOUNG**

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I don't like to see very young children lifting weights. Their bodies are too unformed, their bones still too soft, to stand up to the stresses of weight training. I have seen boys five to nine years of age, pushed into working with weights too young by their parents, profiled on television as supposed bodybuilders. And a very young girl of about sixty pounds who "lifted" (that is, barely moved) some 400 pounds on a Hack Squat machine. I hope none of these children were injured by these activities because I don't believe this kind of exercise or physical stress is appropriate for the very young with their immature, vulnerable bodies.

Preteen training, in my opinion, should rely on lots of athletic activities to develop all of the body's physical potentials, with the emphasis on calisthenics or gymnastic exercises rather than weight training—exercises that use body-weight resistance such as Push-Ups instead of Bench Presses, Knee Bends instead of Squats, and so on.

Once the body begins to mature, weight training can begin. I began at fifteen, but this doesn't mean that every fifteen- or sixteen-year-old has to decide whether he wants to pursue competition bodybuilding right from the start. It takes a few months, maybe a year, simply to learn the exercises and begin to understand the experience of training. Still, it is important during this phase to use light weights and keep reps relatively high. The sooner you make up your mind to pursue serious training, the better chance you have of going all the way.

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## STARTING LATE

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“Am I too old to begin bodybuilding?” I am frequently asked. “You are too old not to!” is usually my reply. As we get older the muscle structure tends to atrophy at a faster and faster rate. The ideal remedy for this is bodybuilding.

But when it comes to competition, there are obviously disadvantages to starting very late. Certainly, there have been bodybuilders who started much later in life and gone on to become great competitors—Ed Corney, the master poser of my day, for example. But, generally, your chances of becoming a Mr. Universe or a pro champion diminish with a late start. But starting late in bodybuilding is not the same as in other sports. Many champions didn’t begin training until their early twenties and went on to become amateur and professional champions within the next ten years. However, these successful late starters are usually already competitive athletes who are simply switching sports. Their bodies are pretrained by years and years of other types of sports training. World Amateur Champion Ronnie Coleman is an example of this. And Franco Columbu, who started out as a boxer and then a powerlifter, didn’t switch to training for bodybuilding until he was well into his twenties.

Not only can you start relatively late in bodybuilding, but you can continue to compete long past the point where most athletes (golfers being the most obvious exception) have retired. Of course, a bodybuilder in his forties is not going to be able to get the kind of shape he could a few years earlier. There is wear and tear on the muscles, a gradual hormonal change, shortening of the muscles—and the fact that an older competitor generally has more in his life to deal with, distractions and responsibilities (family, children, business interests) than does a younger man just starting out, so it is much harder to dedicate himself 100 percent to his training and diet programs.

Masters bodybuilding competitions are now widely available to competitors in their forties, fifties, and up. Former top professionals are even vying for titles at the Arnold Classic and Masters Mr. Olympia. And it’s amazing how hard, muscular, and in-shape many of the champions of the past are able to look.

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## BODYBUILDING AND THE ELDERLY

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As I said earlier, one of the primary manifestations of aging is the gradual deterioration of muscle mass. But recent research has proved that muscle doesn’t have to atrophy with age to the degree we always believed. In fact, muscle mass can be *increased* to a surprising degree with proper training

even in those of advanced age. In short, recent scientific studies indicate that bodybuilding can be a fountain of youth.

Of course, the older you are the more careful you have to be when you start bodybuilding. "Consult a doctor" is not just a pro forma disclaimer when it comes to somebody in her sixties or seventies. Consult a doctor, find a good trainer, take every precaution. Learn proper technique. Get into training slowly. When you're older, injuries take longer to heal, so do everything you can to avoid any problems.

But the results can be spectacular. A return to more youthful levels of strength. A more youthful body. Energy, mobility, and an increased quality of life. Confidence and independence. Remember, much of what we consider to be inevitable aspects of aging are really just signs of underuse and neglect. You don't have to lose muscle or bone mass as you grow older; you can keep what you have and even build more of it.

## **MAKING THE TRANSITION**

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Making the transition from training for health and fitness to training for competition is largely an evolution of consciousness: You begin to appreciate certain potentials of your body that you were not previously aware of and slowly your attitude toward training begins to change and you have to make a decision—which way are you going to go? Are you going to keep this just a small part of your life, or will it gradually become the centerpiece of your existence?

I decided almost immediately that I wanted to be Mr. Universe. Franco competed for a while as a powerlifter before making that decision. Mike Katz was a professional football player, the late Carlos Rodriguez a rodeo rider. You can decide early or late, but if you find yourself caught up in training, looking forward almost obsessively to your workouts in the gym, relishing every new plane and angle revealed as your physique grows and develops, this may be a decision that you, too, will have to make. To get your feet wet, there are many local amateur contests to enter. There you can try competition and decide whether or not the rigors involved are to your liking.

There is so much more money in professional bodybuilding now than when I started that many athletes who might have concentrated on sports are deciding on a career in bodybuilding. But there are more and more opportunities on the amateur level as well, and many bodybuilders continue to train and compete while pursuing careers as doctors, lawyers, chiropractors, or businessmen.

Most bodybuilders are highly competitive individuals, but others are in the sport primarily for the meaning it gives their lives, regardless of whether or not they ever achieve a victory. Bodybuilding is more than a sport, it is also a way of life. It is an entire philosophy of how to live, a value

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system that gives specific answers to questions that concern so many of us these days—questions of what is worth doing and what value to give to excellence and achievement. It is a way of pursuing self-worth and personal validation, of finding satisfaction in your ability to set goals for yourself and working to reach them.

Of course, not everyone who takes up bodybuilding on a competitive level has the same experience, but no one goes very far in this sport without realizing the deeper meaning of physique.

## COMPETITION

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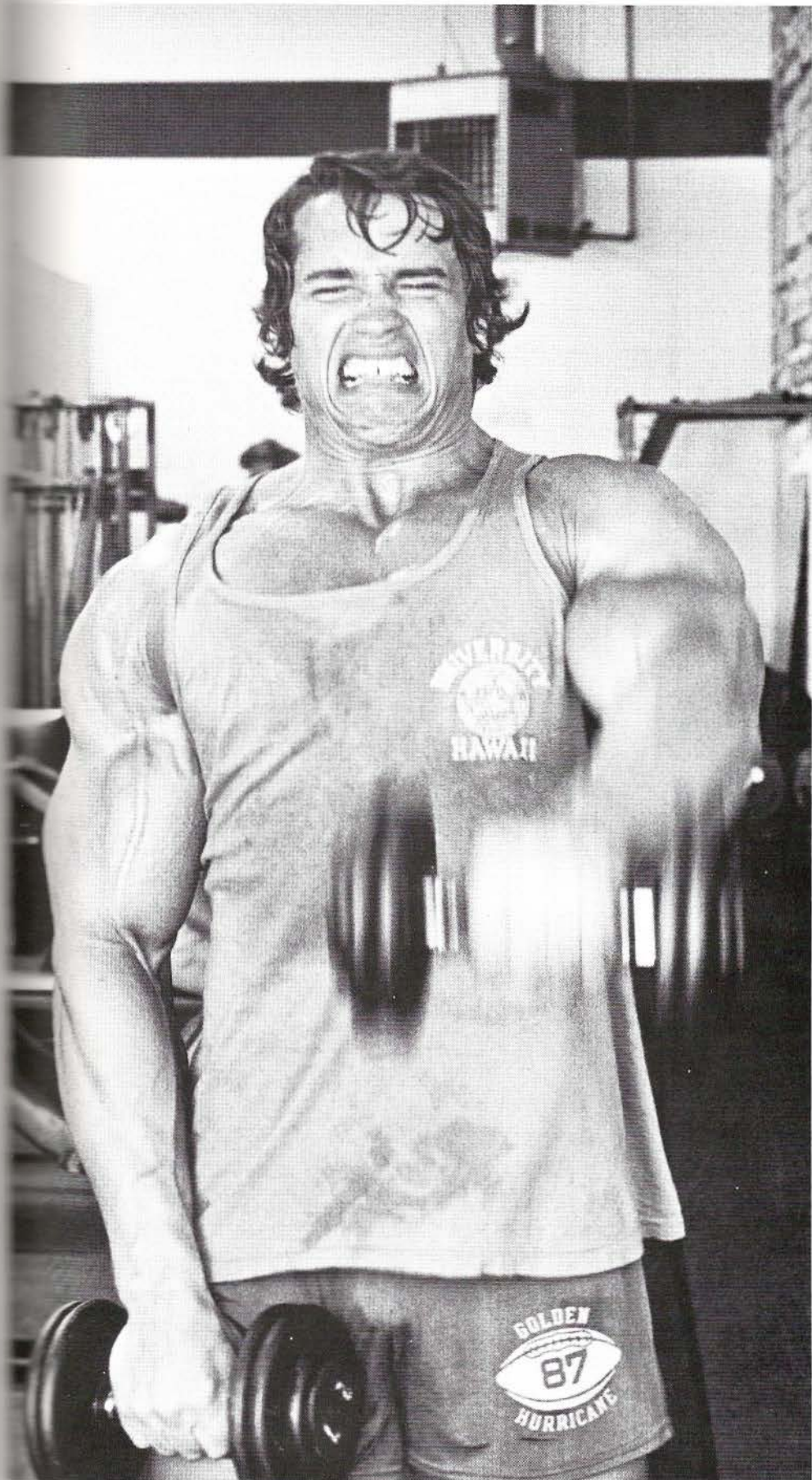
I always intended to do many things with my life besides compete in bodybuilding contests, but there is no aspect of my life that will not be influenced by or will not benefit from my having had the heady experience of competition. Bodybuilding *training*, I believe, is for everyone, but few are suited for the demands of competition. If the idea appeals to you even in the slightest, I urge you to give it some consideration. If you can share even a small part of what bodybuilding has given me, I know you will never regret your decision to try competition.

Just remember one thing—if you really take it seriously, bodybuilding competition will take over your life. It will determine where and how you live, what you eat, who your friends are, the course of your marriage. Sure, you can compete on a local level without giving yourself over totally to the demands of the competition lifestyle—still live somewhat of a “normal” life—but the further you go in bodybuilding the more it will consume you.

This is not so unusual. Think of the commitment it takes to train for the Olympics. The practice and dedication it takes to become a champion in tennis or golf. The demands of training to run a marathon. Success in any of these sports takes a degree of focus and concentration most people can hardly imagine. It takes sacrifice to get to the top. And bodybuilding is no exception.

B O O K T W O

# Training Programs



# Basic Training Principles

**T**O LOOK LIKE a bodybuilder you need to train like one. Athletes like football players, wrestlers, and weightlifters have a lot of muscle; but only bodybuilders have the shapely, proportioned, completely developed muscular bodies we associate with physique competition. If you want to look like a bodybuilder—or even simply want to look more like a bodybuilder than you do now—you need to learn and master the training techniques that bodybuilders have developed on a trial-and-error basis over the past fifty years or so. Just as there is a specific technique involved in hitting a tennis ball or swinging a golf club, there is also a way of doing bodybuilding training that is the most efficient and effective means of muscular training possible.

It takes hard, dedicated work to build a great physique, but hard work alone is not enough. In addition to training hard, you need to train smart, which means mastering the fundamental principles of bodybuilding. These principles should be learned and practiced right from the beginning. It is much easier to learn the proper way to do something than it is to unlearn the wrong way and have to start over. As you continue to progress, you will be introduced to more and more complex approaches to training, but there is no need to worry about this at the beginning. The encyclopedia is organized to introduce you to these more advanced training ideas on a step-by-step basis so that you will have a chance to master one level of complexity at a time.



## INDIVIDUAL NEEDS

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Of course, different people have many different reasons for doing bodybuilding training. Some want to build their bodies just to look and feel better. Others want to improve their performance in a variety of sports. And many are interested in developing a dramatic, high-muscular and well-proportioned physique with the goal of competing in bodybuilding contests.

When it comes to learning how to do bodybuilding properly, some basic techniques and principles will apply to *everyone*; others must be tailored to the needs of the individual, often on a trial-and-error basis over a period of time. Everyone, regardless of why they are doing bodybuilding, needs to master the fundamentals and understand what is involved in putting a training program together. Most important, everybody needs to learn the basic exercises because they continue to be important no matter how advanced you become.

But I recognize that everyone is not the same. Body type, how fast or slow a person gains muscle, metabolic rate, weak points, and recuperation time are just a few of the things that can vary from one individual to another. I have tried to cover all the significant variables in this encyclopedia so that everyone will find the information they need to create the kind of body they want.

In golf, many champions don't swing like Tiger Woods, but every first-rate swing has to bring the club face into contact with the ball in just the right alignment. Not every skier uses exactly the same style as Olympic gold medalist Hermann "The Hermannator" Maier, but certain fundamentals have to be executed or you will never make it to the bottom of the run. When you walk into a gym full of competition bodybuilders, it is apparent that many of them are using very different approaches to their training. In the gym I hear the phrase "Every body is different" all the time, and that's true. But every body is much the same as well, so set your sights on mastering the basic guidelines *and let your body tell you* over time what individual variations and techniques are required for you to realize your potential.

## PROGRESSIVE RESISTANCE

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Your muscles will grow only when they are subjected to an *overload*. They will not respond to anything less. Muscles will not grow bigger or stronger unless you force them to. Making your muscles contract against a level of resistance they are not used to will eventually cause them to adapt and grow stronger. But once they have adapted sufficiently, this progress will stop. When this happens, the only way to make your muscles continue to

grow is by further increasing the amount of overload to which you subject them. And the primary way of doing this is to add weight to your exercises.

Of course, this increase in resistance has to be done gradually. Using too much weight too soon usually makes it impossible for you to perform your sets using the proper technique, and can often increase your risk of injury as well.

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## REPS

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A rep is one complete cycle of an exercise movement—a contraction of the muscle followed by an extension—that is, lifting a weight and lowering it again. A set is a group of these repetitions. How many reps you include in a set depends a great deal on what kind of set you are doing. For example, both research and experience have shown that bodybuilders get the most results using a weight in each exercise that represents about 70 to 75 percent of their *one-rep maximum*—that is, the amount of weight they could use doing one full-out repetition of that particular exercise. If you use this amount of weight you will generally find you can do sets of:

- 8 to 12 repetitions for upper-body muscles;
- 12 to 16 repetitions for the major leg muscles.

These figures are just approximations, but they work well as general guidelines.

Why can you do more repetitions for the legs than the upper body? Simply because the falloff in strength over the course of a set is slower in the legs than in the upper body—upper-body muscles just don't have the same kind of endurance as leg muscles. But in both cases the amount of weight used represents the same 70 to 75 percent of the one-rep maximum ability of the muscles involved.

Occasionally, there are reasons for using less weight than this (and therefore doing more reps) and some very useful types of sets which involve heavier weight (and fewer reps), such as low-rep sets for maximum strength and power. But these guidelines represent the majority of training bodybuilders do—and this is especially true for beginners.

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## TRAINING TO FAILURE

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“Training to failure” in bodybuilding doesn't mean training to a point of complete exhaustion. It simply means continuing a set until you can't do any more repetitions with that weight without stopping to rest. What causes this failure? Basically it results from the gradual fatiguing of the muscle fibers involved and the inability of the muscle to recruit any more

fibers to take their place. The process of contracting a muscle involves the process of oxidation—in effect, a form of burning, which is why we say you burn calories (create heat by the release of energy) when you exercise. Oxidation requires both a source of fuel (in the muscle, this is ATP) and oxygen. Whenever fuel or oxygen is in too short supply, the muscle fibers can't contract until they are replenished as you rest and recuperate.

Another limiting factor is the buildup of waste products that result from the release of energy due to muscular contraction. That burning sensation you feel in a muscle as you continue to pump out reps is due to the accumulation of lactic acid in the area. When you stop to rest, the body removes the lactic acid from the area and you are able to do more reps.

Aerobic exercise (which means “with oxygen”) involves high-repetition effort at sufficiently low intensity so that the body can pump enough blood and oxygen to the area to keep the muscle supplied—running a marathon, for example. Or an aerobics class. Weight training is anaerobic (“without oxygen”) and the muscular contraction involved is just too intense for the oxygen supply to keep pace. So your muscles run out of oxygen, you fatigue, and have to rest while the body pumps more blood and oxygen to the fatigued area.

Why is training to failure important? When you are doing reps with a weight less than your one-rep maximum, all the muscle fibers available don't come into play all at once. You use some, they become fatigued, and the body recruits others to take their place. Continuing a set to failure is a way of demanding that *all* the available fibers are recruited. At what point failure occurs depends on the weight you use in a particular exercise. If you are doing an upper-body exercise and want the muscles to fail at, say, 8 to 12 repetitions, you pick a weight that causes this to happen. If you find you are able to do 15 reps in that movement, you add weight to the next set to bring the failure point into the desired range. If you can do only 5 reps, you know you need to lighten the weight slightly so you can do a few more reps before your muscles fail. But you never just stop a set because you've counted off a certain number of reps.

One of the ways you gauge your bodybuilding progress is the change in where failure occurs during your training. As your individual muscle fibers get stronger, you are able to recruit more of them and your body increases its ability to deliver oxygen to the muscles during exercise (all components of the overall training effect). As a result you will find you can do many more reps with the same weight before hitting the failure point. This is a sign you need to use more weight.

Of course, you aren't a machine, so the way you actually do your sets is not that mechanical. Some sets need to be more demanding and more intense than others. Here, for example, is a typical upper-body set for an experienced bodybuilder:

**FIRST SET:** a warm-up set with a lighter weight; 15 repetitions or slightly more.

**SECOND SET:** Add weight so that the muscles fail at about 10 to 12 repetitions.

**THIRD SET:** Add more weight to bring the failure point down to 8 to 10 repetitions.

**FOURTH SET:** For maximum strength, add enough weight so your muscles fail after only 6 repetitions (power set).

**OPTIONAL FIFTH SET:** Use the same weight, try to get another 6 reps; get some help from a training partner if necessary to complete the set (forced reps).

Training this way gives you the best of all possible worlds: You start out relatively light, which gives your muscles time to fully warm up for that particular exercise; you go on to do slightly fewer reps with a heavier weight, which forces lots of blood into your muscles and gives you a great pump; and finally, you add more weight so that you are training relatively heavy for power and strength.

## SETS

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Generally in the Basic Training Program I recommend doing 4 sets of each bodybuilding exercise, except where otherwise specified. I believe this is the best system for several reasons:

1. You need to do at least 4 sets in order to have the volume of training necessary to fully stimulate all the available muscle fiber. If you do more sets per exercise, your total training volume will be so great that you risk overtraining.
2. Doing 4 sets per exercise, for a total of 12 sets per body part (for the larger muscle groups) in the Basic Training Program and 20 sets in Advanced Training, enables you to do a sufficient variety of exercises to work all the areas of a body part—upper and lower back, for example, the outside sweep of the lats, and the inner back.
3. The experience of five decades of bodybuilders has proved that the maximum amount of weight you can handle that allows you to just make it through 4 sets of an exercise will stimulate the muscles and make them grow.

There is a difference in how much training small muscles require compared to large muscles or muscle groups. For example, if I'm training

my back, that doesn't involve just one muscle—there are many different muscles in the back—such as lats, rhomboids, traps, spinal erectors of the lower back—and each of these areas has to be trained specifically. The same is true for the thighs. The thighs consist of four powerful quadriceps muscles, as well as the adductors at the inside of the upper leg. To fully train this area, you need both power and isolation movements, you have to hit the different heads at different angles, and you aren't going to accomplish this with just a few sets.

In training smaller muscles like the biceps and triceps, on the other hand, fewer total sets are needed because those muscles are just not that complex. You can get a complete biceps workout doing a total of about 9 to 12 sets, for example, whereas most bodybuilders would do 16 to 20 total sets to work the thighs. The rear deltoid is an even smaller muscle, and generally 4 to 5 sets for the posterior deltoid head is enough. However, muscle physiology also comes into play. The biceps are the fastest recuperating muscles, so if you feel like training them using higher sets (as I always did) they are still able to recover. And the calf muscles, which are relatively small, are designed to do virtually endless repetitions when you walk or run, so you can get great results training them with a relatively high number of sets.

But don't worry about trying to remember exactly which muscle should be trained with how many sets right off the bat. I've taken all of this into consideration in the exercise program recommendations coming up in later chapters.

## **FULL RANGE OF MOTION**

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For most purposes, bodybuilding exercises should take any muscle through its longest possible range of motion. (There are some specific exceptions which I'll talk about later.) You should take care to stretch out to full extension, and then come all the way back to a position of complete contraction. This is the only way to stimulate the entire muscle and every possible muscle fiber. So when I'm suggesting you do 8 reps, or 10 reps or more, in each case I am assuming you are going to be doing full-range-of-motion repetitions.

## **THE QUALITY OF CONTRACTION**

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Bodybuilding is about training muscles, not lifting weights. You use the weights and proper technique in order to target certain muscles or muscle groups. Weights are just a means to an end. In order to do this effectively, you have to isolate the muscles you are targeting. Remember how

often you have been told to lift something with your legs and not your back? This technique deliberately brings as many muscles into play as possible to protect you from injury. This makes sense if you are a piano mover or a construction worker. But the task of the bodybuilder is very different. You don't want to make the lift easier, you want to make it harder! You want the target muscles to do all the work, with little or no help from other muscle groups.

Good technique helps you to do this. So does choosing the right amount of weight. Once you are using a weight that is too heavy for your target muscles to handle, your body will automatically call other muscles into play. That's the way your nervous system is designed. So the fact that you can lift a weight doesn't mean you are doing the exercise correctly. You also need to choose a weight that ensures that the target muscles alone are responsible for lifting that weight.

How do you do this? One way is to start out lifting very light and concentrate on how the muscles feel during the movement. Gradually increase the weight. But if and when you get to a point where you can no longer feel the muscles working as they did when the weight was lighter, chances are you are working too heavy and need to back down a few pounds until that "feel" is reestablished.

## **WARMING UP**

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Often when people talk about warming up, they don't understand how literally that should be taken. Remember, oxidation in the muscle is actually a form of burning. Because of this, when you use a muscle, the temperature in the area rises and the ability of the muscle to contract forcefully becomes greater.

Warming up also pumps fresh, oxygenated blood to the area, raises the blood pressure, and increases the heart rate. This provides a maximum oxygen supply to the body and helps to eliminate the waste products of exercise from the working muscles.

Finally, warming up properly helps to protect the body from becoming overstressed, prepares it for the demands of heavy training, and reduces the chance of injury, such as a sprain or strain.

There are lots of ways to warm up. Some do a short session of cardiovascular training prior to their workout (treadmill, exercise bicycle, running, etc.), enough to get the heart going but not enough to deplete the body of energy. Calisthenics and other light exercises also give you a warm-up without putting any great stress on the body. But the most popular method of warming up is with the weights themselves. First, spend some time stretching and then do some moderately light movements with a barbell or dumbbells, hitting each body part in turn until the body is ready for something more strenuous.

Then, for each different exercise during your workout you begin with one light warm-up set in order to get those specific muscles ready to do that specific movement. When you do a set or two with higher reps and less than maximum weight, your muscles are then prepared to deal with the greater intensity generated by heavier weights and 6-rep sets.

Warming up is even more important before heavy training sessions because you are about to subject the body to still greater stress. The best idea is not to do really heavy movements until your body gets into gear by doing the less stressful bodybuilding sets first.

The time of day is also a factor in determining how much warming up you need. If you are training at eight o'clock in the morning you are likely to be tighter and more in need of stretching and warming up than at eight at night, so adjust your preliminaries accordingly.

Always take care that you warm up thoroughly. If you are about to do heavy shoulder presses, for example, remember that you are going to involve more than the deltoids and triceps. The muscles of the neck and the trapezius will also contract intensely during the movement, and they should be given time to get ready as well.

Injuries in the gym generally happen for two primary reasons: Either the person used sloppy technique (used too much weight or failed to keep the weight totally under control) or didn't stretch and warm up properly.

I should also point out the effect of age on the physique and athletic ability. It is commonly known that the older you are, the more important protecting your body with warm-ups and stretching becomes. Young athletes can get away with things that older competitors can't. Nonetheless, learning proper technique, stretching, and warming up are good for *all* bodybuilders, regardless of age, and the sooner you make this a lifelong habit the better off you will be in the long run.

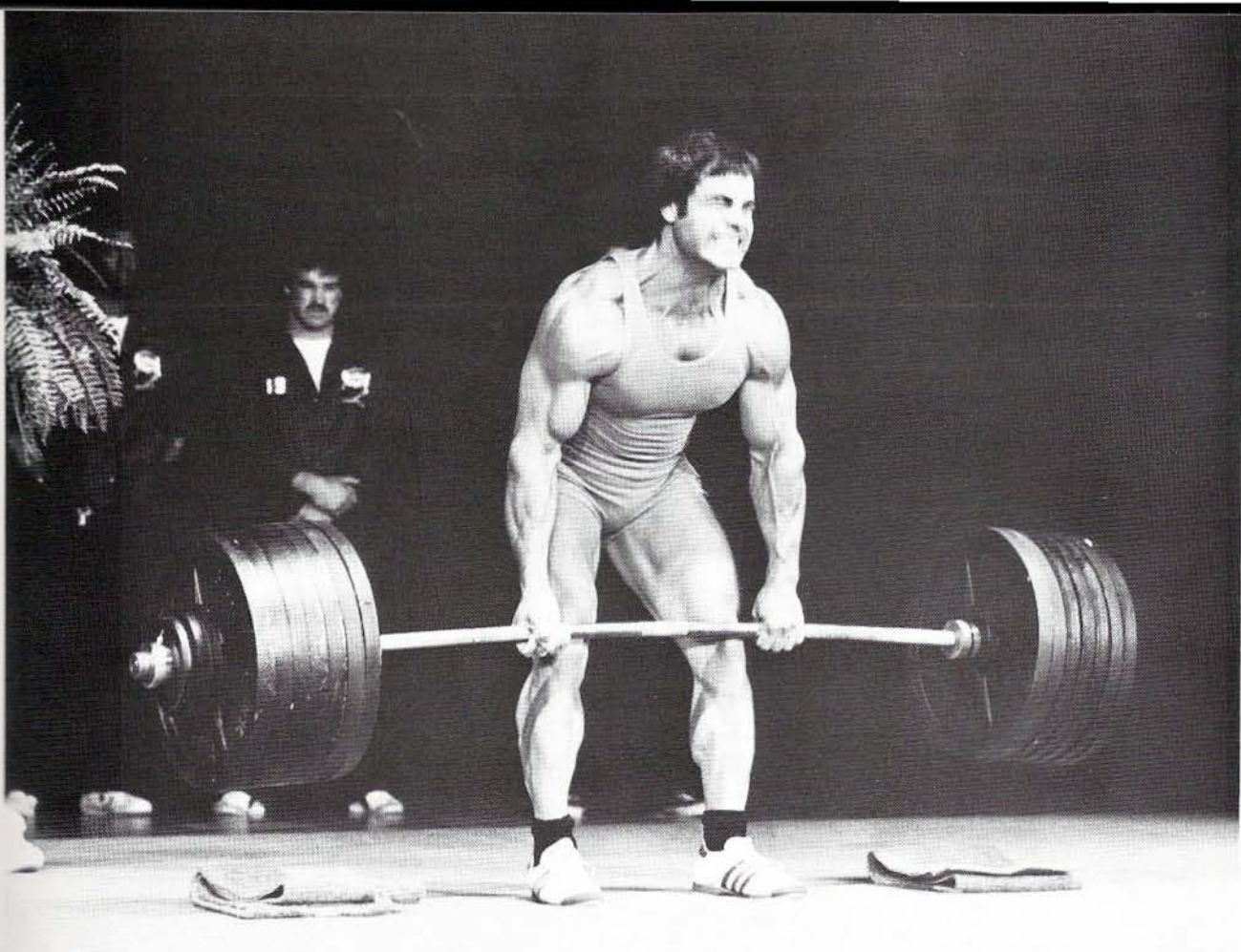
## **POWER TRAINING**

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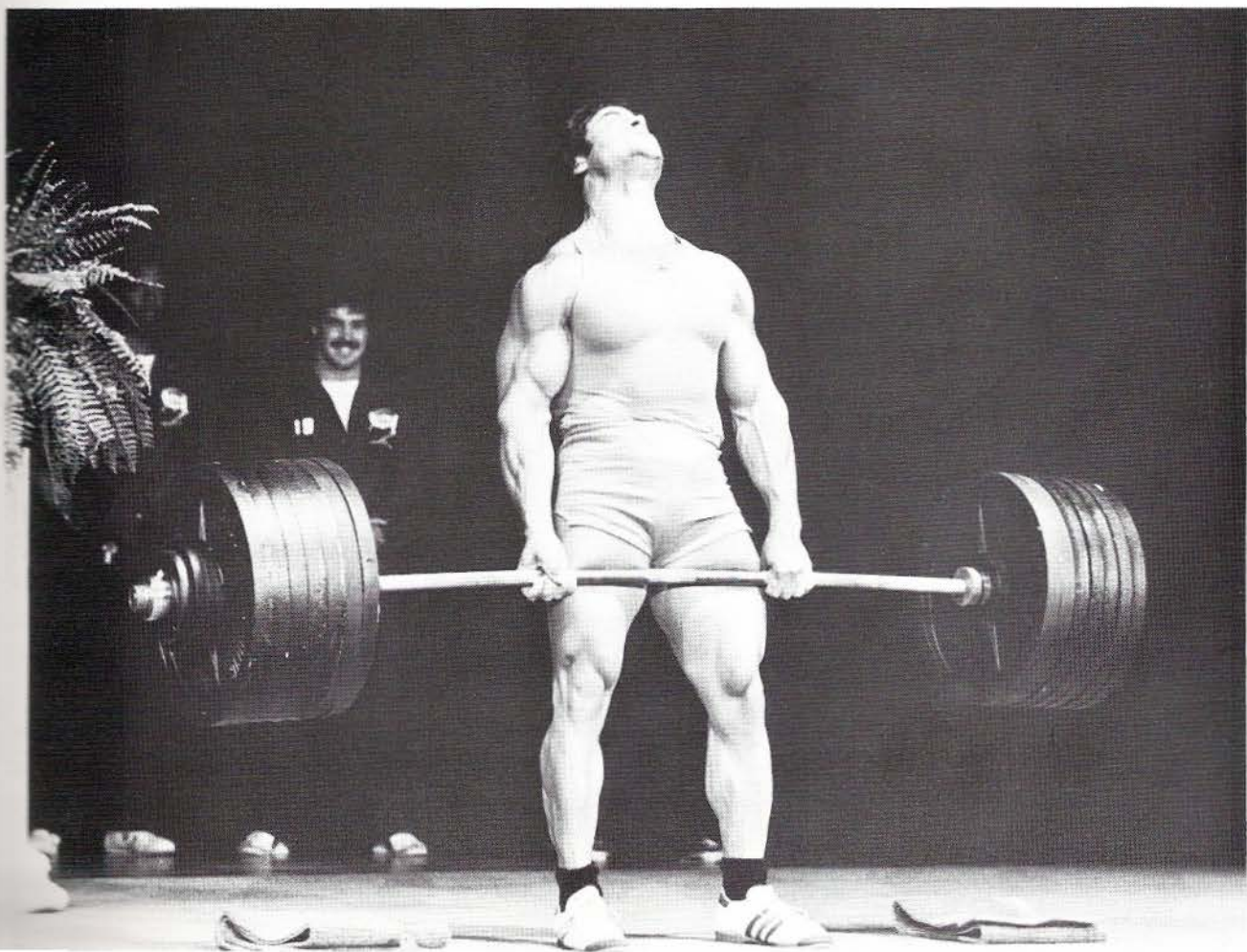
There are various ways of assessing strength. If I can lift 300 pounds and you can lift only 250, I am stronger than you in one-rep strength. However, if you can lift 250 pounds ten times and I can lift it only eight times, that is a different kind of strength; you would be surpassing me in muscular endurance—the ability to continue to be strong over a series of movements.

To shape and develop the body, it is necessary to do a lot of endurance training—that is, the appropriate number of sets and reps. But I also believe that, unless you include low-rep strength training, you will never achieve the hardness and density necessary to create a truly first-class physique.

In the days of John Grimek, Clancy Ross, and Reg Park virtually all bodybuilders trained for power. Being strong was considered as important



*Franco Columbu deadlifting 730 pounds*





as having a physique that looked good. But keep in mind that there were then and are now different kinds of strength. The legendary Jack La Lanne could never compete with a Reg Park in a one-rep strength contest, but Jack could continue Chin-Ups and Dips, back and forth without stopping, long past the point where the bigger guys at Muscle Beach had collapsed with fatigue.

Although the bodybuilders of the 1940s and 1950s generally lacked the total refinement that top bodybuilders have today, they were extremely strong, hard, and impressive physical specimens. In the 1980s it seemed to me that the pendulum had swung too far and bodybuilders were overlooking the benefits of including traditional power moves in their overall programs. Nowadays, with so many competitors coming into pro shows weighing a solid 230, 240 pounds or more, there seems to have been a rediscovery of heavy power training. Certainly, you don't get to be as dense and massive as Dorian Yates without working with a lot of mind-bendingly heavy poundages.

"If you don't do heavy lifts," my friend Dr. Franco Columbu explains, "it shows immediately onstage. There is a soft look that shows itself clearly." There is abundant scientific and physiological evidence for why this is so. Power training puts tremendous strain on relatively few fibers at a time, causing them to become bigger and thicker (hypertrophy), and they also become packed much tighter together. This contributes enormously to that hard, dense look of the early champions.

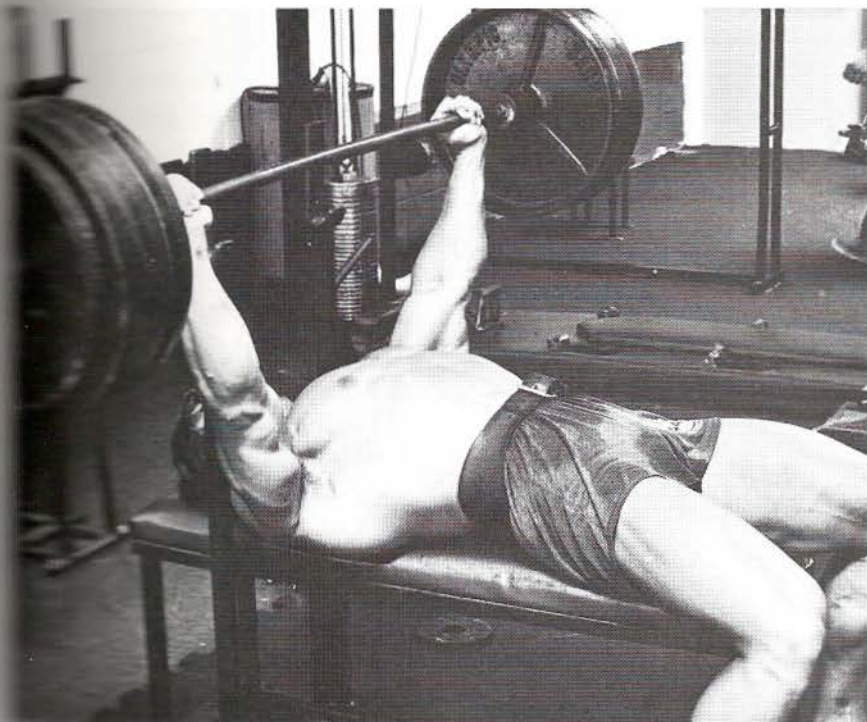
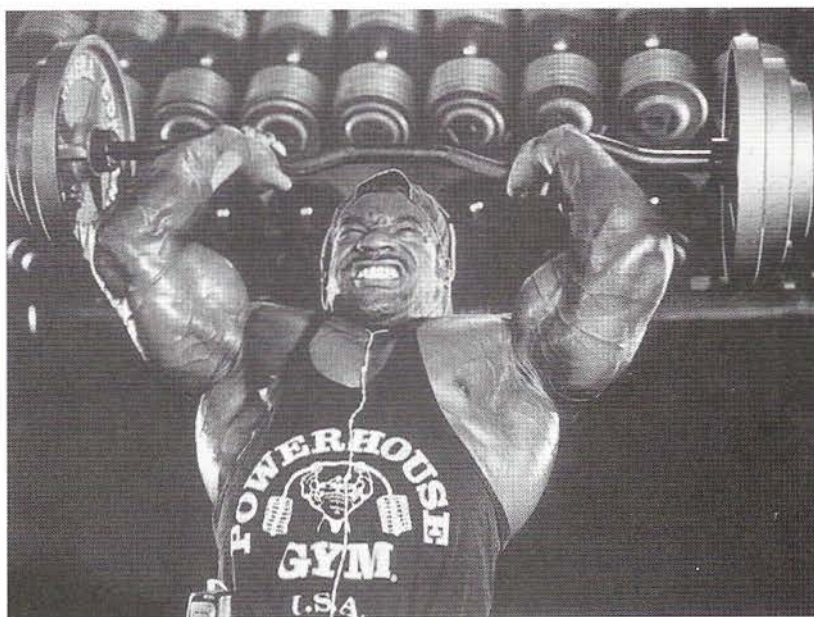
Including some power sets in your program also helps to make you stronger for the rest of your training. You will move up to using heavier weights more quickly, so your muscles will grow that much faster. It also toughens and strengthens your tendons as well as your muscles, so you will be much less likely to strain them while doing higher-repetition training with less weight, even if you should lose concentration at some point and handle the weights with less than perfect technique.

Heavy training strengthens the attachment of the tendon to bone. Separating the tendon from the bone is called an avulsion fracture (see *Injuries*, page 775), and the right kind of power training minimizes the possibility of this occurring.

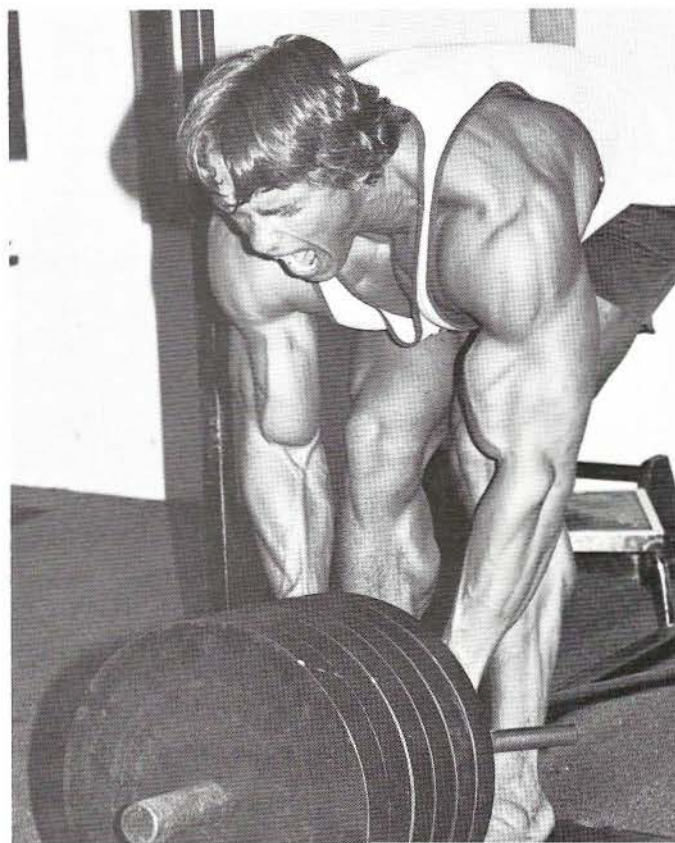
Muscle size and density created by a program that includes heavy training are easier to maintain for long periods of time, even with a minimum of maintenance training. With high-rep training only, much of the growth is the result of transient factors such as fluid retention and glycogen storage, but muscle made as hard as a granite wall through power training comes as a result of an actual increase in muscle fiber size. Also, as Franco tells me, the muscle cell walls themselves grow thicker and tougher, so they tend to resist shrinking.

Besides all this, when you do power training, you find out what the body can really do, how much weight you can really move, and this gives you a mental edge over someone who never does power training.

*Chris Cormier's arms are so powerful  
he is able to do Triceps Extensions  
as a power exercise.*



*With my long arms, bench-pressing 400-  
plus pounds eight times takes a lot of effort  
and concentration.*



*Heavy T-Bar Rows is one of the best power  
exercises for the back.*

Modern bodybuilders need to master many sophisticated techniques, but you can't forget that the basis of bodybuilding is developing muscle mass by lifting heavy weights. This does not mean that I believe bodybuilders should train like weightlifters. I recommend a program of total development that includes a certain number of power moves to give you the advantage of both kinds of training.

## HEAVY DAYS

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When I was a young bodybuilder just starting out, I used to do a lot of powerlifting (powerlifting is a form of weightlifting which involves three specific lifts: Bench Presses, Squats, and Deadlifts). As I progressed in the sport, winning competitions on higher and higher levels, I had to concentrate more and more on sculpting a complete, balanced, quality physique because the further you go in bodybuilding the higher the quality of your competition. Remember, at the top levels in *any* sport, everybody has a lot of talent. That's what got them there. So relying on talent or raw genetics will not work at the elite levels of competition. For example, when you get to the Mr. Universe or Mr. Olympia level, judges are looking more at what you *don't* have than what you do, focusing on your weak points, so having as complete a physique as possible becomes essential.

In my case, this meant doing a greater proportion of higher-rep isolation training, making sure I sculpted each muscle and achieved the greatest amount of definition and separation possible. But I never wanted to lose the basic thickness, density, and hardness that my early powerlifting training had created. That is why I always scheduled "heavy days" in my training routine. Once a week or so I would pick one body part and go to the maximum with strength moves that worked that area. When training legs, for instance, I would try for a maximum Squat; for chest, a maximum-strength Bench Press; and so on. By training this way I would not tax my body to such an extent that it could not recuperate before my next workout. But by going to the maximum on a regular basis, I gained a very accurate perception of just how much progress I was making in developing my strength, and by forcing myself to go to the limit every so often, I counterbalanced the lighter-weight, higher-rep training that made up the majority of my workouts.

I recommend you try the same thing. Once or twice a week pick one body part and test out your maximum strength. Have your training partner standing by to spot you so that you have no anxieties about handling a heavy weight. Stretch and warm up first to prepare your body for the effort. Keep track of your poundages in your training diary. You will feel a great deal of satisfaction watching the numbers climb as you grow stronger. Your ability to handle heavy weight will also contribute tremen-

dously to increasing your confidence and mental commitment to your training.

## **OVERTRAINING AND RECUPERATION**

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The harder you work your body, the more time it takes to recover and recuperate from that training. Rest and recuperation are very important because, although you stimulate growth by training, it is during the subsequent period of recuperation that actual growth and adaptation take place. That's why bodybuilders frequently overcome sticking points by resting more rather than training harder or more often.

Overtraining occurs when you work a muscle too often to allow it to fully recuperate. You hear bodybuilders talk about tearing the muscle down and then letting it rebuild itself, but this is not really physiologically accurate. There can be small amounts of tissue damage during heavy exercise, and it is this damage that is associated with residual muscular soreness. But the soreness is a side effect and not the primary reason the muscles need time to recuperate after heavy exercise.

A number of complex biochemical processes accompany strenuous muscular contraction. The process of fueling muscular contraction results in the buildup of toxic waste products such as lactic acid. And during exercise the energy stored in the muscle in the form of glycogen is used up.

The body requires time to restore the chemical balance of the muscle cells, clear out the residual waste products, and restock the depleted stores of glycogen. But another factor is even more important: Time is needed for the cells themselves to adapt to the stimulus of the exercise and to grow. After all, bodybuilding is all about making muscles grow. So if you overtrain a muscle, forcing it to work too hard too quickly after the preceding exercise session, you will not give it a chance to grow and your progress will slow down.

Different muscles recover from exercise at different rates. As I mentioned, the biceps recover the fastest. The lower back muscles recover the slowest, taking about a hundred hours to completely recuperate from a heavy workout. However, in most cases, giving a body part 48 hours' rest is sufficient, which means skipping a day after training a muscle before training it again.

Basic training involves only medium levels of intensity, so the time necessary for recuperation is shorter. Once you move on to more advanced training, higher levels of intensity will be needed in order to overcome the greater resistance of the body to change and growth. There is one other important factor, however: Trained muscles recover from fatigue faster than untrained muscles. So the better you get at bodybuilding, the faster your recovery rate will be and the more intense your training program can become.

## RESTING BETWEEN SETS

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It is important to pace yourself properly through a workout. If you try to train too fast, you risk cardiovascular failure before you have worked the muscles enough. Also, you may have a tendency to get sloppy and start throwing the weights around instead of executing each movement correctly.

However, training too slowly is also bad. If you take 5 minutes between each set, your heart rate slows down, you lose your pump, the muscles get cold, and your level of intensity drops down to nothing.

Try to keep your rest periods between sets down to a minute or less. In the first minute after a weight-training exercise you recover 72 percent of your strength, and by 3 minutes you have recovered all you are going to recover without extended rest. But remember that the point of this training is to stimulate and fatigue the maximum amount of muscle fiber possible, and this happens only when the body is forced to recruit additional muscle fiber to replace what is already fatigued. So you don't want to allow your muscles to recover too much between sets—just enough to be able to continue your workout and to keep forcing the body to recruit more and more muscle tissue.

There is one other factor to consider: Physiologists have long noted the link between maximal muscle strength and muscular endurance. The stronger you are, the more times you can lift a submaximal amount of weight. This means that the more you push yourself to develop muscular (as opposed to cardiovascular) endurance, the stronger you become. So maintaining a regular pace in your training actually leads to an increase in overall strength.

## BREATHING

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I am surprised how often I am asked how you should breathe during an exercise. This has always seemed automatic to me, and I am often tempted to say, "Just relax and let it happen. Don't think about it."

But now I know that for some people this doesn't work very well, and for them I have a simple rule: Breathe out with effort. For example, if you are doing a Squat, take in a breath as you stand with the weight on your shoulders and squat down, and expel your breath as you push yourself back up. As you breathe out, don't hold your breath.

There is a good reason for this. Very hard contractions of the muscles usually involve a contraction of the diaphragm as well, especially when you are doing any kind of Leg Press or Squat movement. This increases the pressure in your thoracic cavity (the space in which the lungs fit). If you try to hold your breath, you could injure yourself. For example, you could

hurt your epiglottis, blocking the passage of air through your throat. Breathing out as you perform a maximal effort protects you from this and, some people think, it actually makes you a little stronger.

## STRETCHING

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Stretching is one of the most neglected areas of the workout. If you watch a lion as he wakes from a nap and gets to his feet, you will see he immediately stretches his whole body to its full length, readying every muscle, tendon, and ligament for instant and brutal action. The lion knows instinctively that stretching primes his strength.

Muscle, tendon, ligament, and joint structures are flexible. They can stiffen, limiting your range of motion, or they can stretch, giving you a longer range of motion and the ability to contract additional muscle fiber. That's why stretching before you train allows you to train harder.

Stretching also makes your training safer. As you extend your muscles fully under the pull of a weight, they can easily be pulled too far if your range of motion is limited. Overextension of a tendon or ligament can result in a strain or sprain and seriously interfere with your workout schedule. But if you stretch the areas involved first, the body will adjust as heavy resistance pulls on the structures involved.

Flexibility will also increase if the various exercises are done properly. A muscle can contract, but it cannot stretch itself. It has to be stretched by the pull of an opposing muscle. When you train through a full range of motion, the muscle that is contracting automatically stretches its opposite. For example, when you do Curls, your biceps contract and your triceps stretch. When you do Triceps Extensions, the opposite happens. By using techniques that engage the full range of motion, you will increase your flexibility.

But that isn't enough. Muscles contracted against heavy resistance tend to shorten with the effort. Therefore, I recommend stretching before you train—to allow you to train harder and more safely—and stretching after you train as well—to stretch out those tight and tired muscles.

You can prepare for your workout by doing any number of the standard stretching exercises which follow. You might also consider taking a yoga or stretching class. Many bodybuilders feel that this extra effort devoted to flexibility is not necessary, but others, like Tom Platz, rely heavily on stretching to enhance their workouts. When Tom is limbering up for a workout, with those gargantuan legs of his twisted like pretzels beneath him, it is almost unbelievable to watch. He spends the first part of his calf workout stretching his calves as far as possible, often using very heavy weights, because he realizes that the more they stretch, the more fiber becomes involved in the contraction.

But as important as stretching before and after the workout may be, I believe it is also essential to do certain kinds of stretching during your training. Just as I recommend flexing and posing the muscles between sets, I also believe in stretching certain muscles between one set and the next. The lats, for example, benefit from careful stretching interspersed with various Chin-Up and Pulldown movements. You will find I have included stretches in various exercises where I feel stretching to be particularly beneficial.

It is, after all, details like these that set champions apart, and the difference will be immediately visible when you pose onstage in competition. The difference will be not only in how you look—the utmost in separation and definition—but will also show in the grace and sureness of your presentation. Bodybuilders like Ed Corney, known as perhaps the best poser in modern bodybuilding, could never move with such beauty if their muscles, tendons, and ligaments were tight and constricted.

I don't recommend spending too much time and energy stretching unless you have a severe flexibility problem or are trying to rehabilitate an injured area. For most purposes, I think spending about 10 minutes doing 10 basic stretching exercises for the bigger muscles before and after you work out is enough.

Stretching requires slow, gentle movements rather than quick, bouncing ones. When you put sudden stress on a muscle or tendon, it contracts to protect itself, thereby defeating your purpose. On the other hand, if you stretch it out carefully and hold that position for 30 seconds or more, the tendon will gradually relax and you will gain flexibility.

I recommend spending about one minute on each of the following exercises. However, this should be considered the bare minimum. The more time you spend stretching, the more flexible you will become.

## Stretching Exercises

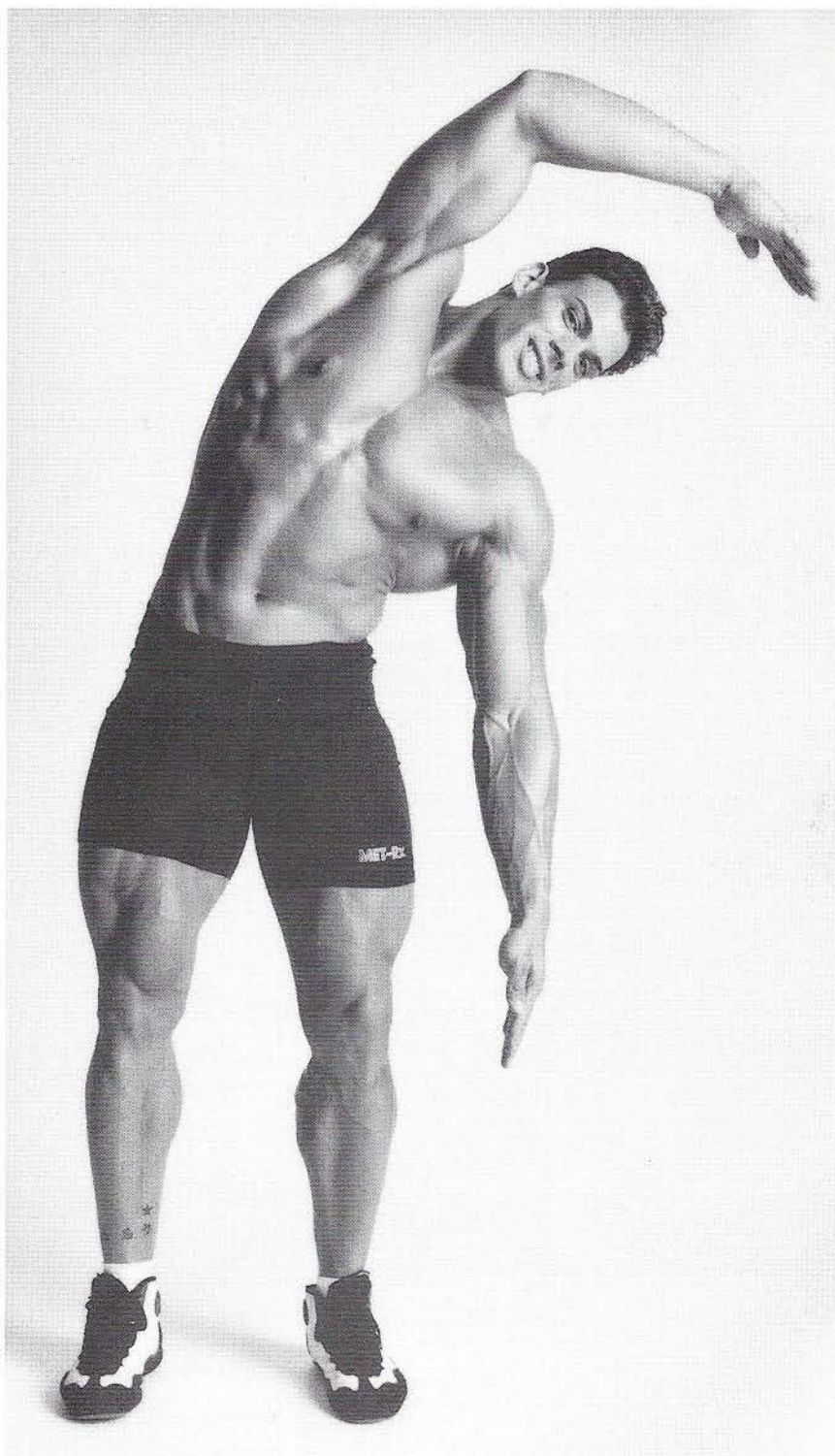
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### SIDE BENDS

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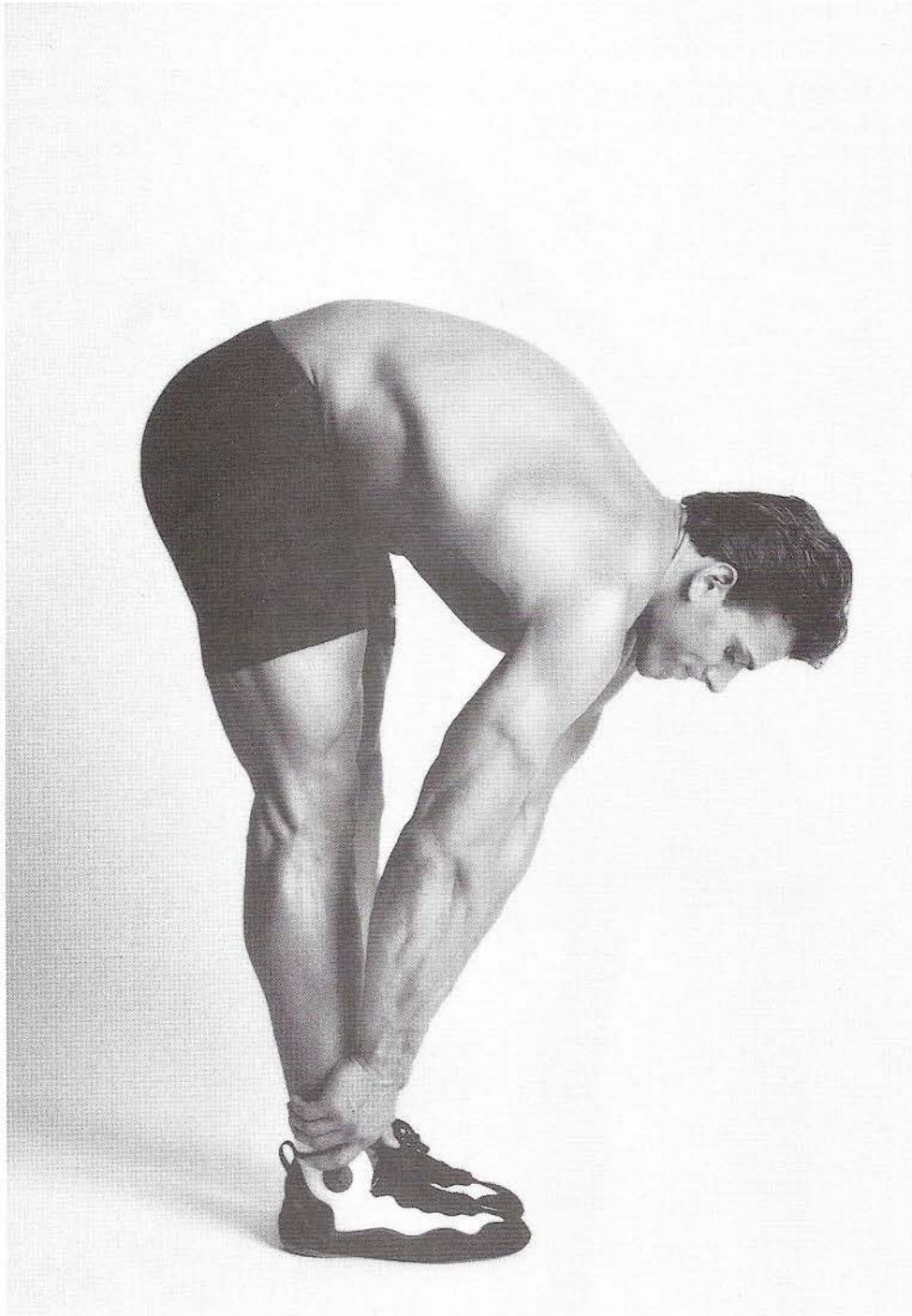
**PURPOSE OF EXERCISE:** To stretch the obliques and other muscles at the side of the torso.

**EXECUTION:** Stand upright, feet slightly more than shoulder width apart, arms at sides. Raise your right arm over your head and bend slowly to the left, letting your left hand slide down your thigh. Bend as far as you can and hold this position for about 30 seconds. Return to starting position, then repeat to opposite side.



*Frank Sepe*





## **FORWARD BENDS**

**PURPOSE OF EXERCISE:** To stretch the hamstrings and lower back.

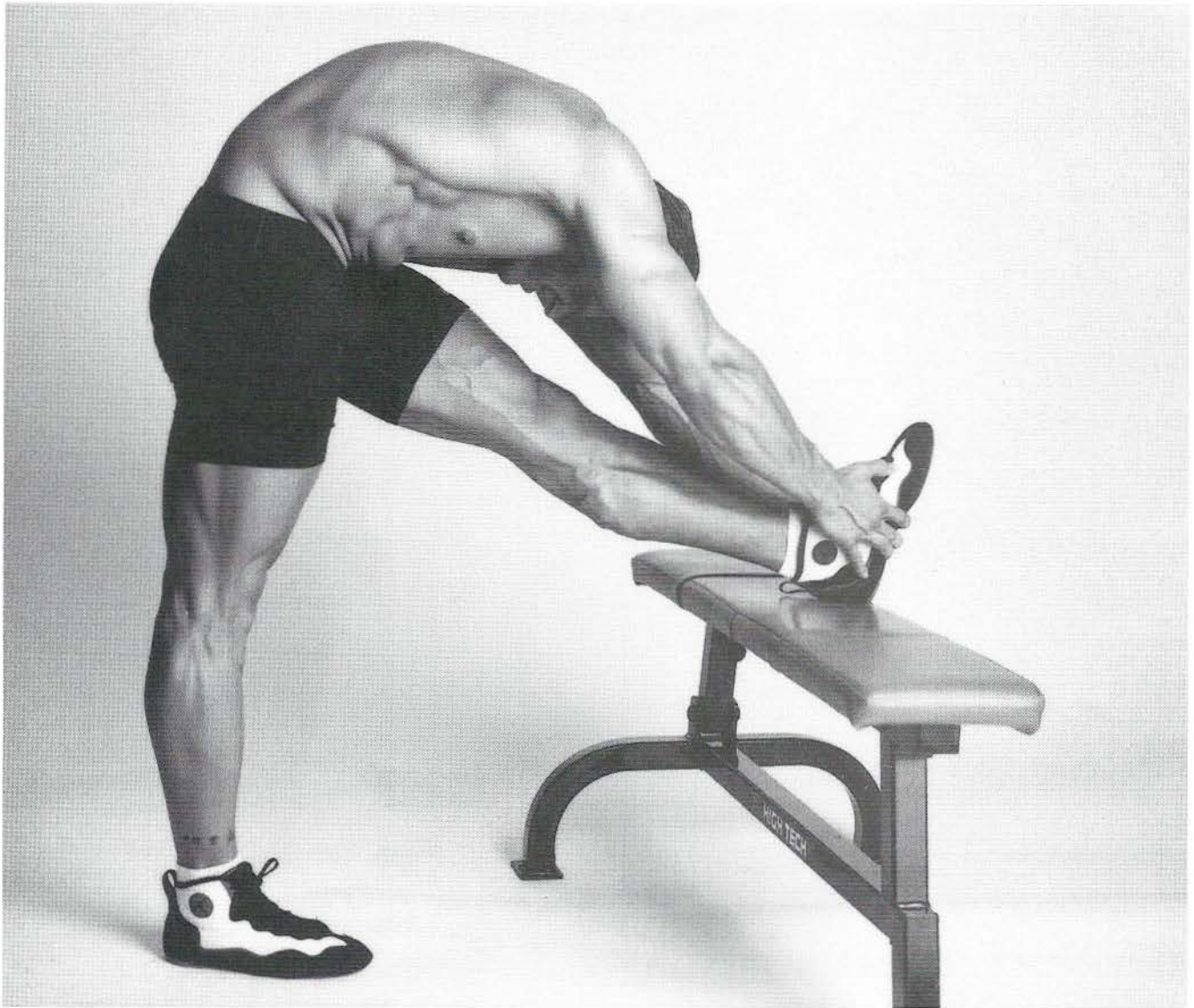
**EXECUTION:** Stand upright, feet together. Bend forward and take hold of the back of your legs as far down as possible—knees, calves, or ankles. Pull gently with your arms, bringing your head as close as possible to your legs in order to stretch the lower back and hamstrings to their limit. Hold this position for 30 to 60 seconds, then relax.

## HAMSTRING STRETCHES

**PURPOSE OF EXERCISE:** To stretch the hamstrings and lower back.

**EXECUTION:** Place one foot or ankle on a support. Keeping your other leg straight, bend forward along the raised leg and take hold of it as far down as possible—knee, calf, ankle, or foot. Pull

gently to get the maximum stretch in the hamstrings. Hold for about 30 seconds, relax, then repeat the movement using the other leg.



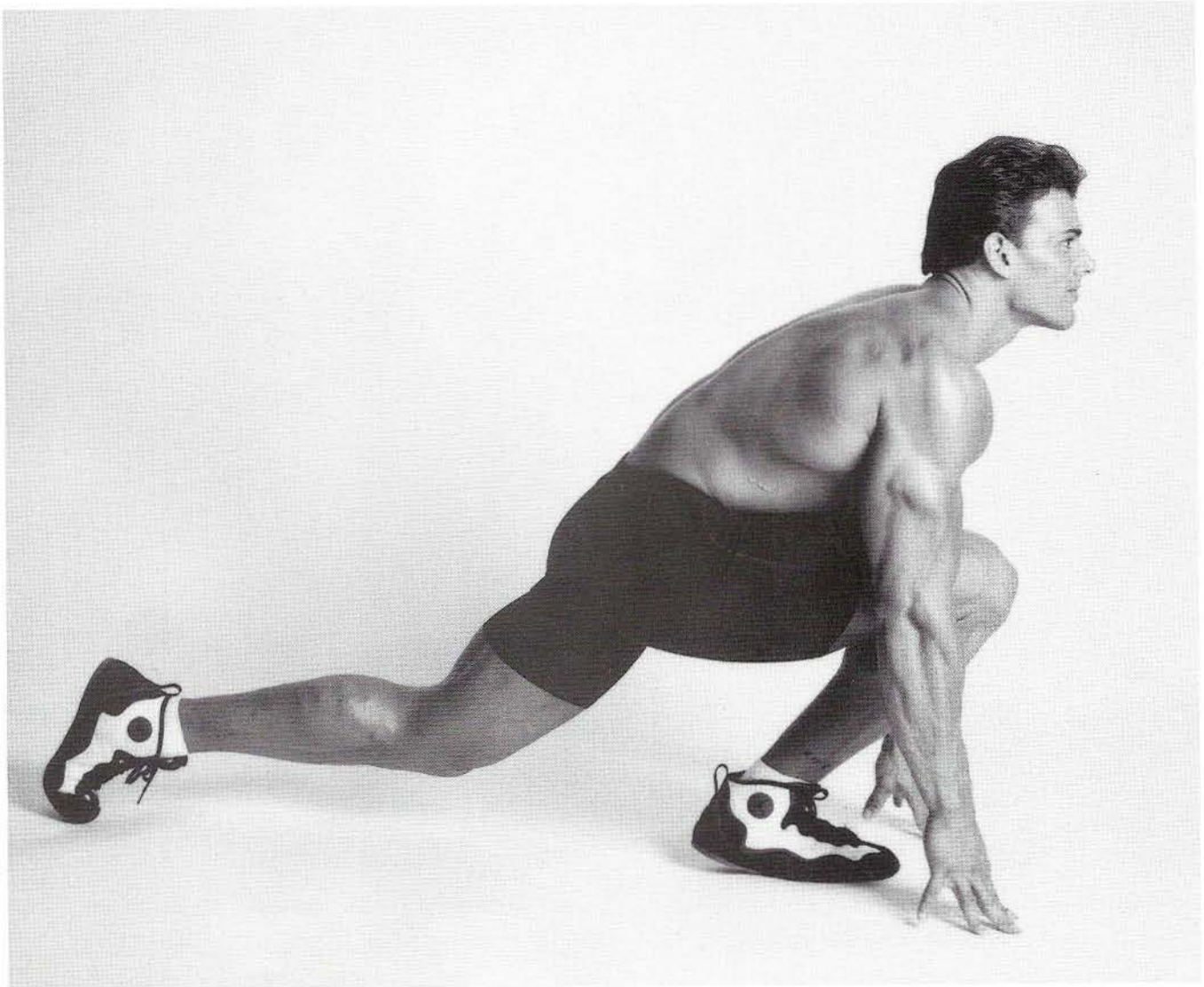
## LUNGES

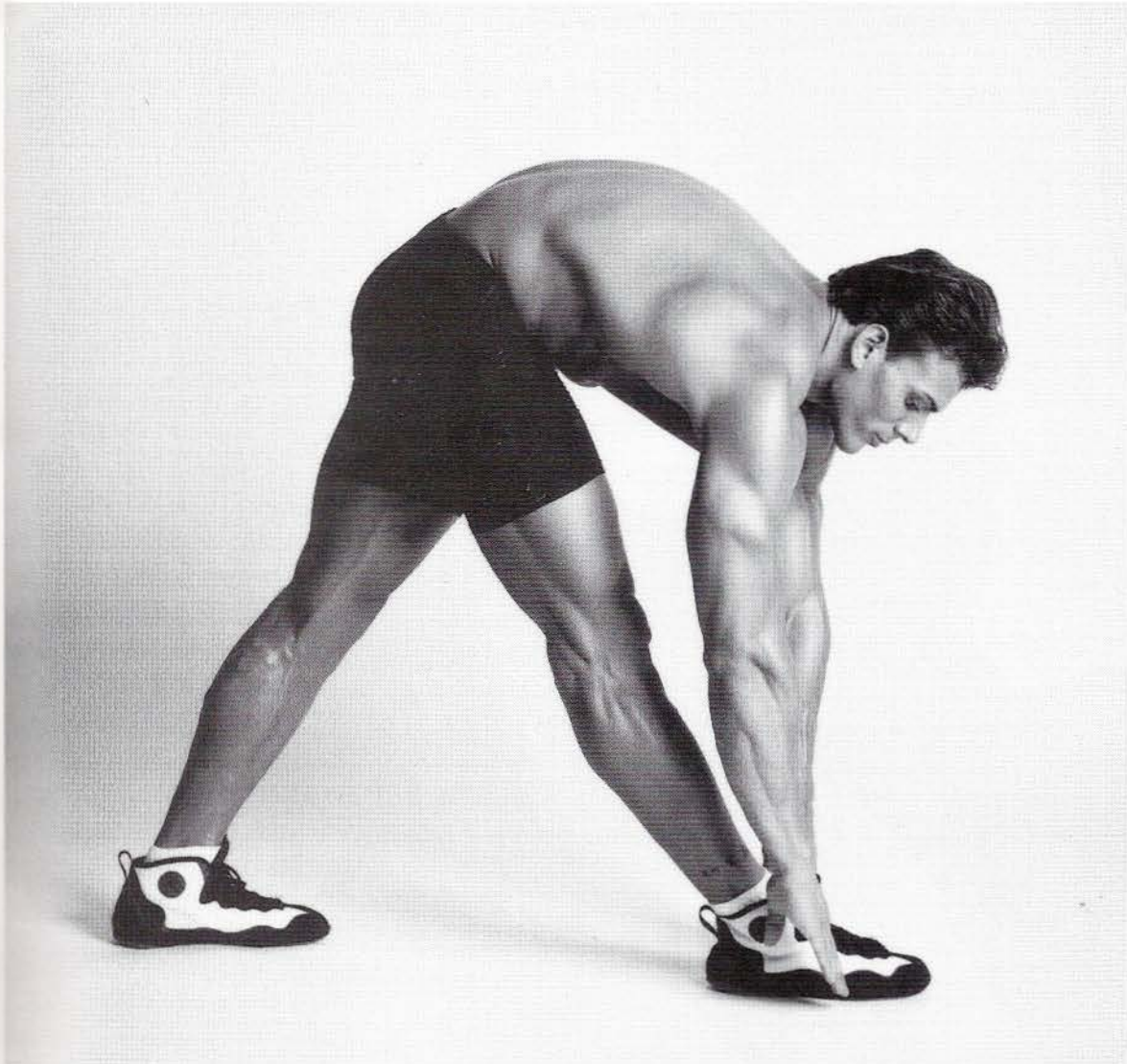
**PURPOSE OF EXERCISE:** To stretch the inner thighs, hamstrings, and glutes.

**EXECUTION:** (1) Stand upright, move one leg forward, then bend that knee, coming down so that

the knee of your trailing leg touches the floor. Place your hands on either side of your front foot and lean forward to get the maximum possible stretch in the inner thighs. (2) From this position, straighten your forward leg and lock your knee, stretching the hamstrings at the back of the leg.

Bend your forward knee and lower yourself to the floor again. Repeat this movement, first straightening the leg, then coming down to the floor again. Stand upright once more, step forward with opposite foot, and repeat the stretching procedure.



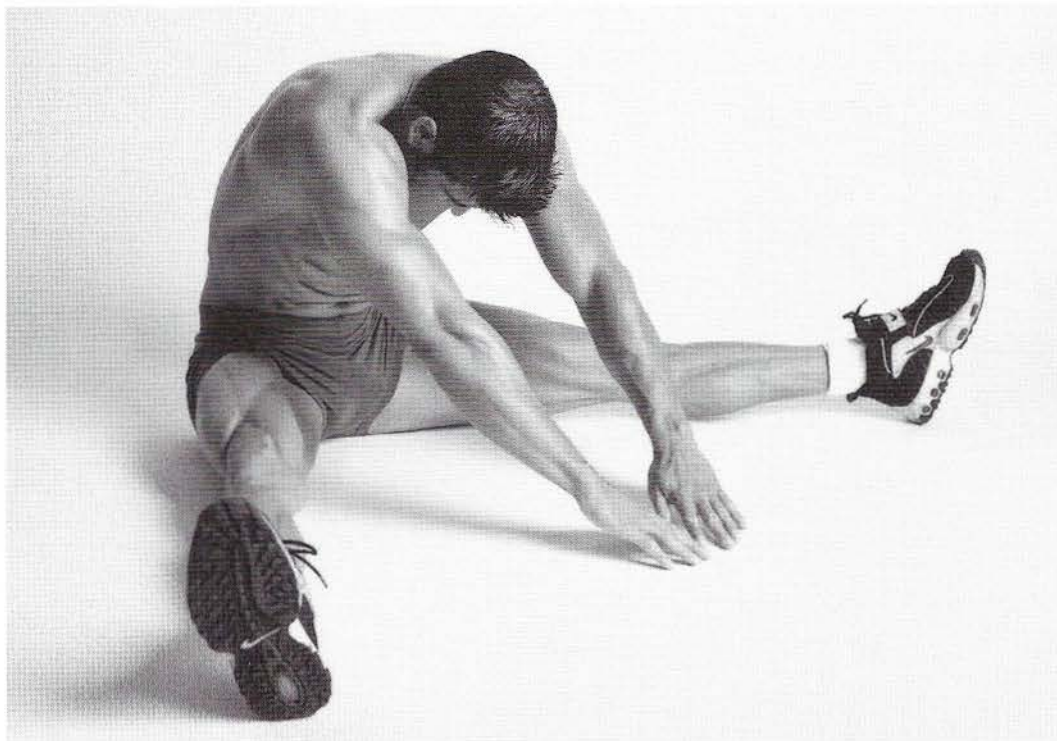


## FEET APART SEATED FORWARD BENDS

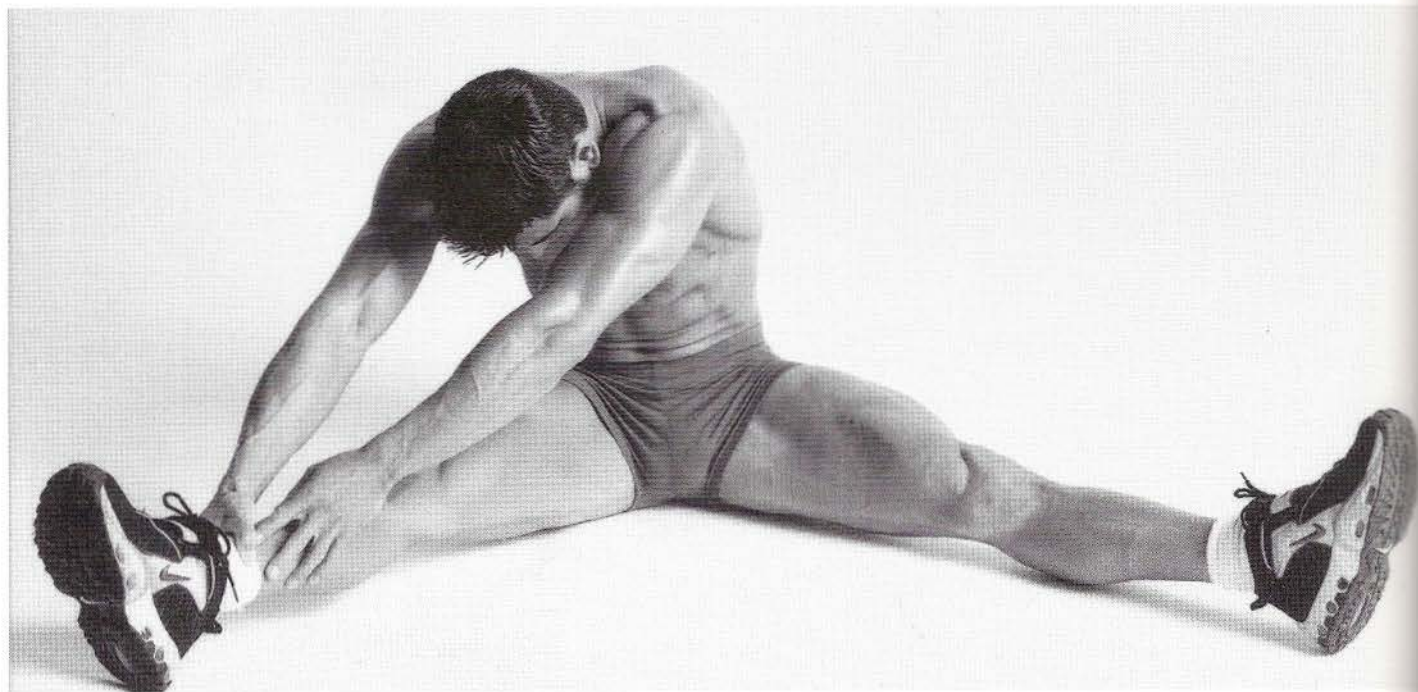
**PURPOSE OF EXERCISE:** To stretch the hamstrings and lower back.

**EXECUTION:** (1) Sit on the floor, legs straight and wide apart. Bend forward and touch the floor with your hands as far in front of you as possible. (2) Hold this position for a few seconds, then “walk” your hands over to one leg and grasp it as far down as possible—knee,

calf, ankle, or foot. Pull gently on your leg to get the maximum stretch in the hamstrings and lower back. Hold this position for about 30 seconds, then walk your hands over to the other leg and repeat.



*T. J. Hoban*

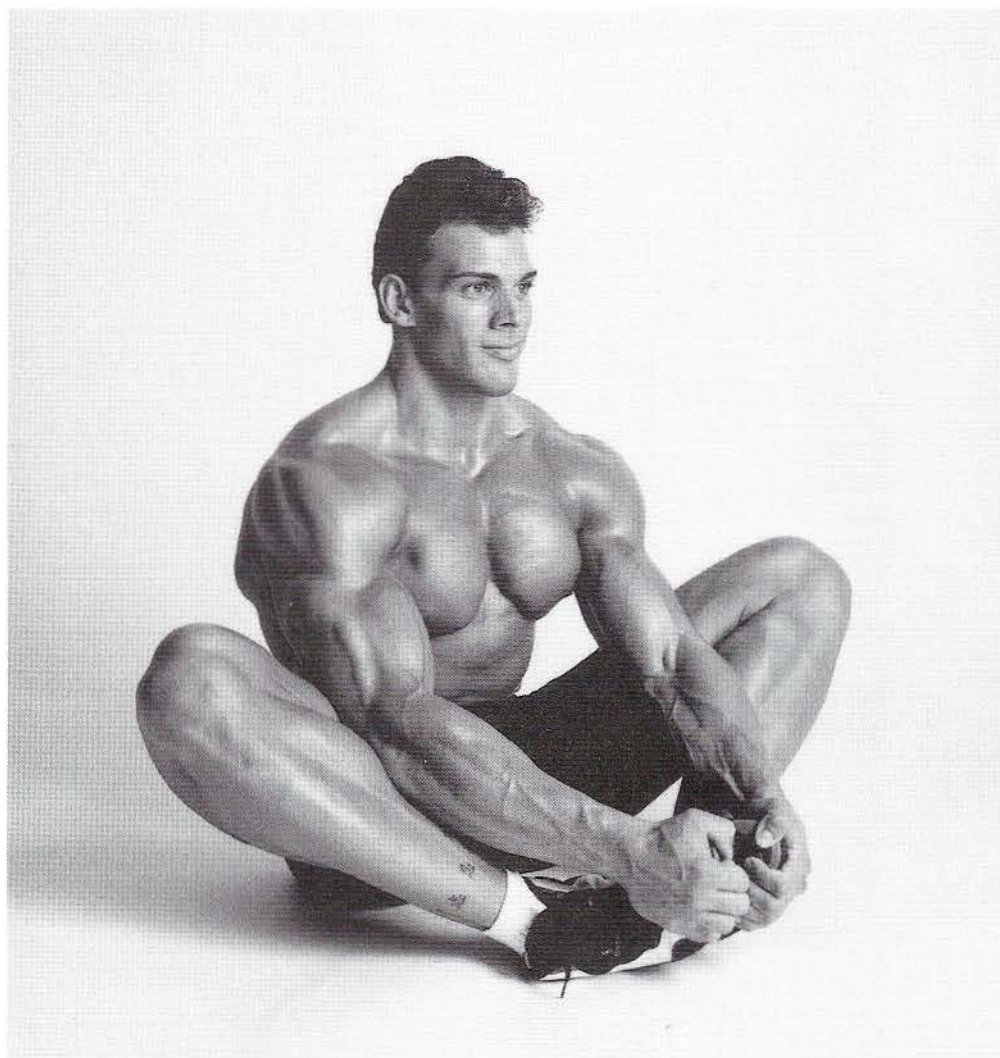


## INNER THIGH STRETCHES

**PURPOSE OF EXERCISE:** To stretch the inner thighs.

**EXECUTION:** Sit on the floor and draw your feet up toward you so that the soles are touching. Take hold of your feet and pull them as close to the groin as possible. Relax your legs and drop your knees toward the floor, stretching the in-

ner thighs. Press down on your knees with your elbows to get a more complete stretch. Hold for 30 to 60 seconds, then relax.



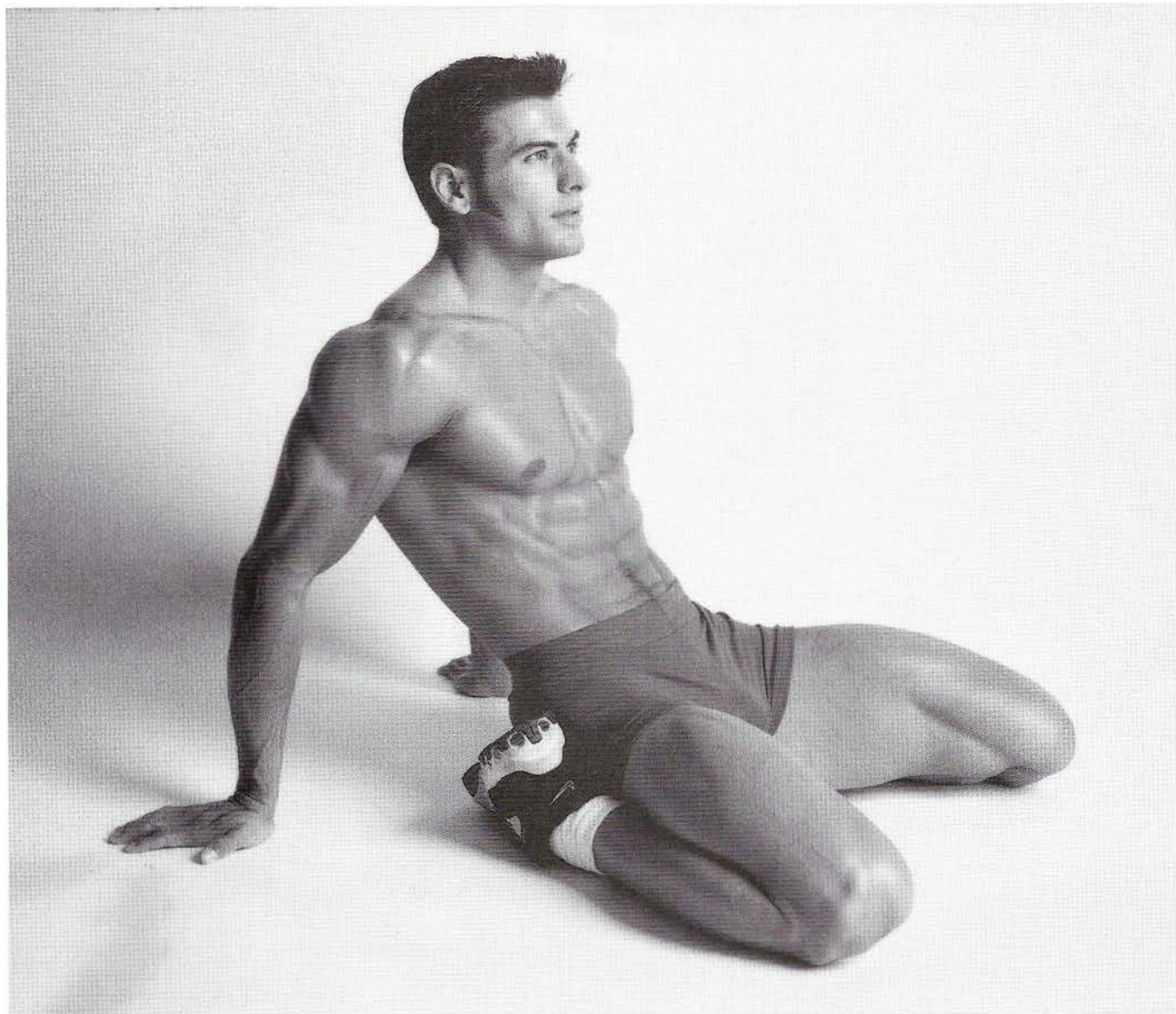
## QUADRICEPS STRETCHES

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**PURPOSE OF EXERCISE:** To stretch the front of the thighs.

**EXECUTION:** Kneel on the floor. Separate your feet enough so that you can sit between them. Put your hands on the floor behind you and lean back as far as possible, feeling the stretch in the

quadriceps. (Those who are less flexible will only be able to lean back a little; those who are very flexible will be able to lie back on the floor.) Hold this position for 30 to 60 seconds, then relax.

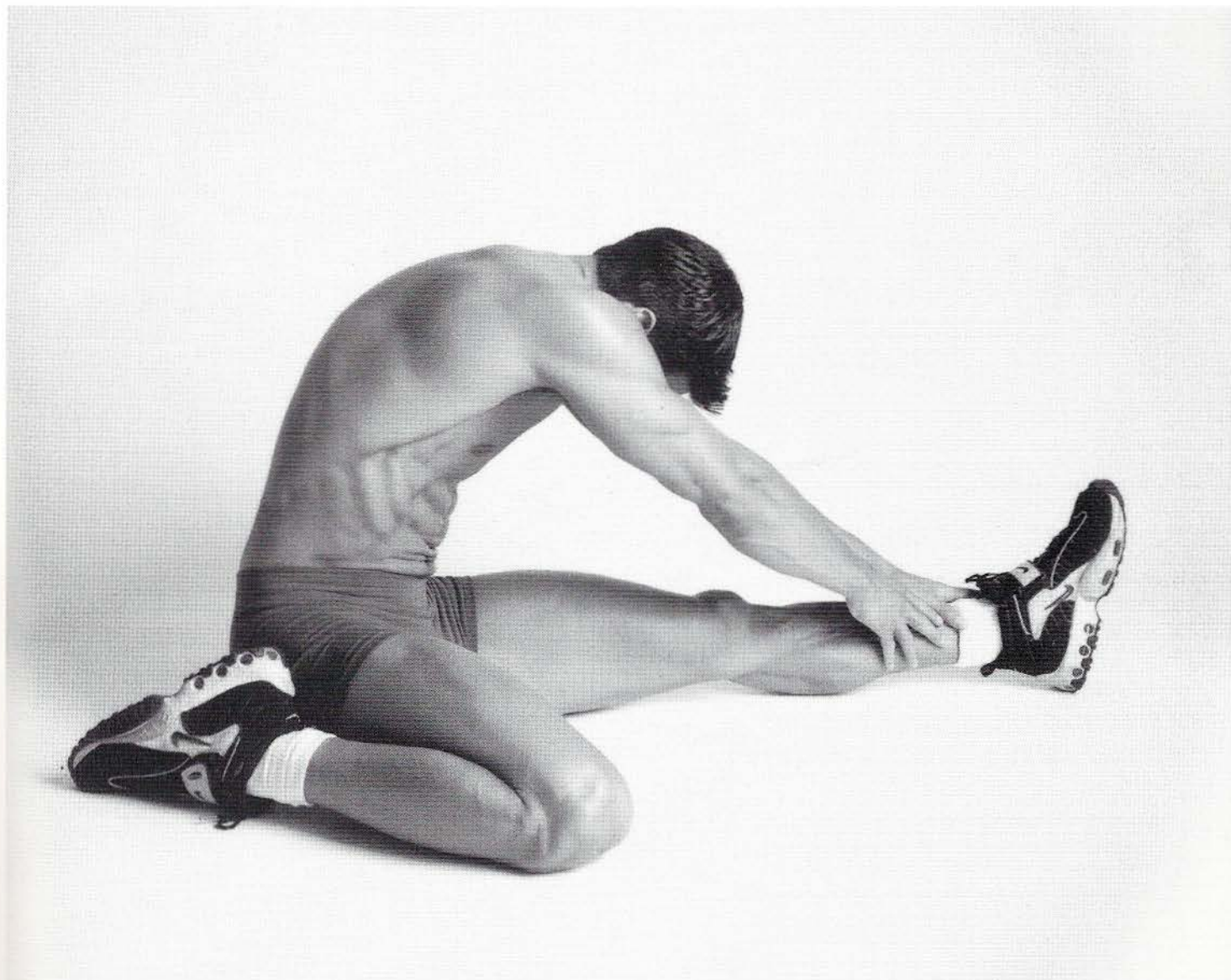


## HURDLER'S STRETCHES

**PURPOSE OF EXERCISE:** To stretch the hamstrings and inner thighs.

**EXECUTION:** Sit on the floor, extend one leg in front of you, and curl the other back beside you. Bend forward along the extended leg and take hold of it as far down as possible—knee, calf, ankle, or

foot. Pull slightly to get the maximum stretch and hold for 30 seconds. Reverse the position of your legs and repeat the movement. Do not overstress your bent knee.



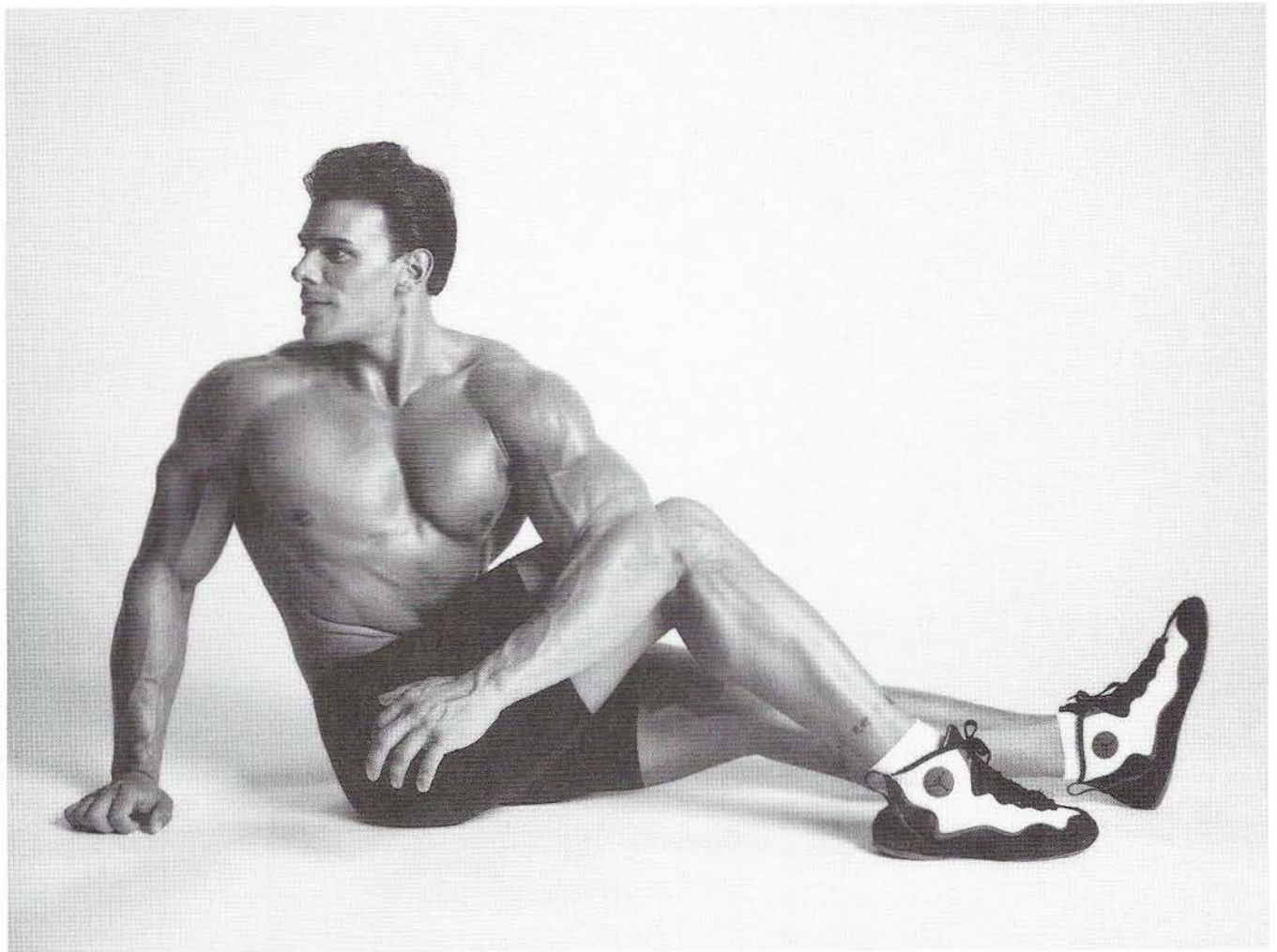


## SPINAL TWISTS

**PURPOSE OF EXERCISE:** To increase the rotational range of motion of the torso and stretch the outer thigh.

**EXECUTION:** Sit on the floor, legs extended in front of you. Bring your right knee up and twist around so that your left elbow rests on the outside of the up-raised knee. Place your right hand on the floor behind you and con-

tinue to twist to the right as far as possible. Twist to the extreme of your range of motion and hold for 30 seconds. Lower your right knee, bring up your left, and repeat the motion to the other side.

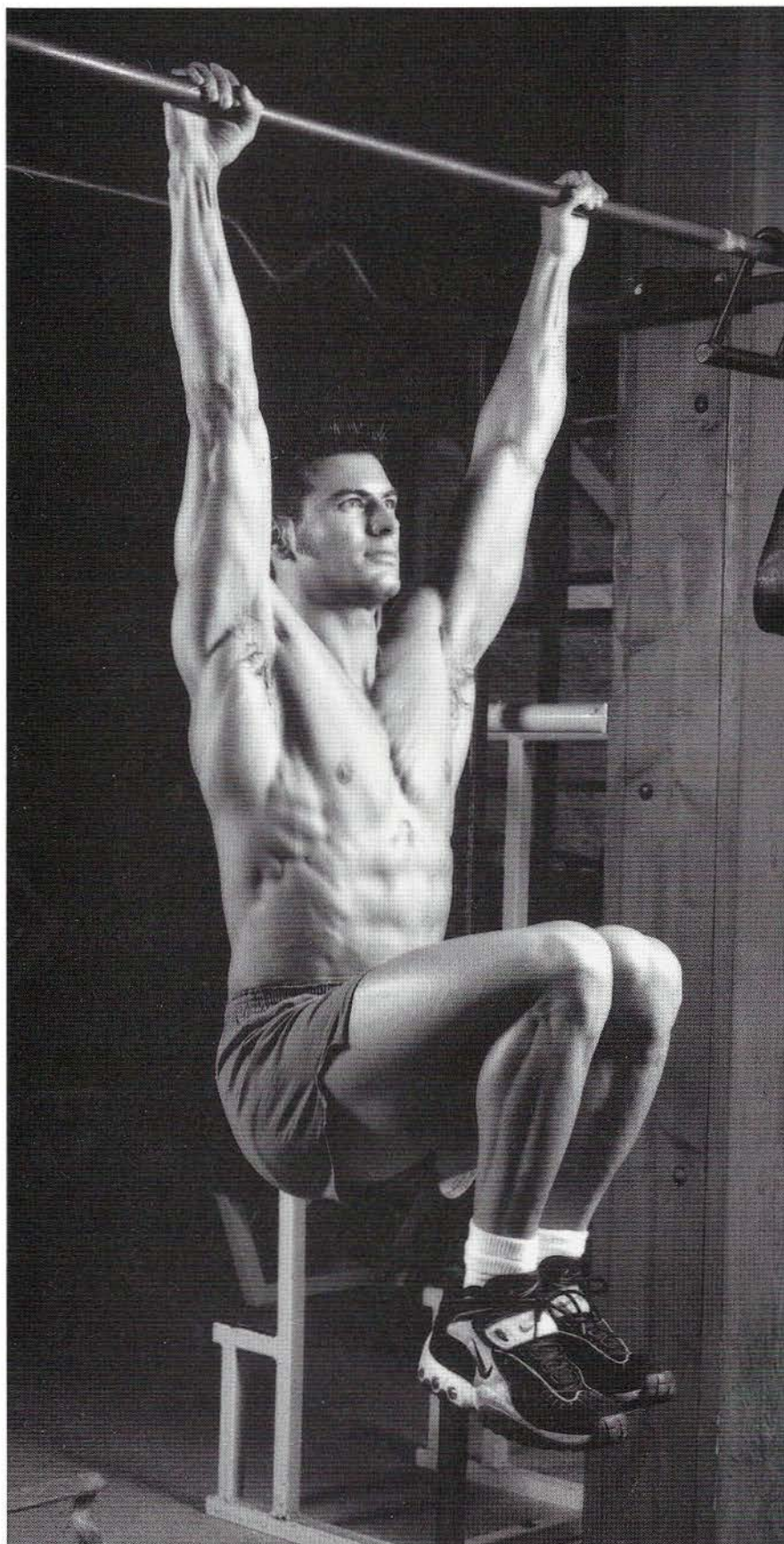


## HANGING STRETCHES

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**PURPOSE OF EXERCISE:** To stretch the spine and upper body.

**EXECUTION:** Take hold of a chinning bar and let your body hang beneath it. Hold for at least 30 seconds so your spine and upper body have a chance to let go and stretch. If you have gravity boots or some other appropriate piece of equipment available, try hanging upside down to increase the amount of spinal stretch.



# Learning Your Body Type

ANYONE WHO HAS spent time at a beach, swimming pool, or gym locker room can attest to the fact that human beings are born with a variety of different physical characteristics. Some are taller or shorter, lighter or darker, wider or narrower in the shoulders, longer and shorter in the leg; they have higher or lower natural levels of endurance, differing types of muscle cells, more or fewer muscle and fat cells.

One popular method of categorizing all these various body types recognizes three fundamentally different physical types, called somatotypes:

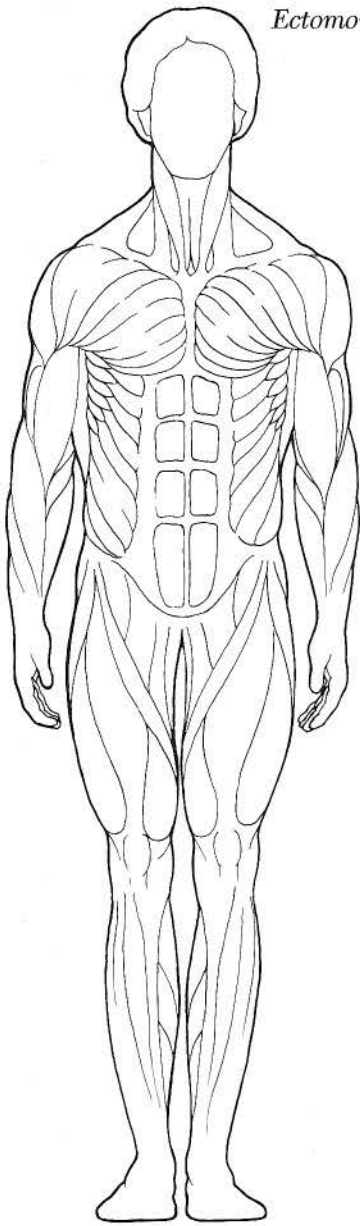
The *ectomorph*: characterized by a short upper body, long arms and legs, long and narrow feet and hands, and very little fat storage; narrowness in the chest and shoulders, with generally long, thin muscles.

The *mesomorph*: large chest, long torso, solid muscle structure, and great strength.

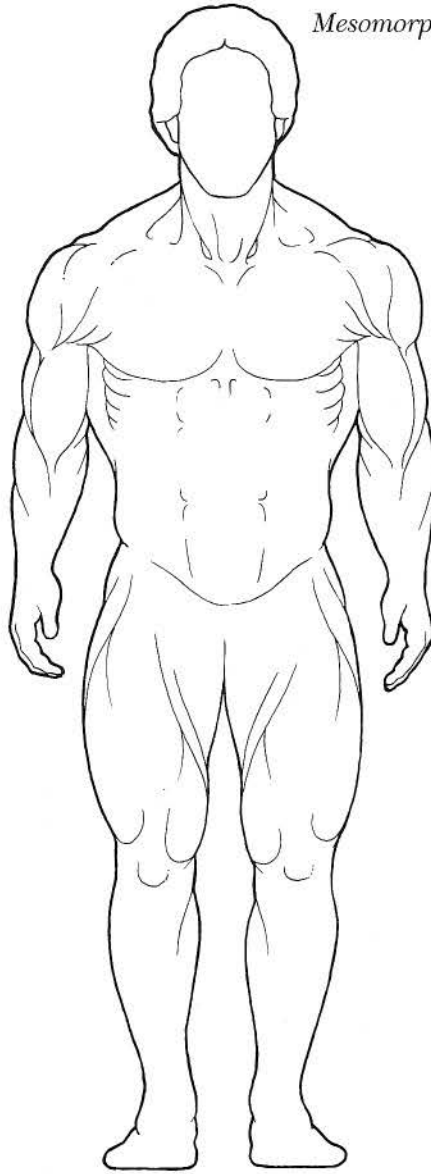
The *endomorph*: soft musculature, round face, short neck, wide hips, and heavy fat storage.

Of course, no one is entirely one type but rather a combination of all three types. This system of classification recognizes a total of eighty-eight subcategories, which are arrived at by examining the level of dominance of each basic category on a scale of 1 to 7. For example, someone whose body characteristics were scored as ectomorphic (2), mesomorphic (6), and endomorphic (5) would be an endo-mesomorph, basically a well-muscled jock type but inclined to carry a lot of fat.

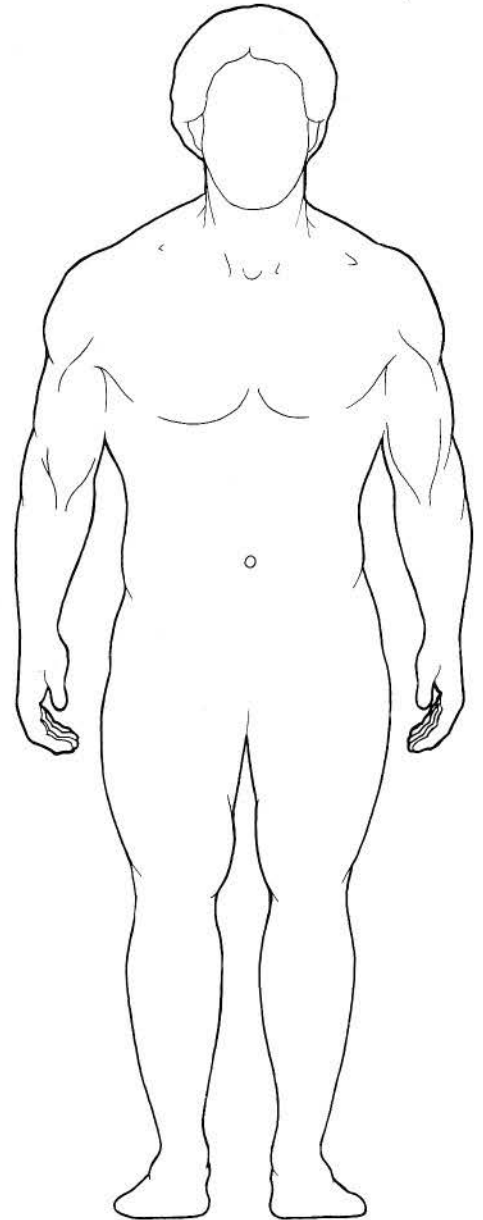
*Ectomorph*



*Mesomorph*



*Endomorph*

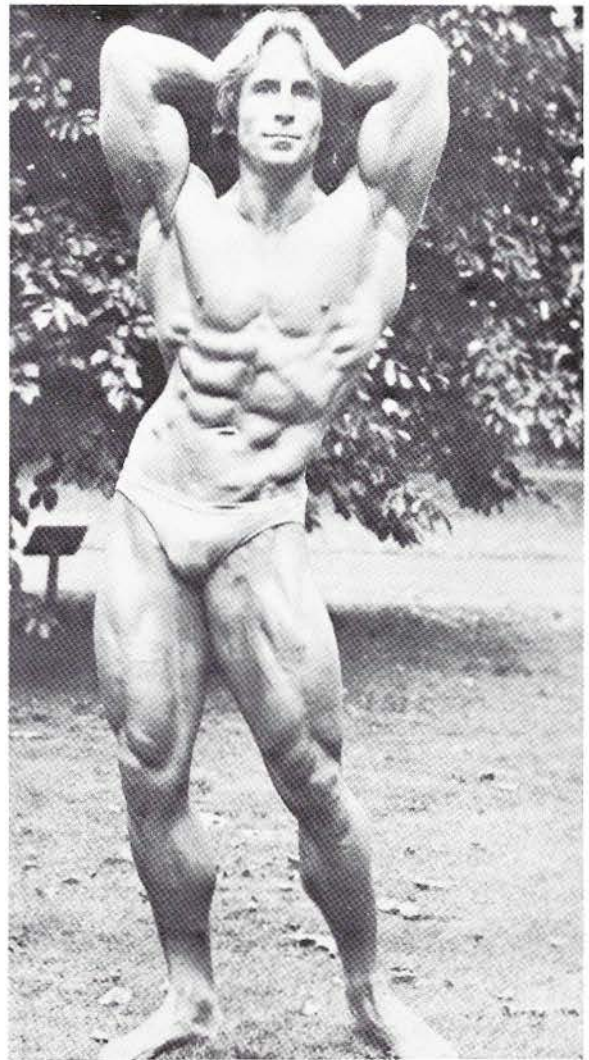


Although the fundamentals of bodybuilding training apply to all the somatotypes, individuals with different body types often respond very differently to training, and what works for one type may not necessarily work for another. Any body type can be developed by proper training and nutrition, but individuals with different body types will find it necessary to initially approach their training with different objectives, even though they may share the same long-term goals.

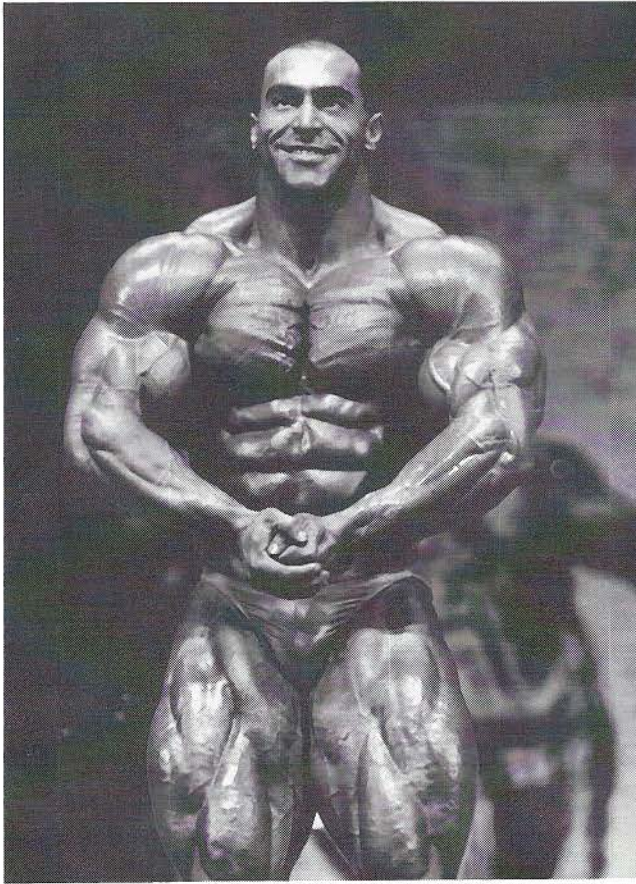
## UNDERSTANDING YOUR BODY TYPE

There have been champions with every kind of body type. Steve Davis, a well-known competitor in the 1970s, once weighed in at around 270 pounds, which meant he tended heavily toward the endomorphic. It was necessary for Steve to lose a lot of fat while maintaining muscle mass in order to win bodybuilding titles. Mr. Olympia Dorian Yates is one of

*Here is a good example of how bodybuilding can change your body. Steve Davis before, looking very endomorphic . . .*



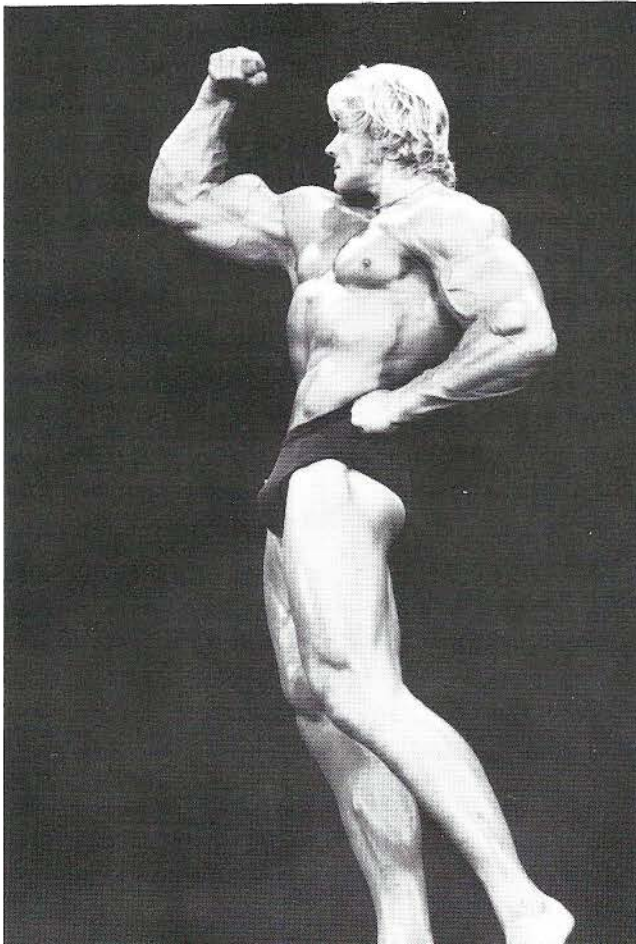
*. . . and after, looking very mesomorphic*



*Nasser El Sonbaty, an endo-mesomorph*

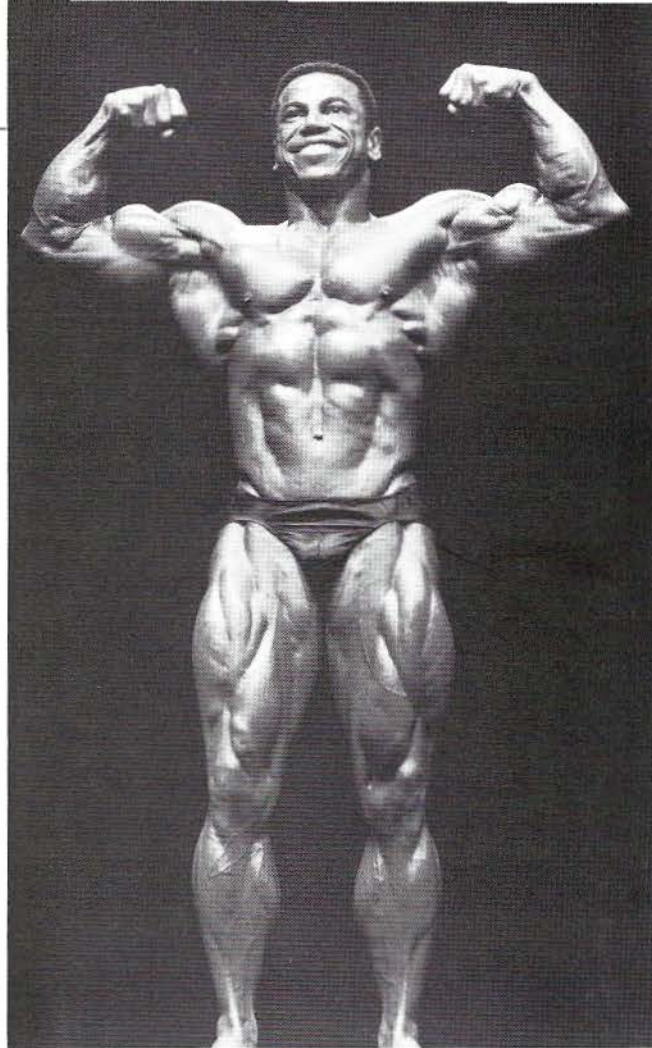


*Frank Zane, an ecto-mesomorph*

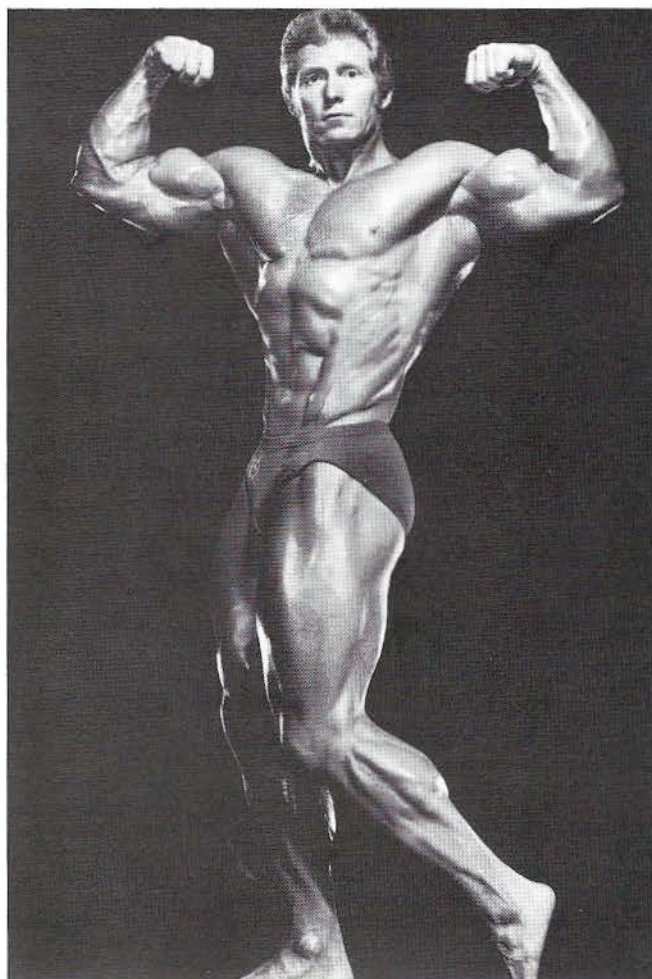


*Dave Draper—classic endo-mesomorph*

*Chris Dickerson—endo-mesomorph*

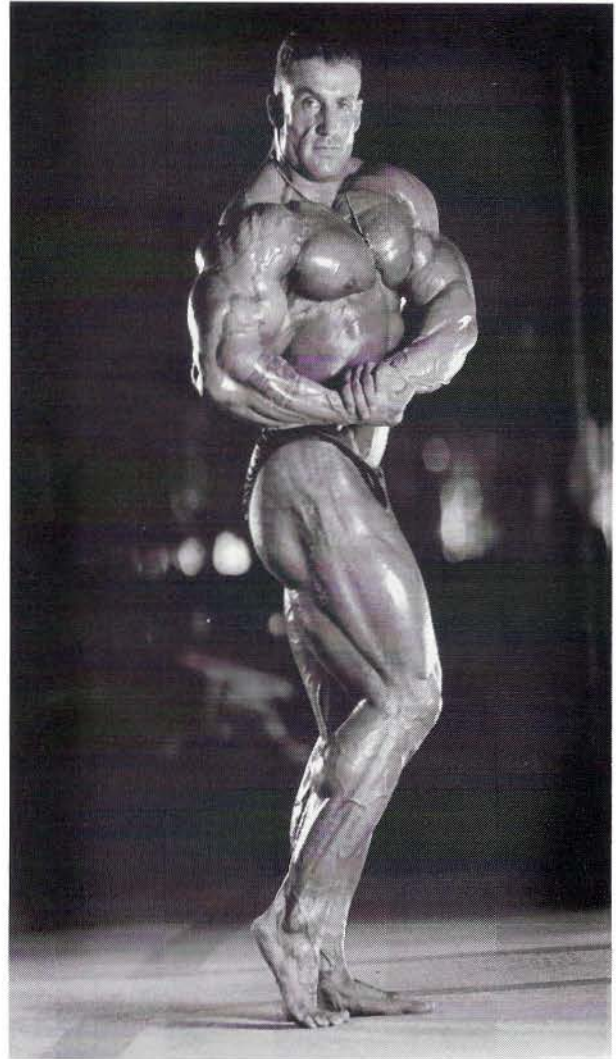


*Flex Wheeler—ecto-mesomorph*

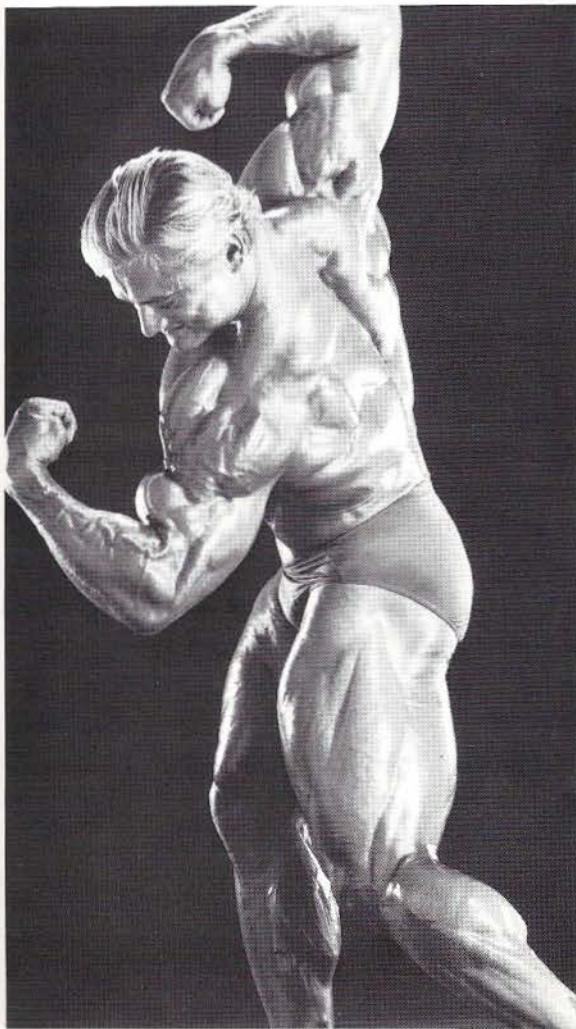


*Ken Waller—endo-mesomorph*

*Lee Priest—endo-mesomorph*



*Dorian Yates—mesomorph*



*Tom Platz—another classic mesomorph*



the biggest champions of all time; in contest shape he weighs in at close to 270 pounds. However, during the off-season Dorian gets up to well over 300 pounds, which indicates his body type tends toward the endo-mesomorphic. The legendary Dave Draper was another endo-mesomorph (although, having less muscle, he'd be classified as more endomorphic than Dorian), tending to get heavy and smooth easily, but able to stay lean and hard for competition by hard training and strict diet.

Frank Zane, on the other hand, is much more ectomorphic. Muscle-mass gains have always taken Frank a long time to achieve, but this did not keep him from becoming Mr. Olympia three times. Bodybuilders like Frank and Shawn Ray, who at 200 pounds have managed to defeat most of the more massive competitors, are not naturally powerful, muscular individuals. Their muscular development and bodybuilding excellence have come about mostly by a lot of hard, dedicated work. "Muscle did not come to me naturally," says Larry Scott, the first Mr. Olympia and another bodybuilder tending toward the ectomorphic. "I was one of those 98-pound weaklings who was motivated to use bodybuilding training to get bigger."

In my own case, I am mesomorphic enough to be able to build muscle mass relatively easily, and at one point bulked up to a solid 240 pounds, but my natural physique has always tended to be lean, which makes me more an ecto-mesomorph than pure mesomorph or an endo-mesomorph.

Flex Wheeler, who is so renowned for his shape and proportion, is yet another ecto-mesomorph. Look at Flex and you'll see how relatively small his bones and joints are, despite his muscle size, especially compared to a powerfully built competitor like Dorian. In bodybuilding terms, Flex, Frank Zane, and I would be characterized as having Apollonian physiques (muscular, but tending toward the ectomorphic, more aesthetic than brute powerful), while thicker bodybuilders like Dorian, Nasser El Sonbaty, Tom Platz, Casey Viator, and Mike Mentzer would be classified as Herculean (very mesomorphic or endo-mesomorphic). Both Apollonian and Herculean physiques can have outstanding aesthetics, but the look is very different. Nowadays, the Apollonian physique is generally considered more artistic or beautiful because of its lines and proportion, but if you look back at classic art you frequently find the Herculean physique to be the more admired.

Of course, the top pro bodybuilders nowadays are so massive and well developed that it's sometimes hard to separate them into different body-type categories. But go to almost any amateur contest and the difference between the various body types will be much more apparent.

Really, though, no top bodybuilder can be *too much* an ectomorph or an endomorph. His body would lack proper proportion, symmetry, muscle mass, and definition. Remember, bodybuilding is not just about building muscle; it involves the maximum *aesthetic* development of muscle. Lifeguard-type physiques (lean and defined) can be very pleasing to look at, but lack the mass necessary to compete at the top levels in bodybuild-

ing. Thick, massive, super-mesomorphic bodies are great for weightlifters, shot-putters, and football linemen, but the aesthetics of this kind of physique don't make it on the bodybuilding stage.

Understanding your own body type can save you a lot of time and frustration. An ectomorph who trains like an endomorph is likely to overtrain and not grow. The endomorph who thinks he is more mesomorphic will grow, but will always have trouble keeping his body fat down. Certain principles of training are the same for everybody. But how you organize your training and how you integrate it with diet and nutrition can be profoundly different depending on what kind of body type nature has given you.

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## METABOLISM AND MUSCLE-BUILDING

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One of the factors that helps create different body types is metabolism. Some people naturally burn more calories than others. Some bodies seem naturally designed to turn food energy into muscle or fat while others turn this energy into fuel for exercise. However, as your body changes, so does your metabolism. Muscle burns calories, so a naturally heavy endomorph will find it easier to get lean as he builds more and more muscle mass. Also, the body is very adaptable, and the literally thousands of various metabolic processes that are going on all the time tend to alter in response to the demands you put on them—turning protein intake into muscle, for example, or increasing your ability to metabolize body fat for energy.

If you are extremely lean or extremely heavy, you should take the precaution of having your thyroid function checked by a physician. The thyroid gland plays a major role in regulating metabolism. When it is underactive (hypothyroid) it is very difficult to burn off excess body fat, and when it is overactive (hyperthyroid) putting on any additional body weight becomes almost impossible. However, I am strongly *against* using thyroid as a means of increasing your metabolism and “cutting up” (achieving a state of high definition) when your own thyroid levels are within normal limits. This is dangerous in a number of ways, including the risk that you will permanently damage your natural thyroid function.

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## ECTOMORPH TRAINING

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The extreme ectomorph's first objective is gaining weight, preferably in the form of quality muscle mass. He will not have the strength and endurance for marathon training sessions, will find that muscle mass develops very slowly, and will often have to force himself to eat enough to ensure continued growth. Therefore, for the ectomorph I recommend:

1. Include plenty of power moves for a program that builds maximum mass. Your program should tend toward heavy weight and low reps (in the 6- to 8-rep range after proper warm-up).

2. Learn to train intensely and make every set count. That way you can keep your workouts relatively short and still make substantial gains (perhaps 14 to 16 sets per major body part rather than 16 to 20). Make sure to get enough rest between sets and give yourself enough time to recuperate between workouts.

3. Pay careful attention to nutrition; take in more calories than you are accustomed to, and if necessary, use weight-gain and protein drinks to supplement your food intake.

4. Remember, you are trying to turn food energy into mass, so be careful not to burn up too much energy with *excessive* amounts of other activities such as aerobics, running, swimming, and other sports. Some cardio exercise is both desirable and necessary for good health, but anyone who spends hours a day expending large amounts of physical energy outside the gym will have a lot more trouble building muscle while in the gym.

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## MESOMORPH TRAINING

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The mesomorph will find it relatively easy to build muscle mass, but will have to be certain to include a sufficient variety of exercises in his program so that the muscles develop proportionately and well shaped rather than just thick and bulky. Therefore, for the mesomorph I recommend:

1. An emphasis on quality, detail, and isolation training, along with the basic mass and power exercises. You build muscle easily, so you can begin working on shape and separation right from the beginning.

2. Mesomorphs gain so easily that they don't have to worry much about conserving energy or overtraining. A standard workout of 16 to 20 sets per body part is fine, and you can train with as much or little rest between sets as suits you.

3. A balanced diet with plenty of protein which maintains a calorie level that keeps the physique within 10 to 15 pounds of contest weight all year long. No bulking up 30 to 40 pounds and then having to drop all of that useless weight for competition.

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## ENDOMORPH TRAINING

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Generally, the endomorph will not have too much difficulty building muscle, but will have to be concerned with losing fat weight and then being very careful with diet so as not to gain that weight back. Therefore, for the endomorph I recommend:

1. A higher proportion of high-set, high-repetition training (no lower than the 10- to 12-rep range), with very short rest periods so as to burn off as much fat as possible. Doing a few extra sets of a few extra exercises while you are trying to get lean is a good idea.

2. Additional aerobic exercise such as bicycle riding, running, or some other calorie-consuming activity. Training in the gym burns calories, but not as much as cardio exercise done on a continuous basis for 30 to 45 minutes or more at a time.

3. A low-calorie diet that contains the necessary nutritional balance (see page 703). Not zero anything, but the minimum amount of protein, carbohydrates, and fats, with vitamin and mineral supplements to be certain the body is not being deprived of any essential nutrients.

## **BODY COMPOSITION TESTING**

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Even though nature has given you a particular body type, when you add lean body mass and cut down on fat weight you are actually changing the composition of your body. It is often difficult to keep track of these developments because your training is creating more muscle mass, so your body composition can change quite a lot without your realizing it. The mirror, the scale, and the tape measure are always useful, but sometimes they don't tell you enough.

In addition to simply studying yourself in the mirror, the best way to keep track of these physical changes is by some form of body composition testing. This testing gives you an indication of the percentage of muscle your body has compared to the amount of fat. So the test will help track your progress as you gain muscle and lose fat. The most common types of body composition testing are:

- skin-fold testing. Calipers are used to pinch folds of skin at various parts of your body, which indicates how much fat is under the skin, and this is used to calculate body composition.
- water-emersion testing. The subject is weighed out of the water, then in the water, and certain measurements such as the residual capacity of the lungs are taken. The numbers are applied to a formula to determine the ratio of fat to lean body mass—which is composed of muscle, bone, and internal organs.
- electrical impedance testing. A low-voltage current is passed through the body. Since fat, muscle, and water create different amounts of resistance to electrical current, the amount of resistance encountered allows for calculation of body composition.

However, while measuring body composition is useful in ascertaining the results of a diet or what changes training is creating in your physique,

be aware that the *direction of change* from one test to another is more significant than the specific results you get in any one test. The reason is that all the test numbers are run through formulas that make certain assumptions about the body that don't necessarily apply very well to the extreme development of serious bodybuilders. So if you are tested as 12 percent body fat in one session and 9 percent two weeks later, you can be pretty sure you're headed in the right direction—assuming you are taking the same type of test administered in the same way, so that the retest accuracy is high.

I have heard some ridiculous claims made for body fat testing, such as by athletes asserting they have as little as 3 percent body fat. Any doctor will tell you that 3 percent might be the fat level of a *cadaver*, but not a strong, healthy athlete. In tests conducted at IFBB and NPC contests, using a variety of methods, it was shown that the bigger the bodybuilder the higher the fat percentage when the competitor is really ripped. So a massive bodybuilder might be ripped at 12 percent body fat measurement, while a lightweight amateur might look great at 7 or 8 percent.

Why is this? Because what we traditionally think of as fat is not the only fat in your body. There is also intramuscular fat, which is the fat in the muscle itself. So if a really big bodybuilder continues to diet past a certain point he is likely to just *shrink* rather than getting more cut-up. So while body composition testing is useful, don't forget to use the mirror or photographs to keep track of how you look. Remember, the judges don't take body fat tests into consideration during a contest. They go only by what they see. And you need to do the same thing.

# The Basic Training Program

**T**HE FIRST TASK facing the beginning bodybuilder is to build up a solid foundation of muscle mass—genuine muscular weight, not bulky fat. Later, you will try to shape this muscle into a balanced, quality physique.

You do this by basic, hard training using heavy weights—grinding it out week after week until your body begins to respond. And what I mean by basic training is not just a few exercises like Bench Presses, Bent-Over Rows, and Squats, but 30 or 40 exercises all designed to stimulate and develop the major muscle groups of the body.

At the end of this period what you want is size, the raw material of a great physique. In my own case, or in the case of other bodybuilders like Dave Draper or Lee Haney, we had pretty much achieved this in our early twenties. I was huge, 240 pounds, but unfinished—like an enormous, gangling puppy who has not yet grown up to match the size of his feet. Although I had won major championships, I was like an uncut diamond. But I had plenty of mass and at that point I set out to create the kind of finished, polished look I needed to become the best I could be.

This initial period may last two, three, or even as long as five years. The length of the process depends on a number of factors such as genetics, body type, and how much energy and motivation you are able to put into your training. Whether a bodybuilder develops faster or slower is no particular guarantee of ultimate quality. What counts is how far you are able to go, not how fast. Dorian Yates, for example, who is incredibly massive, didn't even begin serious bodybuilding until his late teens and early twenties. So no matter when you start, how old you are, or what kind of

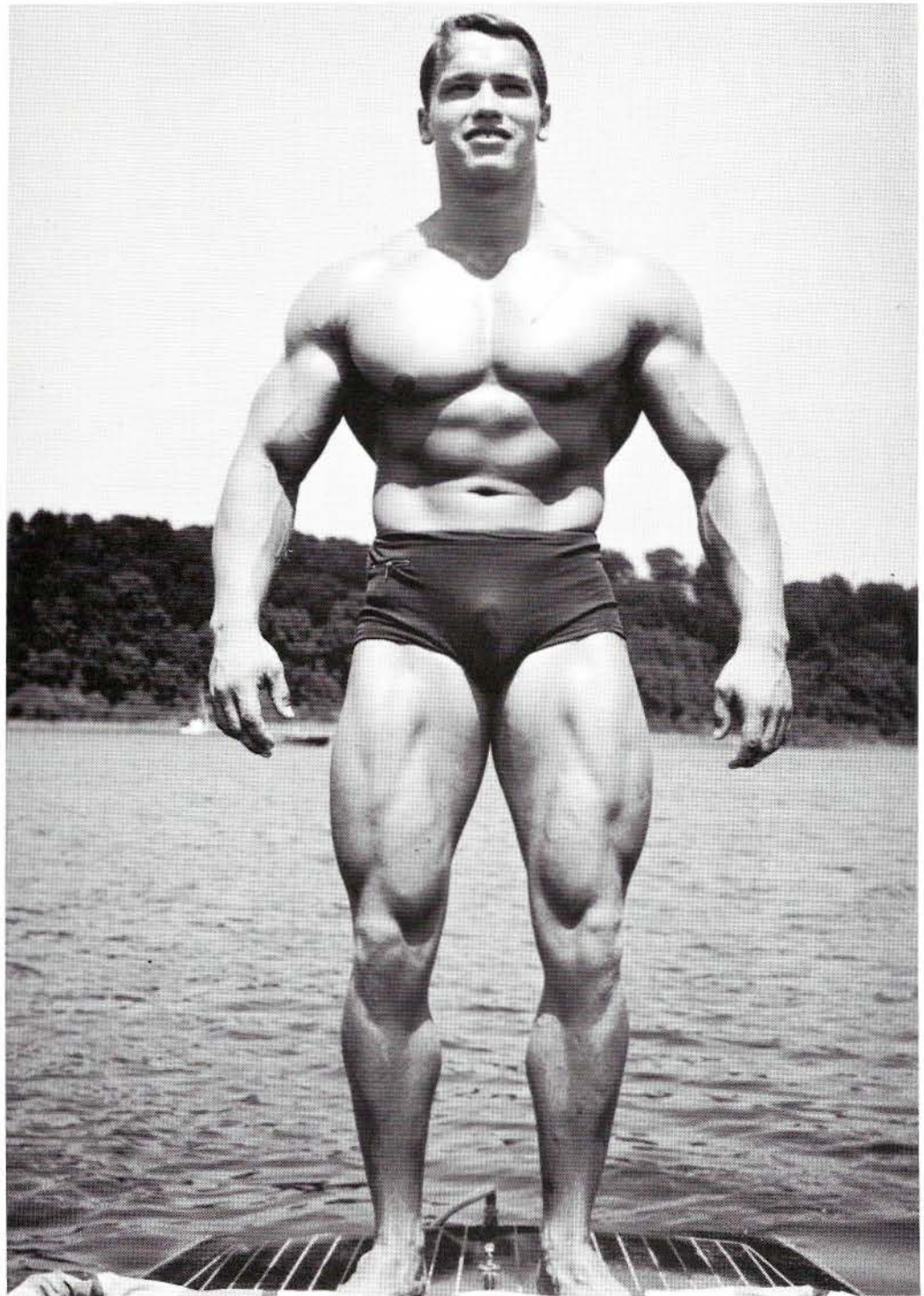
body type you have, the process is the same—heavy, consistent, dedicated training over an extended period of time.

## **SPLIT SYSTEM TRAINING**

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Split System Training involves dividing up your training so that you work only some of your muscles in each session, not the whole body all at one time.

*Me at nineteen with four  
year's training*



In the early days when champions like John Grimek and Clancy Ross reigned, bodybuilders usually attempted to train the entire body three times a week. They could train the entire body in one exercise session because they usually performed only 3 or 4 sets per body part. But as bodybuilding evolved it became evident that more precise training was needed to totally shape and develop the body. Different kinds of exercises were required so that the muscles could be worked from a variety of angles, and more sets of each exercise were necessary to stimulate the maximum amount of muscle fiber. But this meant that it was no longer possible to train the entire body in one workout. Too much effort was involved, so the Split System of training was developed.

The simplest type of Split System Training is just to divide the body into two parts: upper-body muscles and lower-body muscles. To hit each of the muscles even harder, you can further divide the muscles so that you take three training sessions to work the entire body—an example of this being training all the “pushing” muscles in one session (chest, shoulders, triceps), the “pulling” muscles the next (back, biceps), and the legs in the third. And various bodybuilders over the years have developed variations of the Split System that they felt best suited their individual needs.

In the exercise programs that follow, I will give you specific recommendations for how to best do Split System Training.

## THE BASIC MUSCLE GROUPS

The human body has more than six hundred separate muscles, but in learning the fundamentals of bodybuilding we need concern ourselves with only a few of these.

Usually bodybuilders divide the body up into the following basic categories or muscle groups:

- back
- shoulders
- chest
- arms
- forearms
- thighs and glutes
- waist
- calves

But to really sculpt and develop each important area of the body, you need to subdivide the muscle groups even further:

- *back*—both the width and length of the latissimus dorsi (the lats), back thickness, middle back muscularity, development of the spinal erectors of the lower back
- *shoulders*—size and fullness, development of each of the three heads of the deltoids (front, rear, and side), the trapezius
- *chest*—upper and lower pectorals, middle chest thickness, fullness



*Dave Draper at nineteen*



of the rib cage, detail muscles at the side of the torso, the serratus and intercostals

- *biceps*—upper and lower biceps, overall length, thickness
- *triceps*—development of all three triceps heads, detail and separation, mass and thickness
- *forearms*—extensor and contractor development, brachialis tie-in to the elbow
- *quadriceps, and glutes*—development of all four quadriceps heads, separation of the quad muscles, sweep of the outer thigh, the adductors of the inner thigh
- *hamstrings*—fullness and sweep of the leg biceps, separation between the hamstrings and the quads
- *abdominals*—upper and lower abs, external obliques at the side of the waist
- *calves*—the upper calf muscle (gastrocnemius) and the underlying calf muscle (soleus)

There are many exercises for each individual muscle. As you go from basic to advanced training, you'll find that the programs I recommend begin to include more and more specific movements for each of the important muscle subdivisions.

## **ORGANIZING YOUR TRAINING**

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For the Basic Training Program, I recommend the following split:

Level I: *each body part 2 times a week*—using a 3-day split (taking 3 days to train the entire body)

Level II: *each body part 3 times a week*—using a 2-day split (taking 2 days to train the entire body)

Abdominals: every workout, both levels

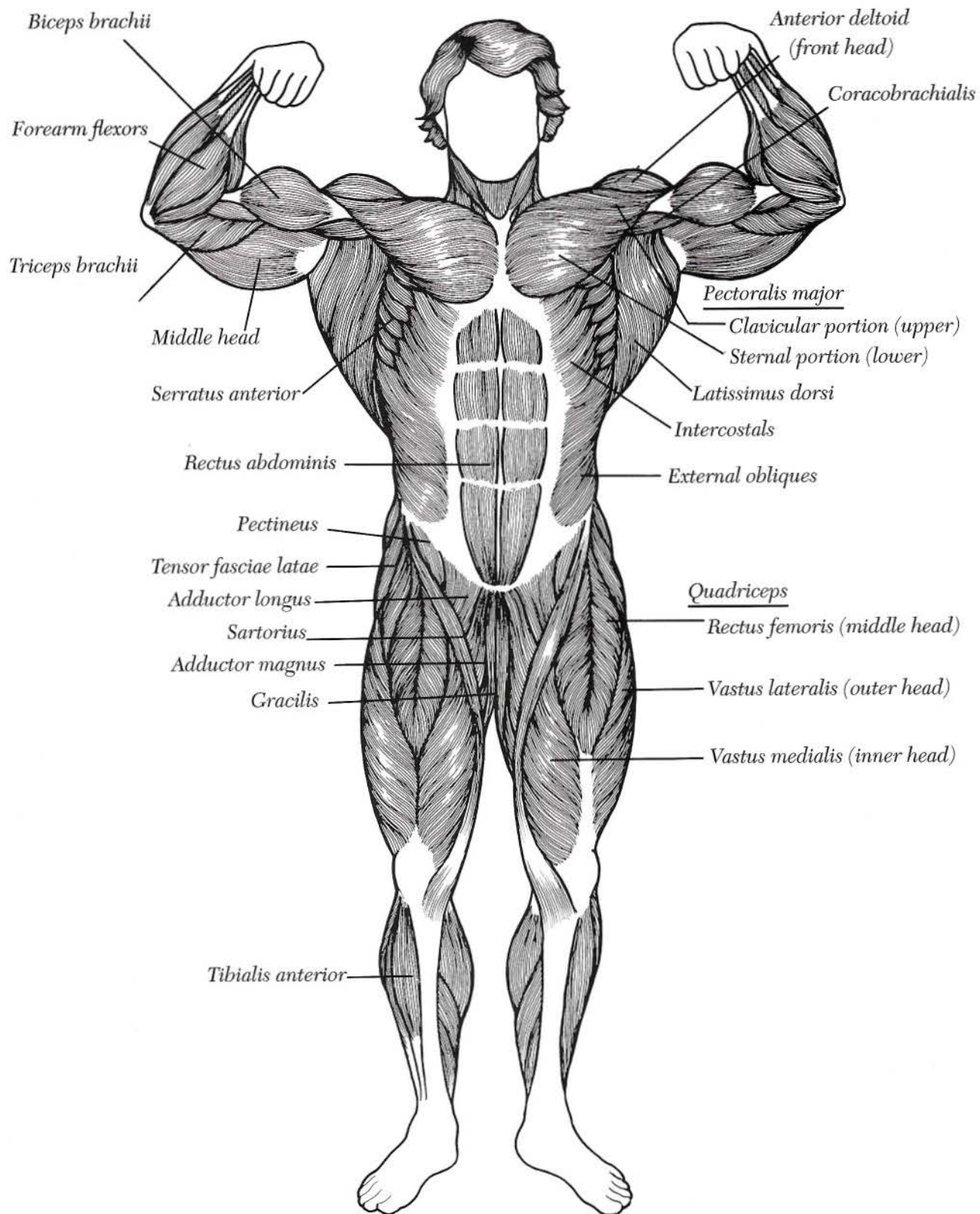
I always liked to train 6 days a week, taking Sunday off as a rest day. This made it easy for me to keep track of my workouts—Monday, a certain group of body parts; Tuesday, a different group, etc. If you're on a different schedule you can do each of your workouts on whatever days they fall—just think of it as Workout #1 instead of Monday, Workout #2 instead of Tuesday, and so on through your entire training program.

## **REST AND RECUPERATION**

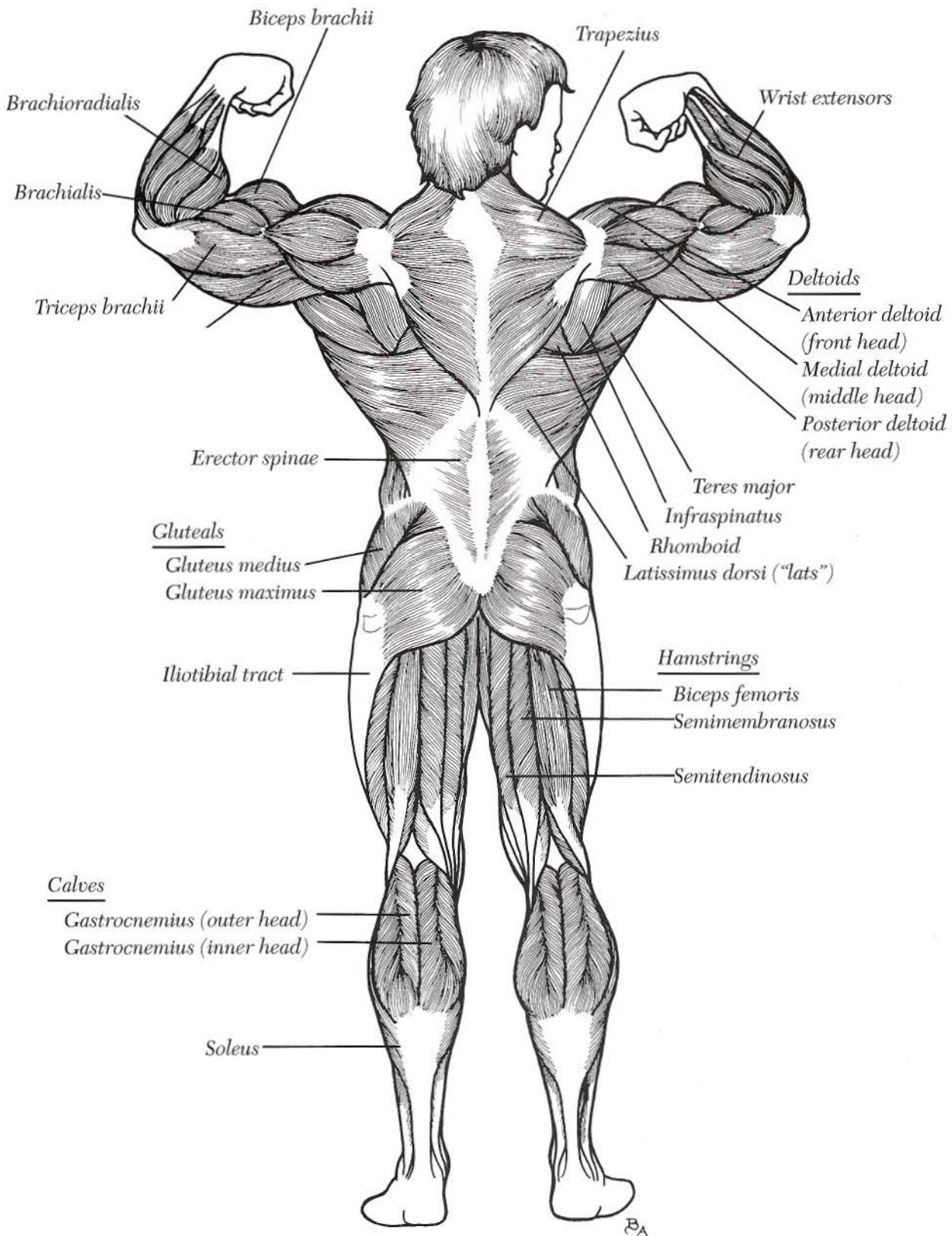
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When you plan a workout program, you have to be sure to include rest days. Remember, when you train intensely you have to get enough rest to

## Front View



Back View



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allow the body to recuperate and build both strength and mass. This means getting plenty of sleep (8 hours is best). It also means you need to pay attention to priorities. If building maximum muscle is your goal, you will need to be careful not to exhaust yourself doing too many other sports or physical activities—just as you would have to be careful to save on a regular basis if you wanted to put money aside to buy a house or a car.

You also need to rest on your off days. This doesn't mean you can't engage in any physical activities on that day—you don't have to stay in bed or anything—but if you are running marathons or involved in Hawaiian canoe racing on Sunday you are probably not going to have much energy when you go back to the gym and work out on Monday.

## WHEN TO TRAIN

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My best workouts were always in the morning, when I was rested and fresh. Some bodybuilders prefer to train later in the day, but the majority of the competitors I've been around also liked to train first thing in the day. To this day, Bill Pearl gets his workout in at 5 A.M. and then has the rest of the day to pursue his other interests. If you work regular hours at a job, this means getting up very early to get your training in. When Franco and I got to the gym at 7 A.M. we would frequently see lawyers, accountants, teachers, and others with a full work schedule just finishing their training and hitting the showers before going to their jobs. This showed a lot of dedication on their part, but it's this kind of dedication that yields the best results.

If you absolutely have to train in the evening, or if that's your personal preference, of course you can get results with that schedule as well. Just ask yourself whether you think you are achieving the *maximum* possible from your workouts this way and whether you are training late because it's best for you or because you don't have the motivation to get up as early as necessary for regular morning workouts.

## Level I Exercise Program

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### LEVEL I BASIC TRAINING

WORKOUT #1 MON	WORKOUT #2 TUE	WORKOUT #3 WED	WORKOUT #1 THUR	WORKOUT #2 FRI	WORKOUT #3 SAT
Chest Back	Shoulders Upper arms Forearms	Thighs Calves Lower back	Chest Back	Shoulders Upper arms Forearms	Thighs Calves Lower back

Abdominals every day

### WORKOUT #1

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#### Monday and Thursday

##### CHEST

Bench Press  
Incline Press  
Pullovers

##### BACK

Chin-Ups (do as many as you can at a time until you reach a total of 50 reps)  
Bent-Over Rows

##### *Power Training*

Deadlifts, 3 sets of 10, 6, 4 reps to failure

##### ABDOMINALS

Crunches, 5 sets of 25 reps

### WORKOUT #2

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#### Tuesday and Friday

##### SHOULDERS

Barbell Clean and Press  
Dumbbell Lateral Raises

##### *Power Training*

Heavy Upright Rows, 3 sets of 10, 6, 4 reps to failure  
Push Presses, 3 sets of 6, 4, 2 reps to failure

**UPPER ARMS**

Standing Barbell Curls  
Seated Dumbbell Curls  
Close-Grip Press  
Standing Triceps Extensions with Barbell

**FOREARMS**

Wrist Curls  
Reverse Wrist Curls

**ABDOMINALS**

Reverse Crunches, 5 sets of 25 reps

**WORKOUT #3**

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**Wednesday and Saturday****THIGHS**

Squats  
Lunges  
Leg Curls

**CALVES**

Standing Calf Raises, 5 sets of 15 reps each

**LOWER BACK*****Power Training***

Straight-Leg Deadlifts, 3 sets of 10, 6, 4 reps to failure  
Good Mornings, 3 sets of 10, 6, 4 reps to failure

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Note: Although these power movements work the lower back directly, they also involve the trapezius and the leg biceps, and help to develop overall strength.

**ABDOMINALS**

Crunches, 5 sets of 25 reps

## Level II Exercise Program

### LEVEL II BASIC TRAINING

WORKOUT #1 MON	WORKOUT #2 TUE	WORKOUT #1 WED	WORKOUT #2 THUR	WORKOUT #1 FRI	WORKOUT #2 SAT
Chest Back Thighs Calves	Shoulders Lower back Upper arms Forearms	Chest Back Thighs Calves	Shoulders Lower back Upper arms Forearms	Chest Back Thighs Calves	Shoulders Lower back Upper arms Forearms

Abdominals every day

### WORKOUT #1

#### Monday/Wednesday/Friday

##### CHEST

Bench Press  
Incline Press  
Pullovers

##### BACK

Chin-Ups (do as many as you can at a time until you reach a total of 50 reps)  
Bent-Over Rows

##### *Power Training*

Deadlifts, 3 sets of 10, 6, 4 reps to failure

##### THIGHS

Squats  
Lunges  
Leg Curls

##### CALVES

Standing Calf Raises, 5 sets of 15 reps each

##### ABDOMINALS

Crunches, 5 sets of 25 reps

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**WORKOUT #2**

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**Tuesday/Thursday/Saturday****SHOULDERS**

Barbell Clean and Press  
Dumbbell Lateral Raises

***Power Training***

Heavy Upright Rows, 3 sets of 10, 6, 4 reps to failure  
Push Presses, 3 sets of 6, 4, 2 reps to failure

**LOWER BACK*****Power Training***

Straight-Leg Deadlifts, 3 sets of 10, 6, 4 reps to failure  
Good Mornings, 3 sets of 10, 6, 4 reps to failure

---

Note: Although these power movements work the lower back directly, they also involve the trapezius and the leg biceps, and help to develop overall strength.

**UPPER ARMS**

Standing Barbell Curls  
Seated Dumbbell Curls  
Close-Grip Press  
Standing Triceps Extensions with Barbell

**FOREARMS**

Wrist Curls  
Reverse Wrist Curls

**ABDOMINALS**

Reverse Crunches, 5 sets of 25 reps





*Until the emergence of modern bodybuilders, this kind of muscular detail was never seen outside of an anatomy chart: the powerful forearms; full, striated triceps; an incredible biceps peak; all three heads of the deltoid; the trapezius muscles below the neck; the wide and powerful latissimus dorsi muscles at the side of the back; the spinal erectors. (Ronnie Coleman)*



*A six-pack extraordinaire. Abs like a bronze statue and well-developed, clearly defined intercostal muscles. (Shawn Ray)*

*The overall shape and proportion of a bodybuilding physique is extremely important, but the whole is also the sum of its parts. Building a complete physique means developing each and every detail of every one of the major body parts.*

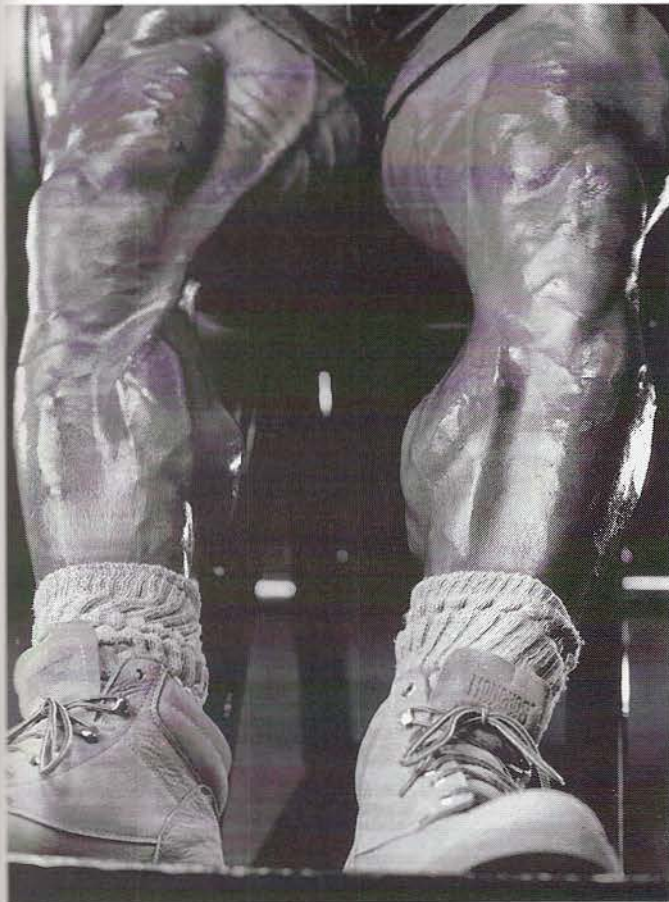
*The quality of a bodybuilding physique is in the details: the deltoids, triceps, both heads of the biceps, upper and lower pecs, abdominals, and all the smaller muscles at the side of the torso are totally developed. (Ronnie Coleman)*



*A top competition physique needs detailed "tie-ins" between the muscles and muscle groups. Muscles don't just sit next to each other but are tied together and interconnected. Notice the well-defined split between upper and lower pectorals.*  
(Ronnie Coleman)



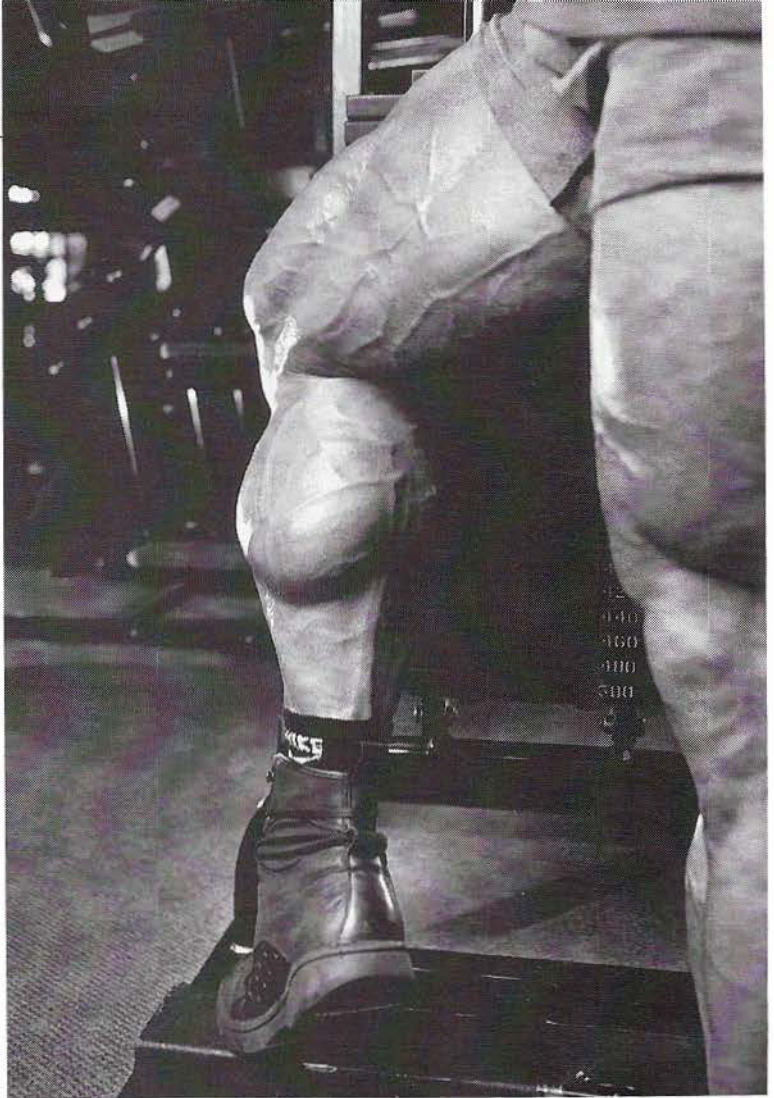
*The upper and lower legs need to balance each other. In this case, the powerful development and sweep of the quadriceps and adductors would make less of an impression if the calf muscles below them weren't also so huge and detailed.*  
(Nasser El Sonbaty)



*In the early days of bodybuilding, competitors were concerned about building muscle size and shape. Today, in addition to having mass, champions need detail that makes their muscles look like a Rand McNally road atlas.*  
(Dorian Yates)



*Ideally, the size of your calves should be about the same as your upper arms.*  
(Dorian Yates)



*An example of a terrific biceps peak. Notice how the development of the arm is made that much more impressive by the overall muscularity of the rest of the upper body.* (Ernie Taylor)



# Advanced Training Principles

**I**NTENSITY IS THE key to making progressive-resistance training work for you. What is intensity? One kind involves how hard you feel yourself trying. That is intensity of effort. Another is the amount of stimulation you are able to deliver to the muscles, causing them to respond and develop. This is intensity of effect. It is important to realize the difference between these two types of intensity, otherwise you are likely to just keep trying harder (often to the point of injury) rather than mastering the type of intensity techniques described in this chapter that produce maximum training progress.

## INCREASING TRAINING INTENSITY

Increasing intensity in the beginning is not that difficult. You learn to do more exercises and how to do them correctly; you get stronger and in better condition so you can work harder and longer and put more stress on your muscles. Once your body gets used to this effort, however, it becomes more difficult to continue to escalate intensity at the same rate.

Obviously, if you take long rest periods and train very slowly, so it takes you half the day to get through your workout, the actual intensity of your efforts will be minimal. Time, therefore, is an important factor in increasing training intensity. By manipulating time, you can increase intensity in two basic ways: (1) by doing the same amount of work in less time; and (2) by doing an increased amount of work in the same time.

But the most obvious way to increase workload is simply to train with more weight. Another valuable method is to cut down on rest periods between sets and try doing two or three exercises in a row without stopping.

This puts greater demand on your powers of endurance. Endurance, like strength, is something that can be developed in a progressive manner, a little at a time. You should also work at the fastest pace you are capable of without getting sloppy in your technique. This will help you to do the maximum amount of work in the minimum amount of time.

Beyond increasing intensity by manipulating time or adding weight, there are a number of special training techniques that can help ensure your progress in the Advanced Training and Competition Training Programs. These all involve methods of putting extra, unusual, or unexpected stress on the muscles, thereby forcing them to adapt to the increased demand.

## **Intensity Techniques**

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### **The Shocking Principle**

The Shocking Principle involves literally shocking the body, catching it by surprise by changing various aspects of your workout. The body is amazingly adaptable and can accustom itself to workloads that would fell a horse. However, if you always put the same kind of stress on the body, in the same way, it gets used to this, and even very intense training will yield less response than you expected. You can shock it by training with more weight than usual; doing more reps and/or sets; speeding up your training; cutting down your rest time between sets; doing unfamiliar exercises; doing your exercises in an unfamiliar order; or using any or all of the Intensity Techniques listed here.

Change by itself tends to shock the body, even if the unfamiliar workout is no more demanding than the one you are used to. But you'll get to a point where you'll find it difficult to make additional progress without shocking your muscles into getting bigger and stronger, fuller, harder, and more defined. One way I introduced radical change into my workout was by training superheavy one day each week, typically on Friday. We'd overload the weights on a couple of sets of each exercise to really train for power, then take Saturday off to recover from the soreness. Check out the power training photos of Behind-the-Neck Presses (page 273), Dumbbell Presses (page 274), and Incline Dumbbell Presses (page 329) for some good examples.

### **Forced Reps**

One method of forcing out extra reps is to have your workout partner supply a little extra lift to help you keep going. However, I have never liked this method because your partner has no real way of knowing how much

lift to supply, what you are really capable of doing on your own, and how much help you actually need. I prefer a kind of forced reps which is sometimes called Rest/Pause Training. You use a fairly heavy weight and go to failure in the set. Then you stop, let the weight hang for just a few seconds, and then force out an extra rep. Again, rest only a few seconds before forcing out another. This method depends on the fast initial recovery that muscles make from exercise, and you can use this recovery to force out several extra reps. If you rest too long, however, too many of the tired fibers recover and you end up using them again instead of stimulating new fiber. For ultimate rest/pause forced reps, you can put the weight down for a moment, pick it up again, and force out additional reps. For exercises like Chin-Ups, you can do your reps, let go of the bar, rest momentarily, and then attempt to force out some more.

### **Partial Reps**

Continuing to do partial reps when you are too tired to complete full-range-of-motion repetitions is a shock method I have always used for almost any muscle in the body, and it is a particular favorite of Dorian Yates. Dorian has done a lot of training where he forced his muscles past the point of momentary failure to almost total exhaustion, using techniques like forced reps and partial reps. Partial reps are most effective at the end of a set, when you are almost exhausted. For example, if you were doing Preacher Curls, you would have your workout partner help you lift the weight and then you would lower it a few degrees and then lift it as much as possible, even if only a few inches; then lower it some more and do some partial reps from that position, repeating this on the way down until your muscles are burning and exhausted.

### **Isolation Training**

Isolation training involves focusing your efforts on a specific muscle or muscle group or even part of a muscle in isolation from other muscles. Here is an example of how specific isolation training can get: When you do compound exercises like a Bench Press, the muscles involved are the pectorals, the triceps, and the front delts. An exercise like Dumbbell Flys, on the other hand, works the pecs in isolation and lets you hit them with maximum intensity. As a further step, you can do Incline Dumbbell Flys as a way of isolating just the upper pecs. Carrying this to an even further extreme, you can perform Incline Cable Crossovers, making a special effort to cross your hands and get the maximum Peak Contraction of the test. This would isolate and develop the inner area of the upper pecs.

Isolation training can allow you to develop every part of your physique completely, bringing up any weak areas and helping to achieve

the degree of muscle separation and definition necessary for that sculpted, champion look.

### **Negative Repetitions**

Whenever you lift a weight using the contractile force of your muscles you perform what is defined as a positive movement; when you lower the weight, extending the working muscle, you perform negative movement. Negative repetitions actually put more stress on the tendons and supportive structures than on the muscles themselves. This is beneficial because you want tendon strength to increase along with muscular strength. To get the full benefit of negatives in your normal workouts, always lower the weights slowly and under control, rather than letting them drop. To work harder at negatives, first try cheating a weight up that would otherwise be too heavy to lift strictly and then lower it slowly and deliberately (see The Cheating Method, below). Your muscles can lower a weight under control that they could not actually lift in the first place. At the end of a set, when your muscles are very tired, you can have your workout partner give you a little assistance in lifting the weight, and then do strict negatives on your own.

### **Forced Negatives**

To develop even more intensity in negative repetitions, have your workout partner press down on the weight as you lower it, forcing you to cope with greater resistance. This should always be done carefully and smoothly so that the muscles and tendons are not subjected to any sudden jerks. Forced negatives are more easily done with machines or cables than with free weights.

### **The Cheating Method**

The Cheating Method is an exception to the general rule that strict technique is necessary in bodybuilding. This kind of cheating doesn't involve using sloppy training technique. It is a method in which you deliberately use other muscles or muscle groups to work in cooperation with the target muscles. This is not something you should do all the time, but it is very useful for achieving certain specific goals.

Say you are doing a heavy Barbell Curl. You curl the weight up five or six times, and then find you are too tired to continue to do strict reps. At this point you begin to use your shoulders and back to help in the lift slightly so that you can do another 4 or 5 reps. But you cheat *just enough* so that you can continue the set, and your biceps continue to work as hard as they can. By cheating, you have forced the biceps to do more reps than

they could have done without the help from the other muscles, so you have put more stress on them, not less.

Cheating is used to make the exercise harder, not easier. It is also a way of doing forced reps without the help of a training partner. But to make cheat reps work, you have to concentrate on making sure that the extra effort being applied by the other muscles is *just enough* and not too much, so that the target muscles are still being forced to contract to the max.

## Heavy-Duty Method

Heavy-Duty Training is a name applied to different approaches to working out. For some, it involves a lot of extended sets—that is, following your regular repetitions with forced reps, negatives, forced negatives, and partial reps to exhaustion. I always used the term to mean going right to the heaviest weight you can handle (after warming up) rather than pyramiding up—that is, gradually increasing weight and decreasing reps. So if I could do strict Dumbbell Curls with, say, 65 pounds, rather than slowly working up to that weight I would do two light warm-up sets and then *immediately* pick up the 65-pound dumbbells and do my normal amount of reps and sets with that heavy poundage, forcing my biceps to work to their maximum from beginning to end. The key to this kind of training is not to use a weight too heavy for you to do your normal amount of sets and reps—say 5 sets of 8 to 12 reps. If you can do only 6 or 7 reps, the weight is *too* heavy.

## POWER-TRAINING PRINCIPLE

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Power sets are the kind a competitive weightlifter would do, training for maximum strength and power. You do a couple of warm-up sets and then choose a heavy weight that lets you do only about 8 reps. Keep adding weight so that your sets become 6, 4, and 3 reps, and do a couple of sets of only one rep. This kind of training teaches your muscles to deal with maximum poundages, in comparison to lighter weights for more reps. Power Training works best for exercises that use a lot of muscles at the same time, such as Bench Presses, Squats, and Deadlifts (see page 142 for more on Power Training).

## Staggered Sets

Staggered Sets involve doing a number of sets of a body part you want to train with increased intensity in between other exercises throughout your workout. For example, when I decided I need extra effort on my calf training, I would come into the gym, do a few sets of calves, then go do Bench



Presses, then a few more sets of calves, then Incline Dumbbell Presses, back to calves for a few sets, and by the end of the workout I had done 25 sets or more for calves—really giving them a workout. The next few days I would do my normal calf workout and then train with Staggered Sets again to really bomb and blast them.

## The Priority Principle

The Priority Principle involves giving any area of your physique that is weak or lagging behind the others special priority in your workout schedule. This is necessary because every bodybuilder has weak points. No champion, no matter how many titles he has won, has a perfect physique. Some body parts always develop better and faster than others no matter who you are or how good your genetics may be. There are a number of ways of doing this:

- You can schedule a specific body part so that you train it immediately after a rest day, when you are fresh, recuperated, and strong.
- You can schedule a body part workout at the beginning of your training session rather than later, when you are more fatigued.
- You can choose exercise specifically designed to achieve the kind of development you are looking for (size, shape, definition, separation, etc.).
- You can work on improving your basic training technique to increase the efficiency and effectiveness of your workouts.
- You can change your training program so that you include extra intensity training for any lagging body part, such as making use of a variety of Intensity Techniques.

You can use Priority Training to enhance the size and the sweep of your quadriceps, to make your arms bigger, biceps peak higher, deltoids more pronounced and separated, or to improve any weak area of your physique. When I was a young bodybuilder, I knew I would need better calves to become the kind of champion I wanted to be, so I would always train my calves first, before any other body part, would subject them to any number of intensity techniques to force them to grow—often doing Staggered Sets throughout my entire workout. Since my triceps were never as overwhelming as my biceps, and I was going up against the likes of Sergio Oliva, who had absolutely phenomenal arms, I would give my triceps priority treatment in precontest workouts to give me the arms I needed to defeat Sergio “The Myth.” In more recent times, when I was getting ready to film the second *Conan* movie, although I was in good shape, I wasn’t happy with how tight my waistline looked. So I began giving abdominal training priority in

my daily workouts, piling set upon set and eventually brought my waist measurement down two inches before filming started.

Shawn Ray is another example of what Priority Training can do for you. He was able to stay competitive against the big guys by working his back on a priority basis over a period of years, coming into the Mr. Olympia each time with his back a little wider and a little thicker. Nasser El Sonbaty also improved his back musculature in an effort to defeat Dorian Yates, but in addition he reduced his waistline, which gave him a much better V taper. I could go on with examples forever, but the point to remember is that nobody has a perfect physique and if a body part is not responding, don't just accept that as a fact, but do something about it—and one primary remedy for such a problem is the employment of the Priority Principle.

## Supersets

Supersets are two exercises performed in a row without stopping. For extra intensity, you can even do three sets in a row without stopping (trisets). It takes a while to build up the endurance necessary to do a lot of supersets, but this kind of conditioning develops in time if you keep working on it.

Actually, there are two ways you can use supersets: (1) You can do two exercises in a row for the same body part (such as Cable Rowing and Cable Pulldowns); or (2) you can train two different body parts (Bench Presses followed by Chins, for example). Supersetting within the same muscle group allows you to hammer away at that area and give it an ultimate pounding. You will be surprised how a muscle that seems to be totally fatigued will still have a lot of strength remaining if you demand that it perform a slightly different movement. To do this, however, you need to start with the most difficult movement and then go to one that is less demanding—Bent-Over Rows followed by Seated Cable Rows, for example.

Supersetting two different body parts, such as chest and back (one of my favorites) or biceps and triceps, allows one muscle group to rest while you are working the other, allowing you to exercise on a continuous basis, which is great for cardiovascular conditioning. Personally, I have always liked to use supersets to train opposing muscle groups because of the tremendous pump you get, which can make you feel you have the body of King Kong.

## The Stripping Method

The Stripping Method means you reduce the weight you are using as you begin to fail at the end of a set so that you can continue on and do more repetitions. When I was first learning about bodybuilding training it was

obvious to me that when you come to the end of a set and seemingly cannot do another repetition, that doesn't mean all the muscles are totally fatigued. It only means that they are too tired to lift that amount of weight. If a plate or two is removed, you can do more repetitions. Take another plate off, and you can keep going even longer. Each time you do this, you are forcing the muscles to recruit more muscle fiber. (Actually, unknown to me, this same discovery was made in 1947 by Henry Atkins, editor of *Vigor* and *Body Culture* magazines. He called it the multi-poundage system.) You should never use the Stripping Method at the beginning of an exercise when you are fresh and strong, but only for your last set.

Since the changes in weight must be made quickly so that the muscles don't have time to recuperate, it helps to have a workout partner ready to slip plates off the bar or move the pin in a machine weight stack. For example, you might do Bench Presses with the heaviest weight on the bar you can handle for 6 reps. Say that weight is 300 pounds. After you have failed, your partner would quickly strip off weight so that you could do more reps with 250 pounds. I don't recommend going too low, however, unless you are training for maximum definition, because you won't grow by handling weights that are too light. Many bodybuilders use this principle in a different way by working their way down a dumbbell rack as they do more sets of an exercise and get more and more tired.

A variation of this method is called Running the Rack, in which you do your set with one weight, go to failure, put the weight down and go to the next lightest in line, go to failure, and continue this process to exhaustion.

## The Isotension Principle

During your one-minute rest period between sets, don't just sit around watching your training partner do his set. Continue to flex and contract the muscles you are training. This not only keeps them pumped and ready for more action, but is in itself a very beneficial kind of exercise as well. Flexing is a form of isometric exercise, and isometrics (although they do not usually apply to bodybuilding because they do not work your muscles through their entire range of motion) involve very intense muscle contractions. A bodybuilder who poses and flexes in the gym, watching himself in the mirror, is engaged in a very important part of his workout.

In fact, I don't think you can win a major championship without practicing Isotension between your sets. It isn't enough to have big muscles; you have to be able to control them as well, and that's something you have to learn. You get the same kind of benefits from really hard sessions of posing practice, too, as we will discuss later (see *Posing*, page 565).

## **The Instinctive Principle**

When you begin bodybuilding training and are attempting to master the fundamental exercises and create a basically sound muscle structure, it pays to follow a set program. But after you have been training for a longer period, you will find that your progress will increase if you learn to perceive and understand your body's individual responses to training and vary your workouts accordingly. In my early years I tended to go through my workouts in a rigid, set pattern, the same way every time. Then I started training with Dave Draper and he taught me another approach. Dave would come into the gym knowing which body parts he was going to train and which exercises he was going to do, but he would change the order of those exercises depending on how he felt on that particular day. If he usually began a back workout with Wide-Grip Chins, he might decide instead to begin with Bent-Over Rows and finish off with Chins. He had learned to trust his instincts to help guide him through his workouts. Occasionally, he would abandon his normal workout and do something entirely different: 15 sets of Bench Presses, for example; fewer, very heavy sets or a lot of sets done rapidly. I learned from Dave that the body has its own rhythms, that it is different from day to day and that the more advanced you become, the more you need to be aware of these variations and cycles. Let me caution you, however, that this awareness does not come overnight; a year or more of training is usually needed before you can begin to profit from making these occasional instinctive adjustments in your program.

## **Pre-exhaust Principle**

The total bodybuilding effect comes about when you fully stimulate and innervate as many fibers in the muscle as possible. But some muscles are bigger than others and, when used in combination with smaller ones, will still have unused fiber available when the smaller muscles are totally exhausted. But you can plan your training so that you isolate and fatigue the big muscle first, before you train it in combination with smaller ones. When you do a Bench Press, for example, you are using your pectorals, front delts, and triceps in combination. The pectorals are by far the strongest of these muscles, and normally, when you press the weight up, the smaller delts and triceps fail long before the pectorals. To compensate for this, you can do Dumbbell Flys first, which isolate and pre-exhaust the pectorals. Then if you go on to do Bench Presses, the pectorals, which are already tired, will go to total fatigue at about the same time as the other muscles. Other pre-fatigue routines could involve doing Leg Extensions before Squats (pre-fatiguing the quadriceps), Dumbbell Laterals before Shoulder Presses (pre-fatiguing the deltoids), or fatiguing the lats in isola-

tion on a Nautilus Pullback machine before doing Seated Rows, T-Bar Rows, or another rowing exercise involving the biceps.

### **I Go/You Go**

In this method for increasing your training intensity and shocking your muscles, you and your training partner finish a set and immediately hand over the weight to the other, never putting the weight down, each one going in turn. I can remember doing Barbell Curls, handing the bar off to Franco and going back and forth, not really counting reps, just going to failure. After a while I was screaming and hoping Franco would take his time because my biceps were burning so bad. You stay in pain, your partner hands you back the weight again, and the number of reps you can do gets shorter and shorter. But the point of this technique is that you go when it's your turn, ready or not, no matter how tired you are getting. The degree of intensity you can develop using this method is fantastic. Talk about shocking the body! The only problem is the soreness you feel the next day.

The I Go/You Go Method is more useful for training smaller muscles like the biceps or calves than it is for the big thigh and back muscles. Exercises like Squats and Bent-Over Rows demand so much energy that you run out of steam in a hurry even without this intensive kind of training.

### **The Flushing Method**

The Flushing Method involves holding a (relatively light) weight steady at various points along the path of the exercise, forcing the muscle to maintain a constant contraction for extended periods. For example, after I have done as many Dumbbell Laterals as possible I hold my arms locked out by my sides and then lift them about 5 inches away from my thighs, feeling the deltoids tense and flex. I hold this position for about 10 seconds as the burn accompanying the buildup of lactic acid gets stronger and stronger. This tension applied at the end of an exercise causes an enormous increase in muscle separation, and can be done for many muscles in the body: for lats, hanging from the chinning bar and lifting the body only a few inches; doing Cable Crossovers, holding your hands crossed with chest fully contracted, flushing blood into the pectorals; holding a Curl steady, at various angles of the total arc; or locking your legs out in a Leg Extension and holding as long as you can.

### **Multi-exercise Sets**

To shock the body, instead of doing 5 or 6 sets of a specific exercise for a body part, you do your sets using a different exercise for that body part

each time. Multi-exercise sets are not done as supersets; you do them one at a time and rest in between, but you do only one set of each exercise and then go on to another. For example, you might do one set of Barbell Curls, rest for a minute, then do a set of Dumbbell Curls, Cable Curls, Incline Curls, and so on down the line until you have fully exhausted the biceps. The idea here is to make the stress of each set slightly different, attacking the body part from every possible angle to ensure that the entire muscle is trained and providing a shock that will force the maximum amount of response from the body.

### **The “One-and-a-Half” Method**

Another way to vary the stress you put on your muscles in any set is to do a complete rep of a movement, followed by a half rep and then alternating full and half reps until the set is finished. When you do this, make sure that the half rep is very slow and very strict. Hold the weight momentarily at the extreme point of the movement, then lower it slowly, totally under control.

### **The Platoon System (21s)**

This system is more elaborate than one-and-a-halves because you do a series of half reps in the lower range of motion, a series of half reps in the upper range of motion, and then a series of full reps. You can use any number of reps—I always did 10-10-10—as long as you do the same number for each of your half reps and full reps. Traditionally, many bodybuilders have used 7 reps—hence the name 21s:  $3 \times 7$ . The extra stress generated by this kind of training comes about because you have to stop the movement right in the middle, and this forces the muscles to exert themselves in ways they are not used to.

### **Progressive Workload**

Nobody can go all out every workout. Using this training system, you plan your three-times-a-week body part sessions so that the first is intense, with relatively high reps and sets, but you don't use the heaviest weights possible. You increase the weight for the second session, but still stay short of going all out. For your third workout, however, you go very heavy, keeping your reps down to 4 to 6 maximum per set. By gradually building up each workout during the week, you prepare your body to handle the shock of very heavy weight.

## Ballistic Training

Ballistic Training refers to a technique in which you drive a weight up, or explode it (but in a smooth and controlled manner), rather than lifting it at a constant speed. This is done with relatively heavy poundages, so the weight doesn't really move all that fast. But the attempt to force the weight to go faster accomplishes a number of things:

1. It creates variable resistance. Why? Because you are stronger in one part of a lift than in another, due to the difference in mechanical leverage advantage. When you are stronger, the weight accelerates a little more. And an accelerated weight is heavier than one that is not accelerated or not accelerated as much. Therefore, the weight is heavier when you are stronger and not as heavy when you are weaker—which is variable resistance.

2. It recruits a maximum amount of white, fast-twitch power fibers, which are bigger (by about 22 percent) and stronger than red, slow-twitch endurance fibers.

3. It creates constant failure. The muscles grow when they are given a task that is just beyond their capabilities. When you are trying to accelerate a weight, there is always a limit to the amount of acceleration you can achieve. Your muscles are failing to move it any faster. Therefore, rather than failing only at the end of your set, you are actually experiencing a degree of failure during each rep of the set.

Ballistic Training should be done primarily with exercises that use a lot of big muscles—for example, Bench Presses, Shoulder Presses, and Squats. You should use a weight you can normally do about 10 reps with. Since an accelerated weight is heavier, you'll find you can do only about 7 reps with the same weight when using the ballistic method. Also, ballistic reps require a slightly different type of technique than do normal, constant-speed repetitions:

1. Lower the weight normally, using constant speed. Pause at the bottom, then drive the weight up, accelerating it smoothly throughout the range of motion.

2. Continue the set not to the point of absolute failure, but to failure of power. That is, when you can't accelerate the weight anymore, and can only lift it slowly, you have finished the set. When doing ballistic reps, there is no point in going past this point.

3. Get plenty of rest between sets, from one to 2 minutes. White, fast-twitch fiber takes longer to recuperate than does red fiber and this is the type of muscle you are focusing on with ballistic sets.

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## LEARNING TO USE ADVANCED TRAINING PRINCIPLES

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Rome wasn't built in a day and neither is a first-class bodybuilding physique. Creating a highly developed muscular body means starting out using the basics, learning the necessary skills, developing strength and conditioning over time, and then gradually raising the level of training intensity, in part by learning to use Advanced Training Principles.

To be effective, your training should be goal oriented, and your goals may change over the course of time. In the beginning, your goal is to just get started, learn basic techniques, and condition your body to the point where you have the strength and conditioning you need to make the most of your workouts. For some people, who are interested mostly in training for overall health and fitness and who aren't able or willing to devote more than a couple of hours a week to working out, this is the most they will ever want to achieve.

But for those who look to a higher goal, the development of a superior, muscular body or who are training for the purpose of entering a competition, the next step is to increase intensity, both by lifting heavier weights and by using the appropriate intensity techniques.

My best recommendation is to master the intensity techniques listed above one at a time. Try a particular technique, get familiar with it, and observe how it feels and how it affects your body. When you feel totally comfortable using that intensity technique, go on and do the same thing with another. Not every bodybuilder uses or wants to use every intensity technique. But getting familiar with them, learning how they work and what they feel like, will enable you to incorporate the ones that best suit you into your future workout programs.



# Building a Quality Physique: The Advanced Training Program

**T**HE ADVANCED TRAINING Program is for people who want to challenge themselves more, who are not content with simply being fit but want to develop a powerful, impressive physique. For these individuals, it is not enough to just gain a few pounds of muscle. Instead, they want not only serious gains in strength and muscle mass, but to sculpt the body as well—to achieve muscle shape and separation, to balance the proportions of the various muscle groups, and to create impressive muscular definition.

But wanting to achieve it is not enough; you also have to learn how to do it. Nobody would expect to become a surgeon without learning everything about the body—how it is constructed, how it is put together, what all the parts are. To become a great bodybuilder you must learn all about the body—what the body parts and muscles are, the different areas of the body, how they tie together, and how the body responds to various programs of exercise. If you don't know these things, you won't be able to develop your body to its full potential no matter how intense your motivation may be. And these are the subjects I will be dealing with in this and subsequent chapters of this encyclopedia.

The bodybuilder's physique is a carefully balanced combination of many factors, including shape, proportion, and symmetry. Bodybuilding

has been compared to sculpture, with the bodybuilder creating and shaping a physique the way the artist sculpts a statue from marble or granite. For the bodybuilder, the only material he has to work with is muscle.

The exercises and training principles you learned in the Basic Training Program are not enough to give you the total control over your body that is needed to develop a sculpted, championship physique. You need more and different kinds of exercises, a knowledge of how to design your workouts to get very specific results, and an ability to generate sufficient intensity so your body will continue to grow and change. You can't leave any muscle groups out. You must include everything—the forearms, the two major calf muscles, the lower back, the rear delts, the serratus, and the intercostals. And it isn't enough to have big muscles. For the chest, for example, you need upper, lower, and middle pecs, inner and outer fullness and development. There are three heads of the deltoids to be developed and separated. You need traps, middle back, lats, and lower back in order to be complete. In addition to developing the quadriceps and the hamstrings you have to create a distinct line between them. Biceps require length, thickness, and peak—not just size.

Development on this level is absolutely crucial when you finally enter a competition, but waiting until you are training for competition to start detail and Weak Point Training is too late. The time to start is when you begin serious, advanced training and then you can *further* refine your training program when you go on later to Competition Training.

Of course, setting these higher goals for yourself in Advanced Training will demand more time, energy, dedication, and, therefore, commitment. And it will be much more demanding mentally, requiring a steadfast awareness of purpose. Purpose doesn't come from just an act of will. It has to involve a real and joyful degree of motivation; you have to be *hungry* to achieve your goals; the necessary effort shouldn't be seen as a burden but an opportunity. Not, "Damn, I have to go work out today," but "Wow, I can't wait to get to the gym and work out." The additional workload is nothing if you are hungry enough.

One way to achieve this state of mind is by having a *vision*—a clear idea in your mind of where you are going and what you want to become. I'll deal with this subject in detail in Chapter 7. As a young bodybuilder I remember looking at a lot of photos of Reg Park hitting the major poses. When I saw his Herculean but highly detailed physique—his abdominal development, lower back, and calves in particular—that gave me the vision of what I needed to become a Mr. Universe. I could close my eyes and *see* clearly in my mind what a championship physique should look like, and that vision guided me in my training, diet, posing, and everything else I did in bodybuilding.

Summing up, the specific goals you will be working toward in Advanced Training workouts include:

1. developing extra mass and, eventually, muscle shape;
2. focusing not just on muscle mass but on the details of each muscle group as well;
3. creating a physique with the aesthetic qualities of balance, proportion, and symmetry;
4. working on the separation between muscles and the major muscle groups;
5. learning to totally control your physical development so that you are able to correct imbalances, weak points, and problem areas.

## **WHEN TO MOVE ON TO ADVANCED TRAINING**

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Once you have gained 15 pounds or more of muscle mass, put about 3 inches on your arms, 5 inches on your chest and shoulders, 4 inches on your thighs, and 3 inches on your calves, you are then ready to begin adding a greater variety of exercises to your routine, to train for shape as well as size, for balance as well as mass.

But this is not accomplished in one sudden jump. You need time to learn new exercises, to begin to understand how specific exercises affect the body in different ways, and to learn to use these exercises and a wide range of new training principles to accelerate the response of your body to your workouts.

Since you gradually increase your workload, your transition from Basic to Advanced Training does not happen all at once. The point is that if you want a championship body, you have to train with championship intensity, technique, and knowledge. It is a difficult task, but it can be one of the most rewarding challenges of your life.

## **“HIGH-SET” TRAINING**

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Some training systems claim you can make great progress by training with only a few sets per body part. Actually, this idea is not new; that was the way bodybuilders trained in the early days of the sport.

When Reg Park began serious training, many bodybuilders still used the old-fashioned, low-set approach to working out. “Training strictly for power like a weightlifter,” Reg says, “gave us certain advantages in the old days, a really solid foundation of muscle. But it wasn’t until I learned to do fifteen or twenty sets per body part that I felt I was getting enough shape and definition in my physique. I’m sure that a lot of the bodybuilders from the very early days would have improved a lot if they had understood the need for high-set workouts the way we do today.”

True, but it's also true that the more advanced you become as a bodybuilder, the more the body tends to resist further development. That means you have to work harder to create the necessary intensity in your workouts and be certain that you are training in the most efficient manner possible. To ensure that this continued development takes place, the Advanced Training Program requires performing a relatively high number of sets. This is not arbitrary or just a matter of personal preference; it is designed with specific physiological purposes in mind: (1) to recruit and innervate all the fiber available to each muscle, then work the muscle to exhaustion in any particular exercise; and (2) to do enough different exercises for every single body part so that each individual muscle is worked from every angle to create the fullest possible shape and development—and to be sure that no major muscle of the body escapes this complete stimulation.

Some training systems advocate as many as 75 sets per workout, but this is not what I mean by high sets. As far as I'm concerned, the ideal training program involves *doing 4 sets per exercise*. The fact that you can keep going for 4 sets, resting very little in between, proves that there is still fresh and unrecruited fiber available after the first few sets. The second task is sheer necessity, since no one exercise is enough to fully develop even the simplest muscle. Take, for example, a relatively small muscle like the biceps: You can train to develop the upper area (point of origin), the lower area (point of insertion), the thickness of the muscle, the inner and outer areas, or to create a really high peak. Once you start dealing with the larger and more complex muscle groups, the number of different ways you can train and shape them becomes really immense.

You don't have to be a mathematician to realize that a task this size cannot be accomplished by doing 3 or 5 total sets per body part. The physiques of those modern bodybuilders who are seduced into following an old-fashioned theory of training masquerading under the guise of a new scientific approach to bodybuilding will surely be lacking. It takes a minimum of 4 or 5 exercises to train each major body part, at least 3 for the smaller ones, and this can add up to a total of 20 sets.

With the right combination of exercises, you not only develop each individual muscle fully, but also build definition, striations, and a full separation between one muscle group and another.

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## DOUBLE-SPLIT TRAINING

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One way to deal with the demands of Advanced Training is by following a program of Double-Split Training, which simply means breaking up each day's workout into two different training sessions.

I discovered Double-Split Training on my own, strictly as a matter of

necessity. After a year of training I really began trying to push my body to its ultimate limits. I wanted to train each body part as hard as possible and then come back the next time and train it even harder. One day I came into the gym and had a really dynamite chest and back workout. I felt great. Then I went on to do legs, but I noticed I was not training with the same intensity and enthusiasm as I had felt during my upper-body workout. Looking in the mirror at my developing teenage physique, I had to admit that my legs were not progressing as rapidly as my upper body. The next day, after training shoulders, biceps, triceps, forearms, and calves, I again took stock and realized that those last three muscle groups were also somewhat weak. They obviously were lagging behind.

As I thought about it, it didn't seem to me that I lacked real potential to develop those weaker areas, *so it had to be some fault in my approach to training*. I experimented with nutrition, being much more careful of what I ate, trying to keep my blood sugar level up, but though this helped, it was not enough.

As I analyzed my training further, it became obvious that each of these body parts came toward the end of my workouts, when I was tired from doing numerous sets. Training my chest, back, and legs in one day was very demanding, and it occurred to me that I could train each body part with more intensity if I trained my chest and back in the morning, and then came back late in the afternoon, fresh and rested, to give my legs a really hard workout. Without knowing that any other bodybuilders trained this way and never having heard the name, I found myself doing Double-Split Training as the only means possible for training the entire body with the kind of intensity I knew had to be generated if I were to become Mr. Universe.

Advanced Training can often involve 75 total sets—15 to 20 sets for each of four body parts, or three body parts plus calves and abdominal training. Trying to do all of this work in one workout would be a killer, especially since some of the same muscles are involved in training different body parts, and if these muscles get too tired and don't have a chance to recuperate, your training can be severely hindered.

A 75-set session takes something like 3 hours to accomplish, and nobody can train straight through for this long without running out of energy. Many bodybuilders try to cope with this workload by pacing themselves, not training as hard as possible the first and second hours, knowing that they could never make it if they did. But this lack of intensity means the body will not be forced to respond and grow. You have to go all out if you want maximum results.

With the Double-Split System, you train full out in the morning, recuperate during the day, and come back to the gym rested and ready to go the limit again. I've always preferred a good 8 to 10 hours between workouts to ensure full recovery. And that means making sure you actually get

some rest. If you are too active during the day, that 10-hour rest period won't be enough.

Of course, scheduling a second training session in the late afternoon or evening creates yet another demand on your time, and you will have to make further adjustments in your schedule. An added advantage to this system is that you burn up a lot of additional calories in the course of your two workouts, which means you do not have to subject yourself to quite so demanding a diet as you would training only once a day.

## Advanced Training Program

### THE TWO-LEVEL ADVANCED PROGRAM

Just as in the Basic Training Program, I have created two levels for Advanced Training to provide a ready means of increasing workload and generating greater intensity on a progressive basis.

Both Level I and Level II in this program require that you train each body part three times a week. Level II, however, is a more demanding program, including a lot of supersets and a number of extra exercises.

Begin your training with Level I, and take the time to learn each new exercise thoroughly (or twice if you need extra recuperation time). Once you have been working at this level for 6 weeks or longer and feel your conditioning and recuperative powers will allow you to work even harder, go ahead and begin to add new exercises to your routine until you have made the full transition to Level II. One final note: If you are sore from a previous workout, take an additional day off. Work up to the suggested workload.

#### ADVANCED TRAINING SPLIT

WORKOUT #1	WORKOUT #2	WORKOUT #1	WORKOUT #2	WORKOUT #1	WORKOUT #2
MON	TUE	WED	THUR	FRI	SAT

#### MORNING

Chest	Shoulders	Chest	Shoulders	Chest	Shoulders
Back	Upper arms	Back	Upper arms	Back	Upper arms
	Forearms		Forearms		Forearms
	Calves		Calves		Calves

#### EVENING

Thighs	Thighs	Thighs
Calves	Calves	Calves

Abdominals every day

# Level I Exercise Program

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## WORKOUT #1

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### Monday/Wednesday/Friday

#### CHEST

Barbell Bench Presses	4 sets: 1 set of 15 rep warm-up; sets of 10, 8, 6, 4 reps— stripping last two sets
Barbell Incline Bench Press	4 sets: same formula as Bench Presses Every third workout, substitute Dumbbell Presses and Incline Dumbbell Presses for barbell exercises.
Dumbbell Flys	3 sets of 10, 8, 6 reps
Parallel Bar Dips	3 sets of 15, 10, 8 reps
Pullovers	3 sets of 15 reps each

#### BACK

Chin-Ups	4 sets: 10 reps minimum each set Use a dumbbell fastened around your waist for greater resistance; do chins to the rear one workout, to the front the next.
Close-Grip Chins	4 sets of 10 reps each
T-Bar Rows	4 sets of 15, 12, 8, 6 reps
Bent-Over Barbell Rows	4 sets of 8 to 12 reps

#### THIGHS

Squats	5 sets of 20 rep warm-up; 10, 8, 6, 4 reps
Front Squats	4 sets of 10, 8, 8, 6 reps
Hack Squats	3 sets of 10 reps each
Leg Curls	4 sets of 20, 10, 8, 6 reps
Standing Leg Curls	4 sets of 10 reps each
Straight-Leg Deadlifts	3 sets of 10 reps each

#### CALVES

Donkey Calf Raises	4 sets of 10 reps each
Standing Calf Raises	4 sets of 15, 10, 8, 8 reps

#### ABDOMINALS

Crunches	3 sets of 25 reps
Bent-Over Twists	100 reps each side
Machine Crunches	3 sets of 25 reps
Crunches	50 reps

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**WORKOUT #2**

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**Tuesday/Thursday/Saturday****SHOULDERS**

Behind-the-Neck Barbell Presses	5 sets of 15 rep warm-up; 10, 8, 8, 6 reps
Lateral Raises	4 sets of 8 reps each
Bent-Over Dumbbell Laterals	4 sets of 8 reps each
Dumbbell Shrugs	3 sets of 10 reps each

**UPPER ARMS**

Standing Barbell Curls	5 sets of 15, 10, 8, 6, 4 reps
Incline Dumbbell Curls	4 sets of 8 reps each
Concentration Curls	3 sets of 8 reps each
Lying Triceps Extensions	4 sets of 15, 10, 8, 6 reps
Triceps Cable Pressdowns	3 sets of 8 reps each
One-Arm Triceps Extensions	3 sets of 10 reps each

**FOREARMS**

Barbell Wrist Curls	4 sets of 10 reps each
Reverse Wrist Curls	3 sets of 10 reps each

**CALVES**

Seated Calf Raises	4 sets of 10 reps each
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**ABDOMINALS**

Reverse Crunches	4 sets of 25 reps
Seated Twists	100 reps each side
Vertical Bench Crunches	4 sets of 25 reps



## Level II Exercise Program

### WORKOUT #1

#### Monday/Wednesday/Friday

**ABDOMINALS** Begin workout with 5 minutes of Roman Chairs.

#### CHEST AND BACK

Superset: Bench Presses	1 set of 15 rep warm-up; 5 sets of 10, 8, 8, 6, 4 reps
Wide-Grip Chins (to back)	5 sets of 10 reps
Superset: Incline Dumbbell Presses	4 sets of 10, 8, 8, 6 reps
Close-Grip Chins	4 sets of 10 reps
Dumbbell Flys	4 sets of 10, 8, 8, 6 reps
Parallel Bar Dips	4 sets of 15, 10, 8, 8 reps
T-Bar Rows	4 sets of 15, 10, 8, 8 reps
Bent-Over Rows	4 sets of 10 reps
Superset: Seated Cable Rows	4 sets of 10 reps
Straight-Arm Pullovers	4 sets of 15 reps

#### THIGHS

Squats	6 sets of 15, 10, 8, 8, 6, 4 reps
Front Squats	4 sets of 10, 8, 8, 6 reps
Superset: Hack Squats	1 set of 15 rep warm-up; 4 sets of 10, 8, 8, 8 reps
Lying Leg Curls	1 set of 15 rep warm-up; 4 sets of 10, 8, 8, 8 reps
Superset: Standing Leg Curls	4 sets of 10 reps
Straight-Leg Deadlifts	4 sets of 10 reps

#### CALVES

Donkey Calf Raises	4 sets of 10 reps
Standing Calf Raises	4 sets of 10 reps
Seated Calf Raises	4 sets of 10 reps

#### ABDOMINALS

Hanging Reverse Crunches	4 sets of 25 reps
Seated Leg Tucks	4 sets of 25 reps
Bent-Over Twists	100 reps each side

## WORKOUT #2

### Tuesday/Thursday/Saturday

**ABDOMINALS** Begin workout with 5 minutes of Roman Chairs.

#### SHOULDERS

Superset:	Behind-the-Neck Barbell Presses	1 set of 15 rep warm-up; 4 sets of 10, 8, 8, 6 reps
	Dumbbell Laterals	4 sets of 8 reps
Superset:	Machine Front Presses	4 sets of 8 reps
	Bent-Over Laterals	4 sets of 8 reps
Superset:	Upright Rows	4 sets of 10 reps
	Seated One-Arm Cable Laterals	4 sets of 10 reps each

#### UPPER ARMS

Superset:	Standing Barbell Curls	4 sets of 15, 10, 6, 4 reps
	Lying Triceps Extensions	4 sets of 15, 10, 6, 4 reps
Superset:	Alternate Dumbbell Curls	4 sets of 8 reps
	Triceps Cable Pressdowns	4 sets of 8 reps
Superset:	Concentration Curls	4 sets of 8 reps
	One-Arm Triceps Extensions	4 sets of 12 reps
Reverse Push-Ups		4 sets of 15 reps

#### FOREARMS

Triset:	Wrist Curls	4 sets of 10 reps
	Reverse Curls	4 sets of 10 reps
	One-Arm Wrist Curls	4 sets of 10 reps

#### CALVES

Standing Calf Raises	4 sets of 15, 10, 8, 8 reps
Calf Raises on Leg Press Machine	4 sets of 10 reps

#### ABDOMINALS

Vertical Bench Crunches	4 sets of 25 reps
Seated Twists	100 reps each side
Cable Crunches	4 sets of 25 reps
Hyperextensions (lowerback)	3 sets of 10 reps

## GOING TO THE LIMIT

In Basic Training, we talked about the necessity of occasionally having “heavy days”—trying to go to your maximum on certain lifts. Heavy days are even more important when you get to Advanced Training.

I recommend that every so often you forget about your regular program and do an entire workout consisting of only power exercises or just

heavy ballistic training. Remember that no amount of refinement, balance, and proportion looks exactly right unless it coexists with the kind of hard and dense muscle structure that comes from occasionally challenging your body to the maximum with heavy weights.

## VARYING YOUR PROGRAM

Advanced Training requires that you change your exercise program every three to six months, dropping certain exercises in favor of others. This is necessary in order to: (1) provide the variety of movements to develop every area of every single muscle and muscle group; (2) force the body to do new and unexpected movements to help shock it into further growth; and (3) help keep you from getting bored.

Exercises that seem fairly similar can feel very different. For example, if you are used to pressing a barbell over your head, doing the exercise with dumbbells instead feels totally different, although both are for the front deltoids. Having to balance and coordinate two weights instead of one puts very different demands on your muscles. Therefore, after a couple of months of an exercise like Behind-the-Neck Barbell Presses, it makes a lot of sense to switch to Dumbbell Presses for a while.

Certain basic exercises are so fundamental that they have to be included in any complete exercise program. However, exploring a whole range of different exercises like this gives you a much better idea as to which exercises work best for you and which don't really suit you. This will lead eventually to a much better understanding of your own body and of how to get the best results.

### *A Sample Alternate Workout*

**ABDOMINALS**    Begin workout with 5 minutes of Roman Chairs.

#### **CHEST AND BACK**

Superset:	Bench Presses (on machine)	5 sets of 12, 10, 8, 8, 8 reps
	Wide-Grip Pulldowns	5 sets of 12, 10, 8, 8, 8 reps
Superset:	Incline Presses (on machine)	4 sets of 12, 10, 8, 8 reps
	Close-Grip Pulldowns	4 sets of 12, 10, 8, 8 reps
	Dumbbell Flys	4 sets of 8 reps
	Decline Dumbbell Presses	4 sets of 12, 10, 8, 8 reps
	Bent-Over Rows	4 sets of 8 reps
	One-Arm Dumbbell Rows	4 sets of 10 reps each arm
Superset:	Seated Cable Rows	4 sets of 10 reps
	Machine Pullovers	4 sets of 10 reps

**THIGHS**

Squats	6 sets of 15, 10, 8, 8, 6, 4 reps
Machine Front Squats	4 sets of 8 reps
Superset: Vertical Leg Presses	4 sets of 8 reps
Lying Leg Curls	4 sets of 10 reps
Superset: Standing Leg Curls	4 sets of 10 reps
Good Mornings	4 sets of 10 reps

**CALVES**

Donkey Calf Raises, Standing Calf Raises, Seated Calf Raises as in regular workout

**ABDOMINALS**

Crunches	30 reps
Seated Leg Tucks	30 reps
Hanging Reverse Crunches	30 reps
Seated Twists	50 reps each side
Stomach Vacuums	5 minutes

**SHOULDERS**

Superset: Dumbbell Presses	5 sets of 10, 8, 8, 8, 6 reps
One-Arm Cross Cable Laterals	5 sets of 10 reps each arm
Superset: Front Dumbbell Raises	4 sets of 8 reps
Bent-Over Cable Laterals	4 sets of 8 reps
Superset: Wide-Grip Upright Rows	4 sets of 8 reps (each side)
Lying Side Laterals	4 sets of 10 reps (each side)

**UPPER ARMS**

Superset: Standing Dumbbell Curls	5 sets of 8 reps
Lying Dumbbell Extensions	5 sets of 10 reps
Superset: Incline Curls	4 sets of 8 reps
Standing Barbell Triceps Extensions	4 sets of 10 reps
Triset: Preacher Curls	4 sets of 8 reps
Dips	4 sets of 10 reps
One-Arm Cable Reverse Pressdowns	5 sets of 10 reps each arm
Dumbbell Kickbacks	5 sets of 12 reps

**FOREARMS**

Preacher Bench Reverse Curls	4 sets of 8 reps
Behind-the-Back Wrist Curls	4 sets of 10 reps
One-Arm Wrist Curls	4 sets of 10 reps

## WEAK POINT TRAINING

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Once you have developed the necessary mass, you must then begin to concentrate on quality. To do this, you need to study your body in the mirror or in photos and try to discover your weak points (although your friends at the gym will probably be all too happy to tell you exactly what they are). For me, my initial weak points were the thighs and calves, so I adjusted my training to put more emphasis on the legs, to bring them up and improve my lower body in proportion to my upper body.

A year later when I was ready to compete in the Mr. Europe and the NABBA Mr. Universe contests, my thighs and calves had improved—they weren't perfect, but they certainly were a lot better. Now the criticism was that my muscle separation and definition weren't as good as they could be. So I had to add more exercises to my routine. For example, I started doing a lot of Front Lateral Raises to separate the pectoral muscles from the deltoids, and a lot of Pullovers to separate the serratus from the lats.

But even this wasn't enough. People told me, "The center of your back isn't cut enough," so I started doing more Bent-Over and Cable Rows. "Your leg biceps aren't as good as your quadriceps," "You could use some more rear deltoid development," and so on—and each time, when I realized where I needed improvement, I changed my program to try to overcome the deficiency.

Too many bodybuilders train to improve their strong points at the expense of their weak points. One bodybuilder who is famous for his tremendous arm development and equally infamous for his lack of leg development comes into the gym day after day and trains—arms! Endless repetitions of biceps and triceps work, set after set, yet anyone looking at him can tell that he should do nothing but basic maintenance training on his arms for the next year while he bombs and blasts his thighs and calves to bring them up to championship level. But he seems to lack that "sense of perfection," and it is doubtful he will ever learn to balance his physique.

Many bodybuilders do not start out with a sense of perfection, but acquire it later on. The truth is, it is possible to go quite far in competition—winning the Mr. Universe title, for example—with glaring weaknesses in your physique. But all too often a Mr. Universe winner will go straight from the amateur championship to a professional contest and finish very poorly or even dead last!

Stepping up from one level of competition to another—from state contests to the National Championship, from the Nationals to the Universe, from amateur bodybuilding to the pros and on to the Mr. Olympia—you will find that weak points in your physique become increasingly detrimental. Bodybuilders often find themselves unable to make the effort needed to correct them because it means, in a sense, starting over. After years of successful competition, you have to admit that you

have a weakness that might take one or two years to totally correct. Making the decision to overcome a weak point, once you are advanced in a bodybuilding career, can take a great deal of moral courage.

When I came to the United States I was criticized for my poor calf development, so I cut off the bottoms of my sweatpants to make sure my calves were visible at all times. That not only reminded me to train them harder, but let everyone else see how they looked—which doubly motivated me to train them even harder.

As another example, my left arm used to be slightly smaller than my right arm. I noticed that whenever I was asked to show my biceps, I would automatically flex the right arm. So I consciously made an effort to flex my left arm as much or more than my right, to work on that weak point instead of simply ignoring it, and eventually I was able to make my left biceps the equal of my right.

Actually, this stage of training, this pursuit of perfection, never really ends because there is no such thing as a perfect body and you can always improve your physique. Every year, as you train and compete, you learn more about your body and what kinds of diet and exercise programs benefit it the most. You never really stop doing the basics, you just add new ways of doing things.

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## TRAINING WEAK AREAS

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Bodybuilding is as much an art as a science, so you can't always be governed by a rigid and unchanging program. From the first day you walk into a gym it may be apparent to you that one body part or another is much weaker than all the rest. One basic method of correcting such imbalances is by using the Priority Principle—work your weak areas first, when you are fresh and capable of generating the greatest amount of intensity. Or arrange your Double-Split schedule so that you are training only the weak body part in one of the sessions.

Another remedy is to increase the number of sets you do for the weaker area from 5 to 7 sets. Continue doing this for as long as necessary, until you see an improvement, and then go back to a more balanced routine. This is a good time to use the Staggered System. Every third or fourth set, throw in one set of an exercise for the weak area in addition to the normal sets you do for that body part.

There will also be times when a body part lags behind because you are *overtraining* it, hitting it so hard, so often, and so intensely that it never has a chance to rest, recuperate, and grow. The answer to this problem is simply to give the muscles involved a chance to rest and recover, and then to adjust your training schedule so that you don't overtrain it again. Remember, too much can be as bad as too little when it comes to bodybuilding training.

But how do you tell the difference between slow growth due to not enough training and lack of development because of overtraining? To a degree, this is something you need to learn to tell instinctively as you get more experience, but here is a good rule of thumb:

1. The remedy for understimulation is most often learning to train harder, more intensely, using additional Intensity Techniques, than it is increasing sets to any great degree.

2. Overtraining is almost always the result of training with too many sets, too often, with too little time to rest for a body part between workout sessions. (One sign of possible overtraining is a lack of a pump during your workouts.) Remember, one of the reasons there are so many good bodybuilders nowadays is that they have learned to *train extremely intensely in short bursts*, while giving their muscles plenty of time to rest and recuperate between workouts. Always keep in mind that training stimulates growth, but that actual growth takes place while you are resting.

Of course, sometimes your weakness is in just one area of a body part—your biceps may have a great peak, but not enough width; your lats may be wide and sweeping enough, but you might lack density and mass in the middle back. The answer is to choose the particular exercises that work that specific area and arrange your training program to give those exercises special priority.

In the exercise section (beginning on page 247) you will find a full analysis of each body part designed to help you spot your weak points and specific instructions as to which exercises or specific training techniques you can use to correct any weaknesses.

# Competition Training Program

**T**ODAY AN ENORMOUS number of bodybuilders are working out for two or three hours a day and dedicating themselves to building a bigger and better physique. Yet only a small percentage of these obviously motivated bodybuilders ever go on and take the next step—to Competition Training.

The barrier that has to be overcome in order to work toward competition is more mental than physical: You have to make up your mind that what you really want is to join the ranks of the competitive bodybuilders, pitting yourself against bodybuilders whom you have probably admired in the past and whose images have helped to inspire and motivate you to continue training.

## **BUILDING A COMPETITION PHYSIQUE**

Competition is a whole other ball game. You suddenly become concerned with things like skin tone, presentation, posing routines, and, above all, learning to deal with a kind of pressure that simply does not exist in the gym and against which you may have developed no defenses.

Physically, you are not just trying to develop a massive, balanced, and defined physique. Now you must reach for total perfection, every muscle and muscle group sculpted and chiseled into its ultimate form and a body fat percentage so low that every striation and muscle separation shows itself clearly. In *Advanced Training* we talked about developing each area of each body part. When you get to Competition Training this becomes even more complex and you need to consider such details as:

*Chest*—upper, lower, and middle pecs, the split between the upper



and lower pecs, the inner pecs along the sternum, the outer pecs where they insert under the deltoids, chest striations, separation between the pecs and front deltoids, serratus definition.

*Back*—width and thickness of the latissimus dorsi, length of the lats where they insert above the waist; rhomboid and middle back detail and muscularity; the spinal erectors of the lower back; intercostal definition.

*Shoulders*—development and separation of all three heads of the deltoids: anterior, side, and posterior delts; mass and thickness of the trapezius muscles; separation of the traps from the back and rear delts.

*Biceps*—upper and lower biceps, width, length, and peak.

*Triceps*—development of all three heads of the triceps, thickness and length.

*Forearms*—development of both extensors and contractors; brachialis development at the elbow.

*Waist*—upper and lower ab development and definition; development of external obliques and separation between abs and obliques.

*Quadriceps*—mass and separation of all four heads of the quads, outer sweep, lower quad insertion at the knee; development of the adductors at the inside of the thigh.

*Hamstrings*—development of both heads of the leg biceps, separation between the hamstrings and quadriceps; development and striations of the glutes and separation between hamstrings and glutes.

*Calves*—development of the underlying soleus muscle and the gastrocnemius muscle that lies on top; calf size, length, and peak.

Think about what you need so that *you're* the one with all of this development and your competitors are trying to keep up with *you*. This involves learning what exercises work each of these areas and incorporating them into your workouts, figuring out at what angles you need to train each muscle and what intensity techniques are needed to get the development you're after. Of course, as you progress, you include more exercises as you go along and therefore more total sets, and that requires higher levels of conditioning and endurance.

You can be quite advanced in your training and not have a complete grasp of what you need to create a complete physique. I was winning the NABBA Mr. Universe title in Europe and didn't realize I needed additional calf development. I didn't know that my calves should have been the same size as my arms. When I came to America people like Joe Weider told me, "Your waist ought to be smaller. You need more serratus. Your calves should be bigger. You need to work on developing more muscularity and definition." That's when I started to get down to serious detail and weak point training, but if I had understood this earlier I wouldn't have wasted that much time, and I wouldn't have lost against Chet Yorton and Frank Zane and, who knows, I might not have lost against Sergio Oliva.

Competition Training involves more sets, more reps, an across-the-

board increase in volume of training—both in terms of what you do inside the gym with weights and the additional aerobic training outside the gym that helps supplement your overall program. This is all accomplished while you are cutting down your intake of food to the bare minimum in order to strip away as much body fat as possible. As a result, it is almost impossible to make a lot of gains in mass and strength on this kind of program, which is designed for *refinement* of the physique, not for building fundamental size and strength.

Competition Training, along with strict diet, can often result in losing hard-won mass if you aren't careful. It is very probable that many of the top champions have actually slowed their progress in the last few years simply because of the opportunities that the rise in popularity of bodybuilding has afforded them. They participate in so many contests, exhibitions, and seminars that they spend most of their time in or close to competition shape. But, ideally, Competition Training should be a concentrated program you use for a short period in order to get ready for a specific contest, not one you stay on for extended periods or try to do too often. In the days when bodybuilders entered only a few contests a year—which tended to be clustered together at a certain time of the year—there was plenty of time for off-season training for more mass and growth. So a bodybuilder would spend much of the year doing a lot of power training and eating as much as necessary, then shift gears into a competition mode of training in order to attain the quality and refinement necessary to be competitive onstage.

But today's top amateur and pro bodybuilders have had to alter their training methods drastically, picking their contests carefully and trying never to get too much out of shape between events. I, of course, have always been a believer in choosing particular contests rather than entering everything that came along, but many professional bodybuilders exhaust themselves entering one Grand Prix after another. This strategy has its price, since staying in shape too long results in your not being able to get in super-shape at all and in its general debilitating effect on your muscle mass and strength. Instead of this approach, I recommend competing only in contests that are really important to your individual competition career. It's better to compete only once a year and win than it is to compete too often and not do that well. Still, with so many more contests being held, deciding where and when to compete is more difficult than it used to be.

But if you are a beginner or early intermediate at bodybuilding competition, you probably won't face that sort of problem until later in your career. For now, it is important simply to realize what Competition Training does and doesn't do: It does not build mass, it is not intended to make you bigger and stronger, and, in fact, can sometimes do the opposite; but what it does do is bring out the quality in the development you have created, strip away the nonessentials, and reveal the diamond-like brilliance of each facet of your musculature.

## THE FEAR OF SMALLNESS

One psychological block that many bodybuilders face when they attempt Competition Training has to do with their perception of their physical size. Whatever other motive bodybuilders may have for getting into training in the first place, part of it is always the desire to get big and strong. Therefore, anything which makes them feel smaller becomes a threat. That is why many bodybuilders are made very anxious by the effects of Competition Training.

The competition physique should be as much pure lean mass as possible, with any excess body fat stripped away. As the saying goes, "You can't flex fat." But fat on your body makes you feel bigger than you actually are, and this sense of being bigger is psychologically satisfying to most bodybuilders.

A person who weighs 240 pounds with 16 percent body fat would be lean for an average man, but not for a competition bodybuilder. When he starts to train and diet for competition he alters his body composition so that ultimately he gets down to 9 percent body fat. What does this change mean in practical terms?

At 240 pounds, he was originally carrying almost 38 pounds of fat. His lean body mass was therefore around 202 pounds. At 9 percent body fat he will find himself weighing about 222 pounds, assuming he has not lost any muscle mass. So, in terms of muscle he will be the same size, but he will feel a lot smaller. And this sense of smallness affects some individuals to the extent that they find themselves psychologically unable to keep to their program.

I have been through this experience myself. When I came to America in 1968 for the IFBB Mr. Universe contest, I weighed 245 pounds. I thought I had it made. Joe Weider took one look at me and declared me the biggest bodybuilder there was. Here I was in America to show everybody how great I was—and I lost! Frank Zane took the title with his smaller but cut-to-ribbons quality physique. And that taught me a valuable lesson.

A year later, at 230 pounds, I completely dominated my competitors, winning both the NABBA and IFBB Universe contests. I had realized that sheer bulk alone was not the stuff of top champions. I didn't take off the extra fat weight in two months; it took a full year. Because I took this amount of time, I was able to get used to my new proportions, to realize that the lighter weight did not really make me smaller—my arms were still huge and so were my thighs. But all my clothes were loose around the waist, indicating a real loss of unwanted bulk. The result? By changing my body composition, I won every contest I entered.

Mass is vital to a bodybuilder's physique. But it is the shape and the quality of this mass that win contests. Seeing big numbers on a tape measure or scale, or striving for the feeling of your clothes being tight all over

your body, and not paying enough attention to stripping away fat, achieving ultimate definition and contest quality, will give you one inevitable result—you'll lose. And that I can tell you from experience.

## **THE ELEMENTS OF COMPETITION TRAINING**

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There are a number of special goals you need to set for yourself when training for competition:

1. You need to focus with even greater concentration on isolating each area of every single muscle.
2. You need to use an additional number of intensity training principles and a wider variety of exercises.
3. You need to increase the total number of sets and weights in your workout sessions.
4. You need to vary your workout pace, doing a number of supersets and trisets that drastically reduce your rest time between sets.
5. You have to make significant changes in diet. (See Contest Diet Strategies, page 748.)
6. You need to be *constantly* flexing and posing in the gym between sets.
7. You need to consider the benefits of having a training partner to help focus your energies on creating super-intense workouts. (See below.)

Analyzing and correcting your weak points becomes even more important when you are training for competition. Whereas you might previously have given weaker areas priority, now you must become a fanatic about correcting these imbalances. Of course, you have to realize that only so much can be done in a few weeks or months of training—totally correcting every weak area may take a year or two—but there are changes that can be made (bringing up the rear delts, for example, further developing the split in the leg biceps) even in such a short time that will increase your chances of doing well in competition.

## **DEPENDING ON YOUR TRAINING PARTNER**

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At no time is having a dependable training partner more important than when you are preparing to compete. As the contest approaches, every workout counts and there is no time for any letdown in training intensity. Your training partner helps to provide the extra motivation you need to diet and train hard at the same time. Of course, this relationship is a two-

way street: You have the same responsibility when it comes to helping your training partner.

If you are a beginner at competition, you would do well to train with somebody who has more experience than you do. A knowledgeable training partner, who has been through it all before, can show you a lot of shortcuts and make your contest preparation that much easier and more effective.

When I was training at World Gym for the 1980 Olympia, I trained some days with two young bodybuilders getting ready for their first competition. They were both young and extremely strong, and they were able to push me hard in our workouts. On the other hand, because of my greater experience, I was able to show them training techniques they hadn't seen before and help them with their dieting and posing. We made a really fair trade: their energy and my knowledge. And we all got better because of it.

## TRAINING VOLUME

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Training for competition, you need to do more sets and use more different exercises. But, as we've discussed, overtraining can be as detrimental as not training hard enough. So here is a volume of training I recommend:

Chest, Back, Thighs, Shoulders	low volume—16 to 20 sets high volume—20 to 26 sets
Biceps, Triceps, Hamstrings	low volume—12 to 16 sets high volume—16 to 20 sets
Calves	low volume—10 sets high volume—15 sets
Abdominals	low volume—3 exercises high volume—4 to 6 exercises

## CHOOSING EXERCISES

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In the Competition Training Program, I recommend specific exercises, as I did in the previous training program. As you will see, the number of exercises listed in the competition program far exceeds what you can or should do in any one workout. By the time you get to the competition level *you should be experienced enough to make some decisions for yourself*. But these are some of the criteria you should use in putting together an individual workout:

1. Make sure you include both mass building, power or ballistic exercises, plus isolation exercises to create quality in each body part.
2. Concentrate on using free weights for mass and strength, and use cables and machines more for isolation exercises.
3. Include exercises to hit every part of each muscle. For example:

## THE TRAINING SPLIT

There are two common ways of dividing up your competition training:

### *2-day split*

the whole body in 2 days, each body part 3 times a week

### *3-day split*

the whole body in 3 days, each body part 2 times a week

Again, I always trained 6 days a week, Monday through Saturday, as did most of my contemporaries. If the demands of your life or your job require you to train on a different schedule, you can also keep track of your workouts as Workout #1, Workout #2, and so forth, rather than in terms of days of the week.

A *2-day double-split* would look like this:

WORKOUT #1	WORKOUT #2	WORKOUT #1	WORKOUT #2	WORKOUT #1	WORKOUT #2
MON	TUE	WED	THUR	FRI	SAT

#### MORNING

Chest	Shoulders	Chest	Shoulders	Chest	Shoulders
Back	Upper arms	Back	Upper arms	Back	Upper arms
	Forearms		Forearms		Forearms

#### EVENING

Legs		Legs		Legs	
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Calves and Abdominals in every evening workout

A *3-day double-split* would look like this:

WORKOUT #1	WORKOUT #2	WORKOUT #3	WORKOUT #1	WORKOUT #2	WORKOUT #3
MON	TUE	WED	THUR	FRI	SAT

#### MORNING

Chest	Shoulders	Thighs	Chest	Shoulders	Thighs
Back	Traps		Back	Traps	

#### EVENING

Forearms	Upper arms	Hamstrings	Forearms	Upper arms	Hamstrings
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Calves and Abdominals in every evening workout

## Competition Exercise Program

Select the desired number of the appropriate exercises for each body part.

**ABDOMINALS** Begin workout with 10 minutes of Roman Chairs.

### CHEST AND BACK

Deadlifts		3 sets of 10, 8, 6 reps
Superset:	Weighted Chin-Ups —behind neck	4 sets of 10 reps
Superset:	Incline Barbell Presses Bench Presses	4 sets of 15, 12, 8, 6 reps 4 sets of 15, 12, 8, 6 reps
Superset:	Chin-Ups—to front Dumbbell Flys	4 sets of 15 reps 4 sets of 10 reps
	Wide-Grip Bent-Over Barbell Rows	4 sets of 12 reps, using Stripping Method
Triset:	Machine Pullovers	4 sets of 15 reps, using Stripping Method
	Dips	4 sets, each to failure
Triset:	Cable Flys Seated Cable Rows	4 sets of 12 to 15 reps 4 sets of 10 reps, using Stripping Method
	One-Arm Cable Rows	4 sets of 12 to 15 reps
	Dumbbell Pullovers	4 sets of 15 reps

### SHOULDERS

Triset:	Front Machine Presses	4 sets of 10 reps
	Dumbbell Lateral Raises	4 sets of 10 reps
	Bent-Over Lateral Raises	4 sets of 10 reps
Triset:	Barbell Presses, alternating front and back	4 sets of 12 reps
	Cable Side Laterals	4 sets of 10 reps
	Lying Incline Laterals	4 sets of 10 reps
Triset:	Front Barbell Raises	4 sets of 10 reps
	Seated Cable Rear Laterals	4 sets of 10 reps
	Shrugs	4 sets of 10 reps

### THIGHS

Superset:	Leg Extensions	5 sets of 12 reps
	Squats	5 sets of 15 to 20 reps
Superset:	Front Squats	5 sets of 12 to 15 reps
	Leg Curls	5 sets of 12 reps
Superset:	Hack Squats	5 sets of 15 reps
	Leg Curls	the Stripping Method
Straight-Leg Deadlifts		3 sets of 6 reps, standing on block or bench

**UPPER ARMS**

Superset:	Barbell Curls	4 sets, the Stripping Method
	Standing Close-Grip Triceps Extensions with bar	4 sets of 10 reps
Triset:	Barbell Preacher Bench Curls	4 sets of 10 reps
	Lying Barbell Triceps Extensions	4 sets of 10 reps
	Barbell Preacher Bench Reverse Curls	4 sets of 10 reps
Triset:	Lying Dumbbell Extensions	4 sets of 10 reps
	Incline Curls (increase incline each set)	4 sets of 10 reps
	Lying Reverse-Grip Barbell Extensions	4 sets of 10 reps
Superset:	Concentration Curls	4 sets of 15 reps, using "One-and-a-Half" Method
	Standing One-Arm Triceps Extensions	4 sets of 12 reps
Superset:	Kneeling Cable Triceps Extensions	4 sets of 12 reps
	Kneeling Cable Triceps Extensions with rope	4 sets of 12 reps

**FOREARMS**

Triset:	Barbell Reverse Wrist Curls	4 sets of 10 reps
	Barbell Wrist Curls	4 sets of 10 reps
	One-Arm Dumbbell Wrist Curls	4 sets of 10 reps

**CALVES**

(Alternate foot position: toes in, toes forward, toes out)

Donkey Calf Raises	5 sets of 15 reps
Standing Calf Raises	5 sets of 10 reps, as heavy as possible
Seated Calf Raises	5 sets of 15 reps
Front Calf Raises	5 sets of 15 reps
Leg Press Calf Raises	4 sets of 12 reps
Standing One-Leg Calf Raises	4 sets of 12 reps
Donkey Calf Raises	4 sets of 12 reps

**ABDOMINALS**

(One cycle is 4 to 6 exercises, no rest between exercises)

Crunches	30 reps
Reverse Crunches	30 reps
Twists	50 reps each side
Seated Leg Tucks	30 reps
Vertical Bench Crunches	30 reps
Hyperextensions (lower back)	15 reps
Twisting Crunches	30 reps
Hanging Reverse Crunches	15 reps
Bent-Over Twists	50 reps each side
Machine Crunches	15 reps



## INDIVIDUALIZING THE TRAINING PROGRAM

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Once you get to the competition level, you have to put together a workout program that is suited to you as an individual. Because each individual has different strengths and weaknesses, there is no way I can give one routine that is perfect for everyone. I can outline general approaches, show you how to change your program so that you burn more calories, create more muscularity and definition—but it is you who must look in the mirror and determine where your weakness lies, whether it be in upper, lower, or middle pec development, biceps, triceps, or lat width.

Suppose your lower lats are not developing quite the way you want them to. It would make sense for you to add about 4 extra sets for lower lats. But 4 sets in addition to everything else you are doing would probably be too much, so you could eliminate one set each of exercises like Close-Grip and Wide-Grip Chin-Ups, Seated Rows, and T-Bar Rows. You would still do these exercises, but with fewer sets of each, so the overall demand of your total workout would remain about the same.

The program outlined here lists specific exercises, but if you are more experienced and have a clear perception of your weaker areas, then you should consult the exercise sections to find which movements are best for correcting the problems and make whatever alterations in your training routine you feel necessary.

All the top bodybuilders go through this process. I know when Franco and I used to train together I would do extra sets for certain areas and Franco would do extra for others. For instance, Franco had trouble getting his thighs really ripped, so he would do additional sets of an exercise like Front Squats on a Smith machine to help define his quadriceps. I didn't have this problem, so I would work harder on shoulders, triceps, abs, or whatever else I felt needed it the most. You can be sure that the bodybuilders who followed us in competition, such as Lee Haney, Dorian Yates, Shawn Ray, and Flex Wheeler, go through the same process.

As you make adjustments in your training, just be certain that you don't create new weaknesses trying to correct old ones. You must continue to give the rest of your body sufficient attention even while you work to correct problem areas.

## MUSCLE SEPARATION

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I talked earlier about the need for quality, and one aspect of physical development that is most important to achieving quality is muscle separation. Muscle separation is a level of muscularity that goes far beyond simple definition. Training and diet can give you good definition, but it

takes something more to become the walking anatomy chart that will win competitions.

The quality physique must show clear separation between each muscle group. For example, when you do a rear double-biceps shot, the borders between the biceps and triceps, shoulder, traps, and upper and lower back should leap out at the judges. Each individual muscle group itself should show clear internal distinctions: the two heads of the biceps, the three heads of the triceps. And each head should be further patterned with visible striations of individual bundles of muscle fiber.

Total muscle separation is the result of training each muscle so thoroughly that every plane, contour, and aspect is brought out and fully revealed once you have lowered your body fat sufficiently. To achieve this requires many different exercises for each muscle and a lot of sets and reps. But it takes specific technique as well:

1. It is necessary to totally isolate each muscle and then each specific area of every muscle in order to engage every fiber possible, thereby creating clear separation between each muscle and major body part. This is done by knowing exactly how each exercise affects the muscles and putting together a program that sculpts the body exactly as you intend.

2. The utmost muscle separation cannot be achieved without strictness of movement involving concentrated effort through the entire range of motion of the exercise, so that every engaged fiber is subjected to the maximum amount of stress. Any sloppiness of execution will defeat your purpose.

Unless you perform an isolation exercise in a totally strict manner, you will not be working the narrow and specific area for which the exercise was designed. When doing a Front Dumbbell Raise to get deltoid-pectoral separation, for example, if you swing the weight up instead of making the muscle do all the work you will not bring out the full shape of the muscles, nor will you get the kind of separation you are after. If you want to work a certain area, you have to do the movement strictly enough so that you feel the effort exactly where you want it.

3. Obviously, whatever separation you achieve will not show if the muscle is covered with body fat. So proper diet resulting in low body fat is also an important factor in achieving spectacular muscle separation.

## **MUSCULARITY AND DEFINITION: ANALYZING YOUR PROGRESS**

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Ultimately, you are judged in bodybuilding competition based on how you look—a combination of what your physique looks like and how you present it. As we've discussed, there are other ways you can keep track of your progress, but these can be problematical. For example, at the 1980 (AAU)

Mr. America contest Ray Mentzer showed up to compete for a spot on the American team going to the World Amateur Bodybuilding Championships. For several months prior to the contest he had been going for body composition testing every three weeks. He came into the competition seemingly confident of victory because his last test had indicated that his body fat was below 4 percent.

Despite the results of the testing procedure, he failed in his bid to win a place on the Universe team because—in my opinion—he looked smooth onstage. He lacked cuts and muscularity. He had failed to realize that how much he weighed, what his physical measurements were, or what his body composition testing had revealed had nothing directly to do with what bodybuilding competition is all about.

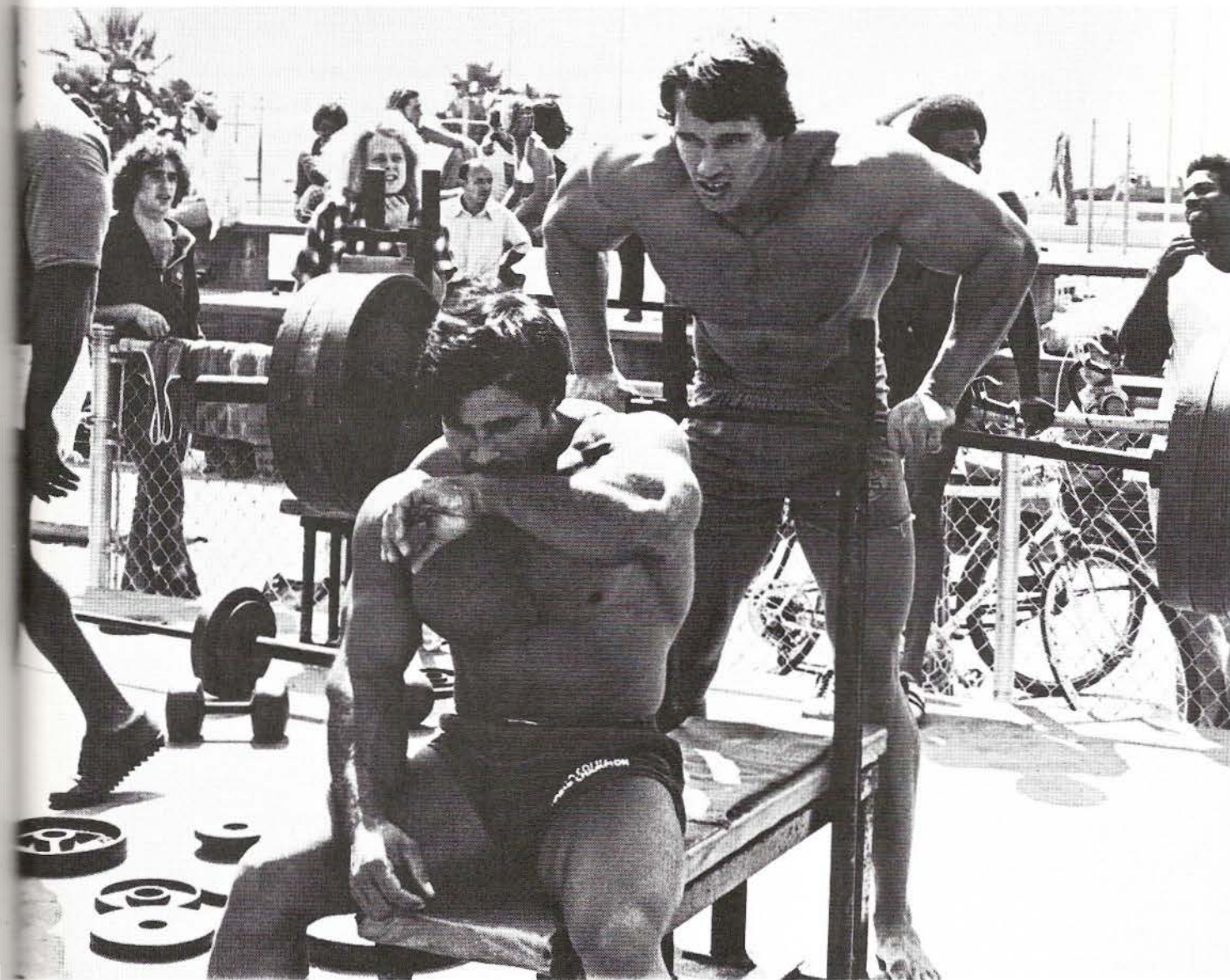
The only real way to know whether or not you are in shape is by how you look. After all, the judges are not going to use underwater weighing, a tape measure, or any other device to make their decision. They are going to go by what they see. And you have to do the same thing.

Of course, it helps to have some basis for comparison. It is easier to measure the difference between two things than it is to analyze a thing by itself. One good way to do this is to take photos periodically and compare how you look now with how you looked then. Another way is to stand alongside another bodybuilder in the gym, hit some poses, and see exactly how you stack up.

But the ultimate test is when you are actually onstage and either win or lose. That is why it is sometimes necessary to enter several contests before you can really judge your progress. How well you do from one contest to another can tell you very clearly whether or not your training methods are working.

In the short term, though, it is your mirror that will be your most honest critic—if you allow it to be. Body composition testing doesn't tell you anything about your muscle separation; the tape measure cannot analyze your muscularity and definition; and you cannot judge the proportion and balance of your physique by stepping on a scale. But looking into a mirror and seeing only what you want to see is not the way to become a champion. You have to see things as they are, no better and no worse.

Also remember to keep your training diary so you will have an accurate record of your progress. When I was training for the 1980 Olympia, I had Franco shoot photos of me every week, which I studied very carefully to see how hard, defined, and muscular I was becoming. Between the photos, my own ability to look at myself in the mirror, and Franco's insightful comments, I knew all the time just how fast I was making progress and was able to arrive in Australia in shape to win my seventh Olympia title.



*Franco and me on Venice Beach*

## OUTDOOR TRAINING

I have always enjoyed training outdoors in good weather. Training in the sun helps to give you a healthy look, tighter skin, and a good tan. Since the early Muscle Beach days, bodybuilders have taken advantage of sunny weather and trained outdoors.

You can certainly begin exercising outdoors right from the first day you start Basic Training, but outdoor training is most valuable prior to competition because of the finished look it helps to give the physique. When Franco and I trained on Venice Beach, we would work out, go lie on the beach for a while, and then return to the weight pit for more lifting. My tan became much deeper this way, and I benefited from training before an audience because it helped to get me ready for the pressures of appearing onstage in a hall full of people.

When you train outdoors I advocate a slower workout, but with very heavy weights. This can give you a nice break from your normal competition training and is another way of surprising and shocking the body.

Not everybody has a California beach right down the street, but when I lived in Austria and then later in Munich, my friends and I would often go out to a local lake and spend the entire day training outdoors. You can go to a park, a recreation area, or even somebody's backyard and enjoy outdoor training yourself.

# Mind over Matter: Mind, the Most Powerful Tool

**T**HE BODY WILL never fully respond to your workouts until you understand how to train the mind as well. The mind is a dynamo, a source of vital energy. That energy can be negative and work against you, or you can harness it to give yourself unbelievable workouts and build a physique that lives up to your wildest expectations. Whenever you hear about anyone performing unbelievable physical feats—Tiger Woods in golf, Michael Jordan in basketball, Michael Johnson in track, Hermann Maier in skiing, and so many more athletes—it is because of the power of their minds, not just technical, mechanical skill. And you can be sure you will never perform at that level unless you can match their inner drive as well as their physical abilities.

People can walk on coals when they are sufficiently motivated. They can endure the rigors of Navy Seal training. They can cross vast deserts, dogsled across arctic wastes, climb Mount Everest, swim the English Channel, bicycle around the world, lift incredible amounts of weight. They perform in spite of terrible pain, despite being ill, no matter the odds or the obstacles.

There are a number of specific ways in which the power of the mind can be harnessed to help you achieve your goals:

1. *Vision.* As I alluded to in Chapter 5, the first step is to have a clear vision of where you want to go, what you want to achieve. “Where the

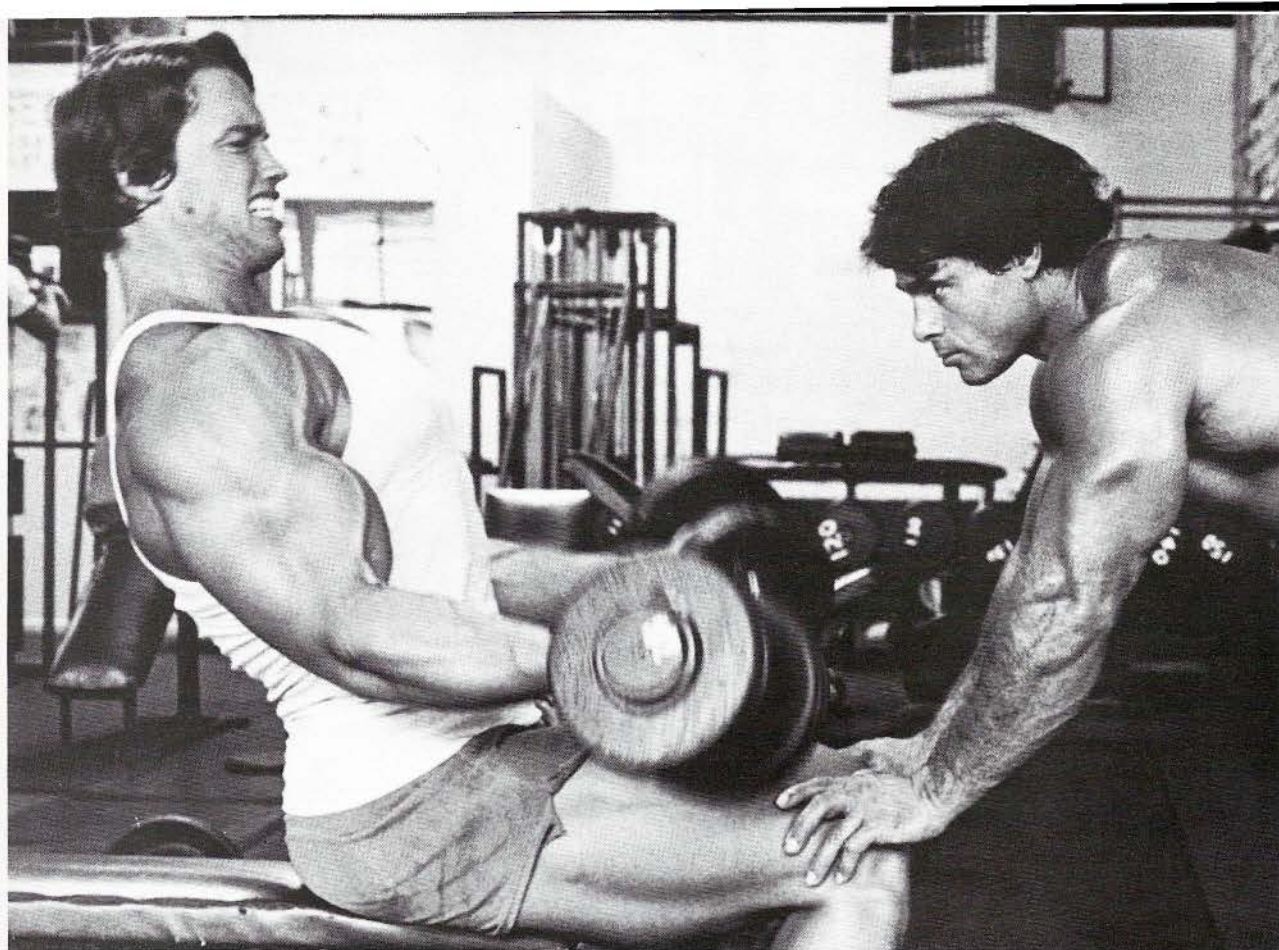
mind goes, the body will follow” is a saying I have always believed in. If you want to be Mr. America or Mr. Universe, you have to have a clear vision of yourself achieving these goals. When your vision is powerful enough, everything else falls into place: how you live your life, your workouts, what friends you choose to hang out with, how you eat, what you do for fun. Vision is purpose, and when your purpose is clear so are your life choices. Vision creates faith and faith creates willpower. With faith there is no anxiety, no doubt—just absolute confidence.

**2. Visualization.** It is not enough to just want to “get big.” Bodybuilding is more than that. It is about mass and shape and symmetry and definition. It is a kind of sculpture. It is almost like an art form. You have to have a picture in your mind of the kind of physique you need to build in order to achieve your goals. When you look in the mirror, you have to see yourself as you are—and as you want to be as well. You have to see in your mind’s eye the masses of muscle you will be creating, the powerful physique that is in your future. Focusing on such images gives your mind and body a clear-cut task, a well-defined goal to strive for.

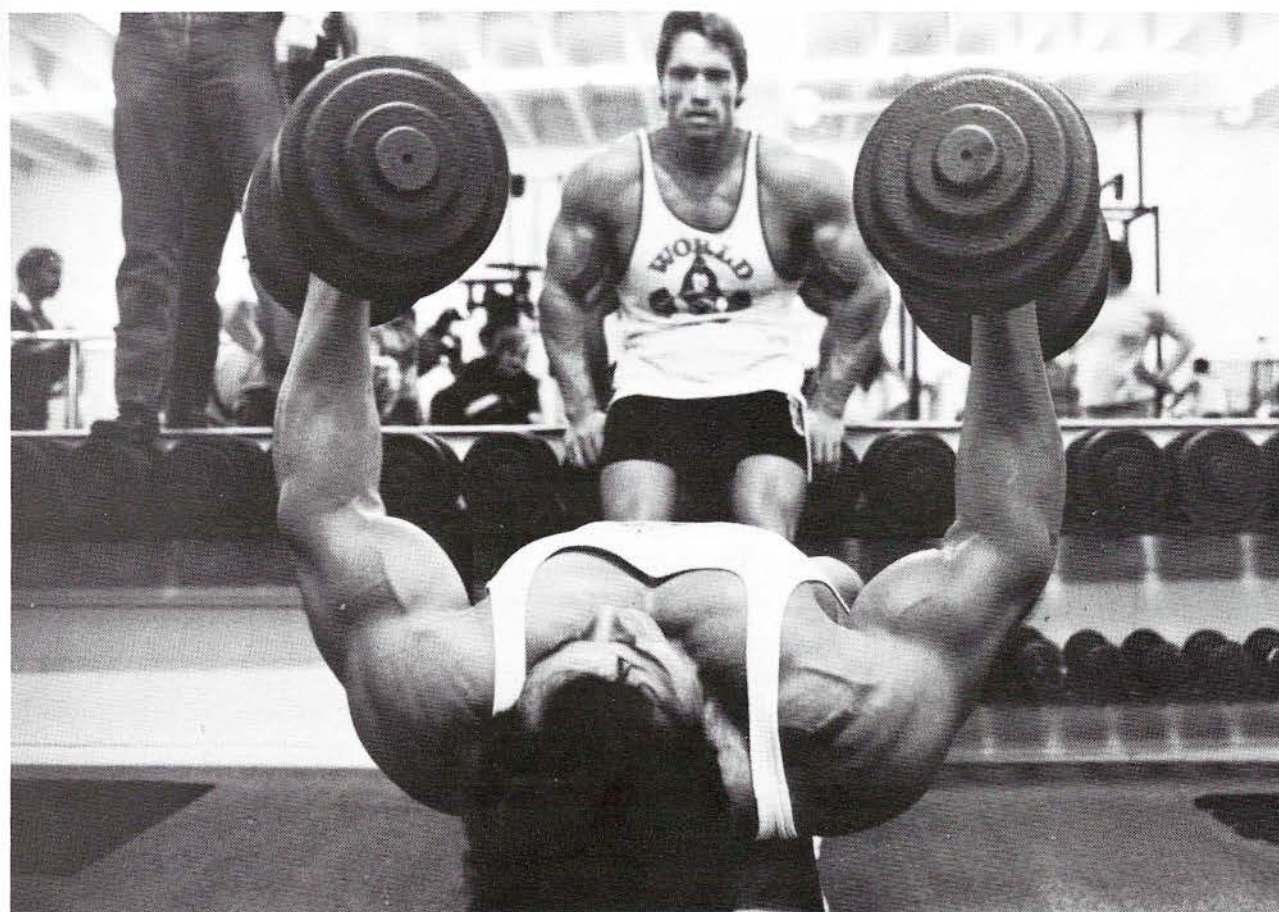
**3. Role models.** I talked in Chapter 5 about how I used to study photos of Reg Park because he had the kind of Herculean physique that I wanted someday to emulate. I remember as I traveled in the 1970s with Franco Columbu how many shorter bodybuilders used to come up to and thank him for inspiring them to train for competition. A medium-size, aesthetic type could choose Frank Zane or Shawn Ray. Really thick, slab-muscled competitors can turn to Dorian Yates or Nasser El Sonbaty for inspiration. When you find somebody who represents your ideal physique, study as many photos of him as you can, tear them out of magazines and put them up on the wall, tape them to the refrigerator—whatever it takes to help keep your mind focused on the task at hand.

**4. Motivation.** Motivation is the driving force that allows you to develop a single-mindedness of purpose that ultimately gives you the will to go into the gym for two to four hours a day and put yourself through the most punishing workouts possible. It makes the difference between just going through five sets of this and four sets of that and really pushing your body to the limit. Motivation creates discipline. Discipline comes from the joy of looking forward to achieving the goal you have learned to picture so clearly in your mind and consistently hammering away, rep by rep, set by set, workout by workout.

**5. Training strategy.** Beyond the act of visualizing the end product of your training, you should decide exactly what kind of development you need in each of the major muscle groups and what specific exercises and exercise techniques will achieve this. You’ve decided where you’re going, now you need to map out how to get there. This is the point where you learn to truly individualize your workouts, find out how your body responds to specific movements and Intensity Techniques, and decide exactly what strategy you are going to employ to create the kind of body you

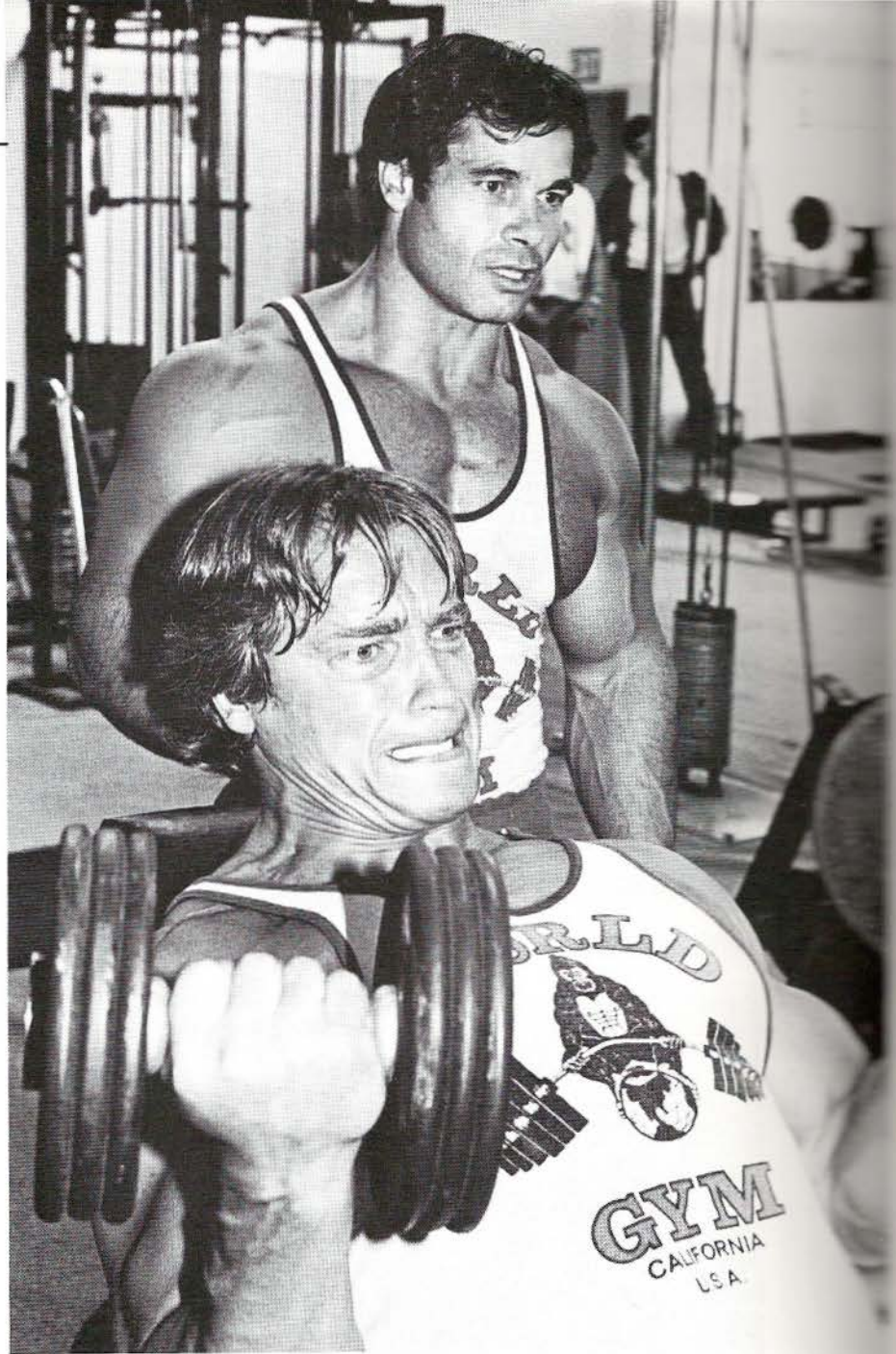


*A little help from my friend—Franco Columbu was always my best training partner.*





*You and your training partner can feed off each other's energy, creating the kind of intensity that will push you beyond your limits.*



are striving for. In addition to this, you have to consider factors we have discussed, such as what gym to train in and what kind of workout partner will help you to succeed, as well as any other factors that can help you to have great workouts or can get in the way.

**6. Mind in the muscle.** The key to success in your workouts is to get the mind into the muscle, rather than thinking about the weight itself. When you think about the weight instead of the muscle, you can't really feel what the muscle is doing. You lose control. Instead of stretching and contracting the muscle with deep concentration, you are simply exerting brute strength. So you end up not working to the limits of your range of motion, not contracting and extending the muscle in a smooth, intense, controlled manner. For example, when I am doing Barbell Curls, I am visualizing my biceps as mountains—not just big, but huge. And because I

am thinking of the muscle, I can feel everything that is happening to it. I know whether or not I have fully stretched it at the bottom of the movement and whether I am getting a full, complete contraction on top.

## **BIG GOALS AND LITTLE GOALS**

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Along with the big goals you set for yourself—the kind of physique you hope ultimately to create, the competitions you want to win—you also have to learn to set smaller goals—day-to-day challenges, short-term achievements. Before you can develop 19-inch arms, you first have to build them up to 16 inches, 17 inches, and 18 inches. Before you can do a 400-pound bench press, you have to be able to press 250 pounds, 300 pounds, and 350 pounds.

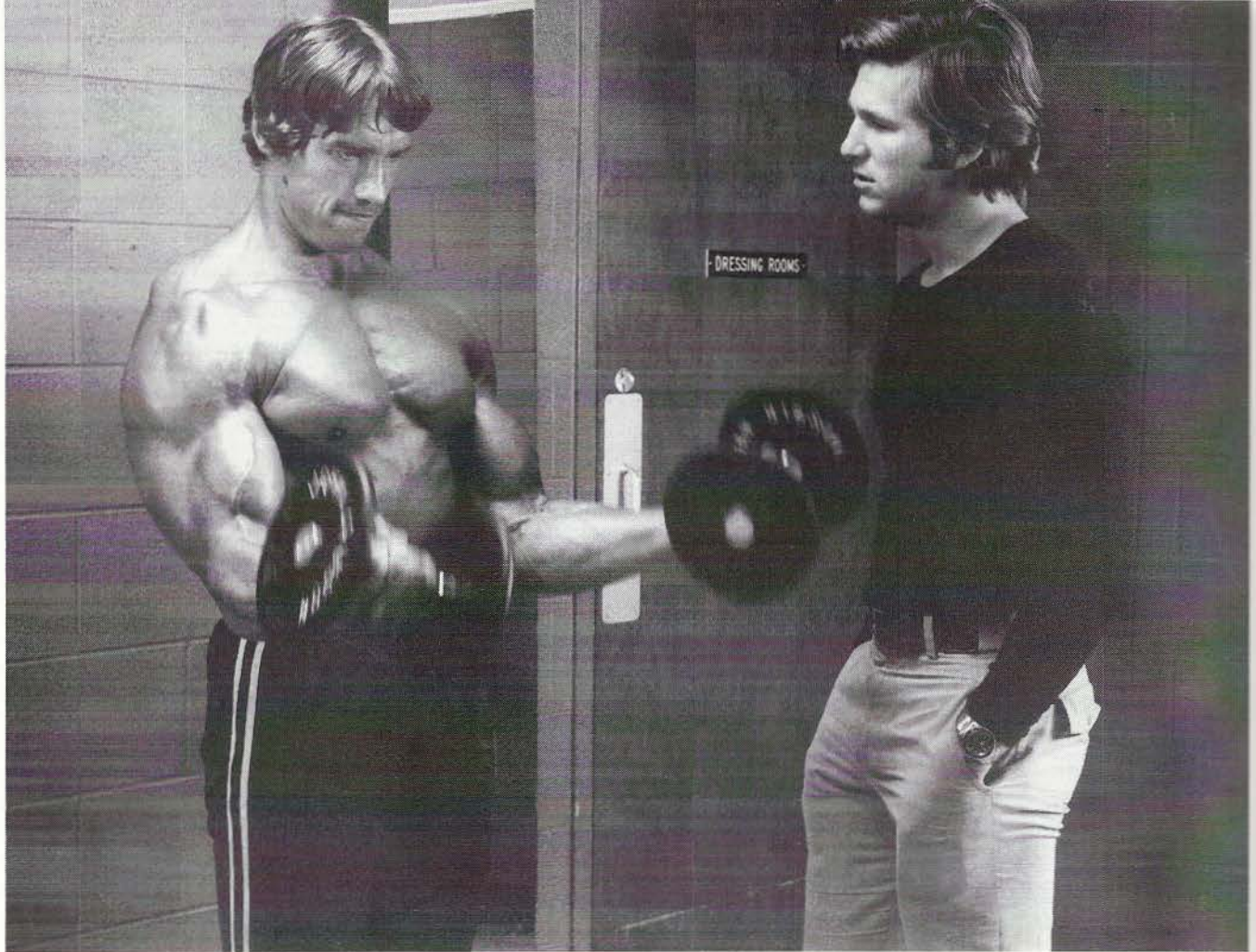
Sometimes focusing only on long-term goals can be discouraging. But as the old saying goes, a journey of a thousand miles begins with a single step. I always had plans that covered different periods of time. My plan for the whole year dictated what I wanted to achieve in order to win another Mr. Olympia title. But I would also make plans that covered only a month at a time, and at the end of that period I would look back, evaluate my progress, and make whatever changes I felt were necessary for the next 30-day period. Maybe I wanted to pump up my triceps an inch or so, or take a little off my waist.

I do the same thing today when I have a movie scheduled. “Oh, two months to go before filming, I’d better hit the gym a little harder, increase my cardio.” So I recommend, instead of always concentrating on the far horizon of your ambitions, try to take your long-term goals and break them down into smaller, incremental, and more manageable segments.

## **LEARNING FROM FAILURE**

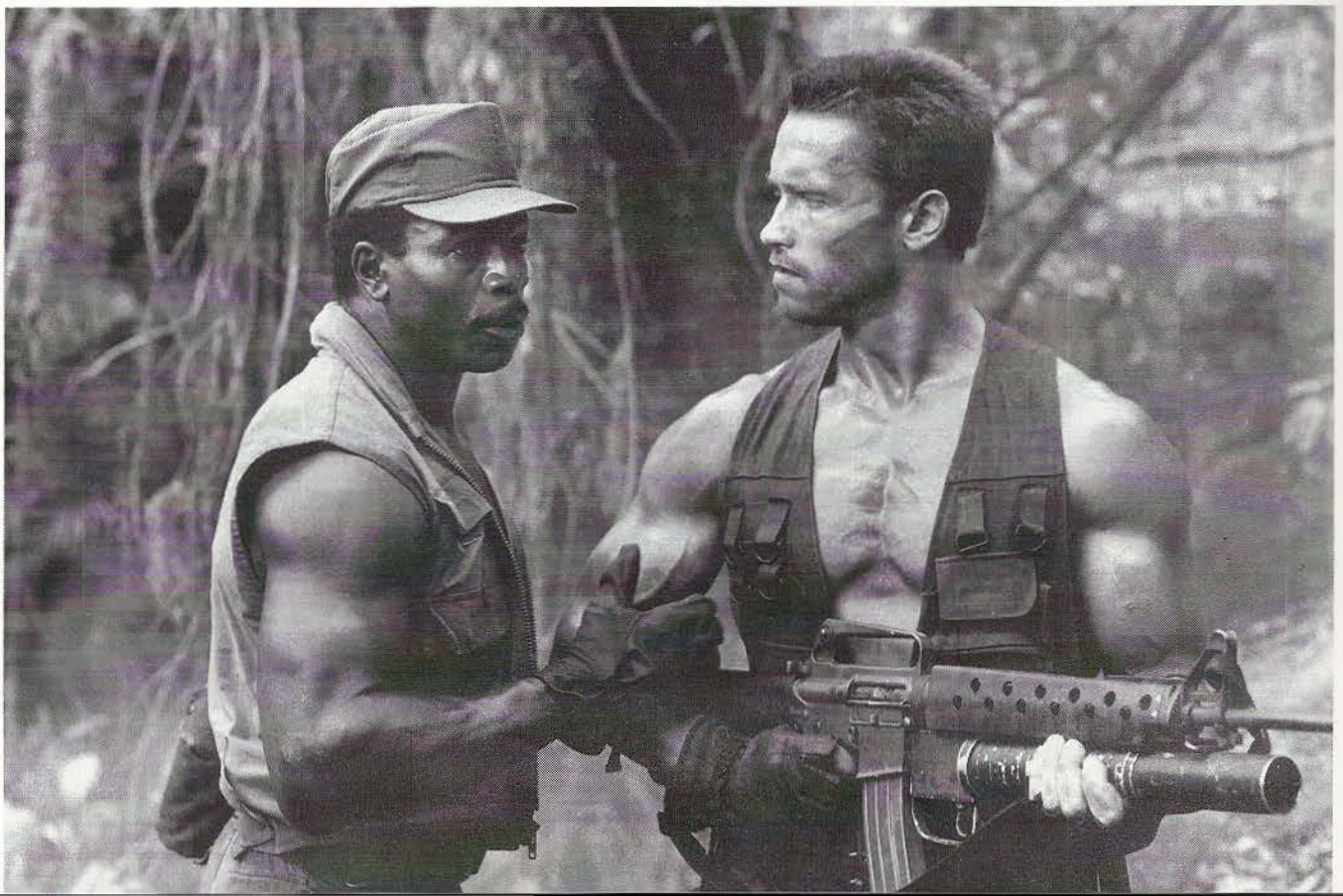
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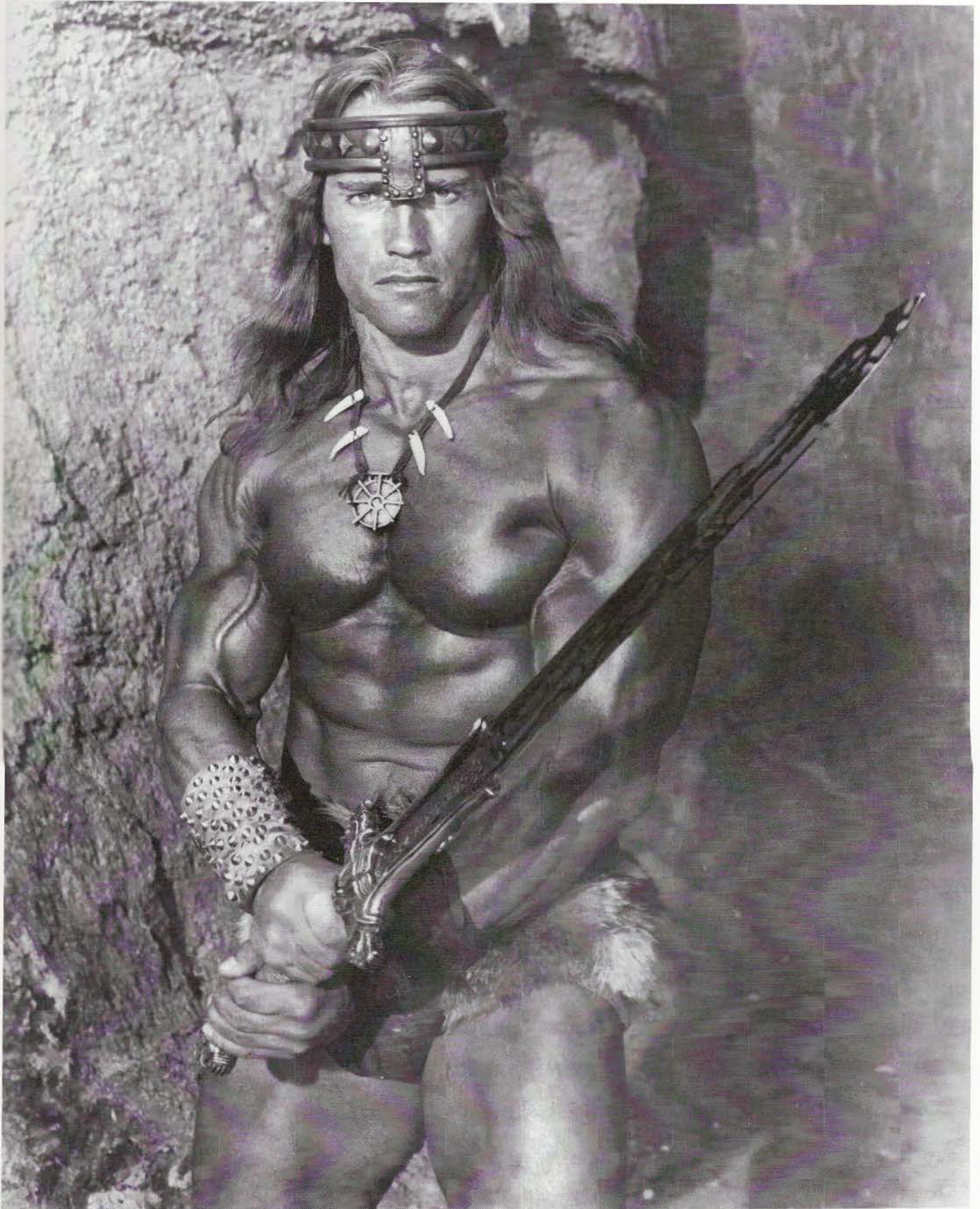
Anytime you undertake any difficult task, you have to face the possibility of short-term failure, obstacles that block your path and have to be overcome. Failure doesn’t have to discourage you. It can be a great training tool. It defines limits for you, it instructs you as to which parts of your program are working and which aren’t. It tells you what step of the staircase you are on and helps to motivate you to climb higher. Failure is not what hurts the aware; it is *fear of failure* that most often gets in the way. This prevents you from really trying hard, from releasing all of your energies, from summoning up total motivation. In fact, it often helps to seek out failure! Train as hard as possible, find out what your strength and endurance limitations really are. Push yourself until you run into a wall and can go no further. “You don’t know how much enough is until you know how much too much is” is a phrase I have often heard. Once you experi-



*Jeff Bridges and me in Stay Hungry*

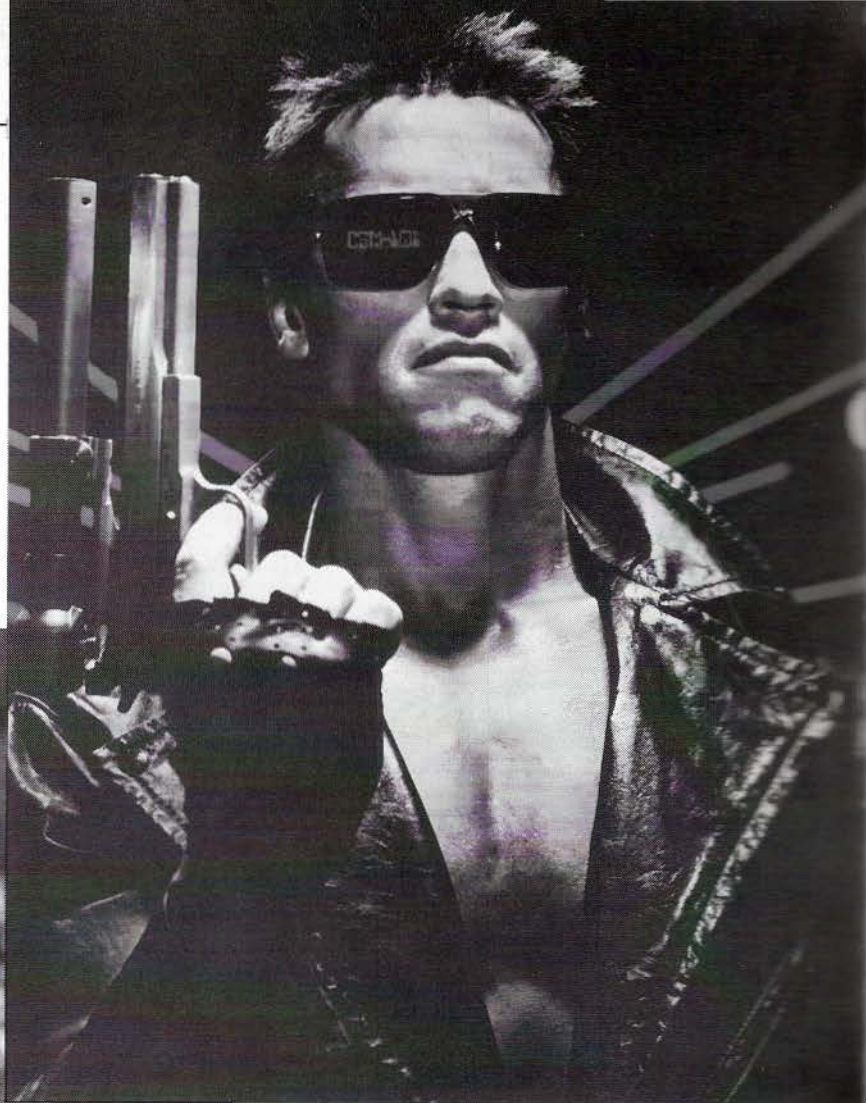
*Carl Weathers and I battle an alien in Predator.*





Conan the Barbarian

The Terminator

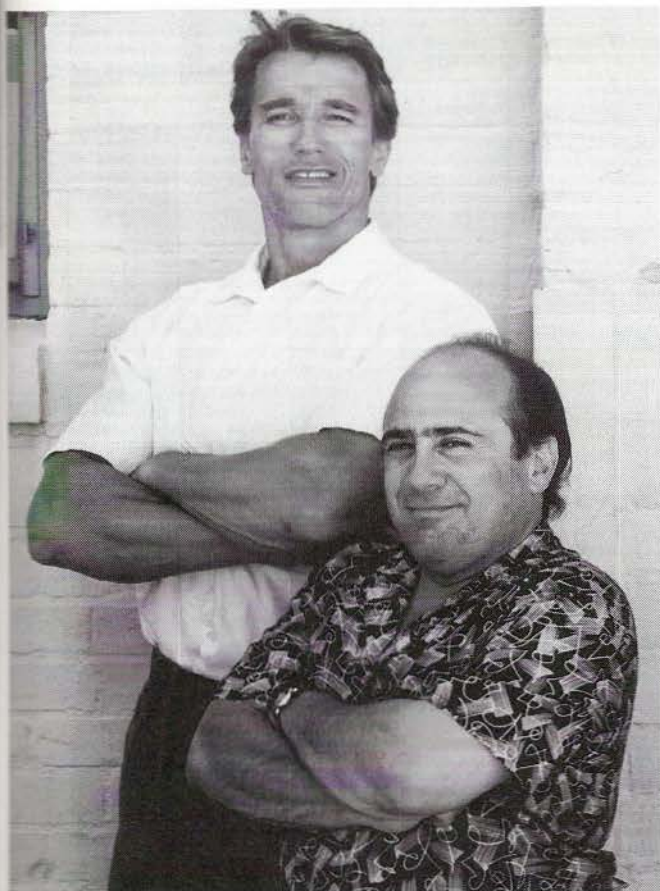


Commando

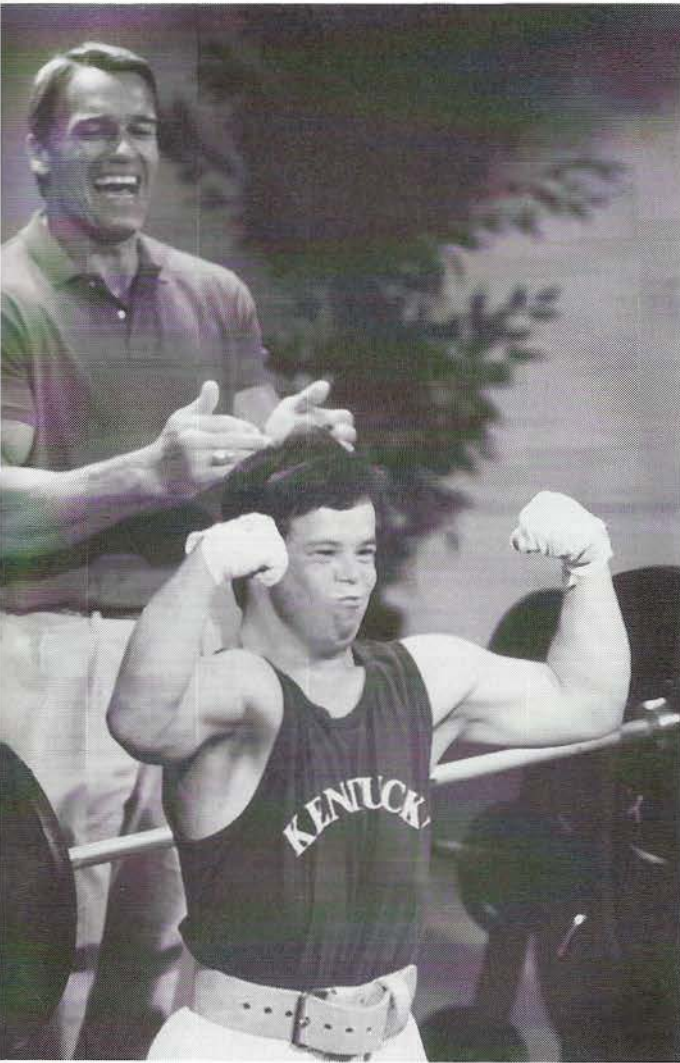


*James Belushi watches me pump iron in Red Heat.*

*Terminator 2*



*Danny DeVito and I played hardly identical twins in Twins.*



*I've always been proud to be involved with The Special Olympics. They are what sports are really all about—not competing against the other guy, but competing against yourself, concentrating your energies on achieving the highest standard of excellence you are capable of.*



*President Reagan believed in weightlifting. He said, "This is real power."*

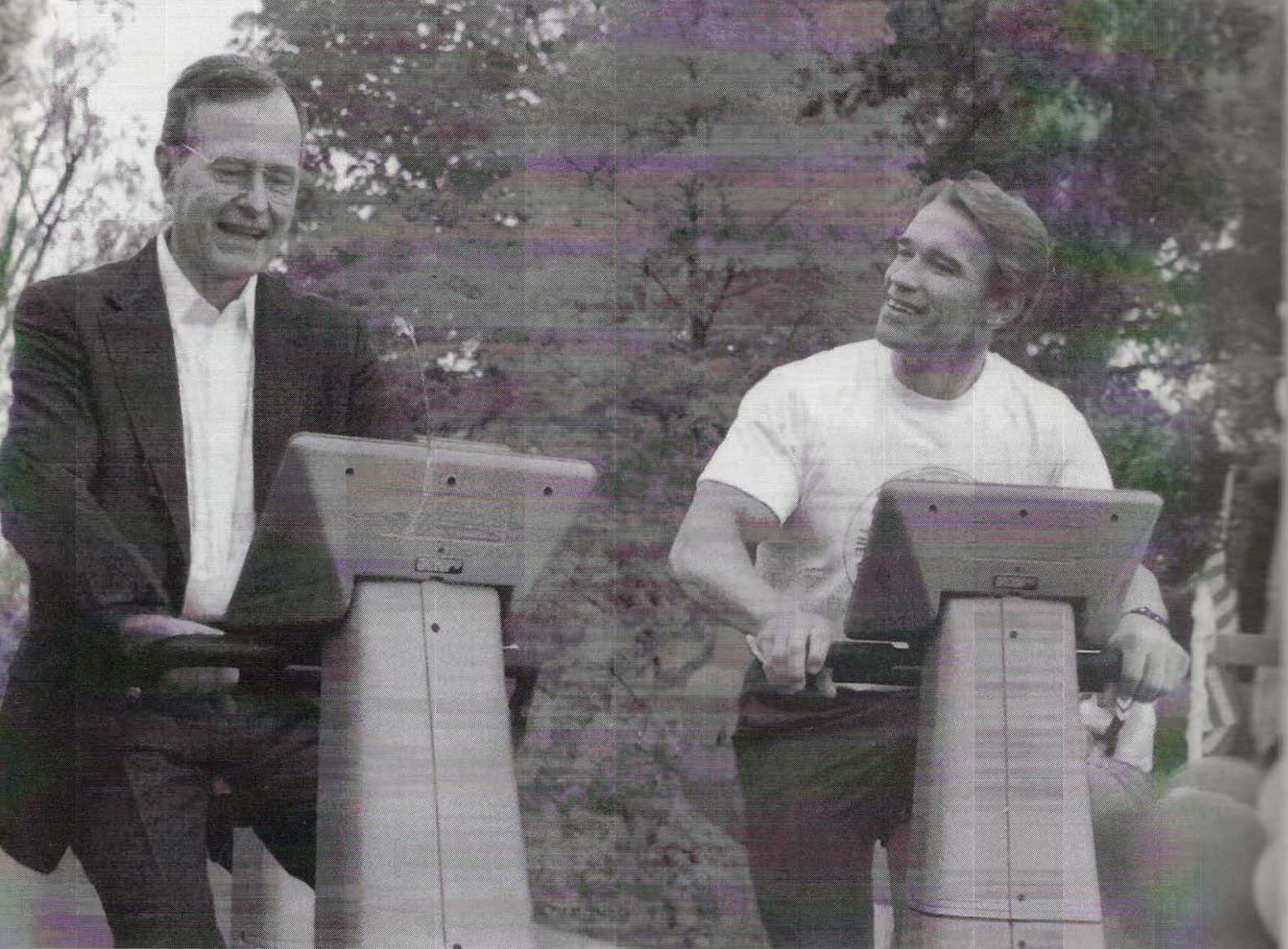


*Even before I was involved with the President's Council on Physical Fitness, I spent time working with the armed forces. Here, I was working with the crew of a Navy carrier.*



*Governor Pete Wilson and I do push-ups during the Great California Workout.*





*President George Bush and I at the Great American Workout, an event held at the White House to help promote the health and fitness of all Americans.*

ence failure—failure to lift a weight, to get through a workout, to place well in a contest—you will know much more about yourself and can plan the next stage of your training more intelligently. Learn from it, benefit by it, but don't be intimidated and fail to dare. You may attempt a lift you are certain you cannot make, but make it anyway! The satisfaction and confidence that come from stepping over your supposed limit is enormous, but it never comes to those who fear to test their limits.

## **MUSCULAR INHIBITION**

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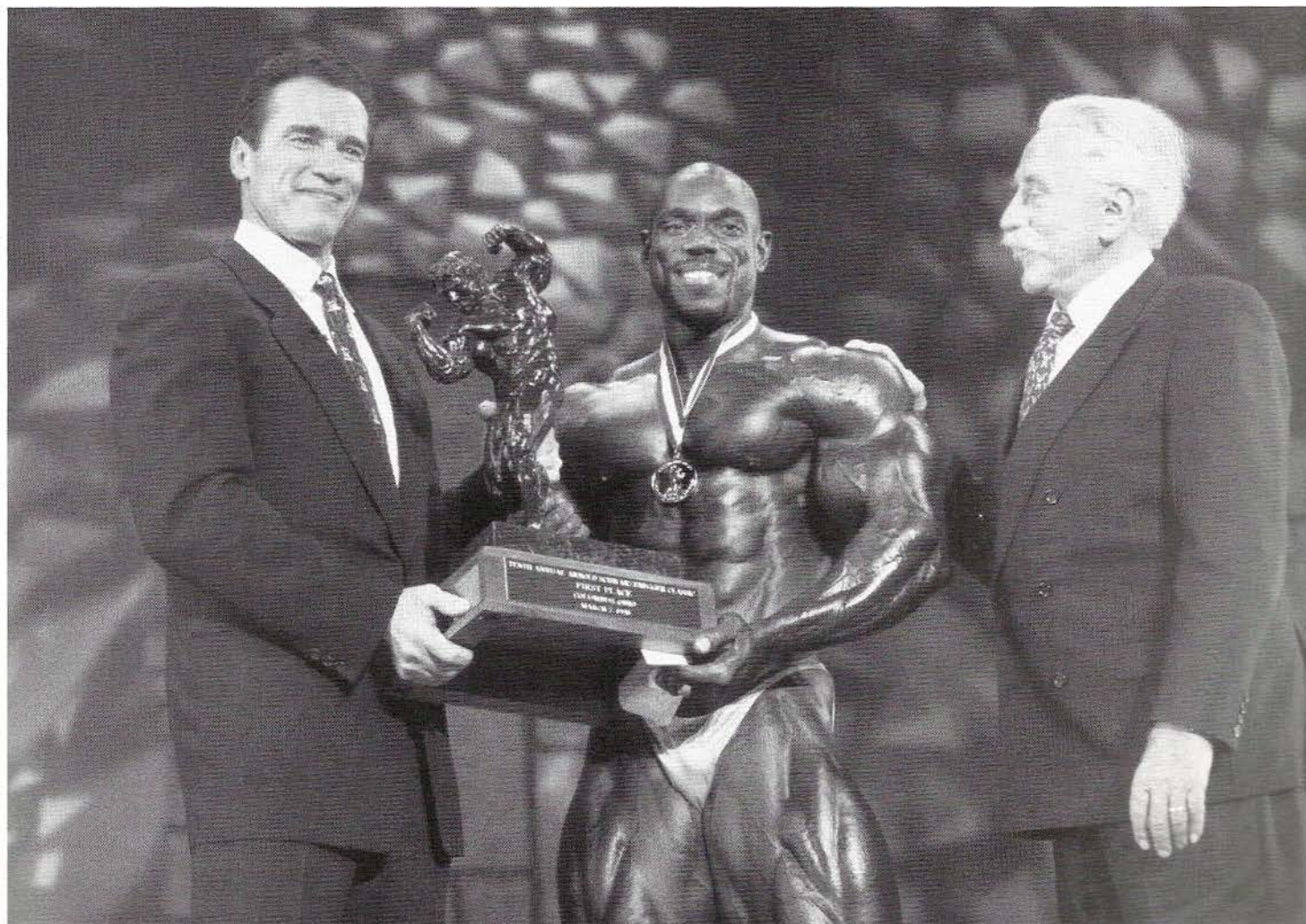
When you contract a muscle, the brain not only sends out signals that stimulate fiber contraction, but inhibitory signals that limit it as well. This protects you from overcontraction, which could cause injury, but limits the amount of muscle being stimulated. Whenever you experience a muscle spasm or cramp, you are getting a taste of what would happen if these inhibitory signals did not exist.

Training progress happens in part because you are making your muscle fibers bigger and stronger, and in part because you gradually reeducate your nervous system so that it will decrease the inhibitory signals involved and allow for a stronger contraction. It takes energy to overcome this inhibition, to overwhelm the protective mechanisms. The more intense the imagery you use, the harder you concentrate and focus the mind into the muscle, the more you break through these inhibitory limitations your brain is creating and the more rapid your progress.

## MAXIMIZING YOUR MOTIVATION

All of us have certain body parts that feel good to train and respond easily, and others that we have to force ourselves to train and that respond reluctantly. In my case, training biceps has always been a piece of cake, while I never had the same great feel doing triceps movements. But a bodybuilder with competition ambitions can't afford to let this situation stand.

*Joe Weider and I present  
Flex Wheeler with a trophy at the  
Arnold Classic.*



He has to concentrate on putting the mind into the muscle and establishing precise control of every muscle of every body part.

But there is only so much mental energy we can summon up on our own. Good bodybuilders have to be intelligent, but training is not an intellectual exercise. The training movements are sensual, and the deep motivation that excites you and keeps you going is *emotional*. You can't just sit down and feel those things any more than you can deliberately feel that you are in love. In both cases, something outside yourself has to inspire you.

I remember working out with Ed Corney before the 1975 Mr. Olympia and on one particular day I just couldn't get myself into training my back. Ed saw this and said to me, "Remember, you are going to be going up against Lou Ferrigno in South Africa, and his lats are so huge that if you stand behind him onstage the audience won't even be able to see you!"

Needless to say, when I started to think about competing against Lou, and how good his back was, I couldn't wait to do my Chins, Bent-Over Rows, and the rest of my back exercises. Corney's remark had inspired me, given me an energy I couldn't create all by myself.

## **BREAKING BARRIERS**

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When the going gets tough, it is always the mind that fails first, not the body. The best example of this I can think of occurred one day when Franco and I were doing Squats in the old Gold's Gym. Franco got under 500 pounds, squatted down, and couldn't get back up. We grabbed the bar and helped him get it back on the rack. Five hundred pounds for even one rep was apparently just too much for him that day.

Just then four or five Italian-American kids from New York came in. "Wow," they said, "there's Franco! Hey, Franco!" They were great fans, and were looking forward to watching him work out—only Franco had just failed in a lift and it seemed probable that he would miss it again on the next try.

I took Franco aside and told him, "Franco, these guys think you're the king. You can't get under five hundred pounds again and fail." All of a sudden his face changed. He looked at me with big eyes, realizing he was on the spot. Then he went out onto the street and spent a while psyching himself up, taking deep breaths and concentrating on the lift.

He stalked back into the gym, grabbed the bar, and, instead of the six reps he was supposed to do with 500 pounds, he did eight! Then he walked away coolly, as if it were nothing.

Obviously Franco's muscles didn't get any stronger in those few minutes between sets, his tendons didn't get bigger; what did change was his

mind, his drive and motivation, his desire for the goal. It was impossible to overlook how important the mind was in making the body do what he wanted.

## **HOW BODYBUILDING AFFECTS THE MIND**

We have been talking about the effect the mind has on the body. But the effect that bodybuilding has on the mind is also significant. Hard training causes the body to release endorphins (naturally occurring morphine-like substances), which lead to a mood elevation. There are many beneficial effects from the highly oxygenated blood that is pumped through your system. But bodybuilding can also have a profound effect on personality, lifestyle, and success in dealing with the demands of the modern environment.

Discipline is all-important to success in bodybuilding. So is the ability to concentrate, to set yourself a goal and not let anything stand in your way. But as much as bodybuilding demands, it gives back a great deal more.

I have worked with thousands of youngsters who wanted to become bodybuilders. I have taught weight training to Special Olympics kids and to prison inmates, and discussed the role of weight training with physical therapists, medical scientists, and the experts at NASA. And in all my experience I have never seen a case in which an individual made progress in bodybuilding without experiencing an accompanying boost in self-esteem, self-confidence, and enjoyment of life.

I had the same thing in mind when I helped form the Inner-City Games Foundation in Los Angeles in 1995. The mission of the Inner-City Games is to provide opportunities for inner-city youths to participate in sports, educational, cultural, and community enrichment programs; to build confidence and self-esteem; to encourage youths to say no to gangs, drugs, and violence and yes to hope, learning, and life.

Programs like the Special Olympics and the Inner-City Games work so well because a sense of self-worth should be based as much as possible on *reality*; you shouldn't just "believe" in yourself, but be able to point to real achievement. For these youngsters, and for everyone else as well, educating your mind, sharpening your talents, and creating a physically superior body are all ways of realistically enhancing your self-esteem. When you have a superior body, it is not egotism to take pride in it; egotism is when you attempt to take credit for qualities you don't really have.

Bodybuilding changes you. It makes you feel better about yourself, and it changes the way people treat you. It is an avenue open to anybody. Man, woman, or child, you can improve your body through proper training and your self-confidence along with it. Bob Wieland, for example, is a

Vietnam veteran who lost both legs in combat. Rather than treat himself as a cripple, he began training seriously in a gym and has since entered numerous powerlifting contests, breaking the world record for Bench Press in his weight class. Bob does not have to think of himself as handicapped; thanks to the benefits of training, he can rightfully claim the accolade of champion.

It has always seemed to me that bodybuilding is a good way to get in touch with reality. When you're working out, there is the reality of that cold iron in your hands . . . you can lift it, or you can't. That's reality. And then there is the progress you make. If you train correctly, you get results. Train incorrectly, or don't put enough intensity into your efforts, and you get little or nothing. You can't fake it. You have to face the facts.

The human body was never designed for a sedentary lifestyle. It was created to hunt saber-toothed tigers and walk forty miles a day. When we have no physical outlet, tensions build up within us. The body reacts to minor frustrations, such as somebody cutting us off in traffic, as life-and-death situations. The "fight or flight" mechanism is tripped, adrenaline floods our system, our blood pressure skyrockets. Exercise in general and bodybuilding in particular give us an outlet for these tensions and satisfy the body's need for strenuous activity.

If this is true for most of us, it is particularly evident when you are dealing with people in extreme circumstances—for example, prisoners serving time in penitentiaries, the Special Olympians, or kids forced to walk the streets of gang- and drug-ridden inner-city neighborhoods.

In my work teaching bodybuilding to prisoners around the country I have been struck by what an effective system of rehabilitation training with weights can be. Many men in prison suffer from a poor self-image, have found themselves ignored and overlooked in life, and felt trapped behind the bars of economic and social exclusion long before they found themselves behind real bars.

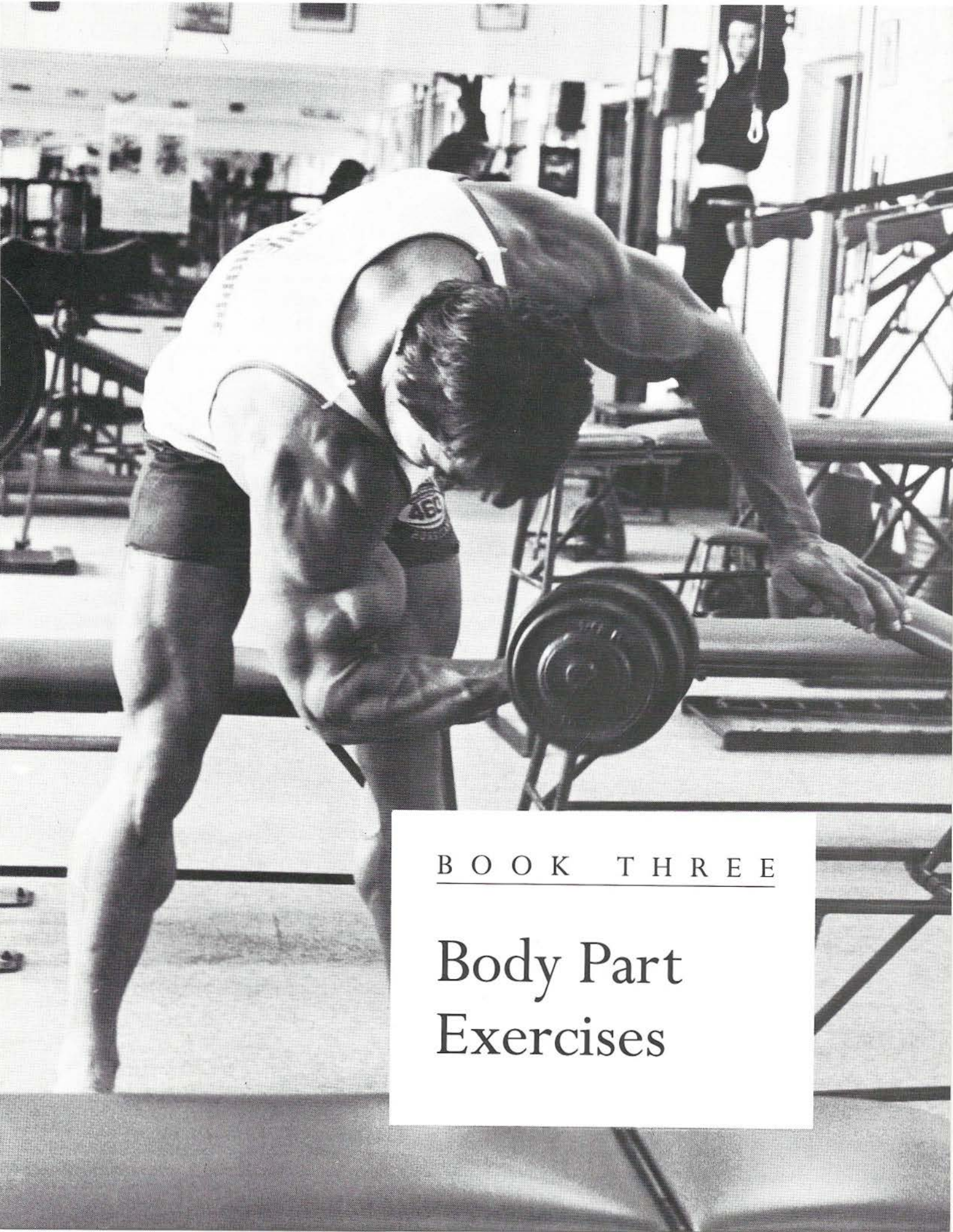
Many of these men have spent their lives blaming others for their own mistakes, rationalizing the behavior that has continually gotten them in trouble, failing to take responsibility for their own actions. All of this can change when they begin seriously pumping iron. The eventual achievement of getting through the set, building up the strength of the muscles, and learning the discipline necessary to continue making progress has its effect on the mind and spirit of the individual. Whereas many of these men had sought attention through antisocial means, now they attract admiring attention from people who respect their achievements. With this attention come pride and self-confidence, and this is one reason weight training has become so popular in prisons around the country. With the Special Olympians, the benefits are even more obvious. I remember working with some kids in Washington, D.C. One youngster was lying on a bench ready to do a bench press, while a line of others waited their turn. I handed him just the bar with no plates on it, and he freaked out—this

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kind of effort was more than he was used to or mentally prepared for. I didn't pressure him, but let him move off while I worked with the other boys. After a few minutes I saw him edging nearer, watching the others closely. Finally, he indicated he wanted to try, and I helped him press the bar three or four times, but he was still afraid and quickly got off the bench. But it wasn't long before he was back, this time with more confidence, and now he managed to do ten repetitions with very little help.

From that moment on, he was hooked. Not only did he join in the line of those waiting to try the exercise, he tried to push others out of the way so that he could have his turn sooner. In a world that contained so many frustrations and disappointments for him, this boy had found something to test his strength against, a physical barrier that could be approached and overcome, giving him a self-confidence usually denied him.

We are all a little bit like that youngster, only we possess enough ability and competence so our needs are not always so obvious. But they are there. All of us run into limitations, have to deal with frustrations and disappointments, and most of us realize that few individuals ever really live up to the physical potential that evolution has built into the human body. But mind and body are interconnected, two facets of the same thing. As the body's health improves, so do the health and strength of the mind, and bodybuilding is the ideal vehicle for achieving this necessary balance.



BOOK THREE

Body Part  
Exercises

AS SUCCESSFUL AS I may have been in winning bodybuilding competitions, I would be the first to admit that nobody has a completely perfect physique. Certainly, when it came to body parts like the chest and biceps, I felt I could stand up to a direct comparison with anyone. But what bodybuilder could say with confidence that he would be willing to compare lats with Franco Columbu or legs with Tom Platz? It takes a great set of triceps to compare favorably with the huge arms of Jusup Wilkosz and a fantastic midsection to bear comparison with the washboard abdominals of Dennis Tinerino.

For this reason, and to make certain this book represented the absolute best in bodybuilding, I have selected a number of the top champions, known for their outstanding body part development, to help me illustrate the many different exercises in this section of the book. Pay particular attention to all the details in the photos, including head, torso, hand, and foot position to ensure maximal effectiveness and safety. After you start to get the hang of each movement, go back and check the photos again to guarantee that slight form deviations haven't crept in. By using strict exercise technique, you'll hasten muscular gains.

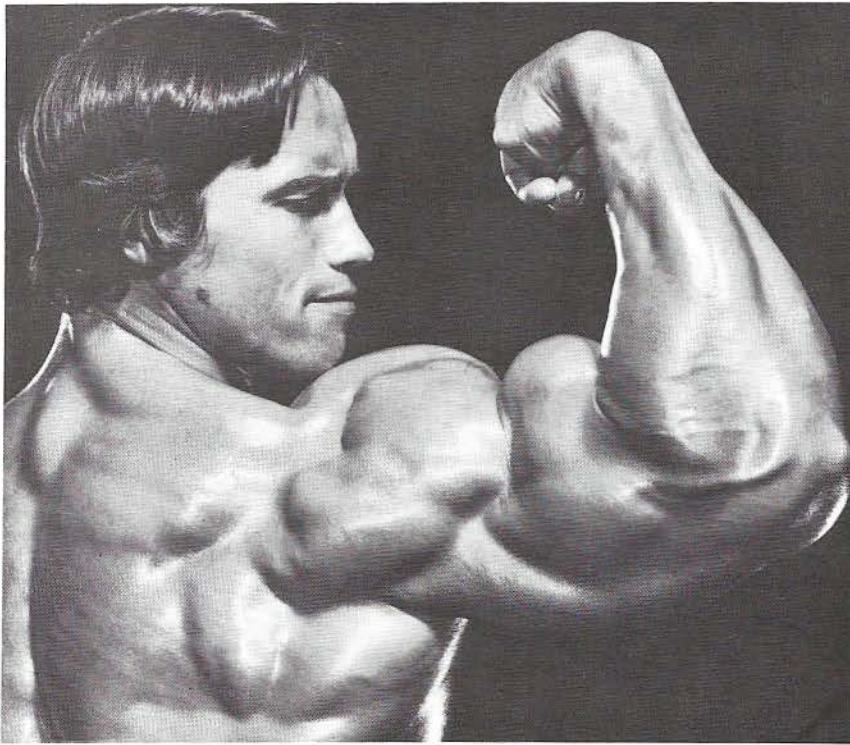
For the photos of myself used as illustrations, I have selected from my files and the photo library of Joe Weider a variety of pictures dating from my earliest competitions right up through the present. This range of photographs shows my physique at every stage of its mature development, creating a picture album of my personal history as well as technically correct bodybuilding illustrations.



## The Shoulders

### THE MUSCLES OF THE SHOULDERS

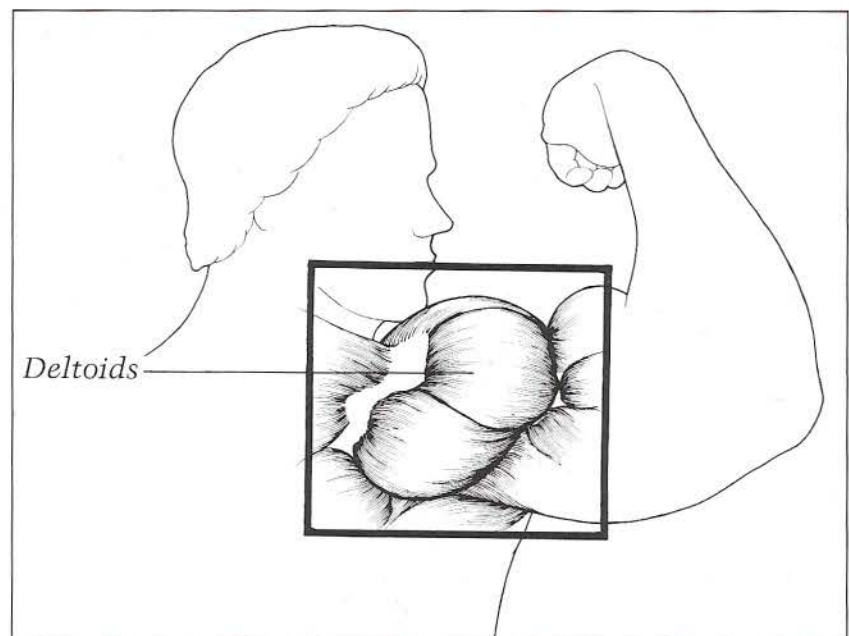
The **deltoid** is a large, three-headed, thick, triangular muscle which originates from the clavicle and the scapula at the rear of the shoulder and extends down to its insertion in the upper arm.



**BASIC FUNCTION:** To rotate and lift the arm. The anterior deltoid lifts the arm to the front; the medial deltoid lifts the arm to the side; the posterior deltoid lifts the arm to the rear.

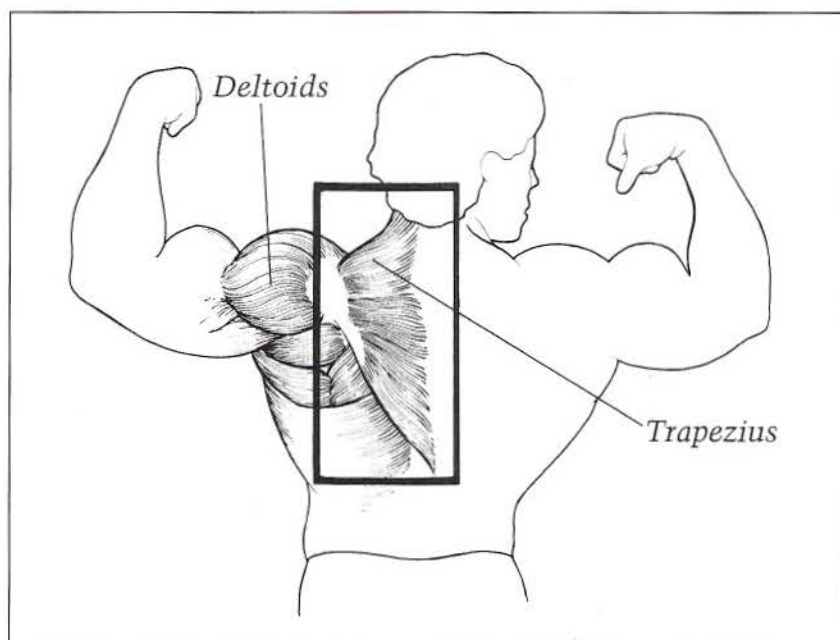
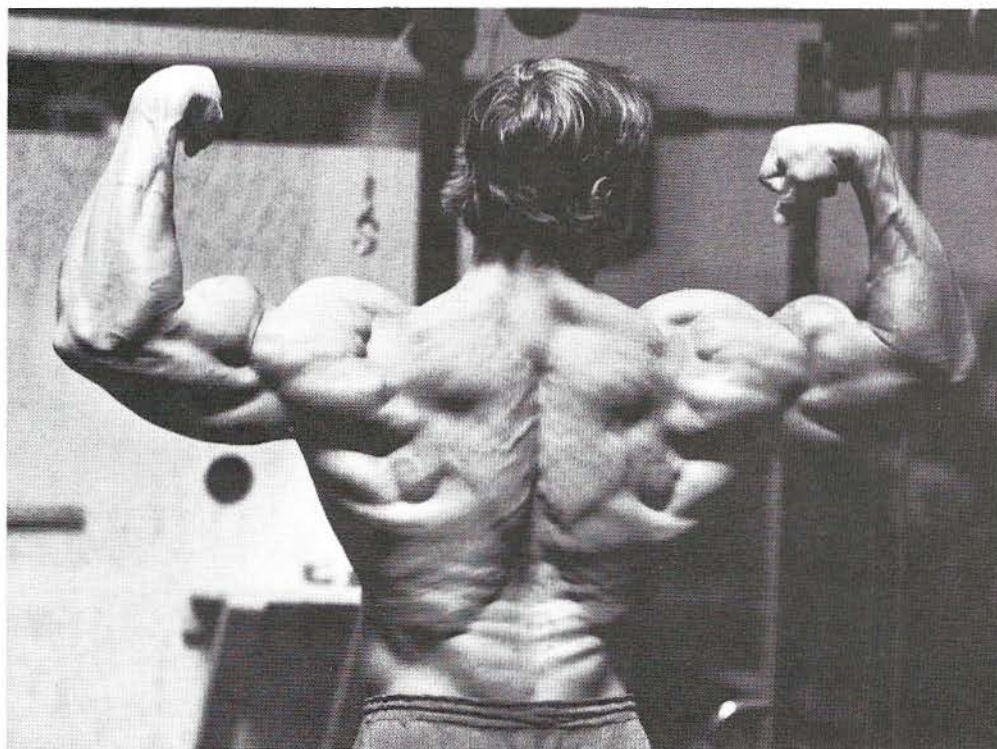
The **trapezius**, is the flat, triangular muscle that extends out and down from the neck and then down between the shoulder blades.

**BASIC FUNCTION:** To lift the entire shoulder girdle, draw the scapula up, down, and to either side, and help turn the head.

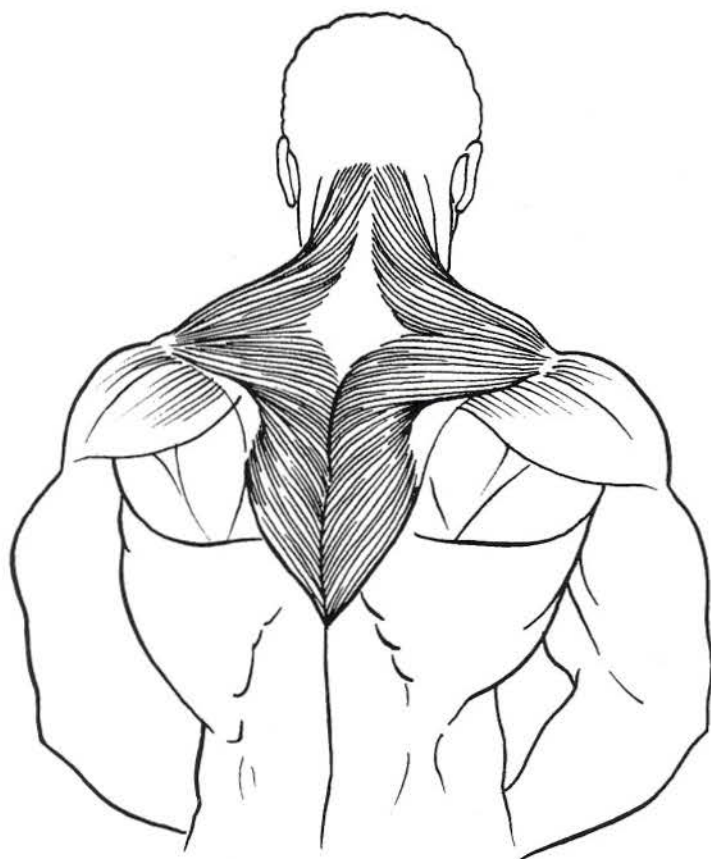
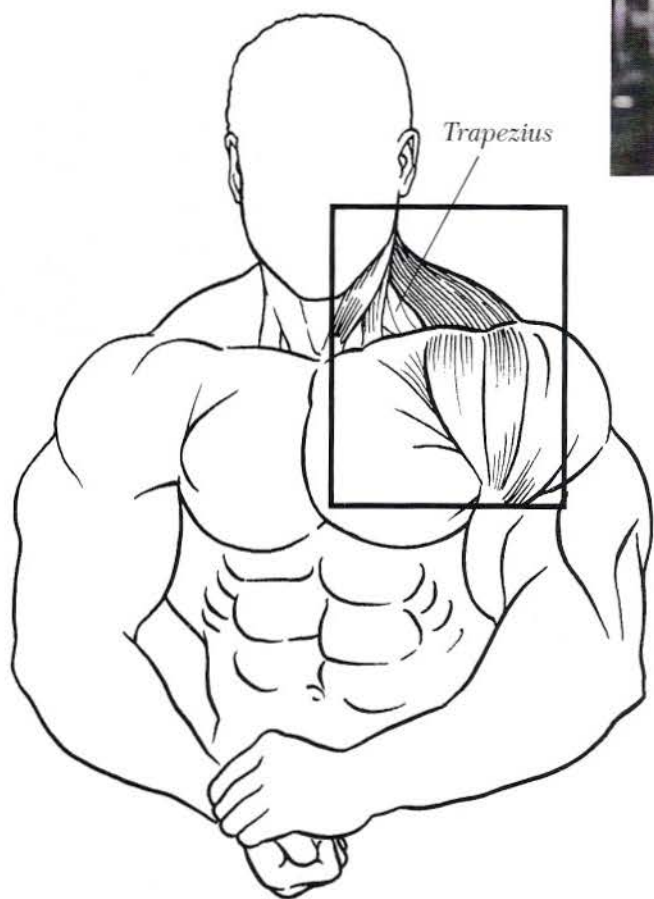


## LOOKING AT THE SHOULDERS

In the 1940s men wore coats with huge, padded shoulders and pinched waists, giving them an exaggerated V shape (a style that seems to have come back into fashion recently). Coincidentally, that is the shape that bodybuilders work very hard to develop, and a significant part of this look is wide, fully developed shoulders.



*Flex Wheeler*



Steve Reeves was one of the first bodybuilders to develop the classic V shape. He was able to achieve this look because he had naturally wide shoulders and a small waist. Proportions like these help create the most aesthetic physiques in bodybuilding.

Shoulder width is, to a great extent, determined by skeletal structure. That is something you are born with. A bodybuilder like Reeves, with his very wide shoulder structure, has an enormous advantage, especially when he is standing relaxed. Don Howarth, Dave Draper, and Frank Zane, all champions who began training around the time I did, are other good examples of this wide, square-shouldered look. Kevin Levrone and Nasser El Sonbaty also possess wide shoulders.

There is another type of physique which is characterized not by narrowness through the shoulders, but by a “hanging” look. Reg Park was not narrow, but his traps and shoulders sloped downward. My own shoulders have this same sort of hanging look, so they look much narrower when I stand relaxed than when executing a pose like a lat spread, where the real width becomes apparent. Watch Paul Dillett onstage and you’ll see somewhat of the same structure.

The other factor involved in a wide-shouldered look is the development of the side deltoids. When these muscles are fully developed, you get a very impressive display when they are flexed. Sergio Oliva and Tom Platz, for example, have tremendous shoulder development, yet do not look particularly wide and square when they are standing relaxed onstage. The ideal look for the competition bodybuilder is to have both a square bone structure and great side deltoid development. Look at Dorian Yates’s shoulder development and you’ll understand how valuable a structure like this can be.

Incidentally, bodybuilders noted for fantastic deltoid development are usually also known for enormous shoulder strength—Behind-the-Neck Presses with 225 pounds and up; Front Presses with 315, as both Sergio and Franco used to do; Ken Waller, with his powerful front deltoids, did Dumbbell Presses with 140-pound dumbbells.

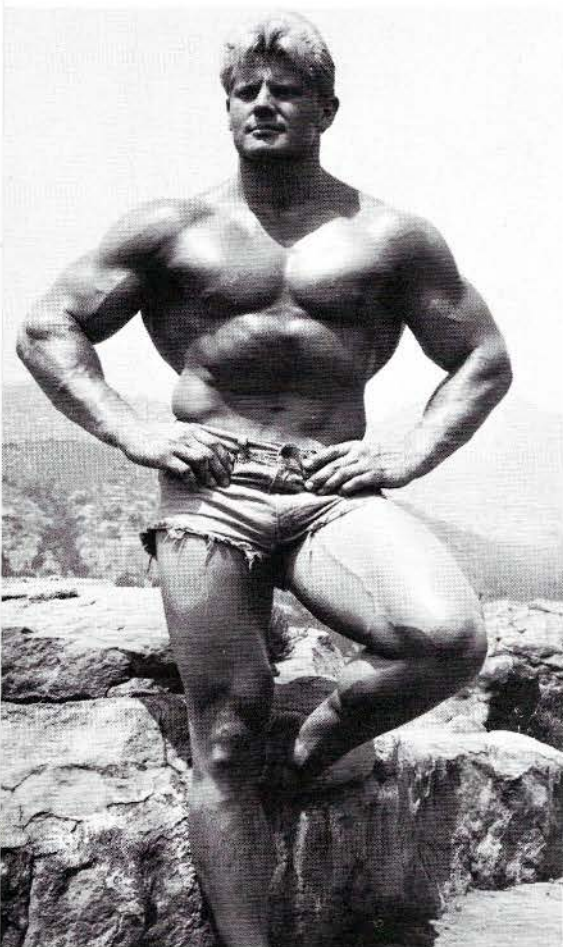
But width—and the development of the side head of the deltoid—is only one aspect of the total development of the deltoid muscles. Shoulders also need to be thick, to show development in the front and the rear, to tie in properly to the pectorals and the biceps as well as to the traps and the rest of the back.

The deltoids are extremely versatile. In order to move the arm forward, back, side-to-side, up and around, the deltoids have three distinct lobes of muscle called heads: the anterior (front) head, the medial (side) head, and the posterior (rear) head.

The deltoids play a prominent part in virtually every bodybuilding pose. They add to your width and size in a front double-biceps pose; to your muscularity in a most-muscular pose. The thickness and development of all three heads play an important part in poses seen from the side,



*Steve Reeves*



*Dave Draper*

*Here is Lee Haney displaying a lat spread pose. His square shoulders combined with great deltoid development turn a simple pose into an awesome look.*

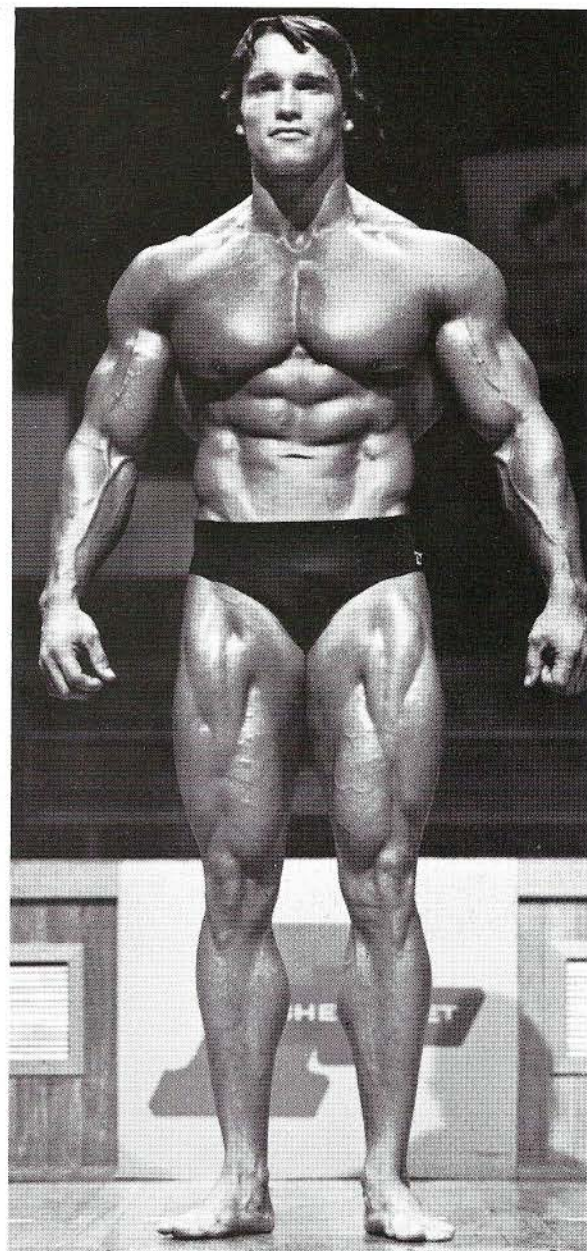
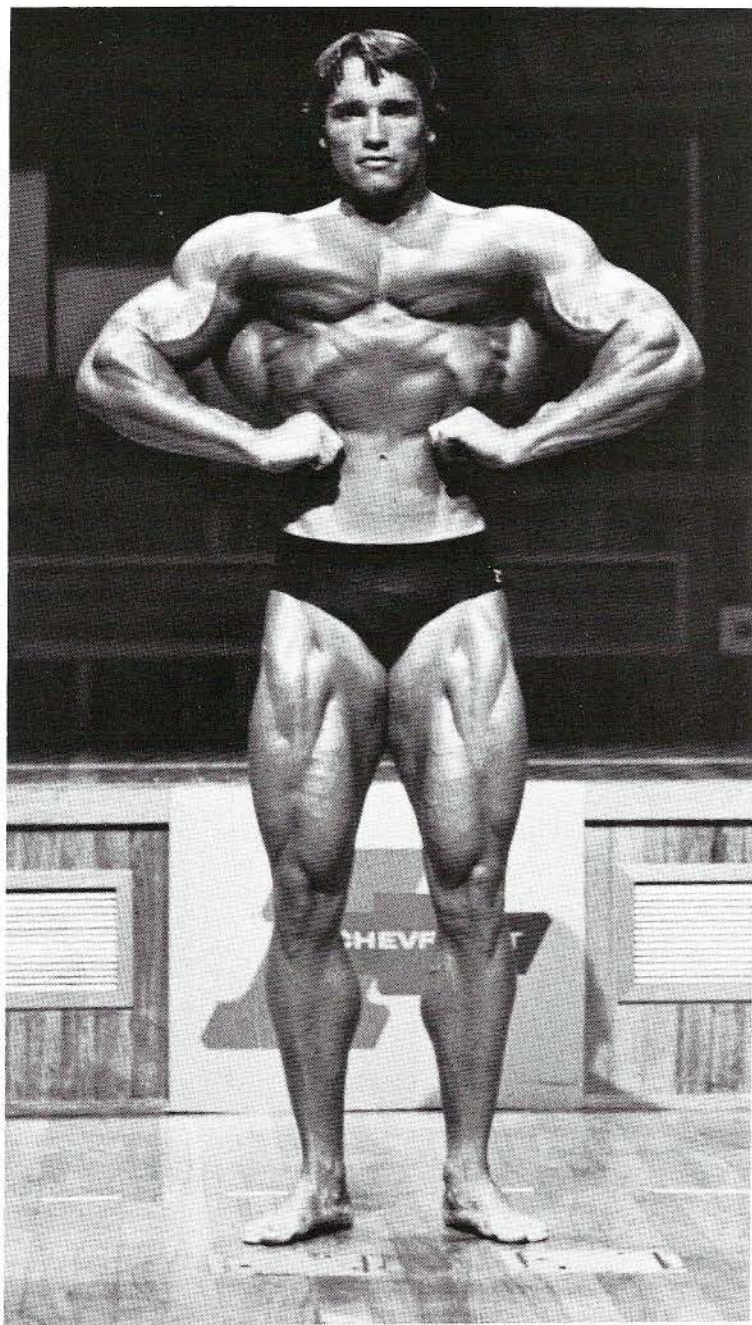
such as the side chest shot or a triceps pose. From the rear, the effect of a pose like the rear double-biceps is highly dependent on how much shape, separation, and definition you have achieved in the rear delts.

Your deltoid development should show definition and striations no matter what movement you make, while hitting all of the poses just cited as well as when you are moving in transition from one to another. There has to be an interconnection so that the three heads work together with all the adjacent muscles, thereby giving you a hard, muscular look.

But having complete deltoid development is also important while standing relaxed. From the front and from the back, good side deltoid development makes you look wider. In front, you should have complete separation of the delts and pectorals. For some people, this separation is natural; for others, it requires a lot of specialized weak point training. From the side, rear delt development gives you that “bump” in the back of the shoulders you see so clearly in great champions like Flex Wheeler or Dorian Yates, and both the rear delts and traps are extremely important when viewed from the back.

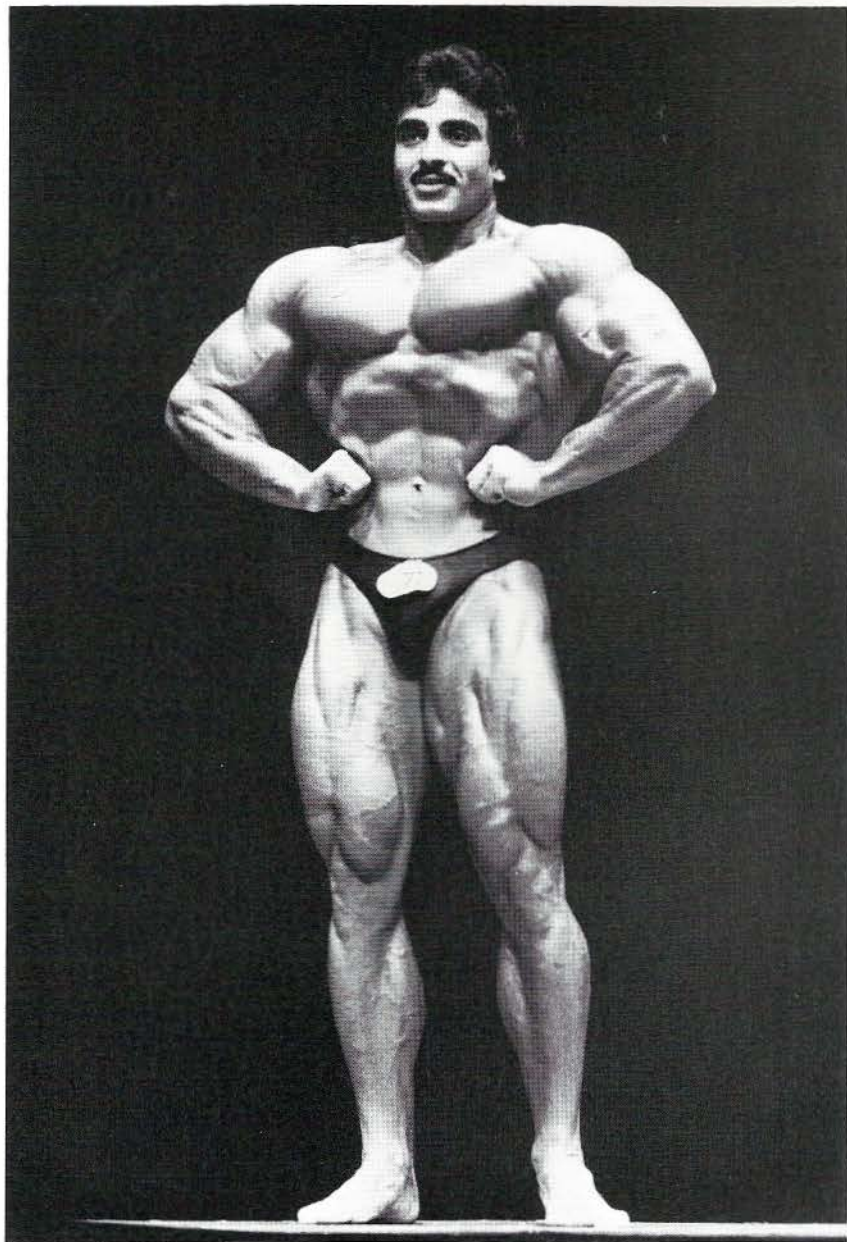


*The square-shouldered look is also a matter of posing. When I was competing, standing relaxed, I had a hanging-shoulder look . . .*



*. . . but when I did a front lat spread, you can see how much wider my shoulders appeared.*

*Samir Bannout*



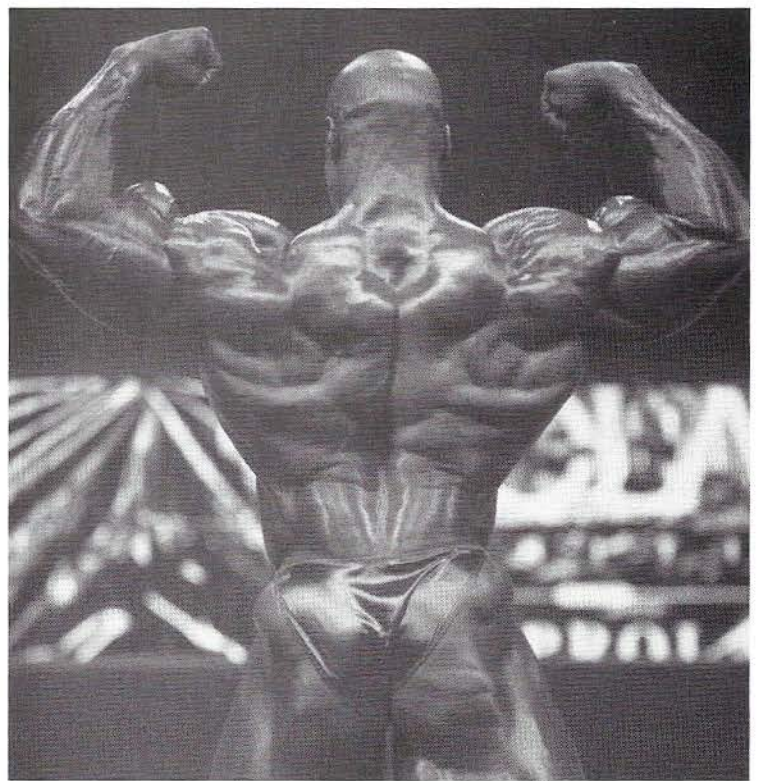
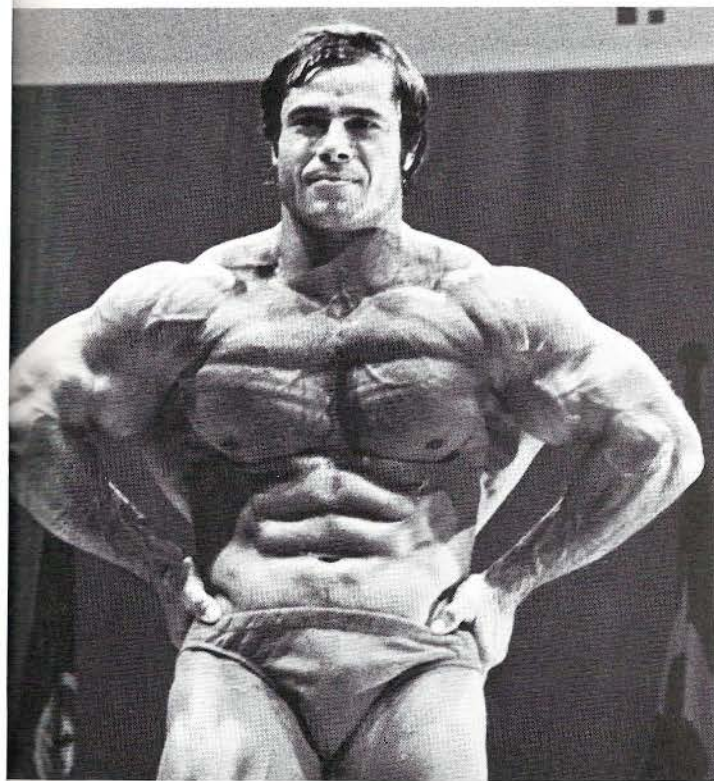
*Shawn Ray*



... me executing a biceps pose ...

... a most-muscular pose by Franco Columbu ...

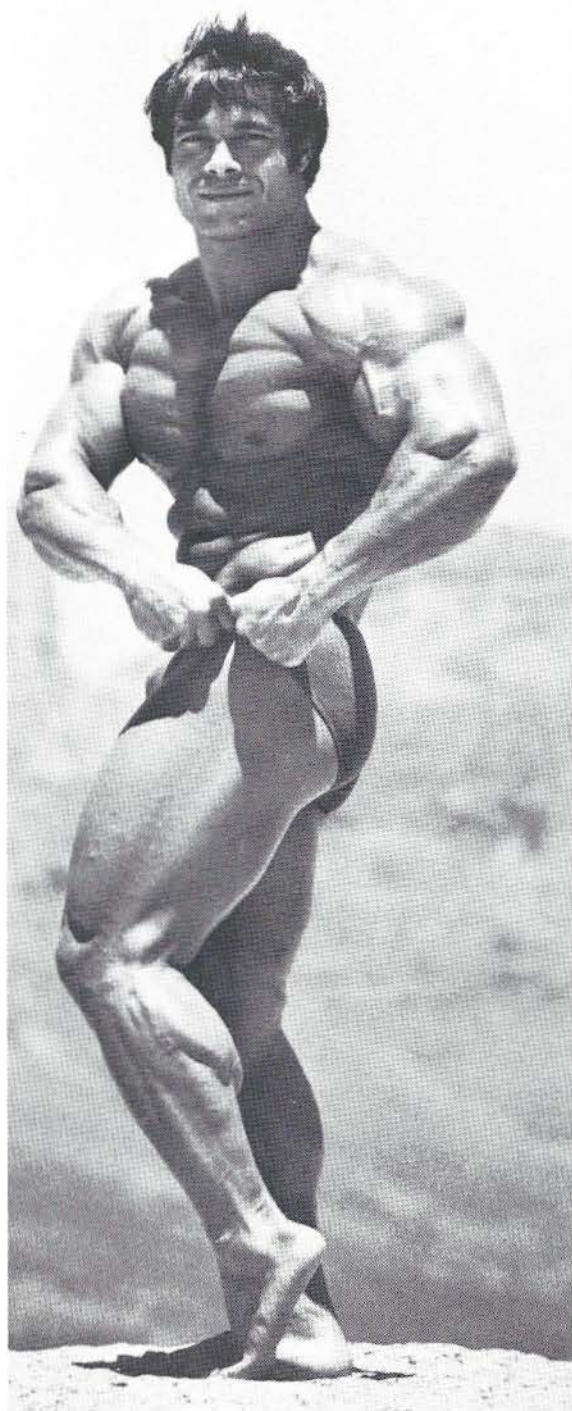
... and a fantastic back double-biceps pose by Ronnie Coleman.





Of course, shoulder width and deltoid development are actually two different things. Steve Reeves, for example, was not particularly thick and massive through the delts, in spite of his great width. Conversely, Larry Scott, who in the 1960s won the first Mr. Olympia competition, exhibited thick, muscular deltoids whose massive development offset his natural rather narrow proportions. Shawn Ray's shoulder width is not exceptional, but you don't notice because his deltoids are so thick and fully developed.

Many bodybuilders with comparatively narrow proportions have been saved by great deltoid development. My favorite example of this is Reg



*Franco Columbu*

Park. Reg worked very hard to compensate for relatively narrow skeletal proportions, and he ended up with enormous shoulder development. He was the first bodybuilder to bench-press 500 pounds, and this was possible only because of the size and strength of his front deltoids, which along with the chest and triceps work very hard in that lift.

One additional point worth making is that all of these champions trained very differently. Franco developed enormous front deltoids from all the pressing he did, so he had to add a lot of rear deltoid training to his workouts to achieve the correct balance. Larry Scott got his best results in shoulder training using the Stripping Method, starting with heavy weights and going lighter set after set to really burn the deltoids—90-pound dumbbells on down to 30-pound dumbbells. Dorian Yates spent a number of years doing a kind of high-intensity training that stressed relatively few sets but all kinds of intensity techniques like negatives, forced reps, forced negatives, and partial reps.

My point here is that no two individuals have bodies that are exactly alike or will end up training any body part exactly the same. There is not a bodybuilder alive who has never had to adjust his training to overcome weak points in order to create a well-proportioned and balanced physique.

## TRAINING THE DELTOIDS

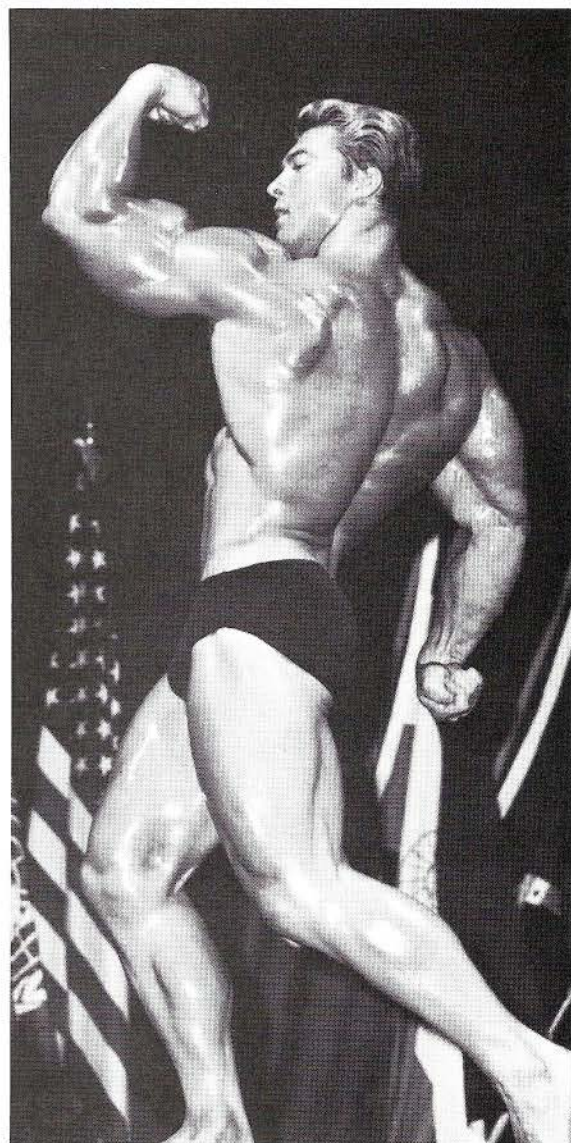
There are two basic kinds of exercises for the shoulders—Straight Arm Raises and Presses.

Raises involve lifting your extended arm upward in a wide arc, which better isolates the heads. You need to do Raises to the front, to the side, and to the rear. When you do Raises, you do not involve the triceps, but almost completely isolate the various heads of the deltoids. However, because you are isolating the deltoids, you cannot lift as much weight as with pressing movements, because you keep your arm virtually straight throughout.

In Shoulder Presses, you begin with your arms bent, the weight about shoulder height, and lift the barbell or dumbbells straight up over your head. Because you are straightening your arms as well as lifting upward, Presses involve both the deltoids and the triceps. You can vary the stress on your shoulders to a slight degree to direct it toward the different deltoid heads by doing different kinds of Presses—to the front or rear, using a barbell, dumbbells, or various machines.

## BASIC TRAINING

I believe in doing a lot of power training to develop shoulders no matter how advanced you are. But power training is perhaps most valuable when you are beginning. The deltoids respond well to working with heavy



*Larry Scott*

weights. This helps your overall development because so many other power exercises—from Bench Presses to Deadlifts to Bent-Over Rows—require a lot of shoulder strength.

Therefore, right from the beginning I recommend that you do movements like the Clean and Press, Heavy Upright Rows, and Push Presses in addition to Dumbbell Laterals. This kind of program will build up the shoulder mass and strength you need to enable you to go on to Advanced Training. Why I prefer to start beginners out with the Clean and Press exercise rather than just Shoulder Presses is that the extra movement—lifting the barbell off the floor, bringing it up to shoulder height, and tucking the arms in underneath to support it—works so many additional muscles besides the deltoids, specifically the back, traps, and triceps.

## **ADVANCED TRAINING**

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When you get to the level of Advanced Training, you need more than just mass and strength. At this point, you have to work toward overall shoulder development—all three heads of the deltoids as well as the trapezius muscles. Therefore, in addition to exercises like Dumbbell Laterals, designed specifically for the side deltoids, I have included Behind-the-Neck Presses for the front and side delts, Bent-Over Laterals for the rear delts, and Shrugs for the traps. Incidentally, for those who believe that the trapezius muscles are more associated with the back than the shoulders, just remember that once you have lifted your arm higher than the level of your head in any Lateral or Press movement the traps come heavily into play, pulling the shoulder up and in and allowing you to complete the full range of motion.

You will also find a number of supersets in this part of the program, to further stress and shock the shoulders, including exercises like Upright Rows (for the front delts and the traps), Machine Presses (to work the front delts and allow you to lower the weight farther than with a barbell), One-Arm Cable Laterals (which isolate the side deltoids), and Bent-Over Cable Laterals (for the rear deltoids).

## **THE COMPETITION PROGRAM**

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The function of the deltoids is very complex, enabling your arm to move in virtually a 360-degree circle—and this means that there are many angles at which you can train your shoulders to bring out their full shape and development.

*In this pose you can see how the front deltoids are clearly separated from the pectorals, a quality you can develop with specific exercises such as Front Dumbbell Raises and Barbell Upright Rows.*



The Competition Program, therefore, introduces a few extra movements such as Lying Incline Laterals and Seated Cable Rear Laterals. There is also a great increase in time intensity, with every exercise done as part of a superset or triset. This intense work is very effective in sculpting and defining the deltoid muscles, bringing in all the tie-ins and creating unbelievable muscular striations.

When training for competition, you have to pay close attention to detail. Not only must each head be developed in proportion, but each must be totally separated from the others, with all three heads clearly defined and visible. Additionally, the deltoid structure must be totally separated from the muscles of the upper arm as well as from the trapezius and upper back muscles. The front delts also must be clear and distinct from the sweep of the pectoral muscles.

On top of all of this, you need the striations and cross striations that give you the kind of quality that makes you competitive at the highest levels. Certainly, none of this comes easily. You can't just take any shoulder routine and expect to develop championship deltoids. It takes continually increasing intensity using techniques like supersets, trisets, the Stripping Method, and as many of the Shocking Principles as possible. If you find that despite your efforts you still have weak points in your deltoid development, intensive training is the only solution; you need to carefully study the weak point options (see page 265) and decide how to reorganize your workouts to deal with these problems.

In 1971, when I trained with Franco, we did Dumbbell Presses down the rack starting with 100 pounds, then immediately went and punished our delts with Lateral Raises until we were unable to lift our arms. Or sometimes we would do trisets: first a front delt exercise, then one for side delts, and finally a set for rear delts. Believe me, after a couple of these our shoulders felt as if they were on fire, with every fiber screaming for mercy.

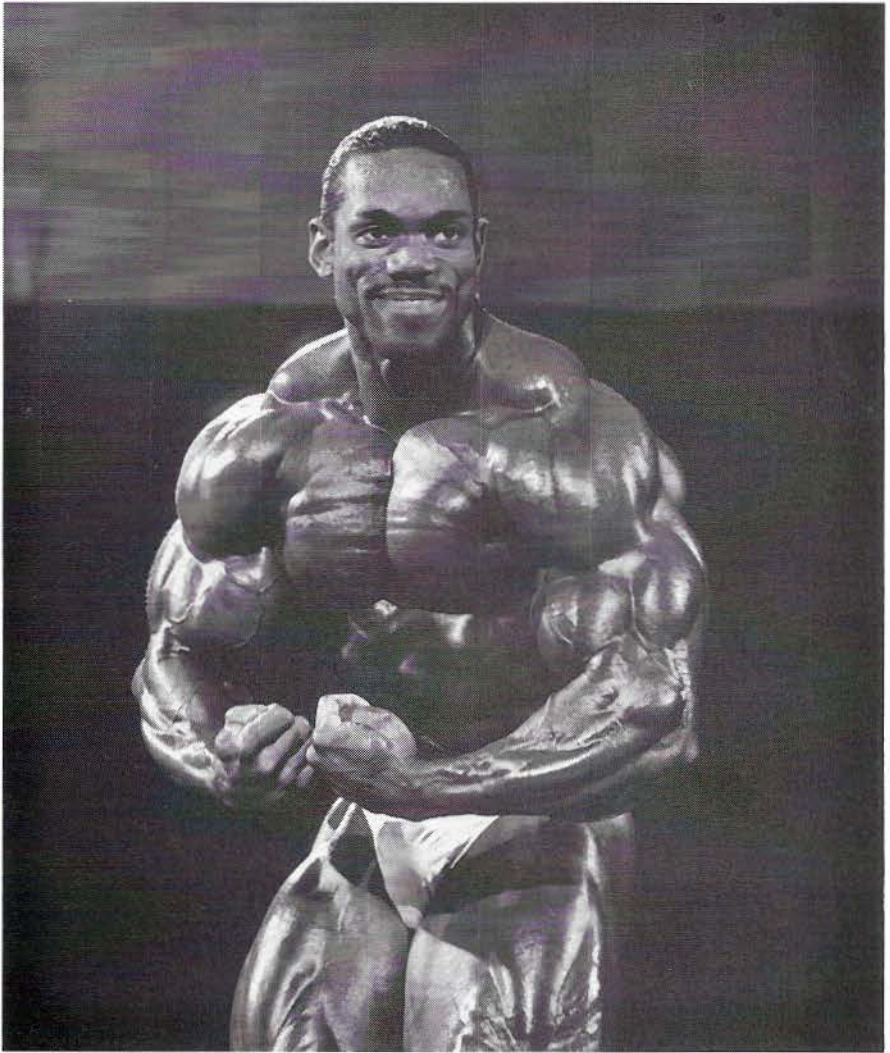
## **TRAINING THE TRAPEZIUS MUSCLES**

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The trapezius muscles are the visual center of the upper back, the trapezoidal structure that ties together the neck, deltoid, and latissimus muscles. The traps play an important part in both front and rear poses. In shots like the back double-biceps, the traps help produce that fantastic effect where your muscles ripple from elbow to elbow clear across the top of your back. In a rear lat pose, as your lats come forward and sweep out, the traps form a clear triangle of muscle in the middle of your back. Trap development also helps to separate the rear delts from the upper back. And in most front poses, the line of the traps, from neck to delts, is extremely important, especially if you want to be able to do an impressive most-muscular shot.



*The traps are important to both front and back poses. For example, see how they help tie the back together in a back double-biceps shot.*



*Flex Wheeler*

But the traps have to be developed in proportion to the rest of your body. If they stick up too high and slope down too abruptly, your deltoids will appear too small.

The traps work in opposition to the pulldown function of the lats—they raise the entire shoulder girdle. In the Basic Training Program, I included Heavy Upright Rows as part of your power training so that your traps will build mass and strength right from the start. But the traps also benefit from the Barbell Clean and Press and from heavy Deadlifts, which are also included in the Basic Program.

Incidentally, you will get some trap development from Dumbbell Laterals, provided you do them the way I have described in the exercise section, starting with the dumbbells in front of the thighs rather than hanging down by your sides.

In the Advanced Program, I have included Dumbbell Shrugs as part

of your trapezius training. These work the traps directly, and you can build up to a tremendous amount of weight in this exercise. You will also find in the Advanced and Competition Programs a number of exercises that train the traps, though they are not specifically designed to do so: Almost any rowing exercise (Bent-Over Barbell Rows, for example) or Shoulder Press (barbell or dumbbell) involves a lifting motion of the traps as well as other muscle functions. And strong traps help you use heavier weight in all of these other movements.

## WEAK POINT TRAINING

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If shoulders are a weak point in your physique, adjust your training so that you do more sets and more exercises for shoulders, and use as many of the Shocking Principles as possible to work that area with maximum intensity.

I like to use the Stripping Method for shoulders. With dumbbells, you start with heavy weights and move on down the rack; with Machine Presses or Cable Laterals, you just keep moving the pin one plate lighter each set.

Another way of accelerating deltoid development is by supersetting Presses and Raises—for example, a Barbell Press followed by Front Dumbbell Raises (or Upright Rows) in order to completely blitz the front delts. For a really intense delt workout, try doing a 3-Pump Set: Presses, Front Dumbbell Raises, and Upright Rows. But be prepared to bear the pain.

To get the best results from Raises, remember two things:

1. Keep your palm turned downward throughout the movement; or, even better, turn the hand a little farther so that the little finger is higher than the thumb (like pouring water out of a pitcher). This helps isolate the deltoids and make them fully contract during the movement.
2. Be as strict as possible. Raise the weight without any cheating, and lower it fully under control. The stricter you are, the more intense the effect on the deltoids.

Another way of increasing the intensity of your deltoid training is, after each set of Dumbbell Raises, go over to the rack, take a heavier set of weights, and just lift them out to the side as far as possible and hold them there as long as you can. This “isometric lateral” will help fully exhaust the deltoids and bring out maximum striations.

As a way of getting extra development in the rear deltoids, I used to leave a light dumbbell—usually 20 pounds—under my bed and, first thing in the morning, would do 5 sets of Lying Side Laterals with each hand without stopping. However, I never counted this as part of my regular shoulder workout. I also did a 2-Pump Set, starting with facedown Incline



Lateral Raises and, when I was too tired to continue the set, changing to a kind of Dumbbell Rowing motion to fully exhaust the rear delts.

Following are extra exercises and techniques you can use to develop a specific area that you have identified as a weak point.

### FRONT DELTOIDS

Machine Presses, because you can lower the weight farther with machines than with barbells or dumbbells, thereby stretching the front delts to the maximum and getting a longer range of motion. Do not lock out on top in any press movement.

Use dumbbells whenever possible to better stress the deltoid heads.

Arnold Presses—my favorite front delt exercise—especially using techniques like Running the Rack or the Stripping Method (page 193)

Front Dumbbell Raises for maximum front deltoid and pectoral separation

Front Barbell Presses

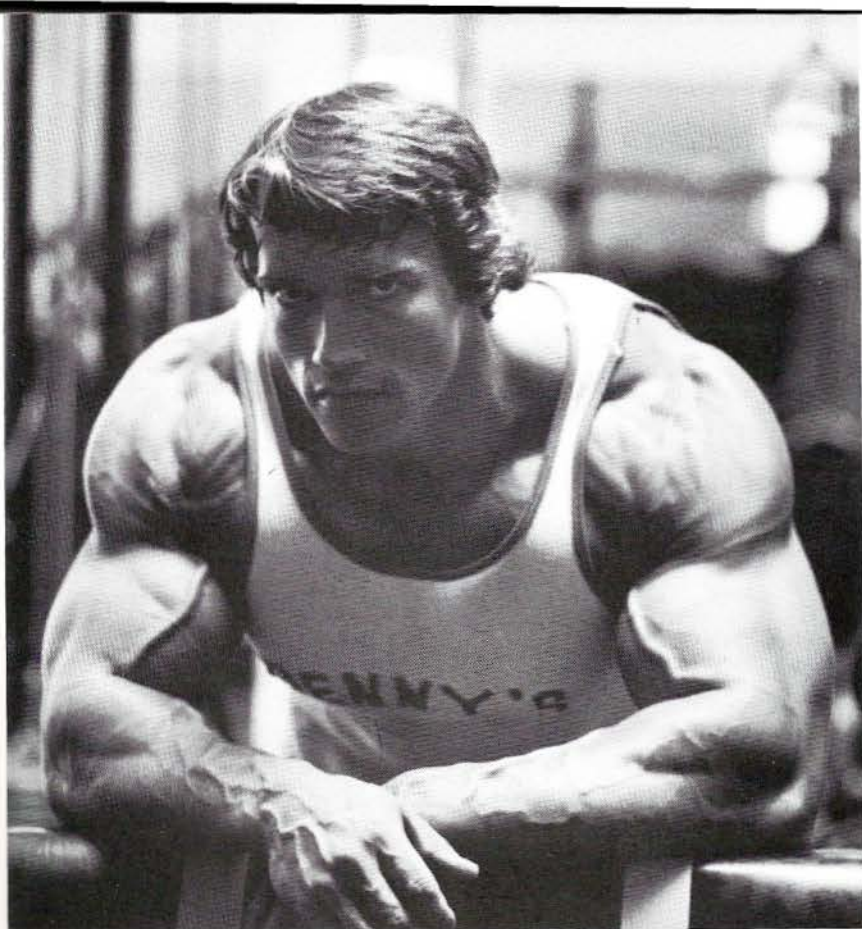
Upright Rows

Incline Barbell and Dumbbell Presses

Incline Dumbbell Flys (see Chest Exercises)

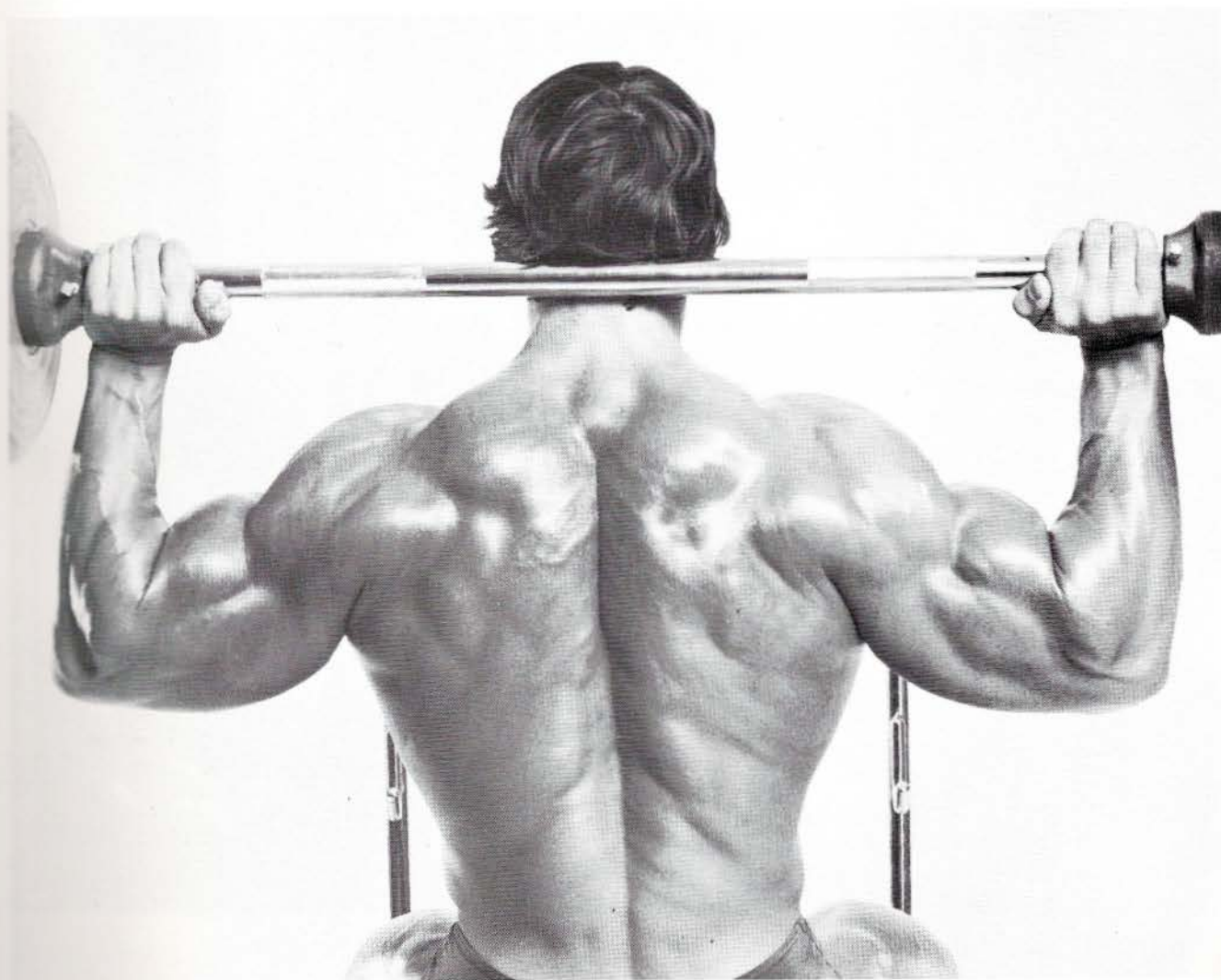
*Many bodybuilders forget that front delts are also important to back poses. Franco Columbu demonstrates how the front delts are visible in a back double-biceps shot.*





*You can see in this semi-relaxed pose how the front deltoids, besides having mass and separation, can also be defined and striated.*

*In all Presses, the forearms should be held straight, not in toward the center, which overinvolves the triceps.*





*The side delts help to create a very wide look, even in this pose by Serge Nubret that is basically an abdominal pose.*

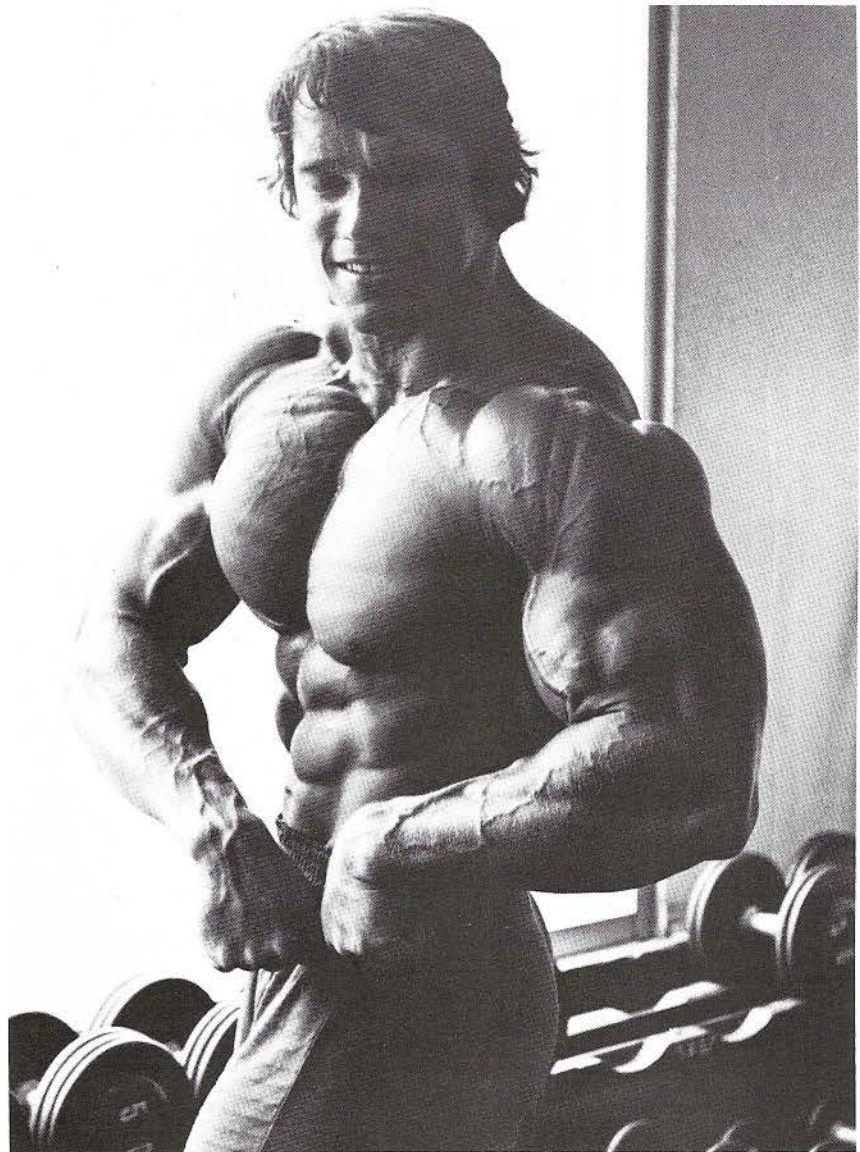
## SIDE DELTOIDS

Dumbbell Laterals, beginning with the dumbbells held beside the thighs instead of in front while standing straight or sitting on a bench with your back straight

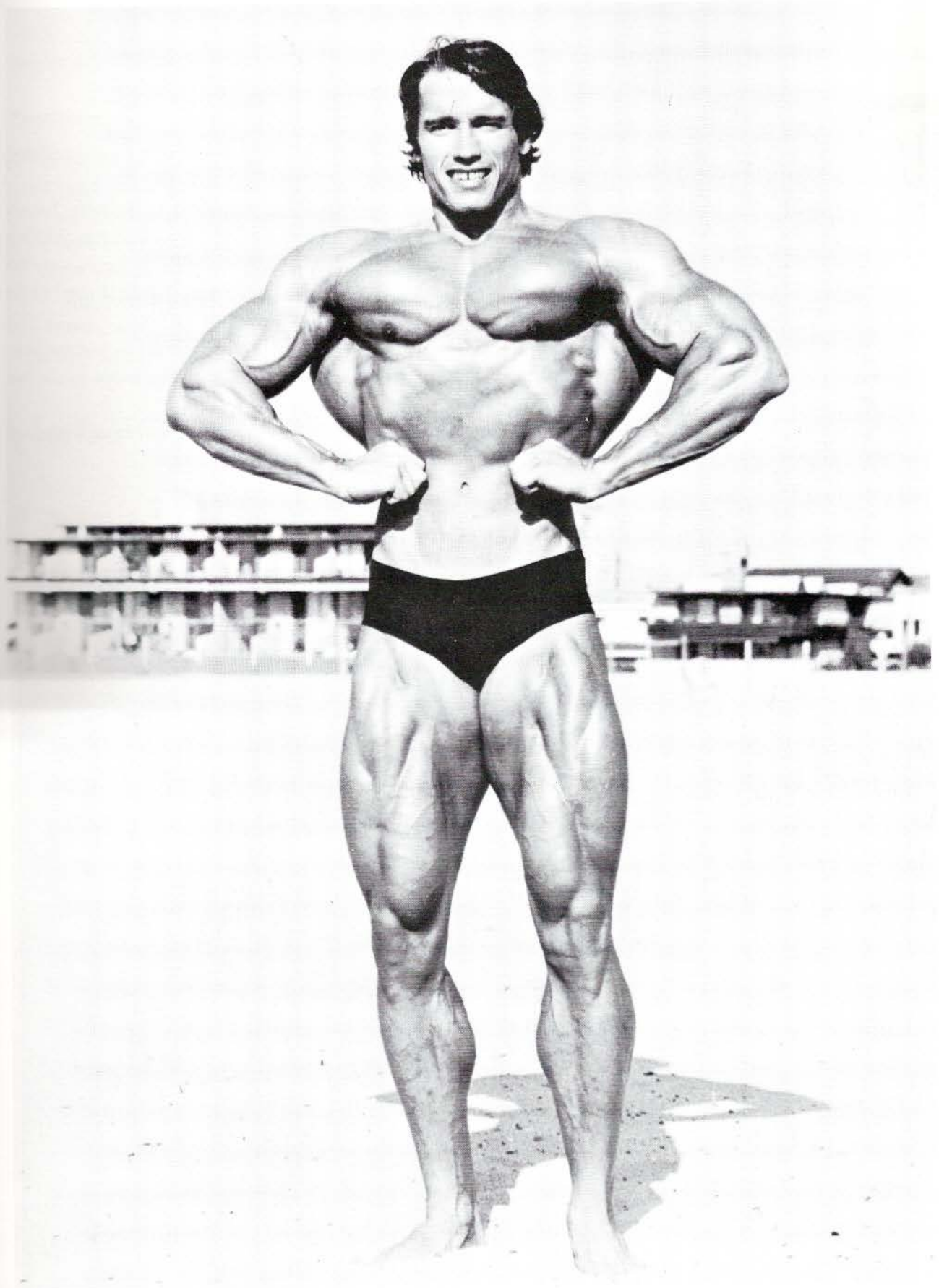
Cable Laterals, raising your arm from the side of the body, not across the front

Do super-strict Laterals (not letting the weight rise about your head, to ensure that the delts do the work instead of the trapezius).

Do burns after your Lateral Raises (taking very heavy dumbbells and holding them out with totally straight arms about 10 inches from your thighs for as long as possible—but at least 30 seconds).



*Seen from the side, the development of the side deltoid creates separation from the trapezius above and from the triceps and biceps below.*



*Shoulder width from good side deltoid development increases the effectiveness of a front lat spread.*



*This three-quarter back pose by Franco Columbu demonstrates the necessity of having good rear deltoid development.*

*Total shoulder development—the traps, the front, side, and rear delts, and the separation and definition of all the muscles involved—is extremely important in a most-muscular shot.*

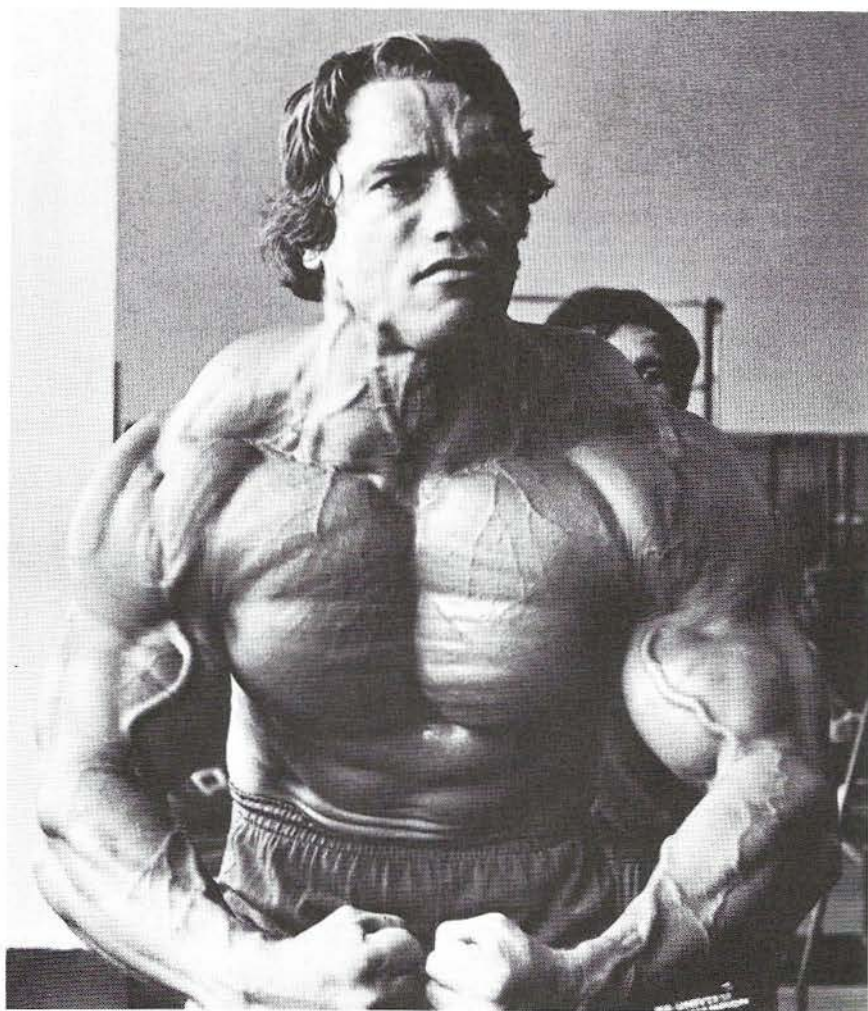
## REAR DELTOIDS

Use the Priority Principle (page 192), beginning your deltoid training with rear delt movements.

Add extra rear delt sets: Bent-Over Laterals, Bent-Over Cable Laterals, Bent-Over Barbell Rows, Seated Cable Rear Laterals, Incline Bench Lateral Raises (facedown), or Lying Side Laterals—try 10 sets for each arm done continuously without stopping (I used to do this every day, whether it was a shoulder day or not).

Take extra care to work the rear delts with the strictest technique possible, since any cheating will allow other muscle groups to do too much of the work.

In all Rear Laterals, twist the wrist as if pouring water from a pitcher in order to increase rear delt development.



**TRAPEZIUS**

Shrugs

Upright Rows

Deadlifts

Clean and Press

Reverse Laterals (very popular with British bodybuilders, these work the traps from an unusual angle as well as hitting the front delts)

Rowing exercises, such as T-Bar Rows and Cable Rows

Cable and Dumbbell Laterals

*The twisting back pose is one that does not work at all unless you have well-developed rear deltoids along with all the other important back muscles.*

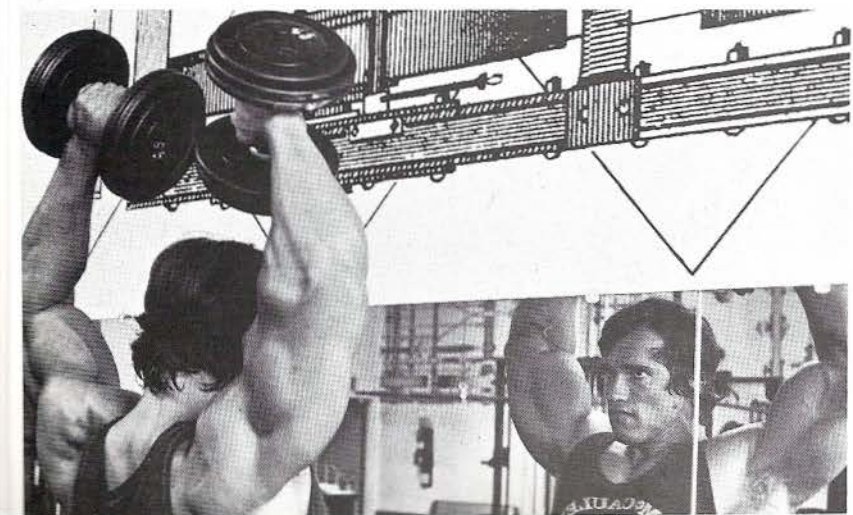
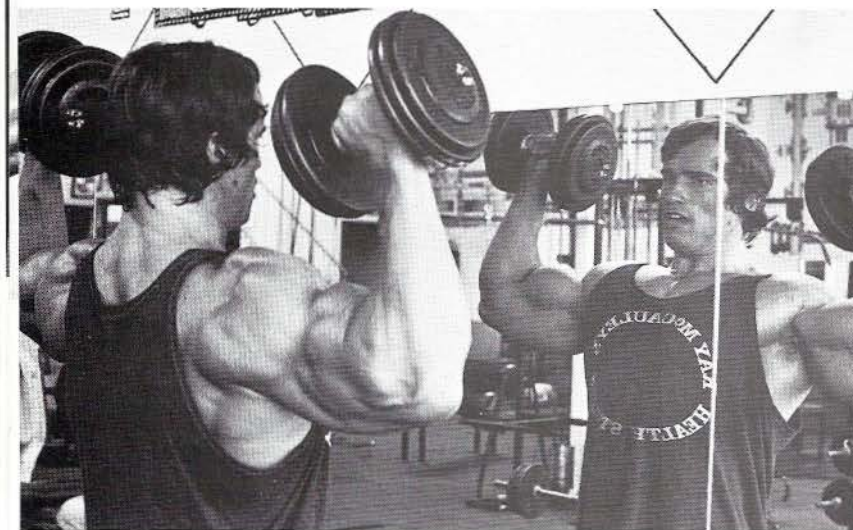


## Shoulder Exercises

### ARNOLD PRESSES

**PURPOSE OF EXERCISE:** To develop the front and side heads of the deltoids. This is the very best deltoid exercise I know, and I always include it in my shoulder routine. By using dumbbells in this manner—lowering them well down in front—you get a tremendous range of motion.

**EXECUTION:** (1) In a standing position, elbows at sides, grasp one dumbbell in each hand and raise the weights to your shoulders, palms turned toward you. (2) In one smooth motion, press the weights up overhead—not quite to the point where they are locked out—and at the same time rotate your hands, thumbs turning inward, so that your palms face forward at the top of the movement. (3) Hold here for a moment, then reverse the movement, lowering the weights and rotating your hands back to the starting position. Don't get so concerned with pressing the weight overhead that you begin to sway and cheat; this movement should be done strictly, keeping the dumbbells fully under control. By not locking the arms out when you press the weight overhead, you keep the stress on the deltoids the whole time. This exercise is half Lateral Raise and half Dumbbell Press, and works both the anterior and medial heads of the deltoids thoroughly.



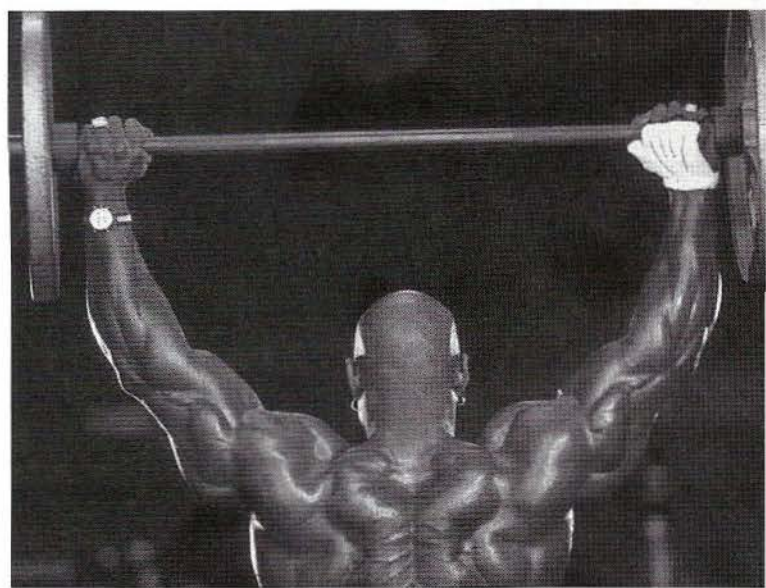


*Nasser El Sonbaty*

## **BEHIND-THE-NECK PRESSES**

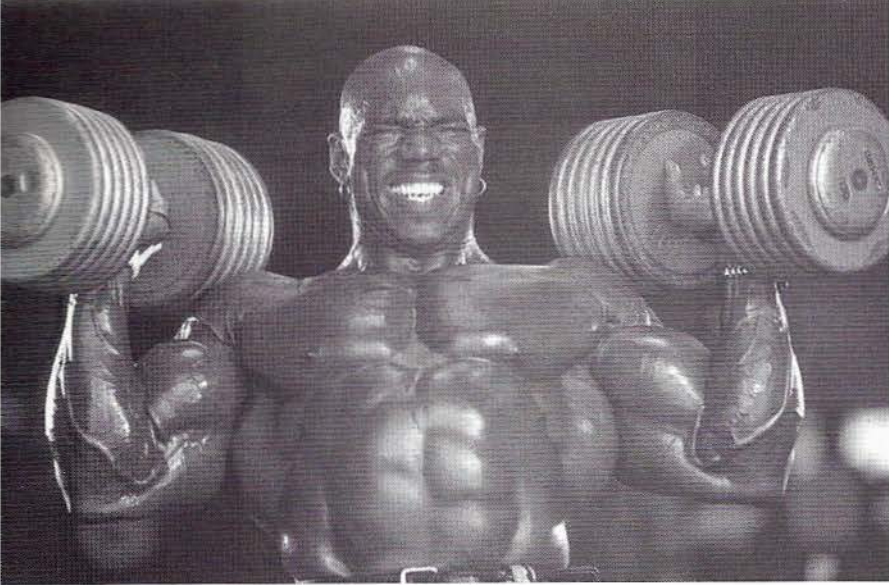
**PURPOSE OF EXERCISE:** To train the front and side deltoids. Any pressing movement involves the triceps as well.

**EXECUTION:** You can do these Presses standing, but I prefer doing them sitting, since it makes the movement stricter. (1) Either lift the barbell overhead and set it down on your shoulders behind your head or lift it off the rack of a seated press bench. (I personally prefer to hold the bar with a thumbless grip.) (2) Press the weight straight up and then lower it again, keeping it under control and your elbows as far back as possible during the movement.



*Flex Wheeler*





## **DUMBBELL PRESSES**

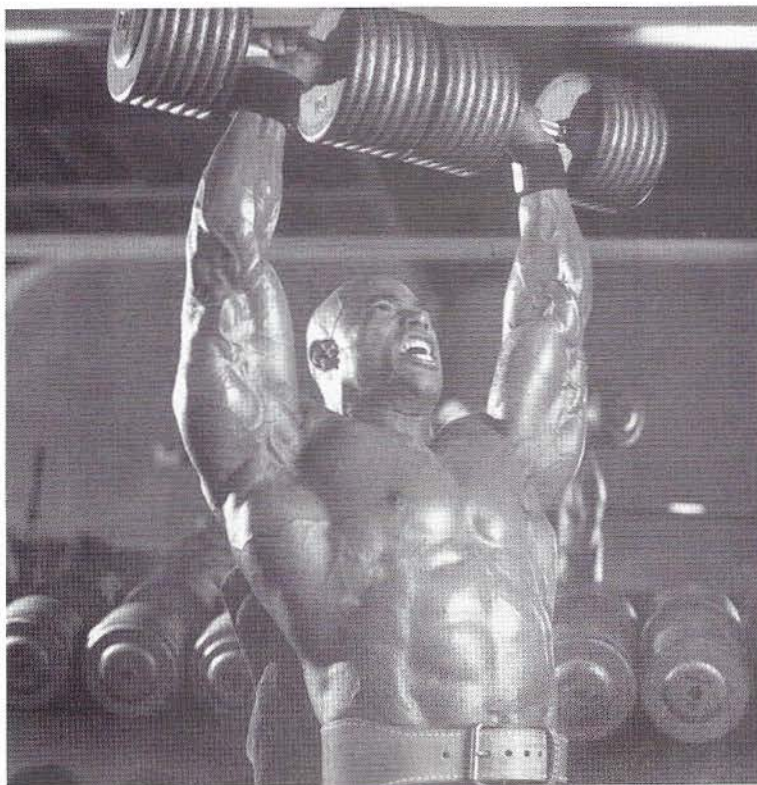
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**PURPOSE OF EXERCISE:** To train the front and side deltoids. This exercise may seem to be similar to Barbell Presses of various kinds, but there are important differences, the most significant being the greater range of motion you get using the dumbbells.

**EXECUTION:** (1) Hold one dumbbell in each hand at shoulder height, elbows out to the sides, palms facing forward. (2) Lift the dumbbells straight up until they touch at the top, then lower them again as far as possible. You will find that you are able to both raise and lower the dumbbells farther than you can a barbell, although the need to control two weights independently means that you are lifting slightly less poundage.



*Flex Wheeler*

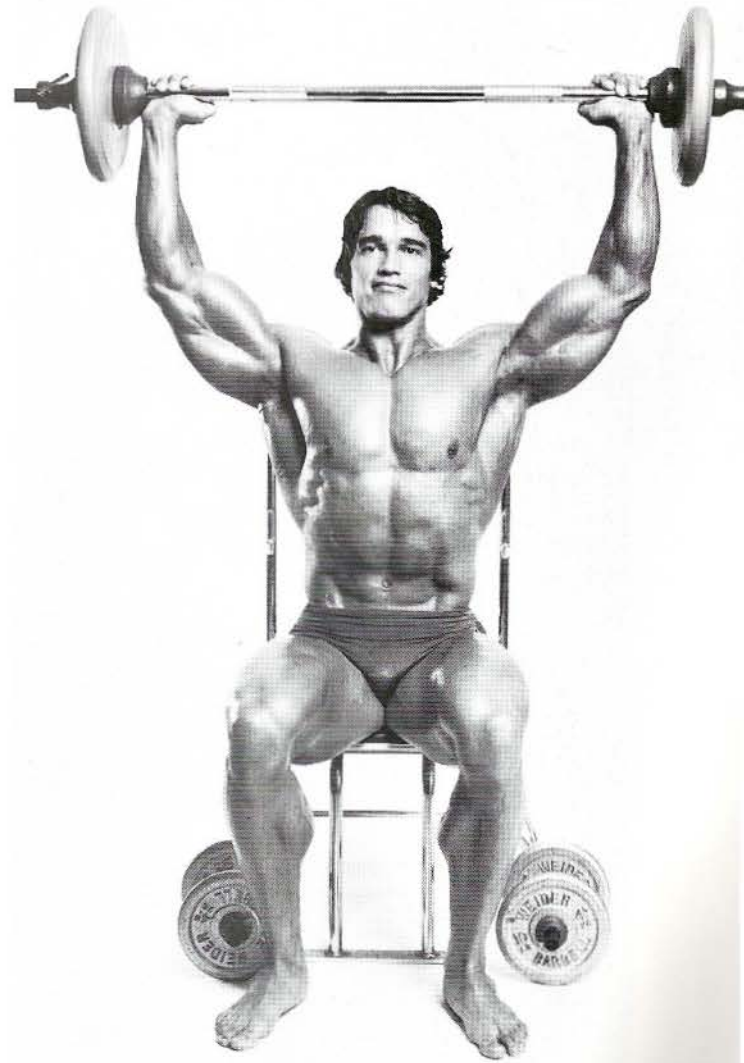


*Kevin Levrone*

## MILITARY PRESS

**PURPOSE OF EXERCISE:** To train the front and side deltoids. This is the granddaddy of shoulder exercises. When done from a seated position the movement will be stricter than when standing.

**EXECUTION:** (1) From a sitting or standing position, grasp a barbell with an overhand grip and hold it at shoulder level, palms underneath for support, hands outside your shoulders, elbows tucked in and under. (2) From a position about even with the collarbone, lift the bar straight up overhead until your arms are locked out, being careful to keep the weight balanced and under control. Lower the weight back to the starting position.



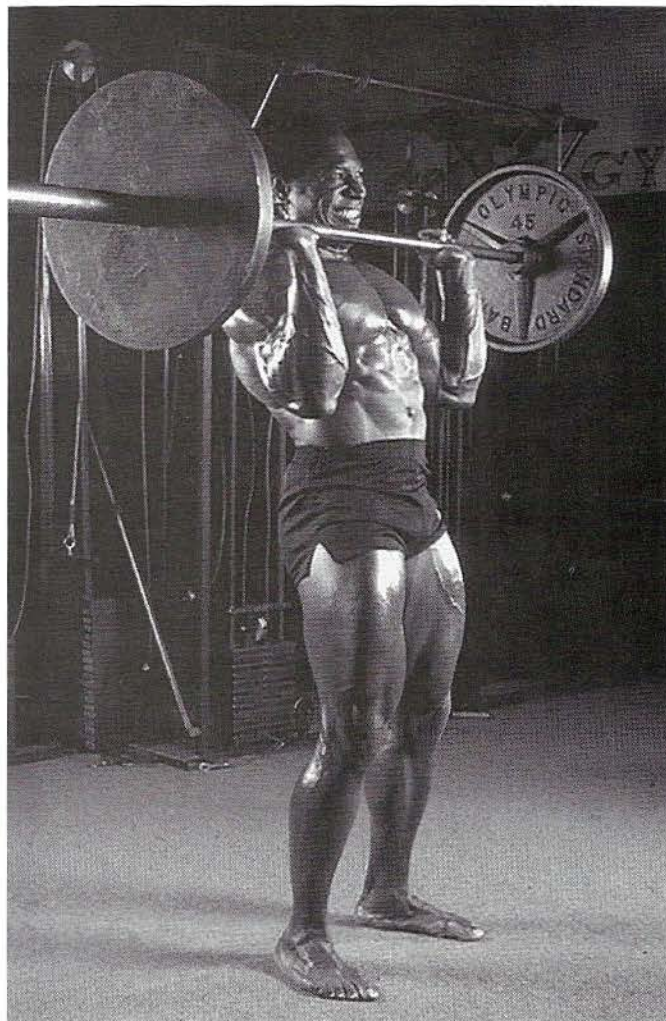
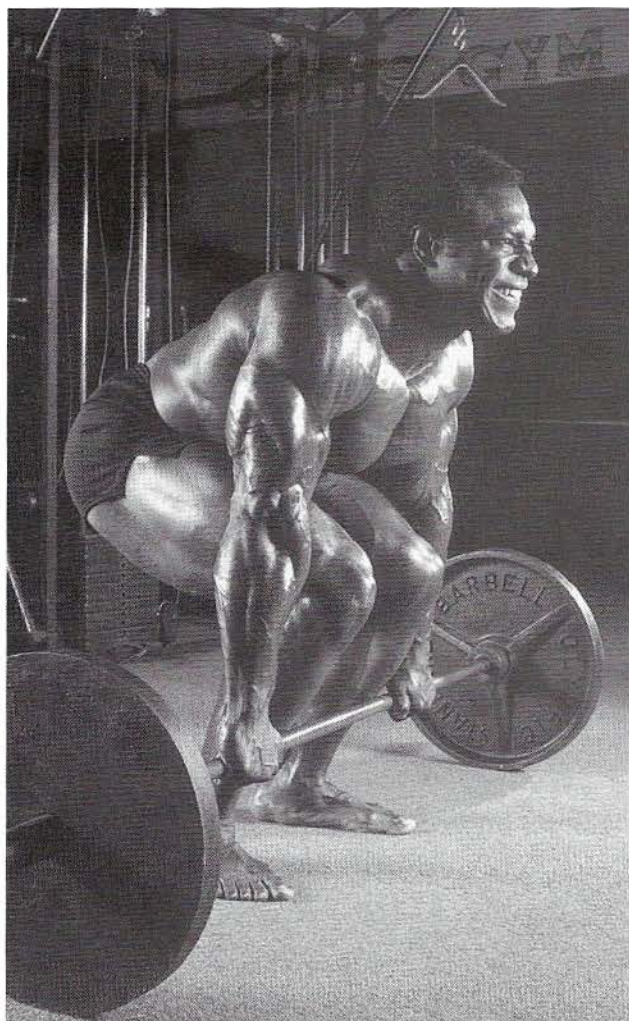
## CLEAN AND PRESS

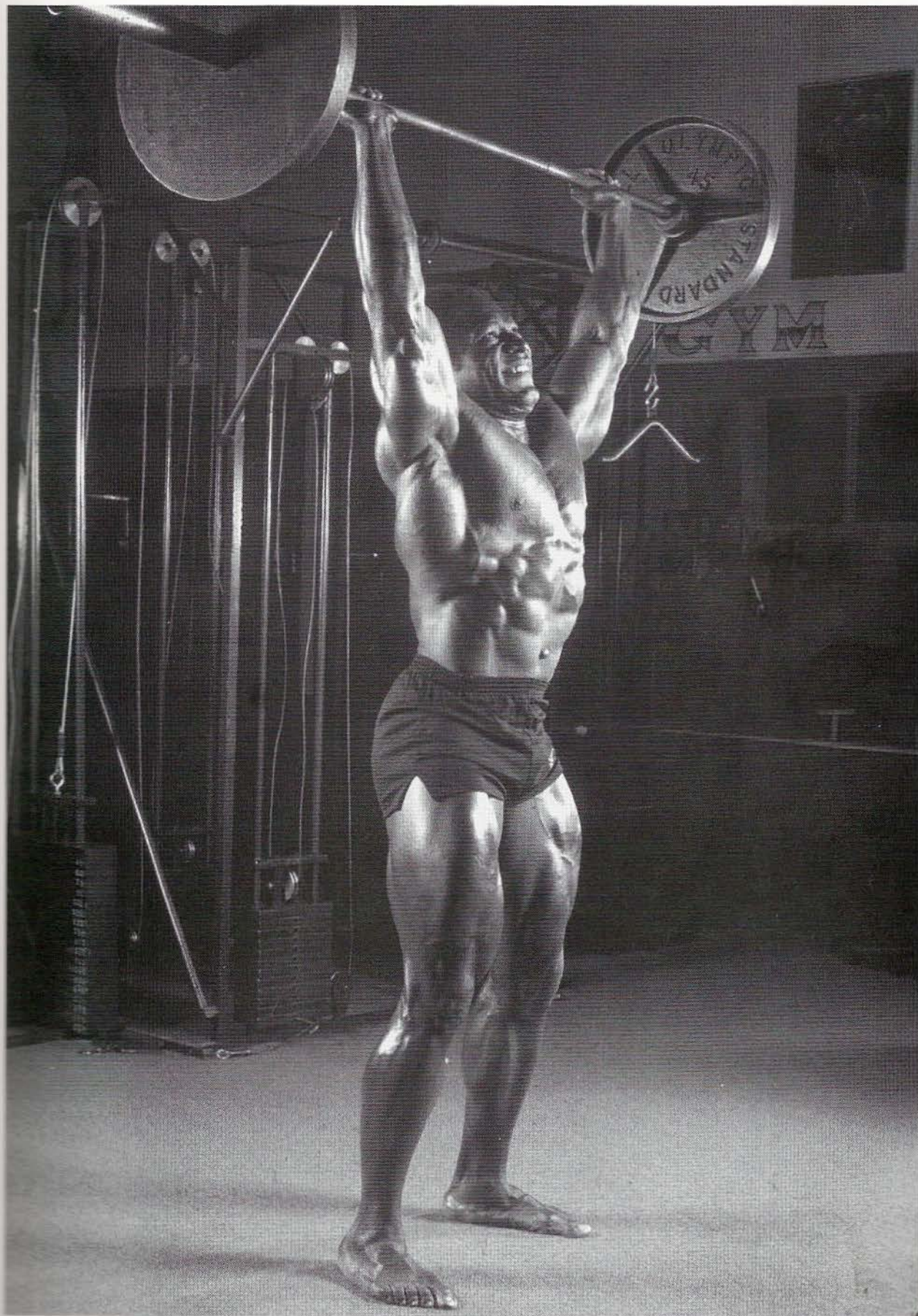
**PURPOSE OF EXERCISE:** To train the front and side deltoids and build total body density and power.

Cleaning a weight is a method of lifting a barbell from the floor to the starting position of the Military Press. The Clean and Press is an important exercise that starts off with a lot of leg movement to get the weight moving, then involves the traps, arms, and back as well as the shoulders to help you develop a truly Herculean look.

**EXECUTION:** (1) Squat down, lean forward, and take hold of the bar with an overhand grip, hands about shoulder width apart. (2) Driving with the legs, lift the bar straight up to about shoulder height, then tuck the elbows in and under to support the weight in the starting position of the Military Press. (3) Then, using your shoulders and arms, press the weight up overhead, bring it back down to shoulder height, then reverse the cleaning motion by bending your knees and setting the weight back onto the floor.

*Lee Haney*



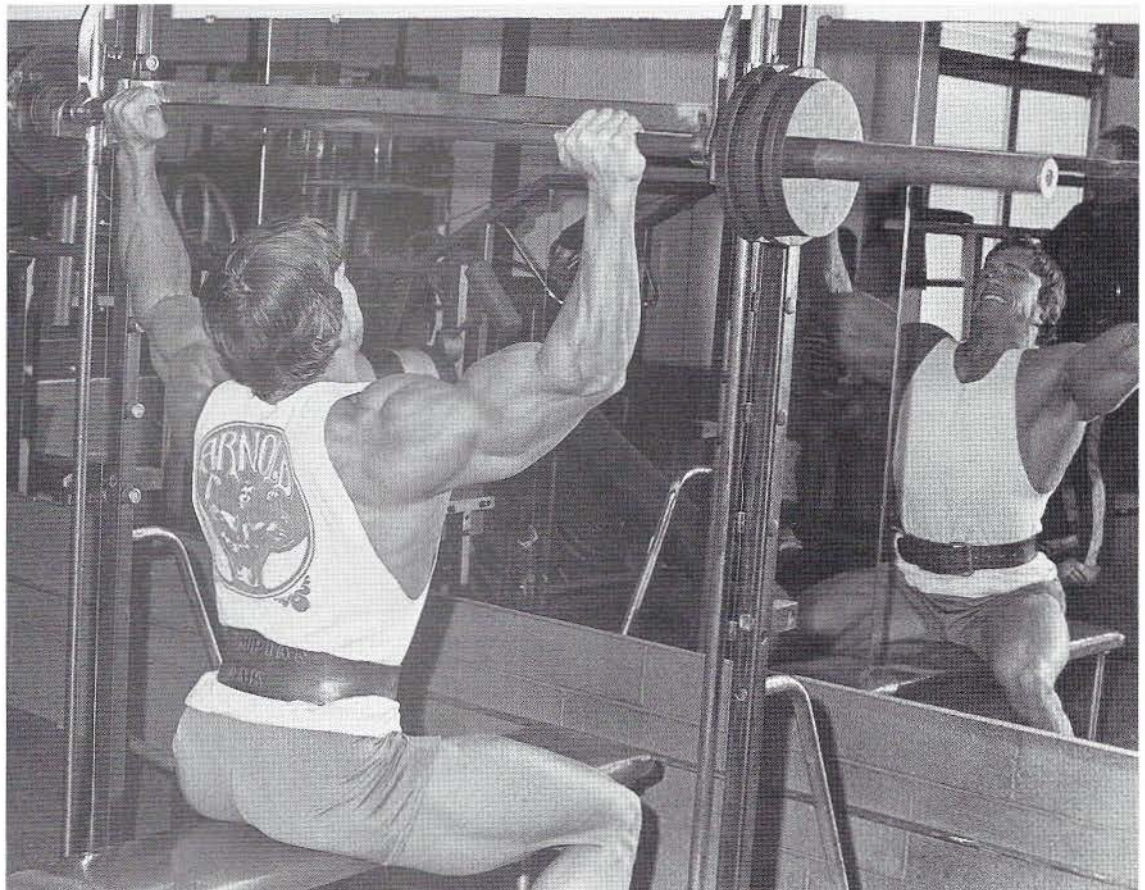




## MACHINE PRESSES

**PURPOSE OF EXERCISE:** To train front and side delts. Doing Presses on a machine helps you do the movements very strictly, and allows you to avoid cleaning a weight if you have some sort of physical problem. Also, you can let the weight come down much lower, which gives you extra stretch in your front delts. There are any number of machines on which you can do a Shoulder Press movement—Cybex, Nautilus, Hammer Strength, or Universal, to name a few—but the principle remains the same.

**EXECUTION:** (1) Grasp the bar or handles at shoulder level and (2) press upward until your arms are locked out, then come back down slowly to the starting position, going through the longest range of motion possible. You can also use machines to do Front Presses or Behind-the-Neck Presses; both will work the front and side delts.



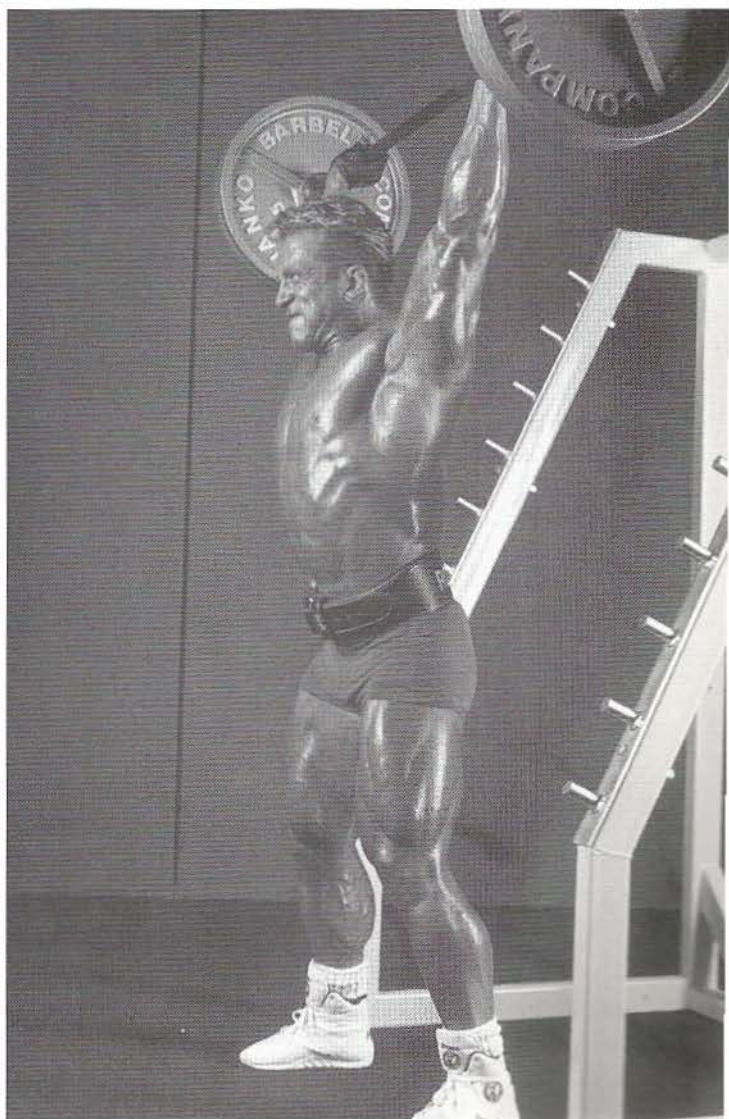
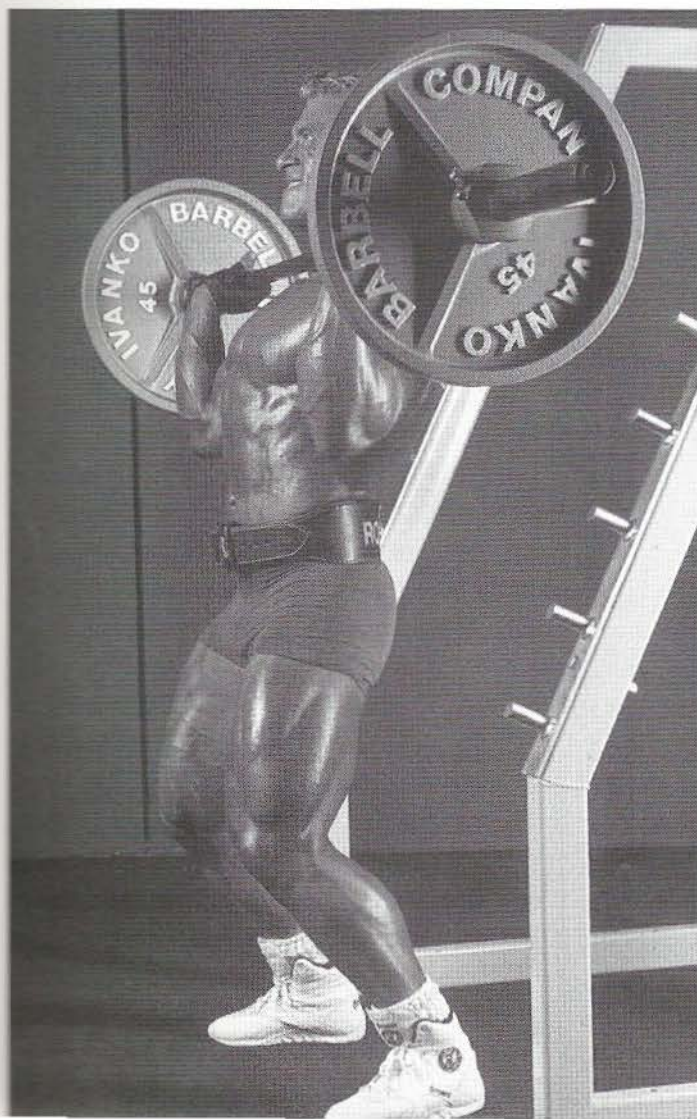
## PUSH PRESSES

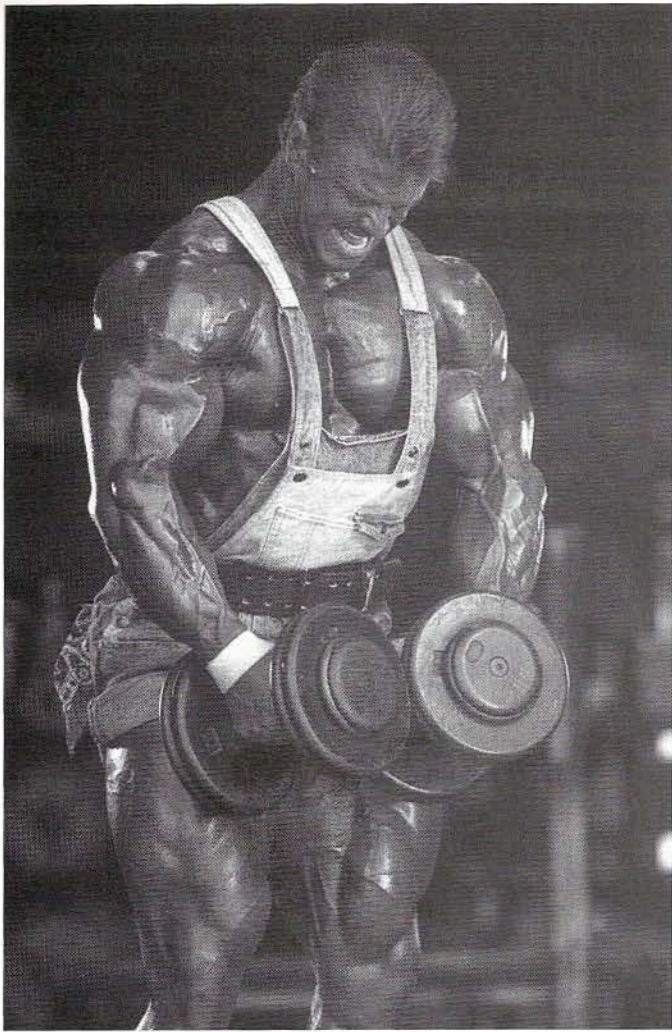
**PURPOSE OF EXERCISE:** To use a heavier than normal weight, or to continue to do repetitions of shoulder presses after reaching a point of failure; to develop additional deltoid strength.

This is a Cheating Principle exercise. You can use it in power training to lift a barbell that you would normally find too heavy to use for strict Shoulder Presses. You can also use the Push Press to do forced reps at the end of a set, when you are too tired to continue to do strict Shoulder Press reps.

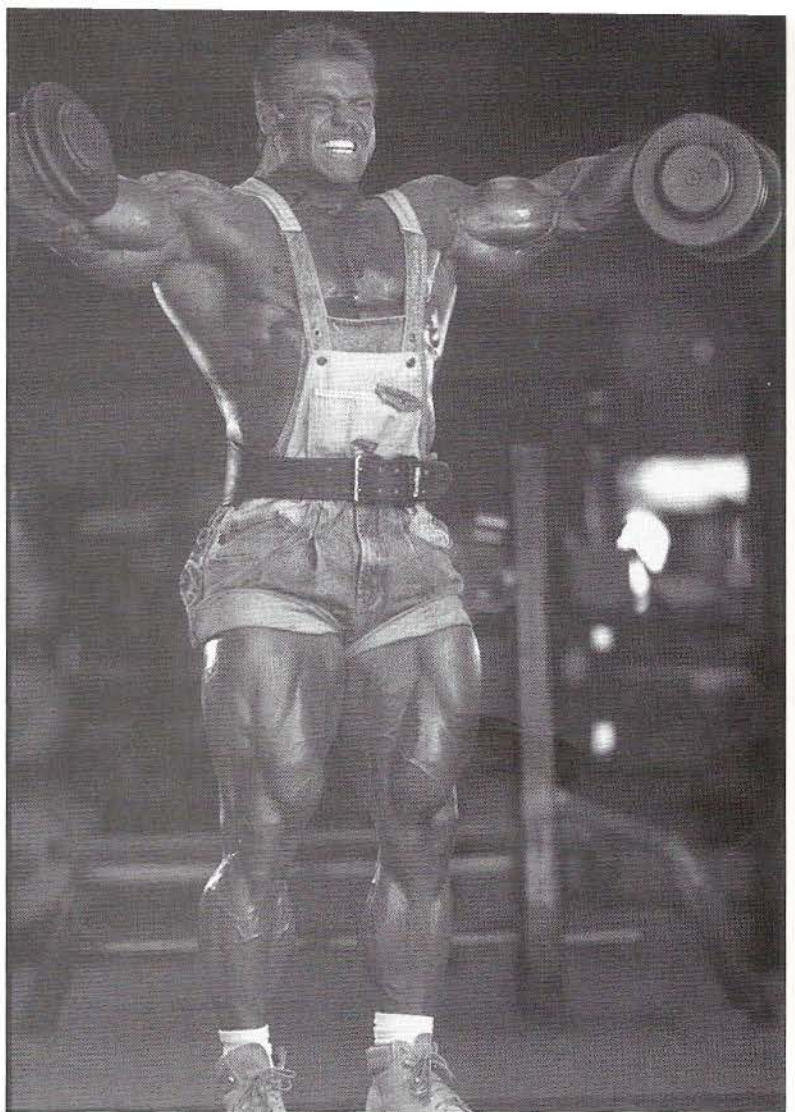
**EXECUTION:** (1) Taking hold of a barbell with an overhand grip, hands slightly wider than shoulder width apart, clean the weight up to shoulder height. (2) Bend your knees slightly and then press up with your legs to get the bar moving. Use this additional impetus to press the bar up overhead. Lock it out, then slowly lower once more to shoulder position.

*David Dearth*





*Eddie Robinson*



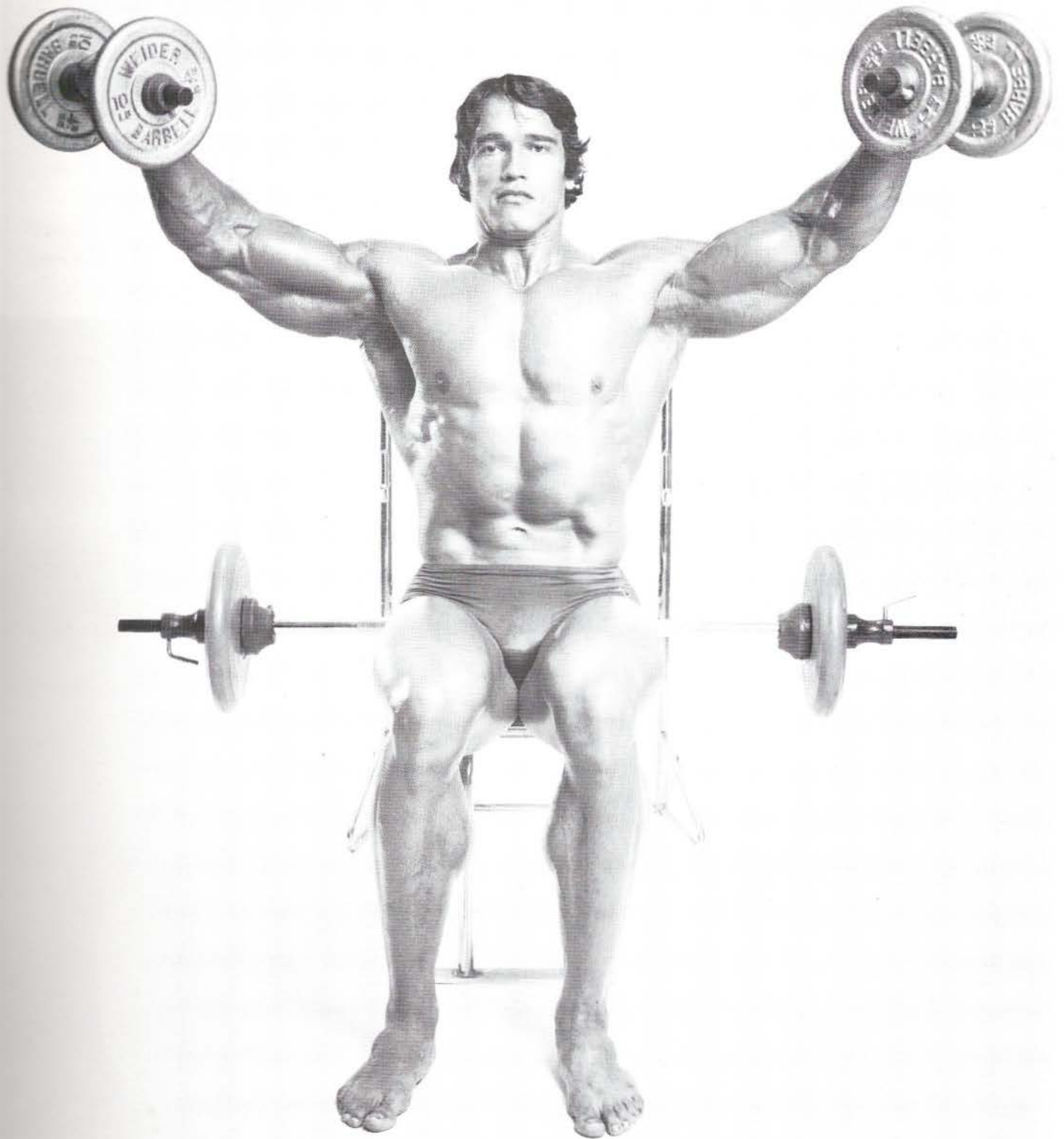
## **STANDING LATERAL RAISES**

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**PURPOSE OF EXERCISE:** To develop the outside head of the deltoid, with secondary benefit to the front and rear heads.

**EXECUTION:** (1) Take a dumbbell in each hand, bend forward slightly, and bring the weights together in front of you at arm's length. Start each repetition from a dead stop to keep yourself from swinging the weight up. (2) Lift the weights out and up to either side, turning your wrists slightly (as if pouring water out of a pitcher) so that the rear of the dumbbell is higher than the front. (3) Lift the weights to a point slightly higher than your shoulders, then lower them slowly, resisting all the way down. (A common mistake with this movement is to rock back and forth and swing the weights up instead of lifting them with the deltoids. Doing this cuts down on the effectiveness of the movement and should be avoided.)

**VARIATION:** You may have a tendency to cheat a little when doing Standing Lateral Raises—this can be avoided if the same exercise is done in a seated position.

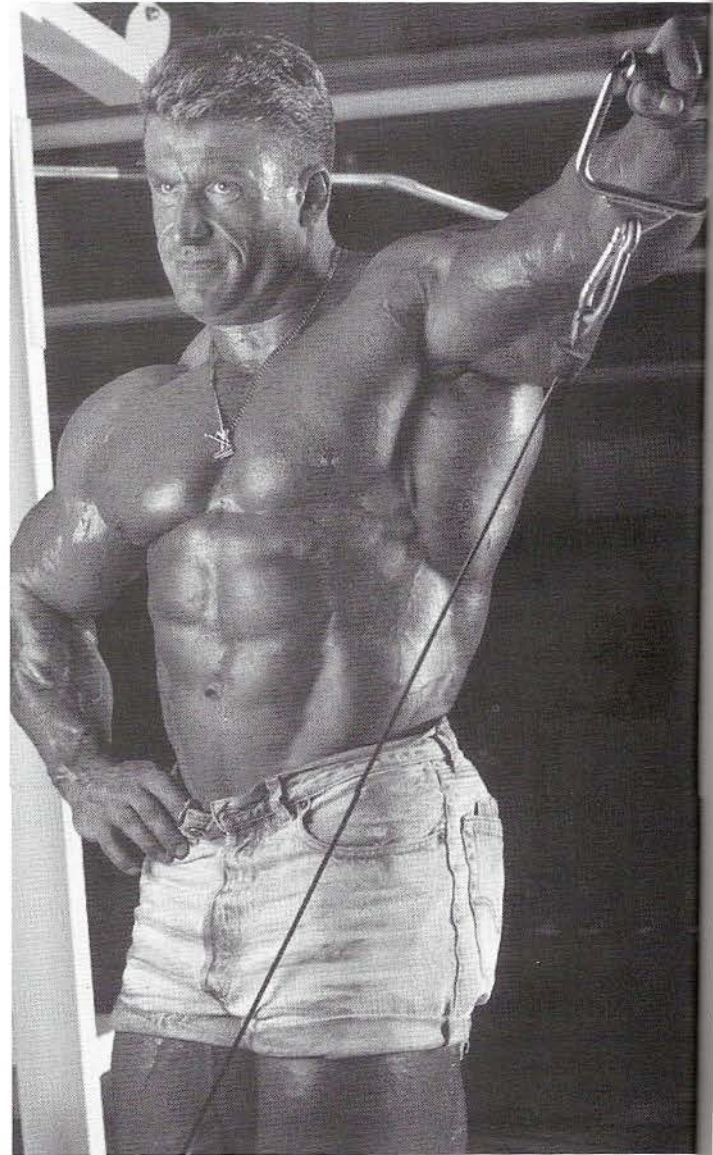
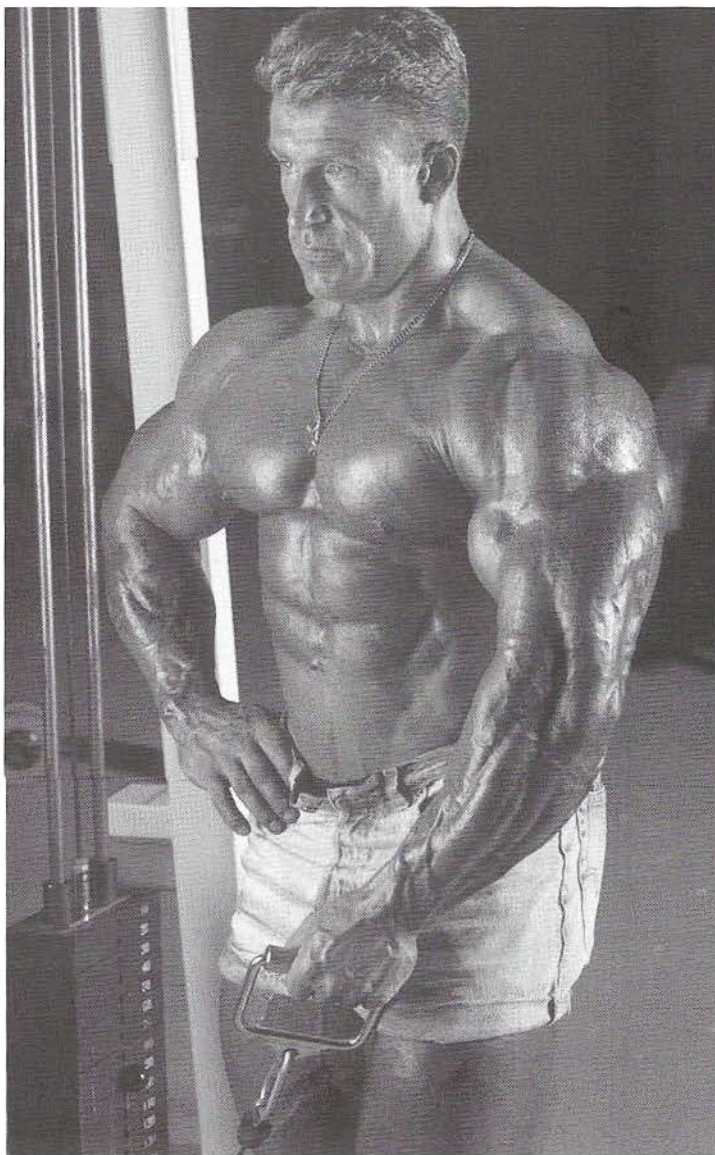


*Seated Lateral Raises*



## ONE-ARM CROSS CABLE LATERALS

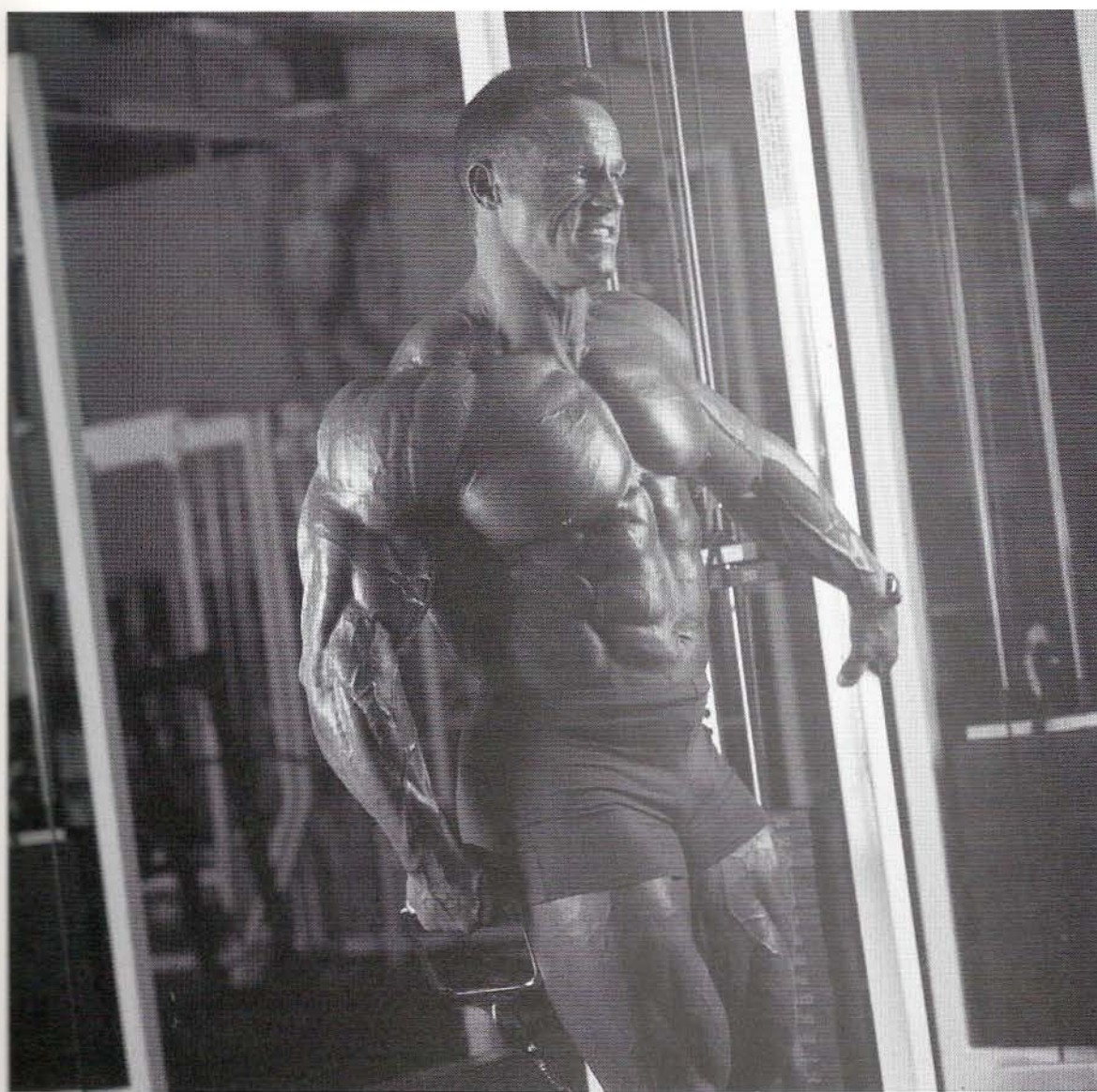
**PURPOSE OF EXERCISE:** To work the outside head of the deltoid and, to a lesser degree, benefit the front and rear heads. Doing One-Arm Laterals with a cable and floor pulley gives you two advantages: It allows you to isolate first one side of the body, then the other; and the cable provides constant tension unaffected by your motion relative to the pull of gravity.



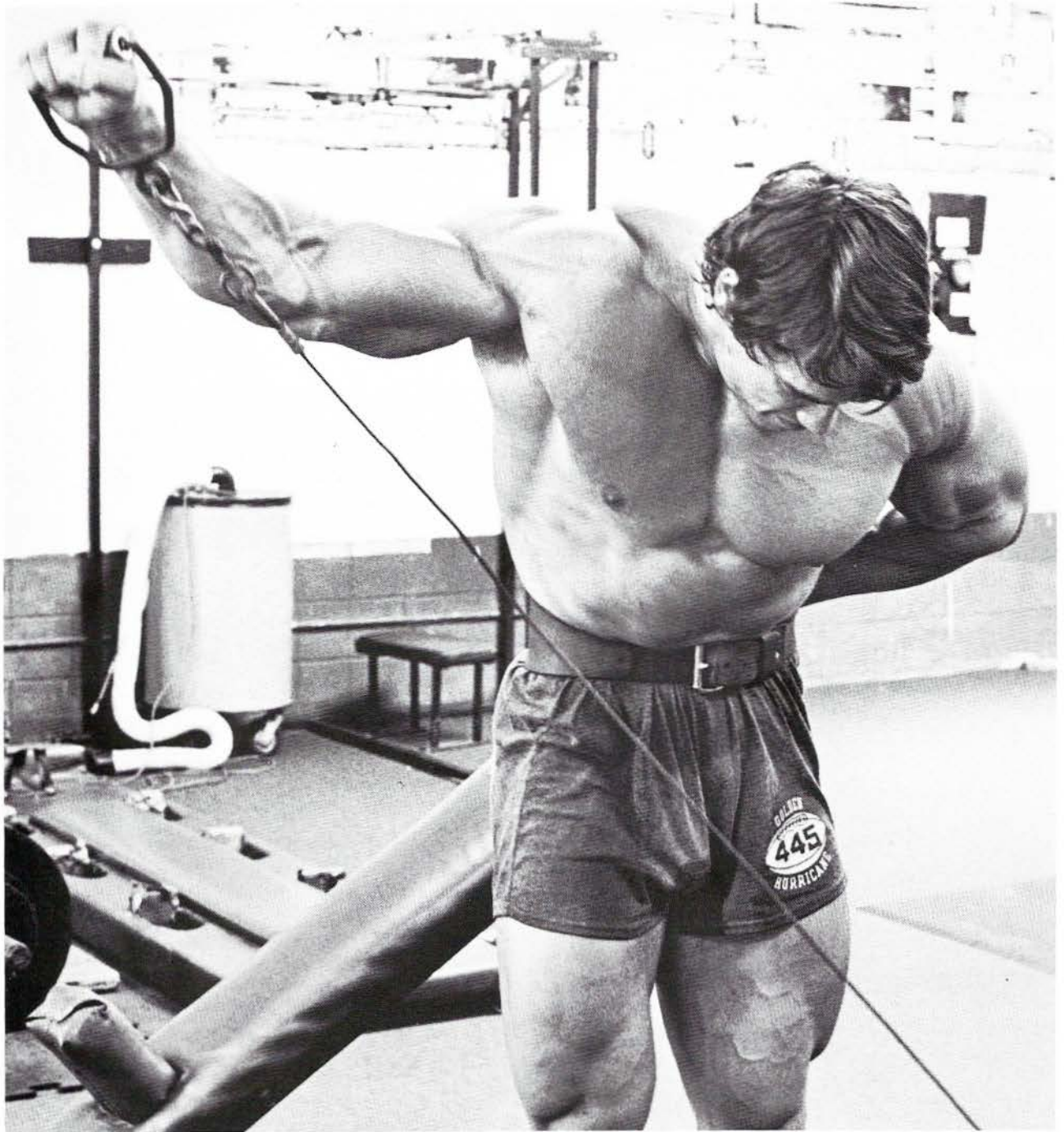
*Dorian Yates*

**EXECUTION:** (1) Grab the handle and stand with your arm down and across your body, your free hand on your hip. (2) With a steady motion, pull outward and upward, keeping the angle in your elbow constant throughout the movement, until your hand is just slightly higher than your shoulder. Twist your wrist as you raise your arm as if you were pouring a pitcher of water. Do your reps with one hand, then an equal number with the other. Don't lift the weight by raising up with your body—use the deltoids.

**VARIATION:** Try doing the movement with the cable running behind your back instead of in front.



*Porter Cottrell*



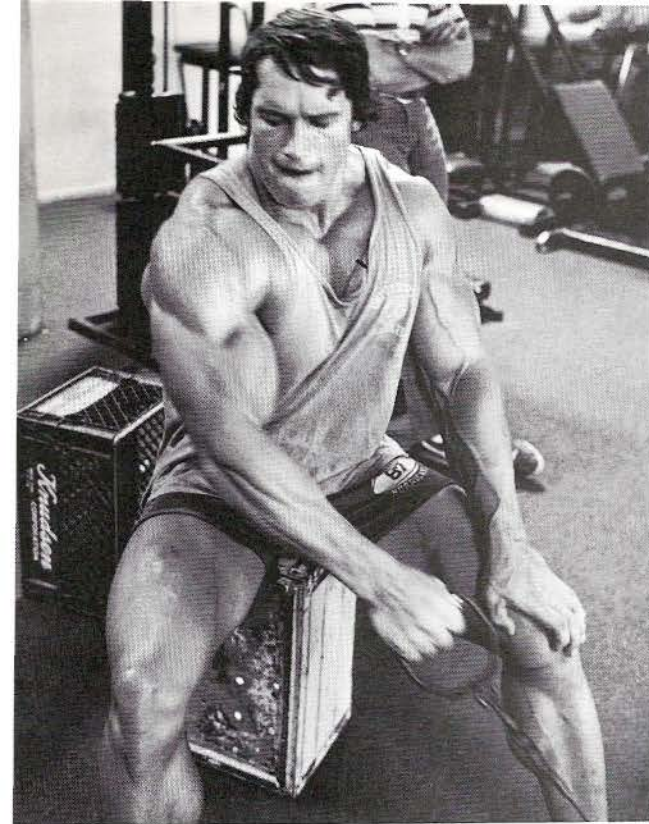
*If you have a weak point in the rear delts, bending your torso forward slightly while doing Cable Laterals works this area in addition to the side delts.*

## ONE-ARM SIDE CABLE LATERALS

**PURPOSE OF EXERCISE:** To focus the work on the side delt head. This movement, which was a favorite of Sergio Oliva's, helps bring out definition in the shoulders, and works the rear and front heads as well.

**EXECUTION:** (1) Stand upright, with your arm down beside you, holding on to a handle attached to a floor-level pulley. Place your other hand on your hip. (2) Keeping your arm straight, lift it up in an arc in one smooth motion until it is higher than your head. Lower your arm back to your thigh. Finish your repetitions, then repeat using the other arm.





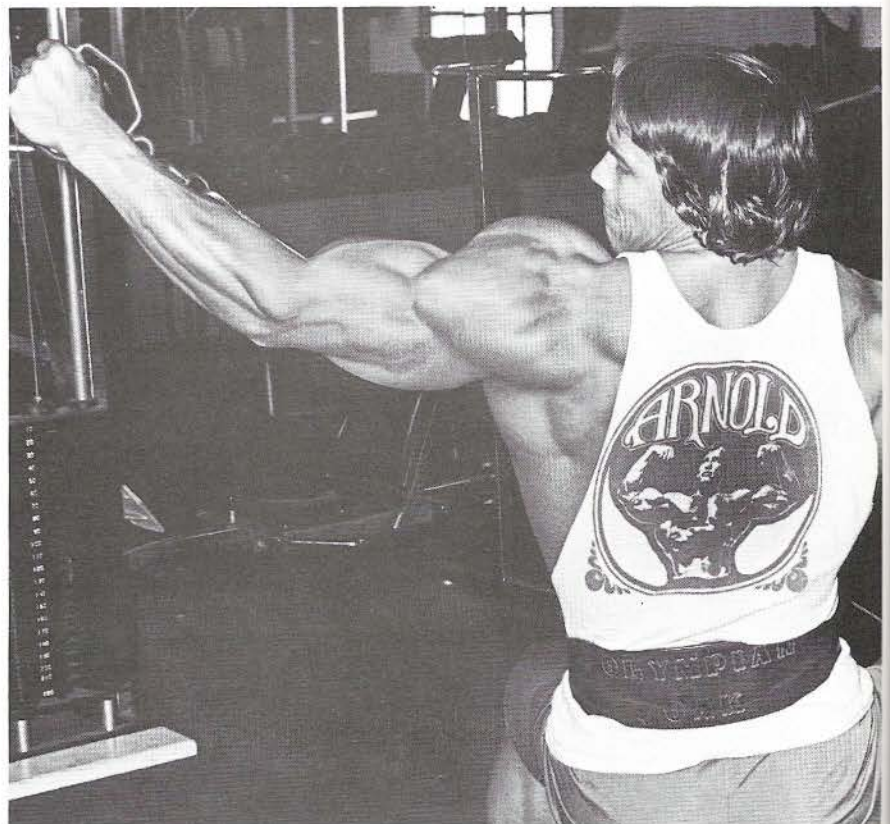
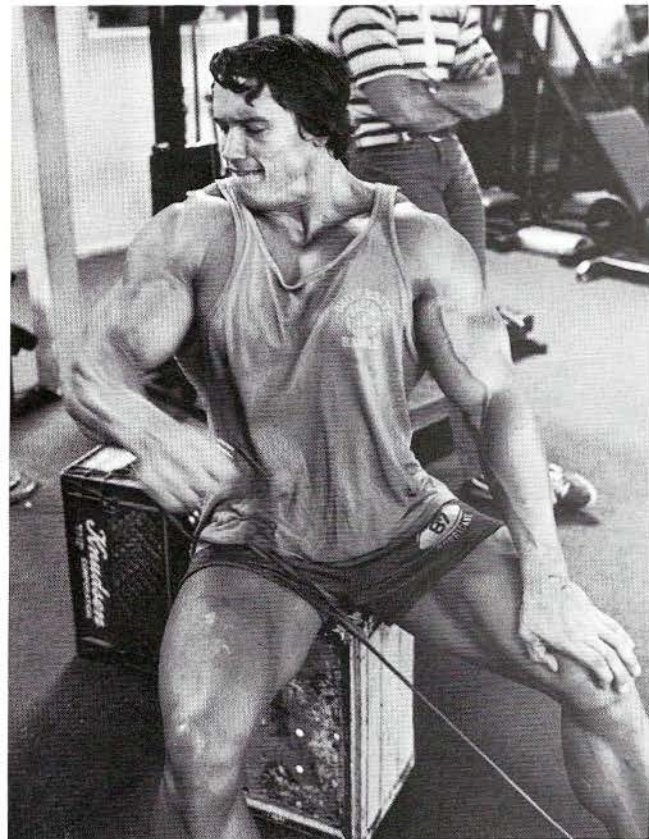
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## SEATED ONE-ARM CROSS CABLE LATERALS

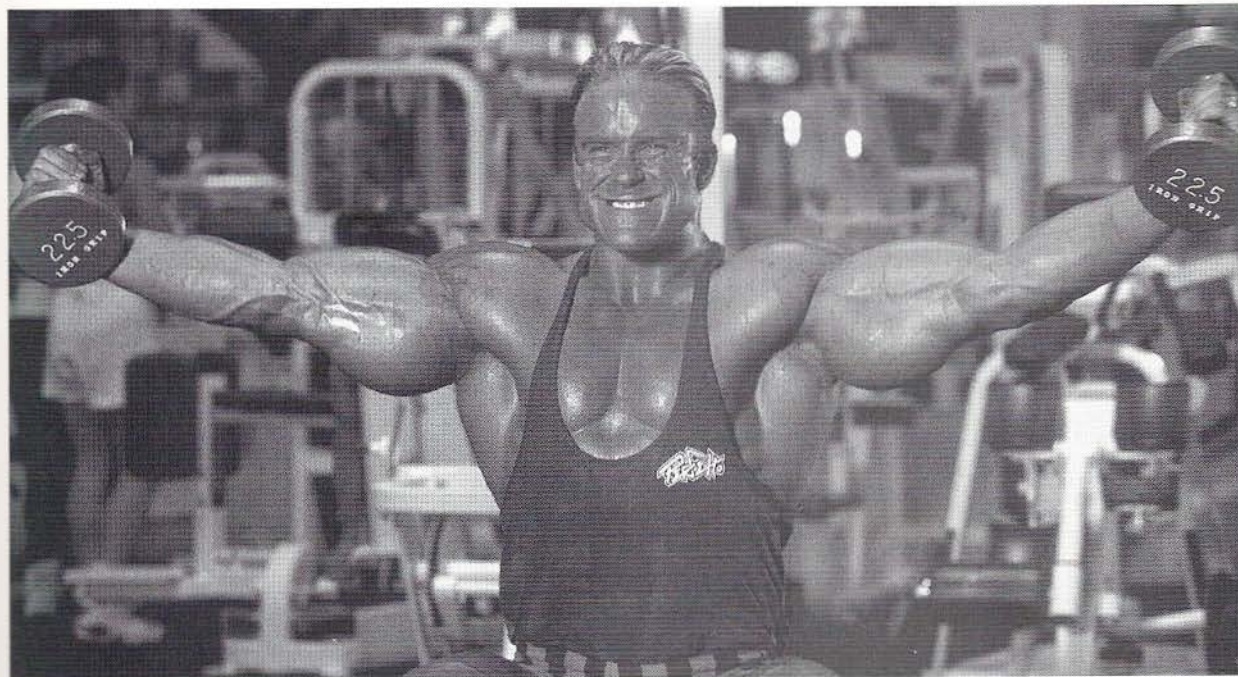
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**PURPOSE OF EXERCISE:** To develop the rear deltoids by isolating and flexing the rear deltoid when reaching the top position of the Cable Lateral movement.

**EXECUTION:** (1) Sitting on a stool or low bench, take hold of a handle attached to a floor-level pulley in such a way that your arm is fully extended across the front of your body. (2) Keeping your body as still as possible, pull the handle across and up until your arm is fully extended to the side at about shoulder height. (3) At the top of the movement flex your rear deltoid to get a really full contraction. Lower the weight back to the starting position. Finish your repetitions, then repeat with the other arm.



*Isolating and flexing the rear deltoid  
when reaching the top position of the  
Cable Lateral*



Aaron  
Maddron

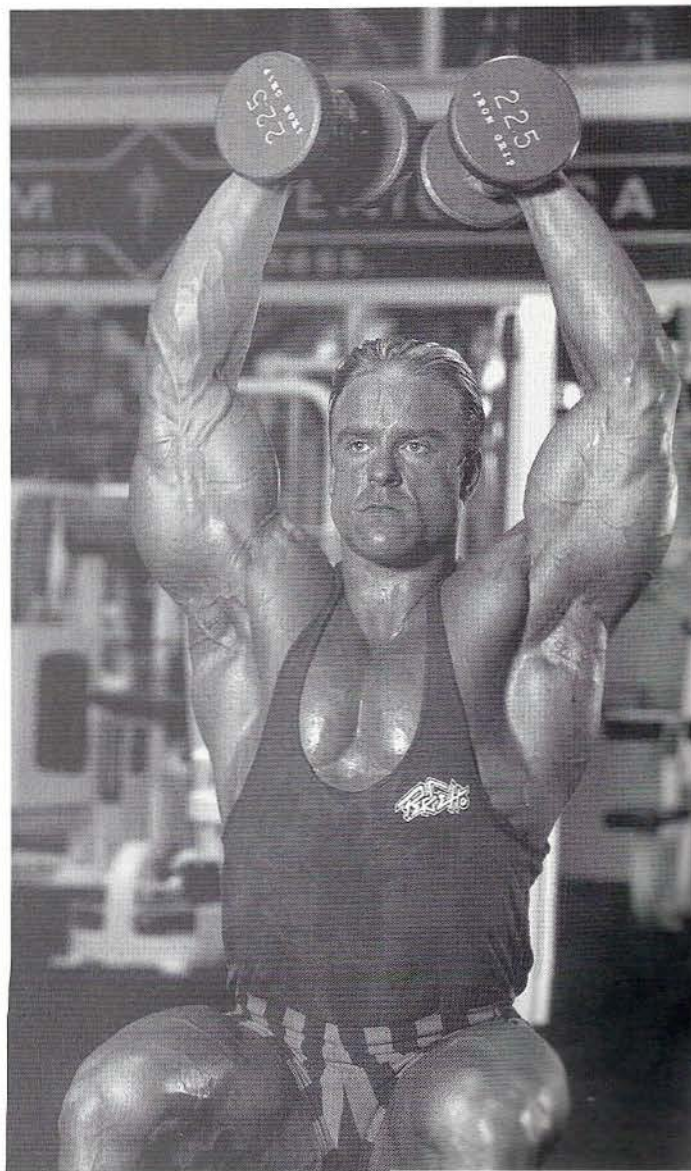
## REVERSE OVERHEAD DUMBBELL LATERALS

**PURPOSE OF EXERCISE:** To develop the side and rear deltoids. This exercise, a favorite of British bodybuilders, also helps develop the traps.

**EXECUTION:** (1) Take a dumbbell in each hand, then extend your arms straight out to either side, palms turned up. (2) Slowly lift your arms up and bring them together over your head. Your arms do not have to be locked out on top. Keep your body steady during the entire movement. From the top, lower the dumbbells slowly down to the starting position.

## MACHINE LATERALS

Various machines have been developed that attempt to duplicate the lateral movement of the deltoids yet do not put any appreciable stress on the wrists, elbows, or upper arms. When using these machines, either with one arm at a time or both together, concentrate on feeling the deltoids lift the arm from a position at your side all the way up through the entire range of motion of the machine and then back down again under control, resisting the pull of gravity from the weight stack at all times.



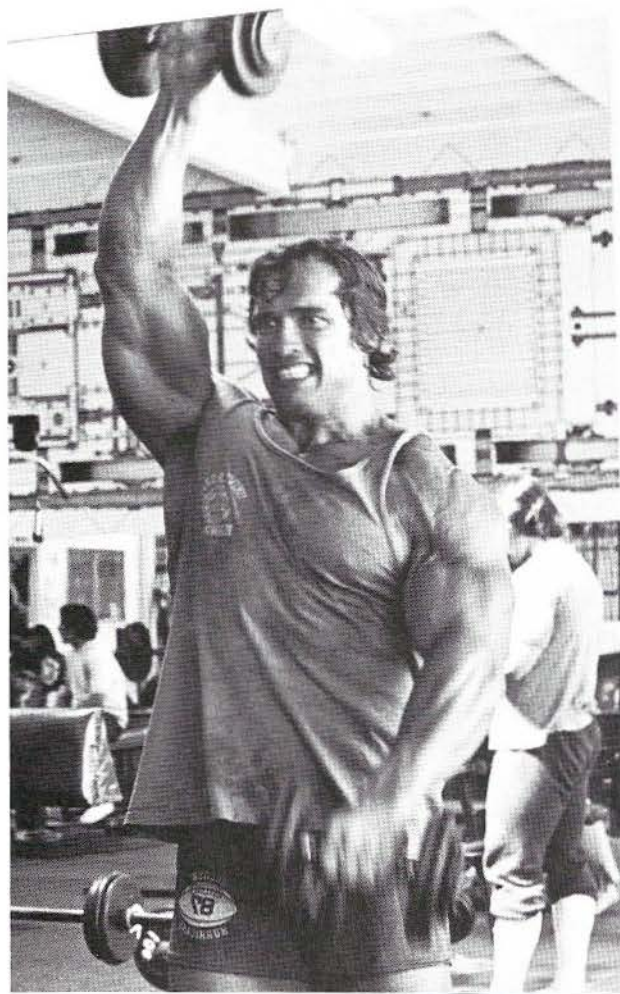
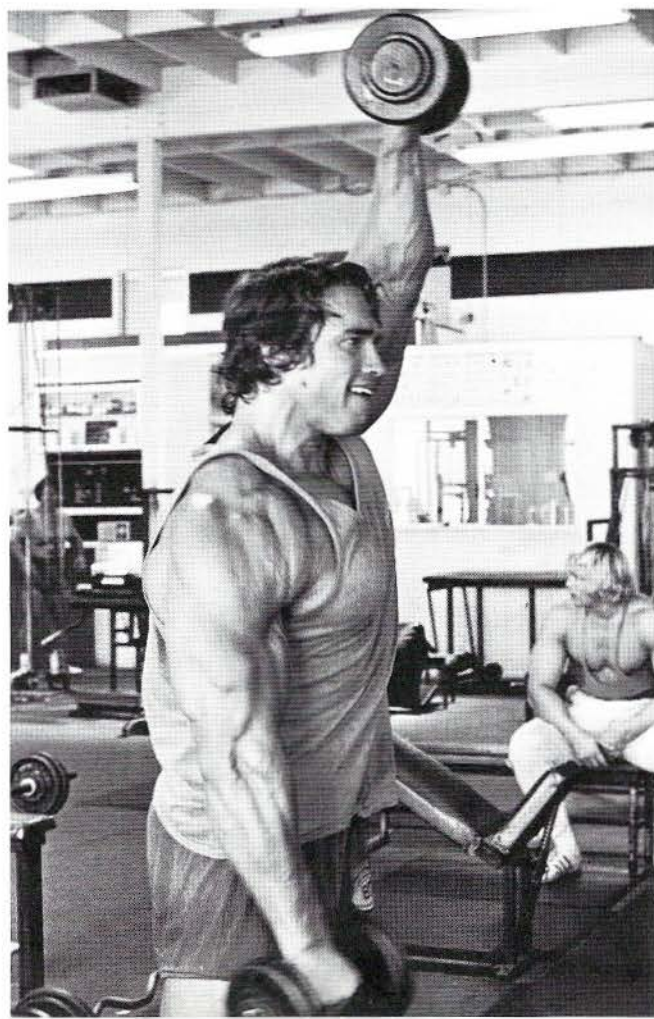
## FRONT DUMBBELL RAISES

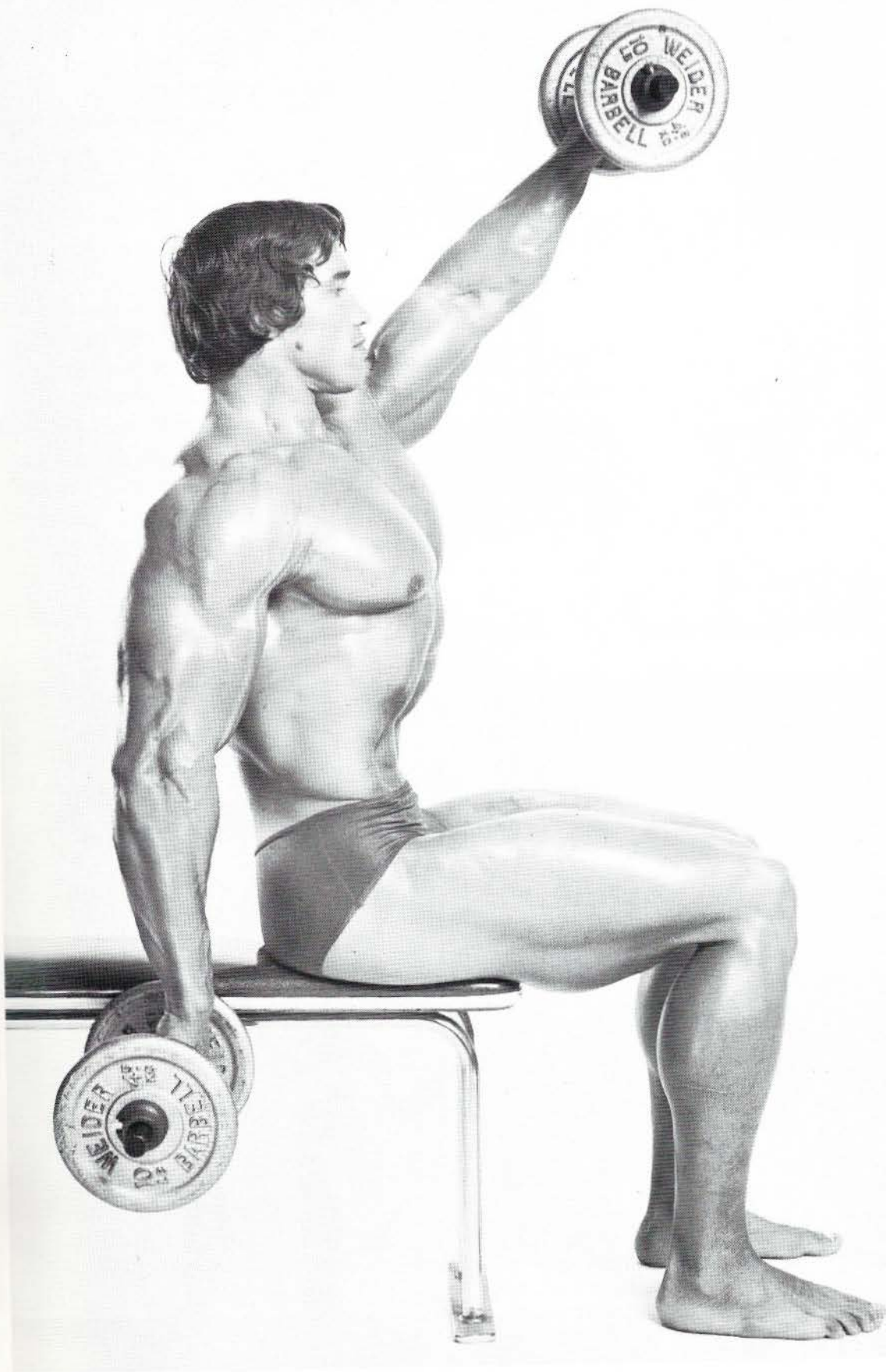
**PURPOSE OF EXERCISE:** To develop the front head of the deltoids.

This exercise not only works the front head of the deltoids through its entire range of motion, but also involves the traps during the top of the movement. It can be done either standing or sitting.

**EXECUTION:** Stand with a dumbbell in each hand. (1) Lift one weight out and up in a wide arc until it is higher than the top of your head. (2) Lower the weight under control while simultaneously lifting the other weight, so that both arms are in motion at the same time and the dumbbells pass each other at a point in front of your face. In order to work the front head of the deltoids directly, make certain that the dumbbells pass in front of your face rather than out to the side. To do this same movement with a barbell, grasp the bar with an overhand grip, let it hang down at arm's length in front of you, and with arms kept locked, lift it to a point just higher than your head, staying as strict as possible, then lower it again under control.

**VARIATION:** Do Front Raises in a seated position for a stricter movement, since you can't use your body to cheat on the lifts.





*Seated Front Dumbbell Raises*

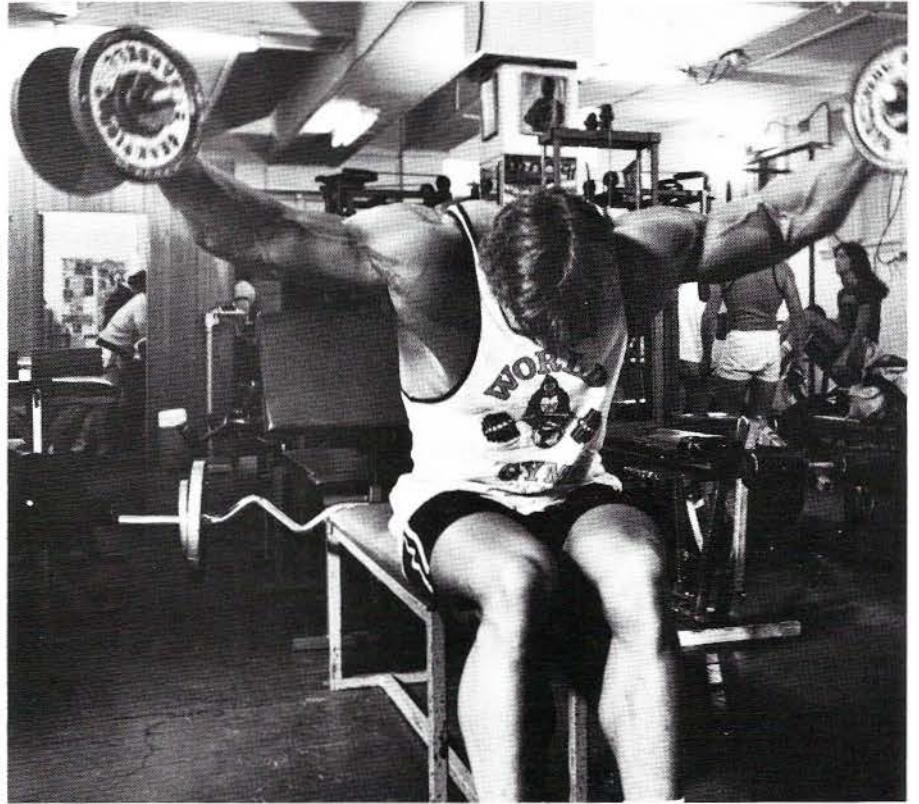
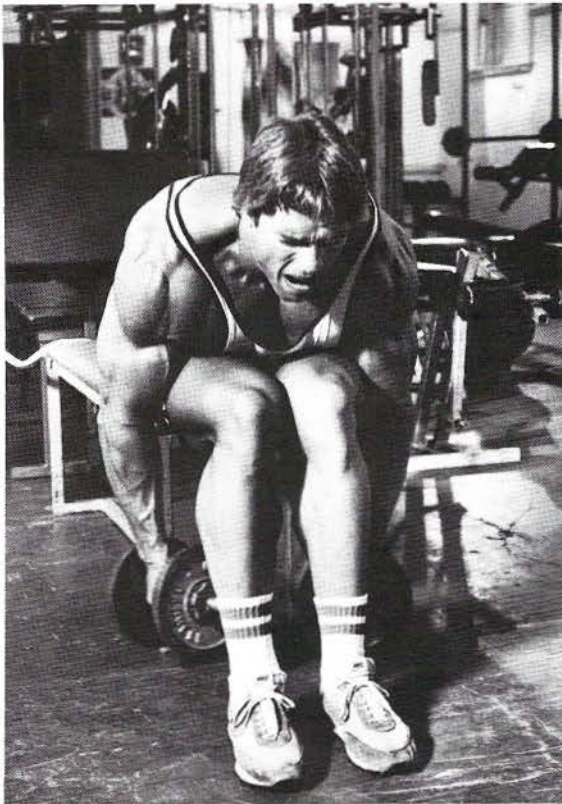


## SEATED BENT-OVER DUMBBELL LATERALS

**PURPOSE OF EXERCISE:** To isolate and work the rear head of the deltoids.

By bending over while executing a Lateral, you force the posterior head of the deltoids to work more directly. Doing them seated allows you to do a stricter movement than when standing.

**EXECUTION:** (1) Sit on the end of a bench, knees together, and take a dumbbell in each hand. Bend forward from the waist and bring the dumbbells together behind your calves. Turn your hands so that your palms face one another. (2) Keeping your body steady, lift the weights out to either side, turning your wrists so that the thumbs are lower than the little fingers. Be careful not to lift up your body as you lift the weights. With your arms just slightly bent, lift the dumbbells to a point just higher than your head, then, keeping your knees together, lower them again slowly to behind your calves, resisting all the way down. Try not to cheat doing this exercise. And be sure you are lifting straight out to either side; the tendency doing this exercise is to let the weights drift back behind your shoulders.

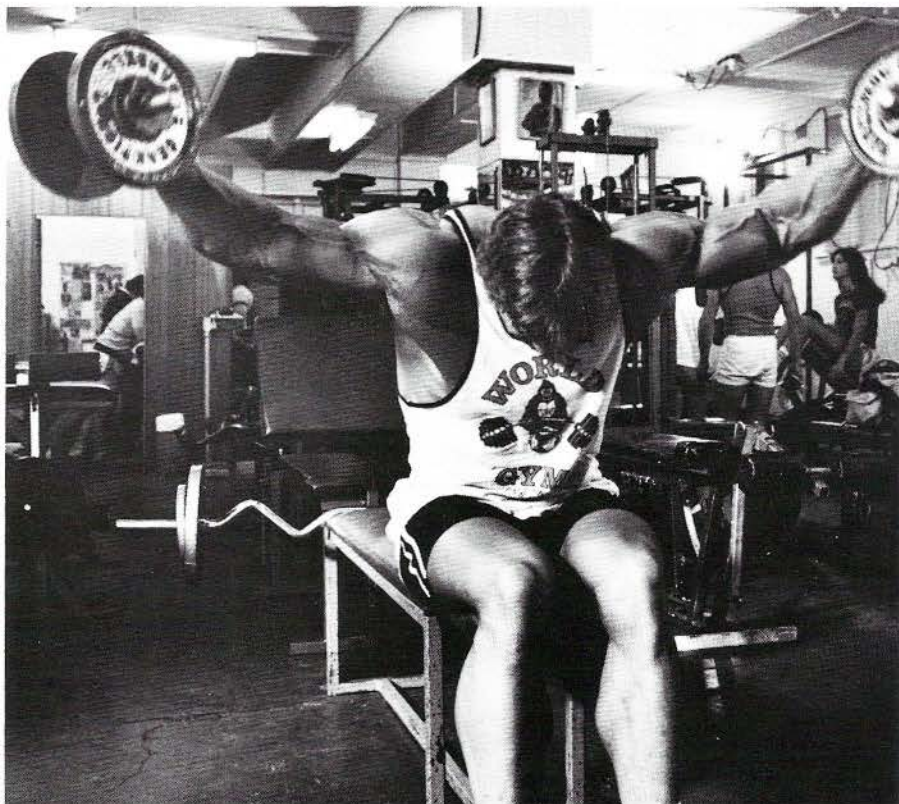
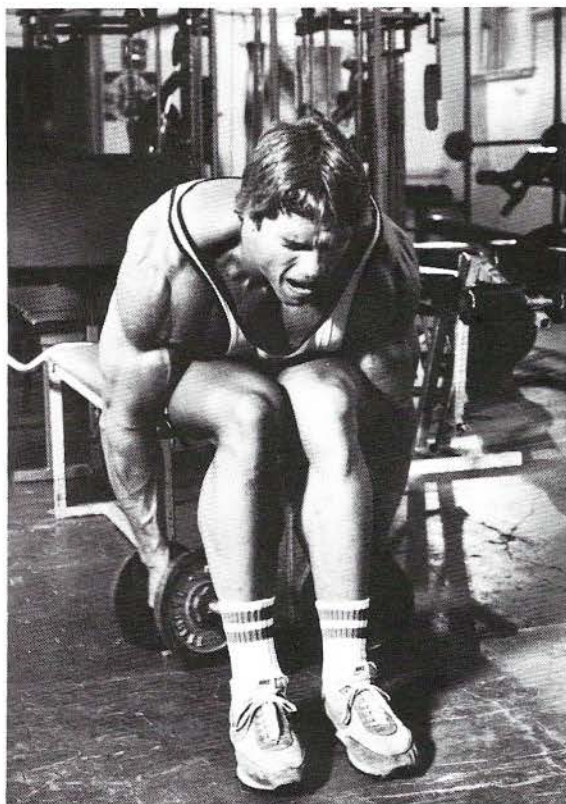


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**EXECUTION:** (1) Sit on the end of a bench, knees together, and take a dumbbell in each hand. Bend forward from the waist and bring the dumbbells together behind your calves. Turn your hands so that your palms face one another. (2) Keeping your body steady, lift the weights out to either side, turning your wrists so that the thumbs are lower than the little fingers. Be careful not to lift up your body as you lift the weights. With your arms just slightly bent, lift the dumbbells to a point just higher than your head, then, keeping your knees together, lower them again slowly to behind your calves, resisting all the way down. Try not to cheat doing this exercise. And be sure you are lifting straight out to either side; the tendency doing this exercise is to let the weights drift back behind your shoulders.



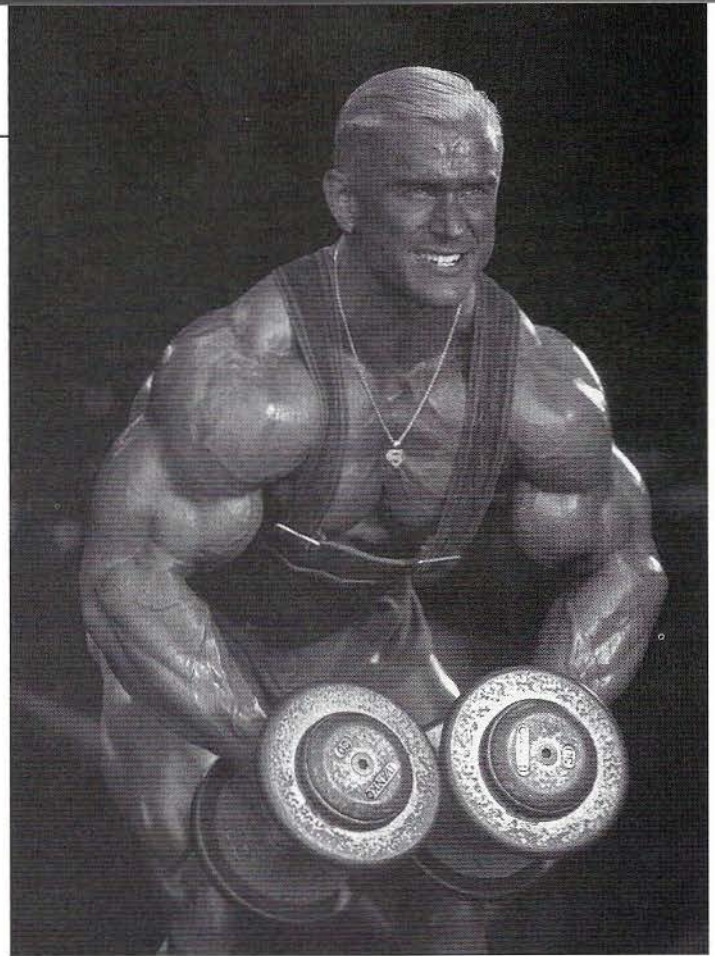
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## STANDING BENT-OVER DUMBBELL LATERALS

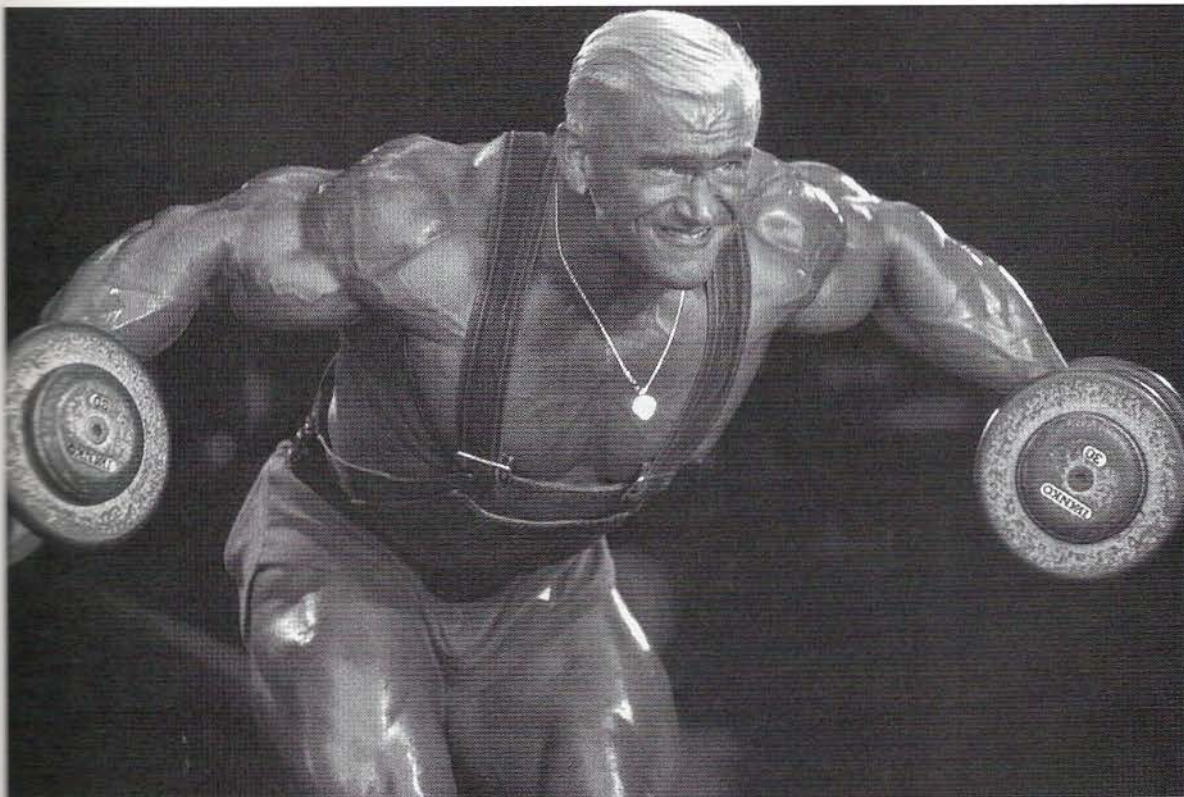
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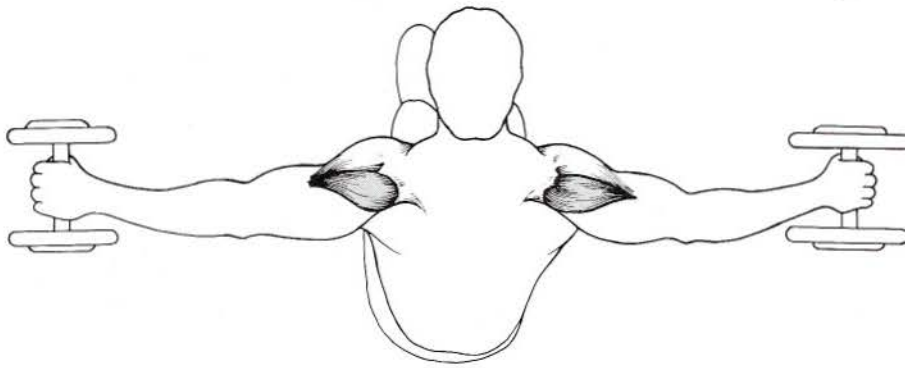
**PURPOSE OF EXERCISE:** To develop the rear deltoids.

**EXECUTION:** (1) Stand with a dumbbell in each hand. Bend forward from the waist 45 degrees or more, letting the dumbbells hang at arm's length below you, palms facing each other. (2) Without raising your body, lift the weights out to either side of your head, turning your wrists so that the thumb ends up lower than the little finger. (Don't allow your arms to drift back behind your shoulders.) Lower the weights again under control, resisting all the way down.

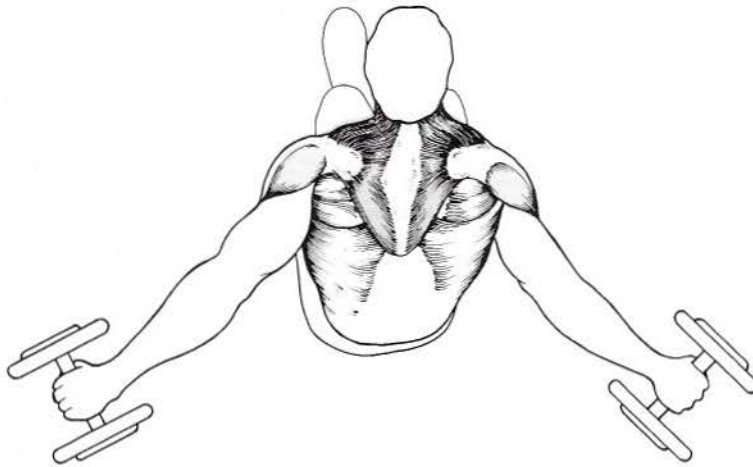


*Lee Priest*

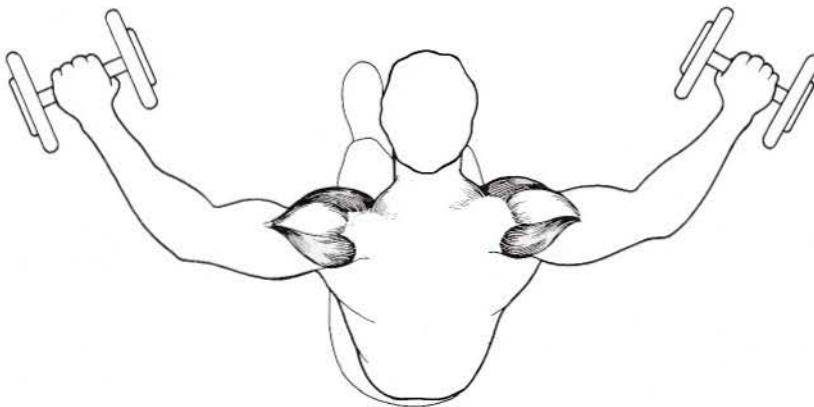




*The proper angle for working the rear deltoids—the dumbbells and the shoulders are in a straight line. Notice also that the dumbbells are kept horizontal, with the palms facing the floor.*



*Lifting the dumbbells too far to the rear involves the traps and lats, diminishing the effect of the exercise on the rear deltoids.*



*Lifting the dumbbells too far to the front works the front part of the deltoids instead of the rear.*

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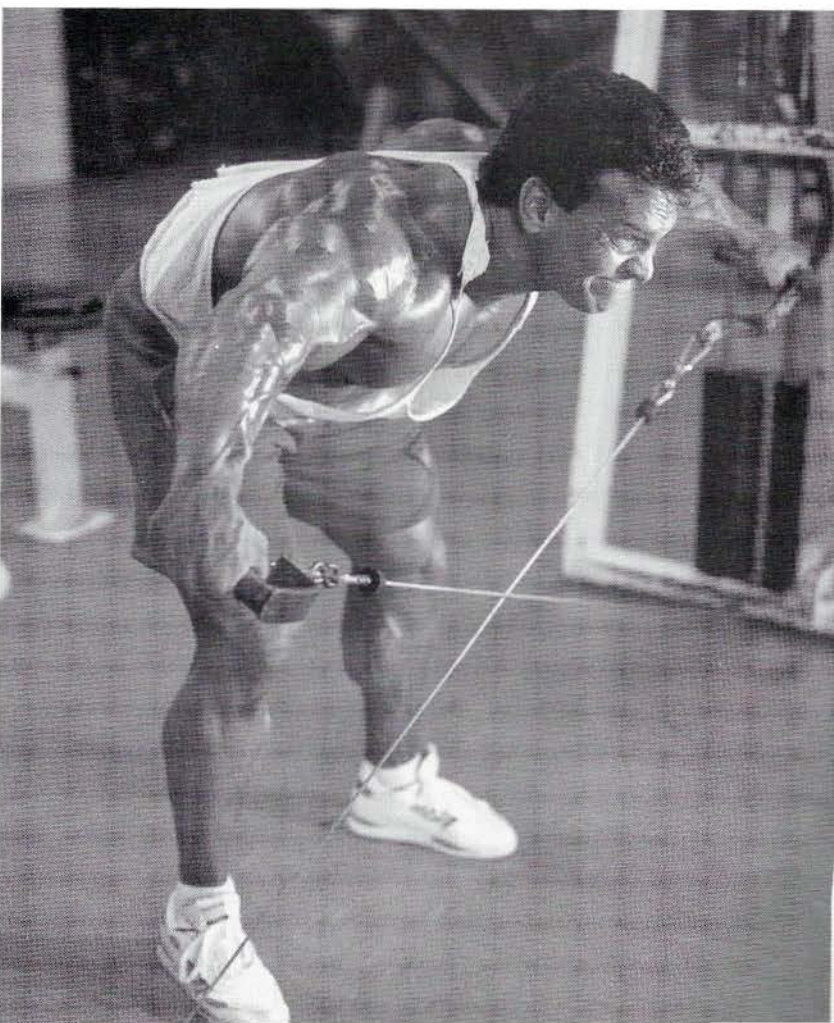
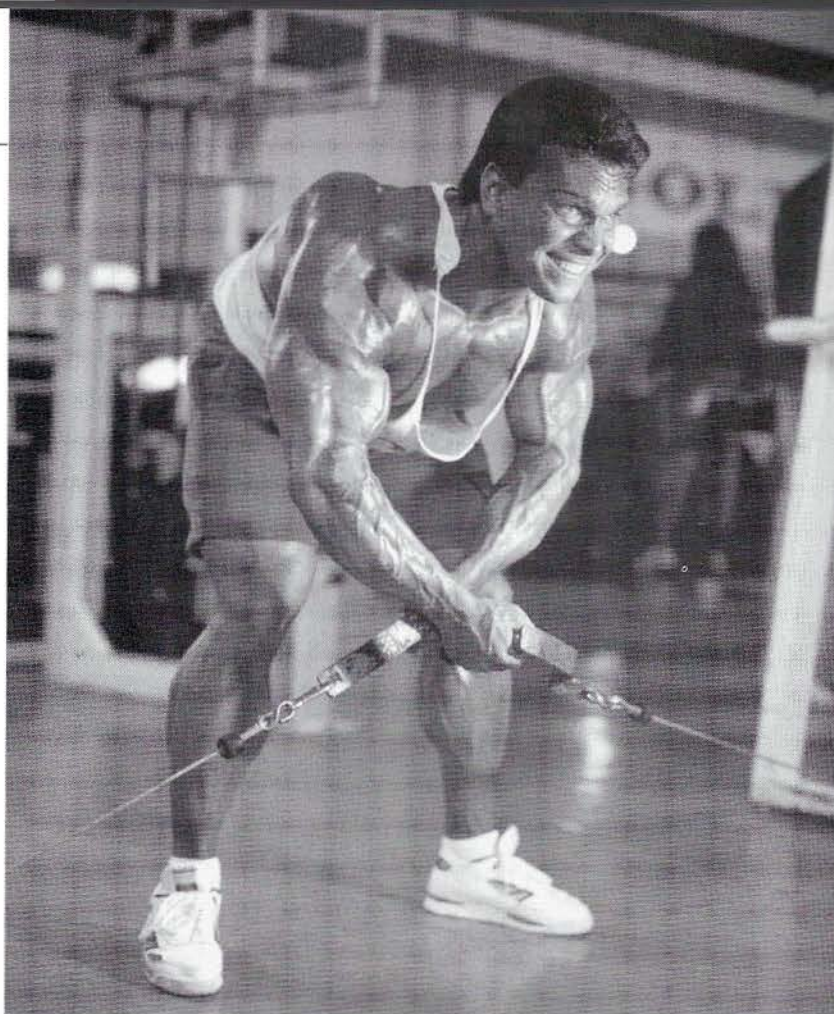
## BENT-OVER CABLE LATERALS

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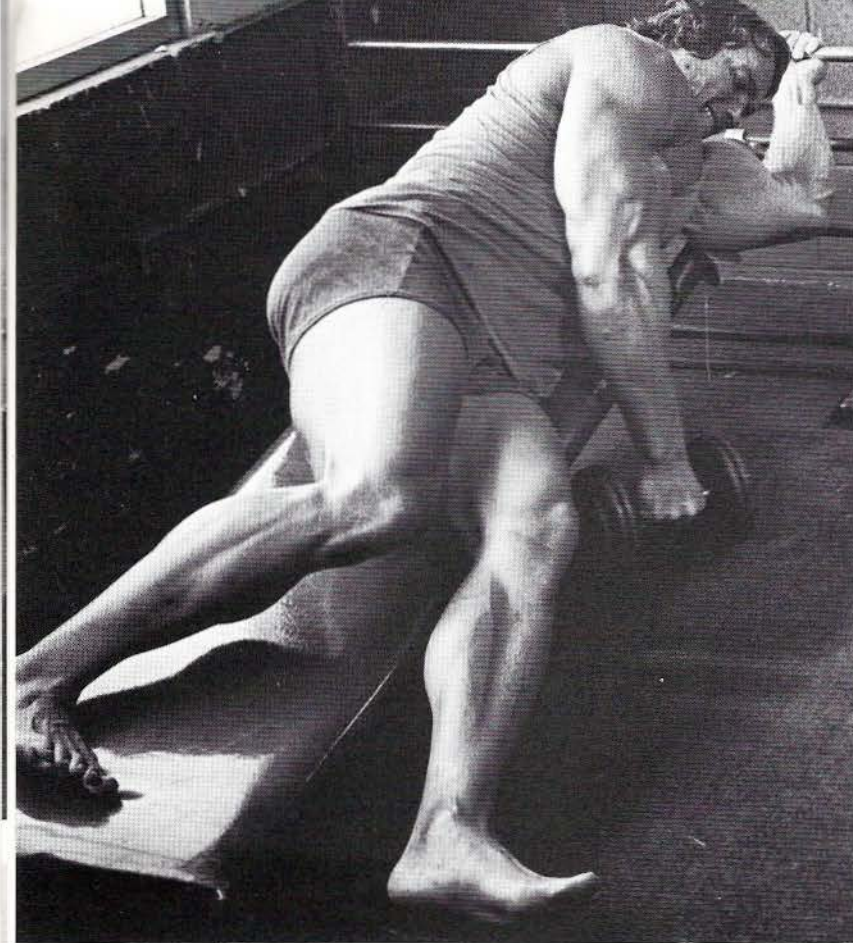
**PURPOSE OF EXERCISE:** To work the rear head of the deltoids.

By using cables, you get a slightly longer range of motion with continuous resistance throughout the movement. This is one of Franco Columbu's favorite rear deltoid exercises, and his rear delts are fantastic.

**EXECUTION:** (1) Using two floor-level pulleys, take a handle in each hand with your arms crossed in front of your body (left hand holding right-side cable, right hand the left-side cable). Keeping your back straight, bend over until your torso is about parallel to the floor. (2) With a smooth pull, and arms nearly straight, draw the handles across your body and extend your arms straight out to either side, turning your wrists slightly, thumbs down, as if pouring a pitcher of water. Stretch as far as possible, then release and let your arms come back slowly across your body as far as they can.



*Rich Gaspari*



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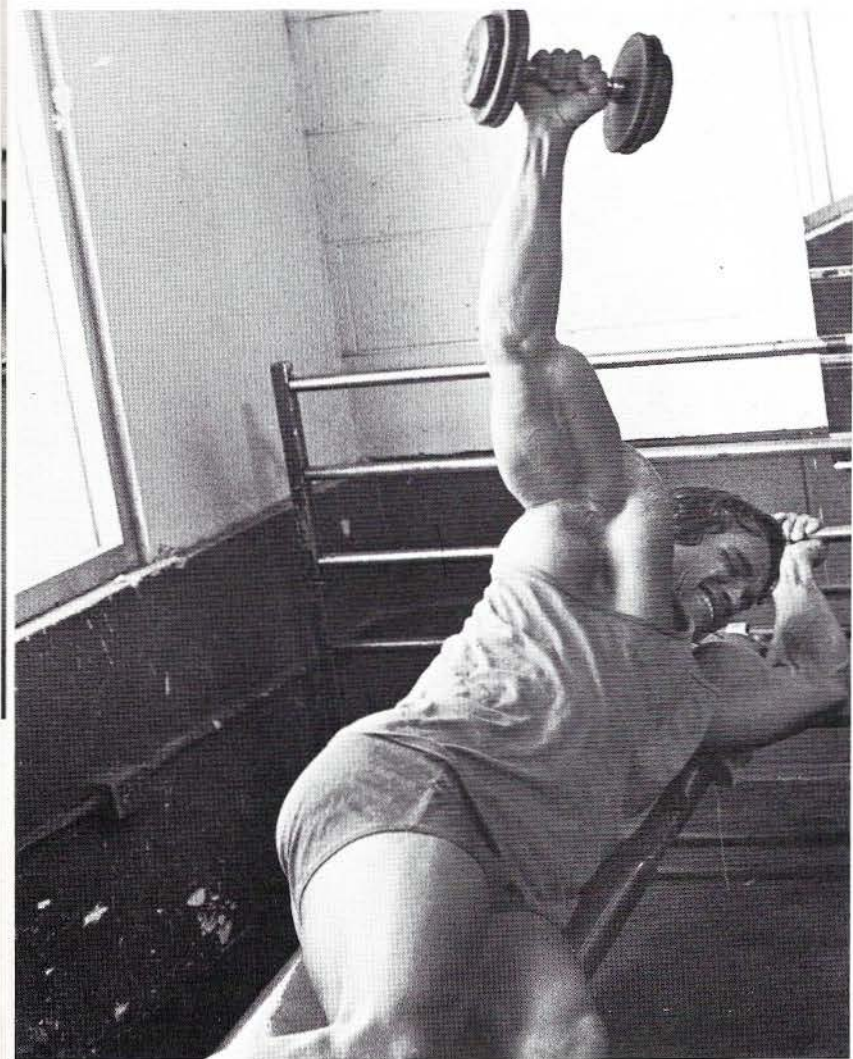
## LYING SIDE LATERALS

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**PURPOSE OF EXERCISE:** To work the rear and side deltoids.

This exercise was often recommended by France's Serge Nubret, and will work wonders for both your rear and side deltoids. It should be done only with a moderate weight and performed very strictly.

**EXECUTION:** Preferably, you should use an abdominal board set at an angle. You can do the movement without a board, but it shortens the range of motion. (1) Lie on your side, with your head raised. Holding a dumbbell in one hand, lower it almost to the floor. (2) Then raise it up all the way over your head, keeping your arm straight. Remember to twist your hand slightly while lifting, turning the thumb down, to further contract the rear deltoid. When you have done the reps with one arm, turn over and do an equal number for the other side.



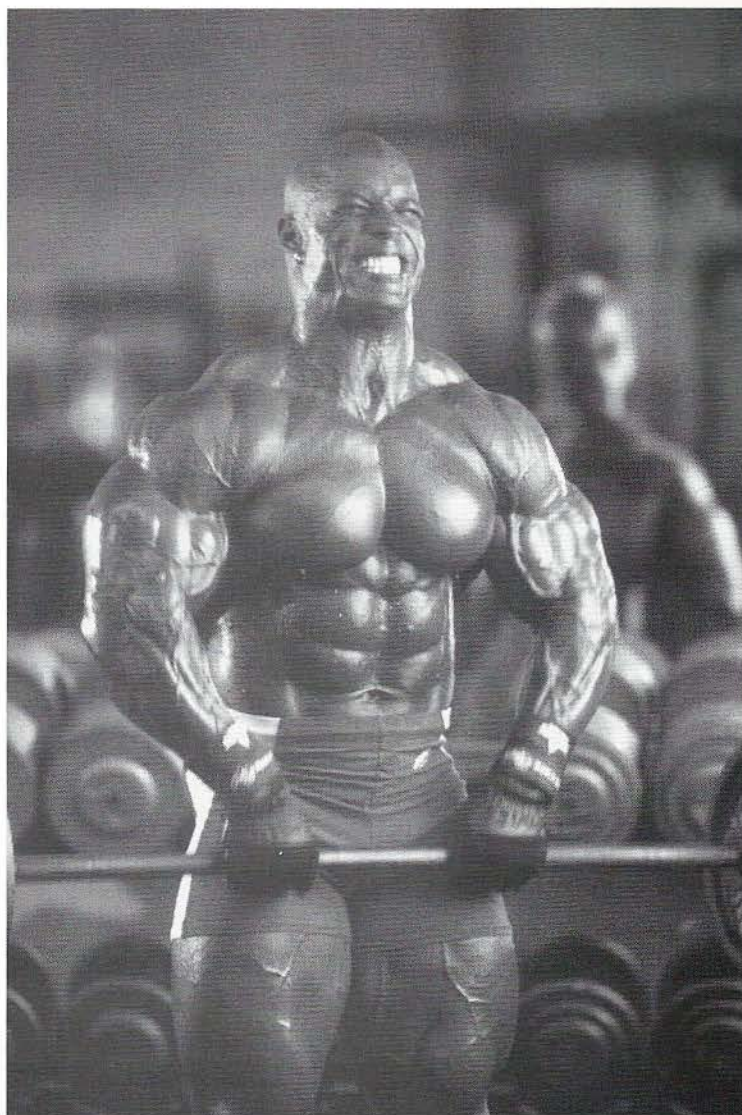
## Trapezius Exercises

### UPRIGHT ROWS

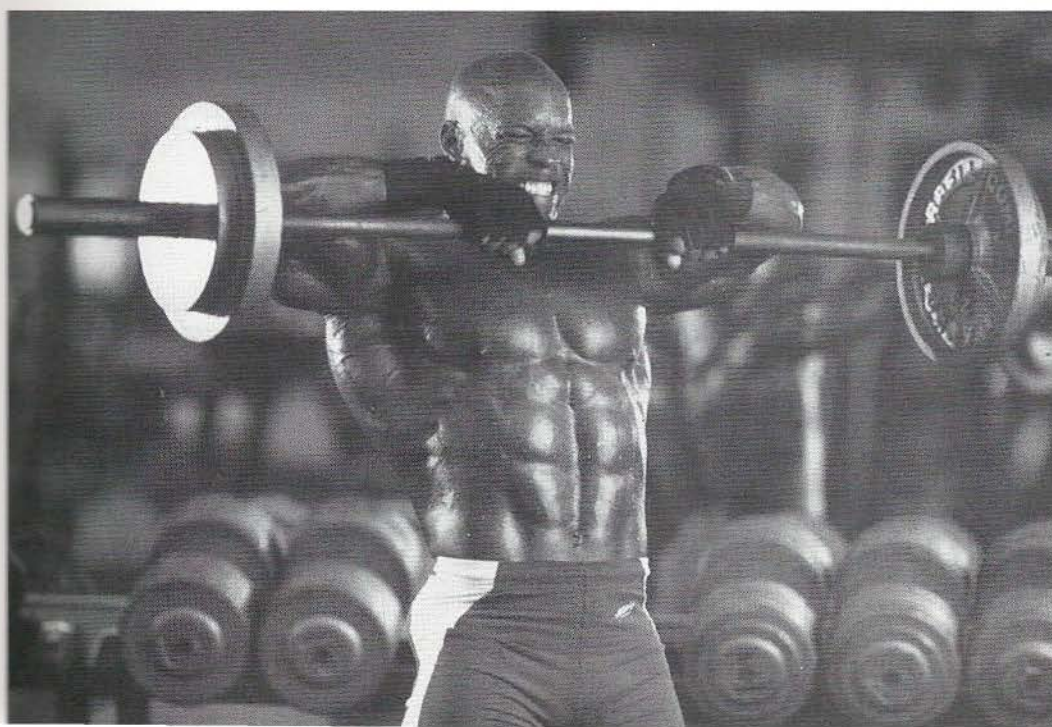
**PURPOSE OF EXERCISE:** To develop the trapezius and the front delts and create separation between delts and pectorals.

**EXECUTION:** (1) Stand grasping a barbell with an overhand grip, hands 8 to 10 inches apart. Let the bar hang straight down in front of you. (2) Lift it straight up, keeping it close to your body, until the bar just about touches your chin. Keep your back straight and feel the traps contract as you do the movement. Your whole shoulder girdle should rise as you lift the weight. From the top, lower it once more under control to the starting position.

This is an exercise that you should do strictly, not cheating or swinging the weight up, keeping your body still, and making sure that you feel the traps working as well as the biceps and front delts. (You can substitute a short bar and cable for the barbell and use Cable Upright Rows as a variation. The constant resistance of the cable helps you do the movement as strictly as possible.)



*Shawn Ray*



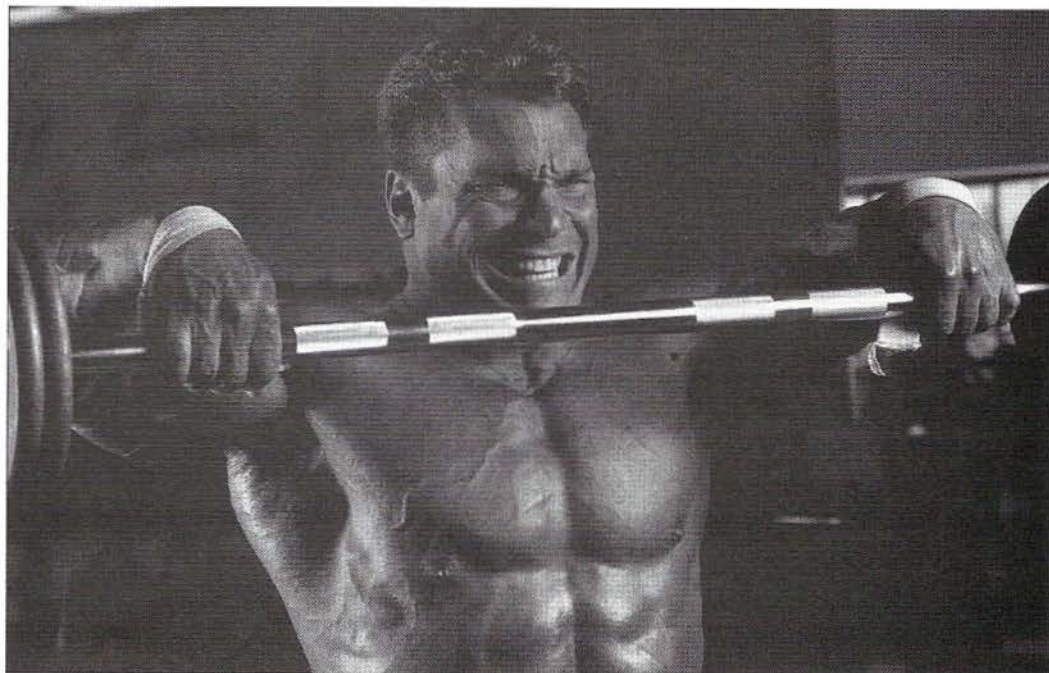


*Rich Gaspari*

## HEAVY UPRIGHT ROWS

**PURPOSE OF EXERCISE:** A heavy cheating movement for advanced bodybuilders to strengthen the entire shoulder girdle and upper back.

**EXECUTION:** (1) Choose a heavy barbell and grasp it with an overhand grip, hands about 12 inches apart. Let the bar hang down at arm's length in front of you. (2) Lift the bar straight up to a point just below your chin, allowing yourself to cheat by swaying with the back, pushing with the legs, and even helping with the calves. As you lift, keep your elbows out and up higher than the bar. Then lower the bar back to the starting position. Remember, this is a power movement in which cheating plays a vital part. This makes Heavy Upright Rows quite a different exercise from standard Upright Rows, which must be done very strictly.





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## DUMBBELL SHRUGS

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**PURPOSE OF EXERCISE:** To develop the trapezius muscles.

This exercise can be done extremely heavy to thicken the traps, which really helps you in doing back poses.

**EXECUTION:** Stand upright, arms at sides, a heavy dumbbell in each hand. Raise your shoulders up as high as you can, as if trying to touch them to your ears. Hold at the top for a moment, then release and return to the starting position. Try not to move anything but your shoulders.

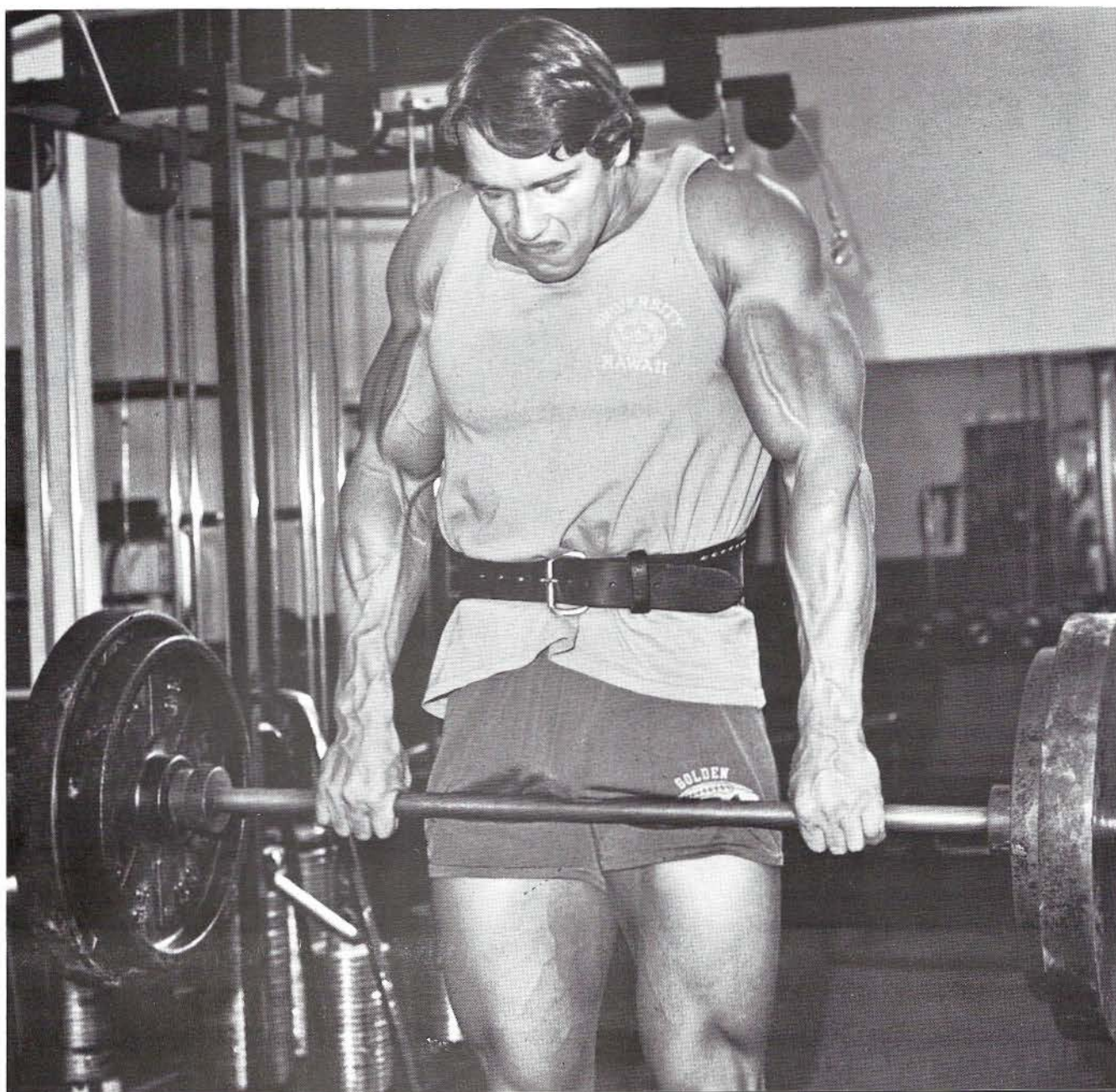


## BARBELL SHRUGS

**PURPOSE OF EXERCISE:** To develop the trapezius muscles.

**EXECUTION:** Stand upright, holding a barbell at arm's length in front of you, using an overhand grip. Raise your shoulders as high as you can, as if trying to touch them to your ears. Hold in this position for a moment, then lower the bar, under control, back to the starting position.

You can sometimes find Shrug machines in a gym and can also use a variety of Bench Press machines to do Shrugs as well. To get really heavy, try to position a barbell on a low support using a Squat rack, which lets you handle very heavy poundages without having to expend energy lifting the bar off the floor.



## The Chest

### THE MUSCLES OF THE CHEST

The **pectorals** consist of two parts, the clavicular (upper) portion and the sternal (lower) portion. The upper part is attached to the clavicle (collarbone). Along the mid-body line, it attaches to the sternum (breastbone) and the cartilage of several ribs. The largest mass of the pectorals starts at the upper arm bone (humerus), fastened at a point under and just above where the deltoids attach to the humerus. The pectorals spread out like a fan and cover the rib cage like armor plates. Attached to the rib cage in the center and across to the shoulder, this muscle lets you perform such motions as pitching a ball underhanded, doing a wide-arm Bench Press, twisting a cap off a bottle, swimming the crawl stroke, and doing parallel bar Dips. In addition, because of its attachment to the humerus, it plays a large role in movements like Chinning. There is, in fact, a prominent interdependence between chest and back muscles. The chest will not reach its full potential size unless the latissimus dorsi muscles of the upper back are fully developed.

**BASIC FUNCTION:** To pull the arm and shoulder across the front of the body

The **subclavius**, a small cylindrical muscle between the clavicle and the first rib

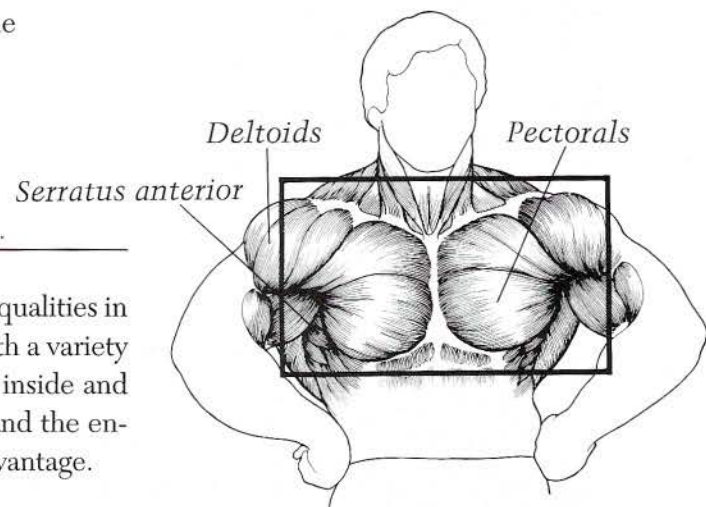
**BASIC FUNCTION:** To draw the shoulder forward

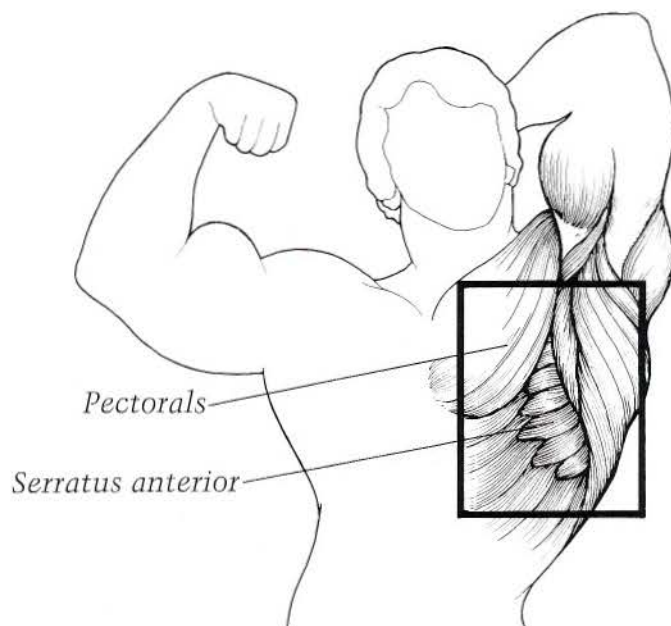
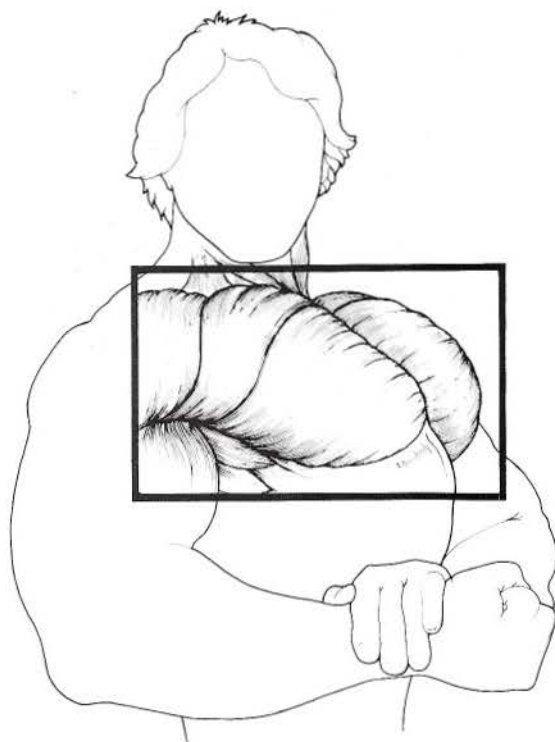
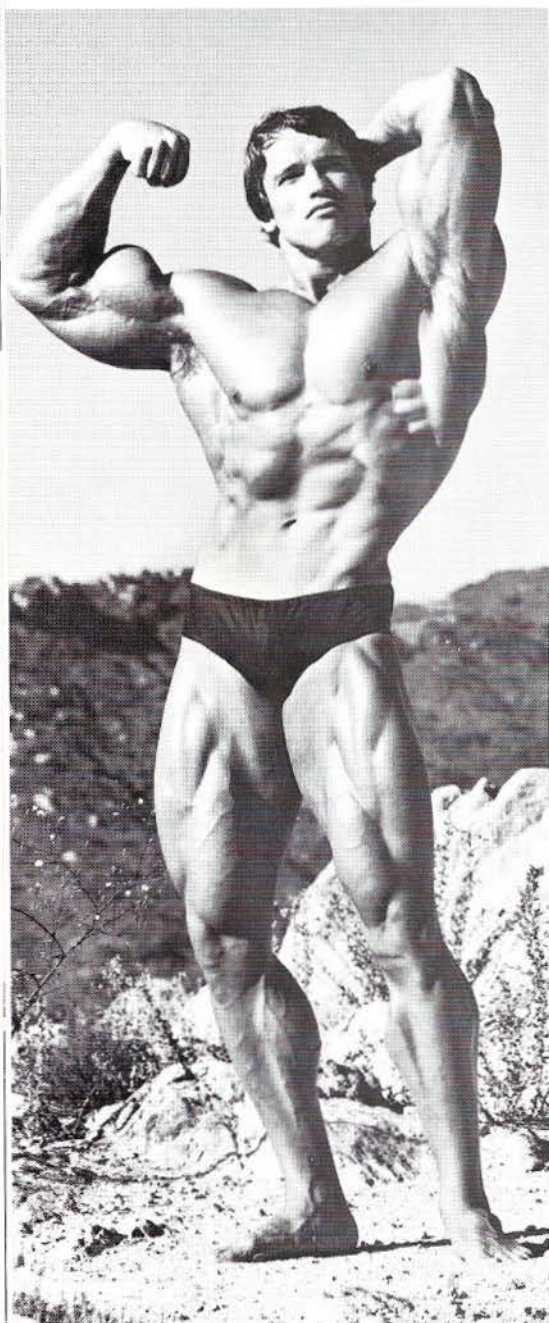
The **serratus anterior**, a thin muscular sheet between the ribs and the scapula

**BASIC FUNCTION:** To rotate the scapula, raising the point of the shoulder and drawing the scapular forward and downward

### TOTAL CHEST DEVELOPMENT

A really deep, well-shaped chest is one of the most important qualities in a bodybuilding physique. To achieve this requires training with a variety of exercises—to develop the upper and lower pectorals, the inside and outside pectorals, and the tie-ins to the deltoids, and to expand the entire rib cage to show off the pectoral muscles to their best advantage.



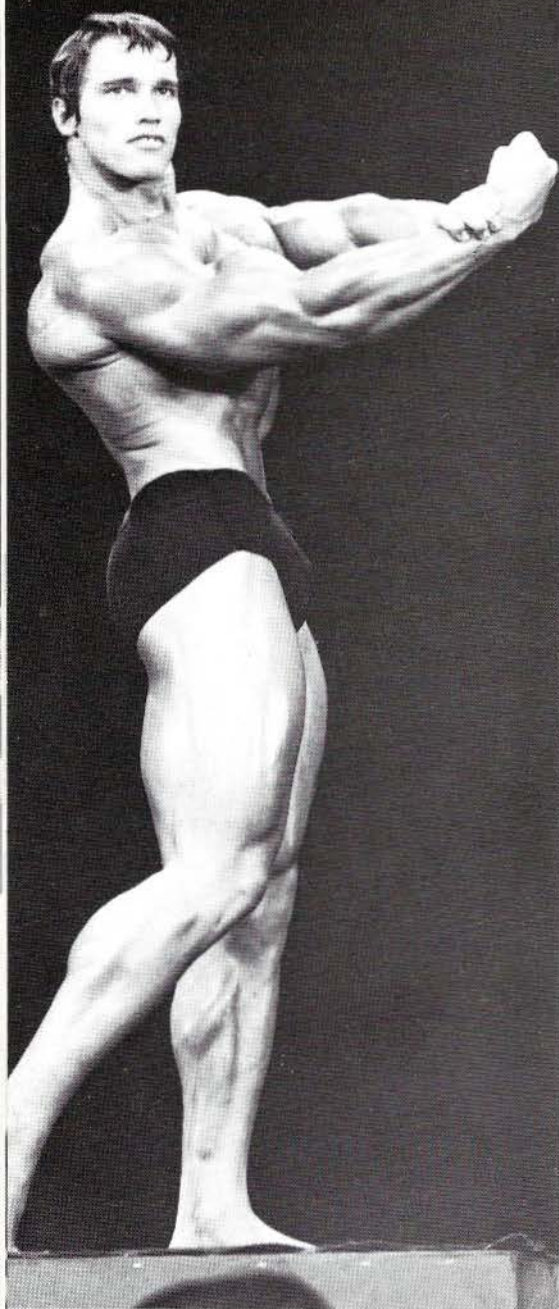


But perfecting the chest is more difficult than many bodybuilders believe. You can have a huge rib cage and huge, thick pectoral muscles, but this will not guarantee a perfect chest. Chest perfection, especially if you are interested in competition, involves all of the following:

1. A great rib cage
2. Thick pectoral muscles
3. Development of the inside, outside, upper, and lower areas of the pectorals



*This is what you need to make a side chest pose really effective: a great rib cage under big, fully developed pectoral muscles.*

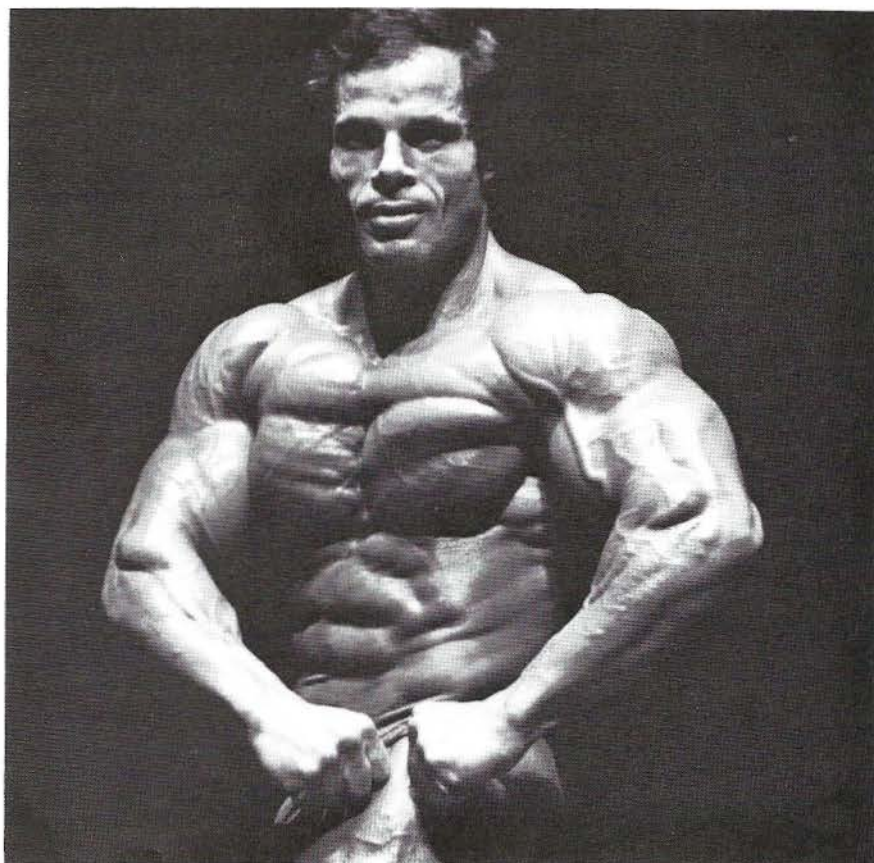


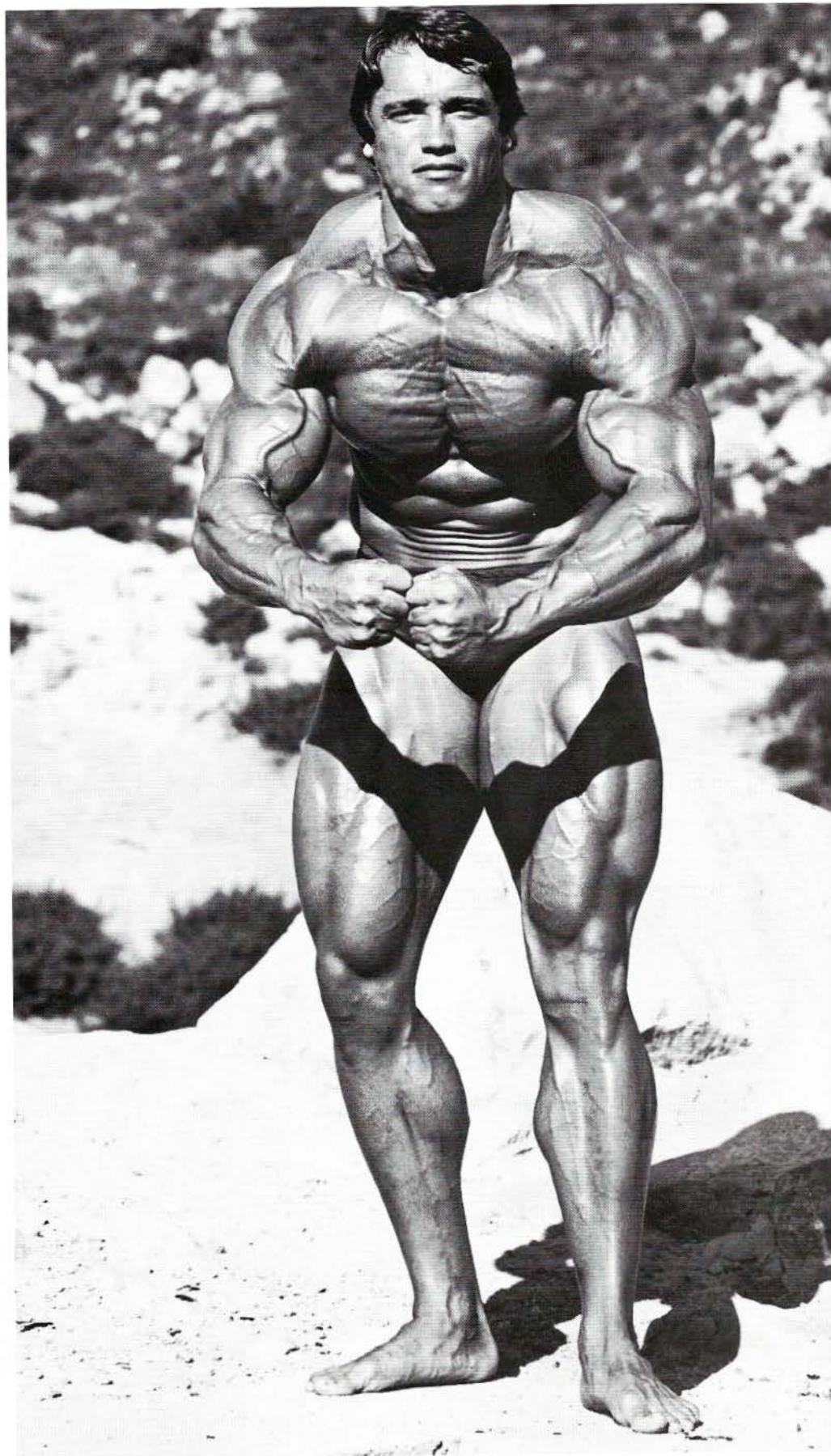
*Thick pectoral muscles complement deltoid and upper-arm muscularity in a straight-arm side pose.*

*When Franco Columbu hit a chest pose, you could see every area of the chest clearly delineated—the upper and lower chest, the separation of upper chest from deltoids, the inner pectorals, and the tie-in of the chest to the serratus.*

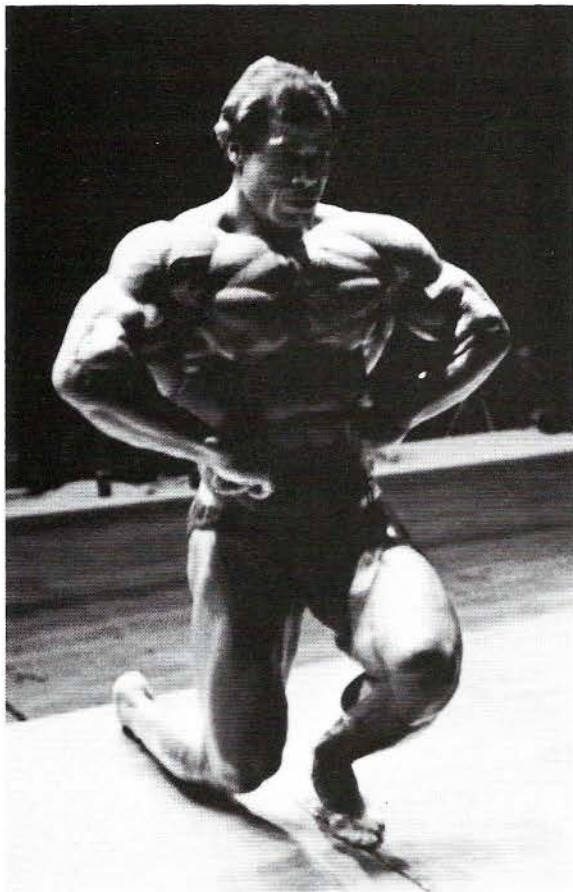
4. Visible striations when the pectorals are flexed, such as in a most-muscular shot, with the striations showing from the middle of the rib cage all the way across and from top to bottom
5. A clear separation of upper and lower pectorals
6. A shape that gives a nice square look, achieved by a lot of upper pectoral development, rather than one in which the muscle seems simply to be hanging down
7. Sufficient development so that the pectorals don't totally disappear when you lift your arms over your head or do a front double-biceps shot

The chest program included here is specifically designed to help you achieve complete pectoral development as just outlined. Of course, some bodybuilders are extremely lucky in their genetic potential for chest development. Sergio Oliva used to do only one kind of exercise for the chest—Bench Presses—and his chest muscles would rise like a loaf of bread. Reg Park is gifted with an enormous rib cage, making his pectoral development all the more impressive. John Grimek also displayed a wonderful rib cage that made his chest poses look terrific. As a former

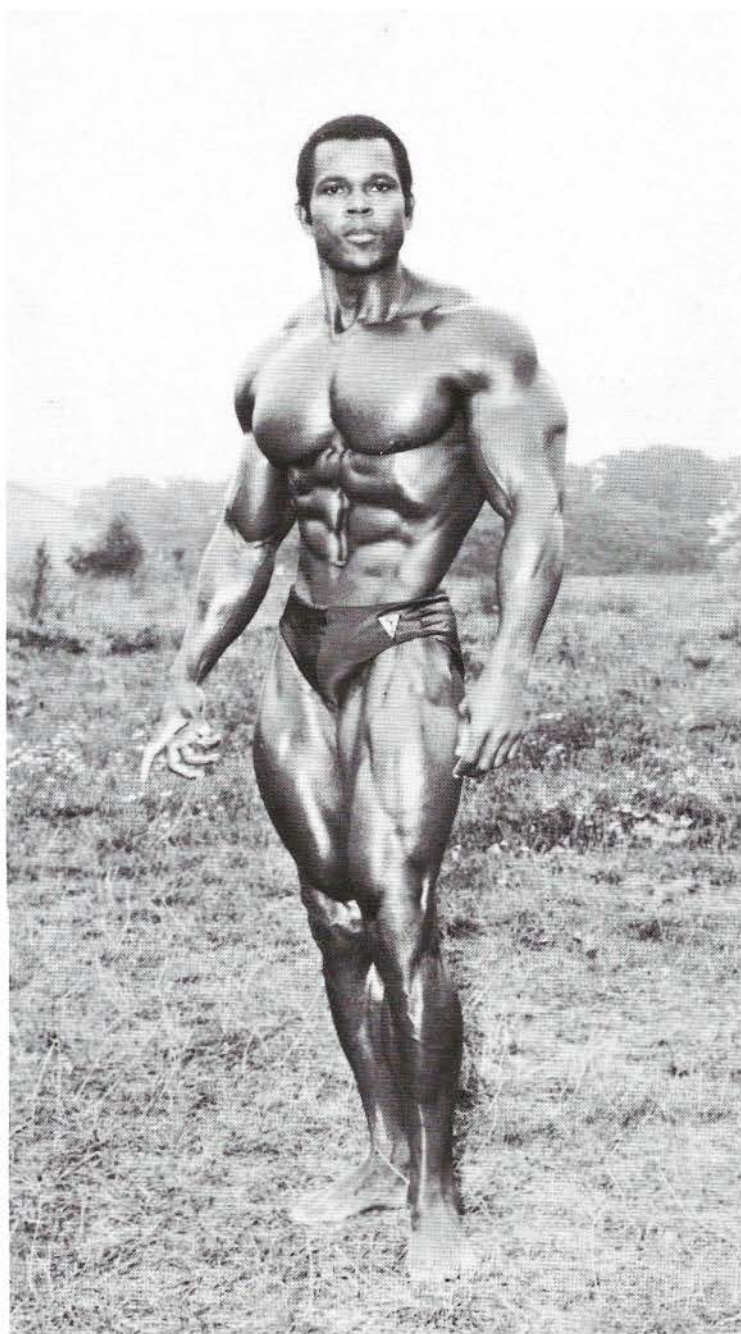




*The chest is the centerpiece of the most-muscular pose. Notice how the striations of the pectorals hold together all the other elements: the traps, front delts, arms, and abdominals.*



*Franco Columbu probably has the most separation of upper and lower chest of anyone in bodybuilding.*

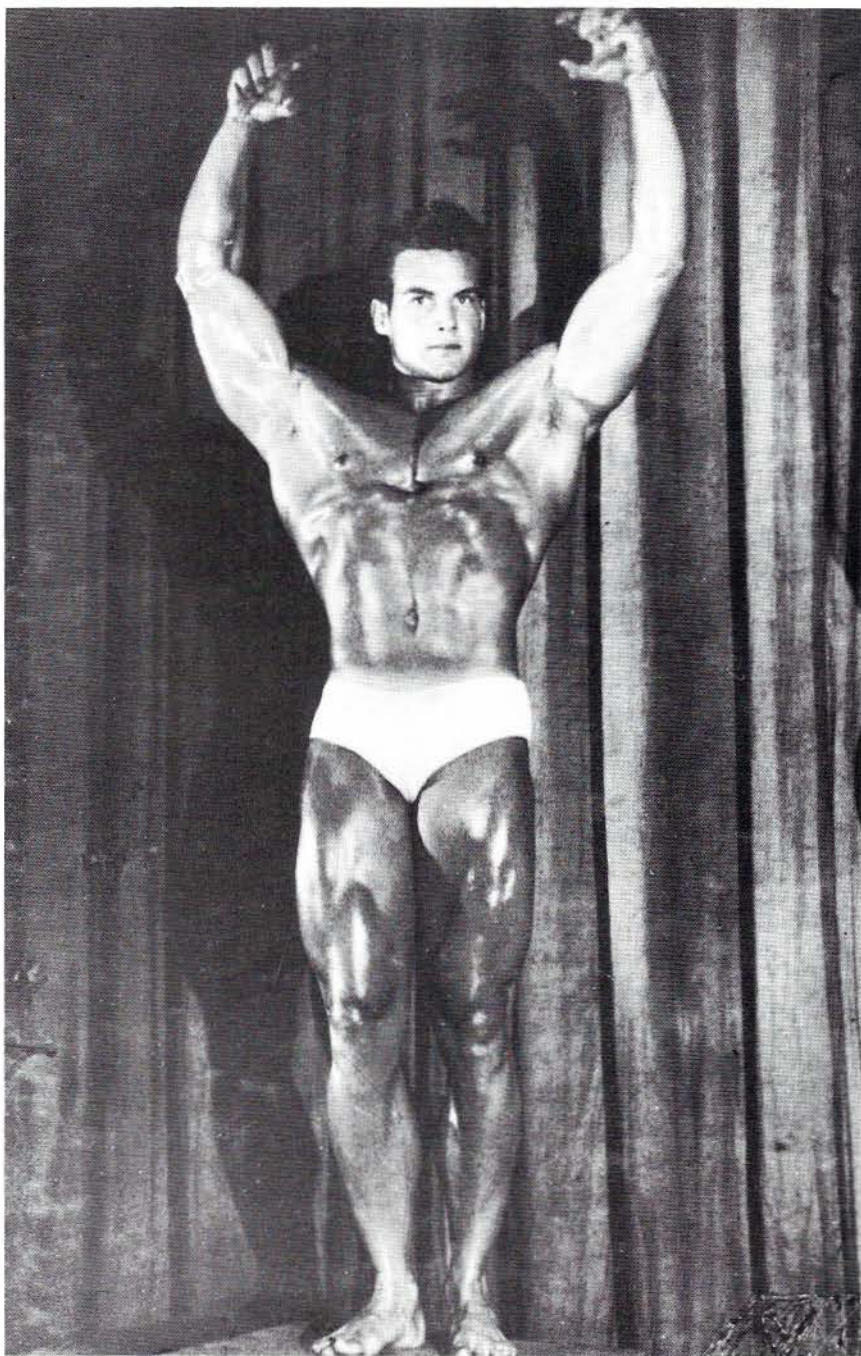


*Serge Nubret's chest development is complete, including upper and lower, inner and outer pectorals. That's what gives him the desired square shape in this picture.*

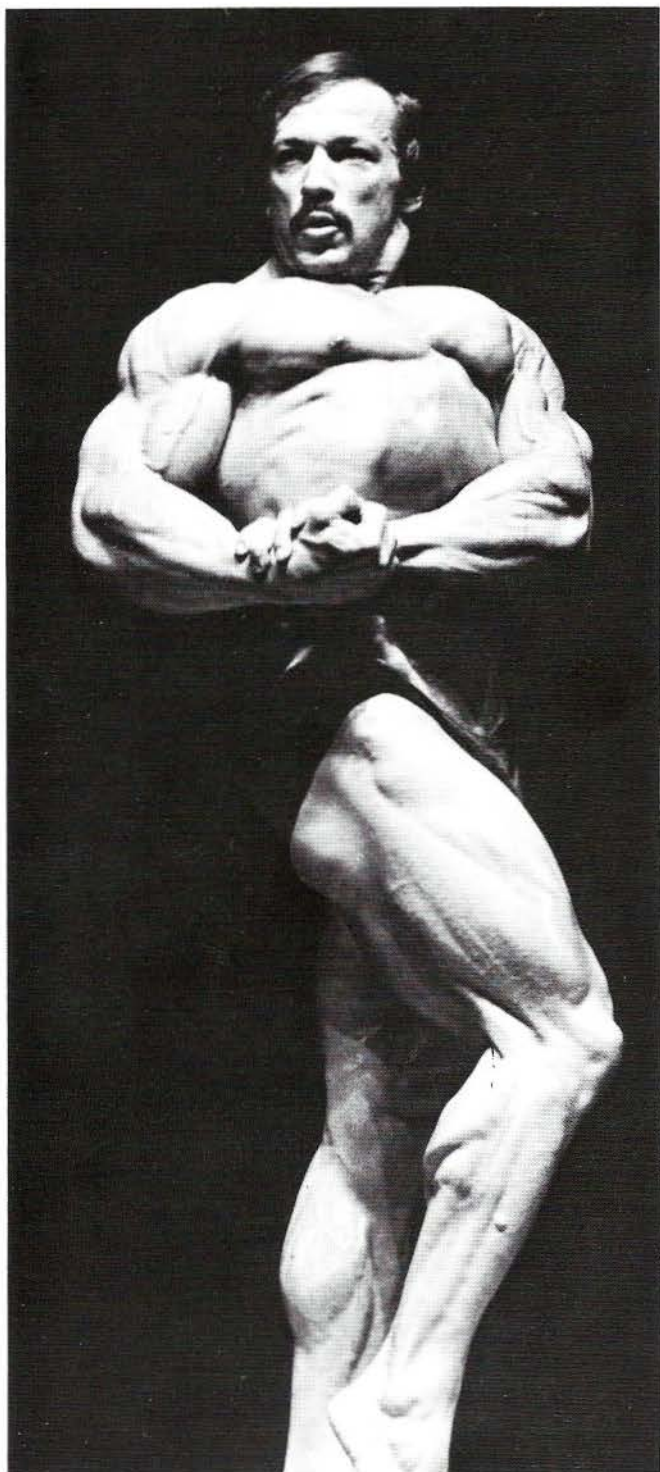


powerlifter, Franco Columbu has developed his chest so that the split between upper and lower pecs is awesome. Sometimes we used to jokingly refer to this vast chasm as the "Grand Canyon."

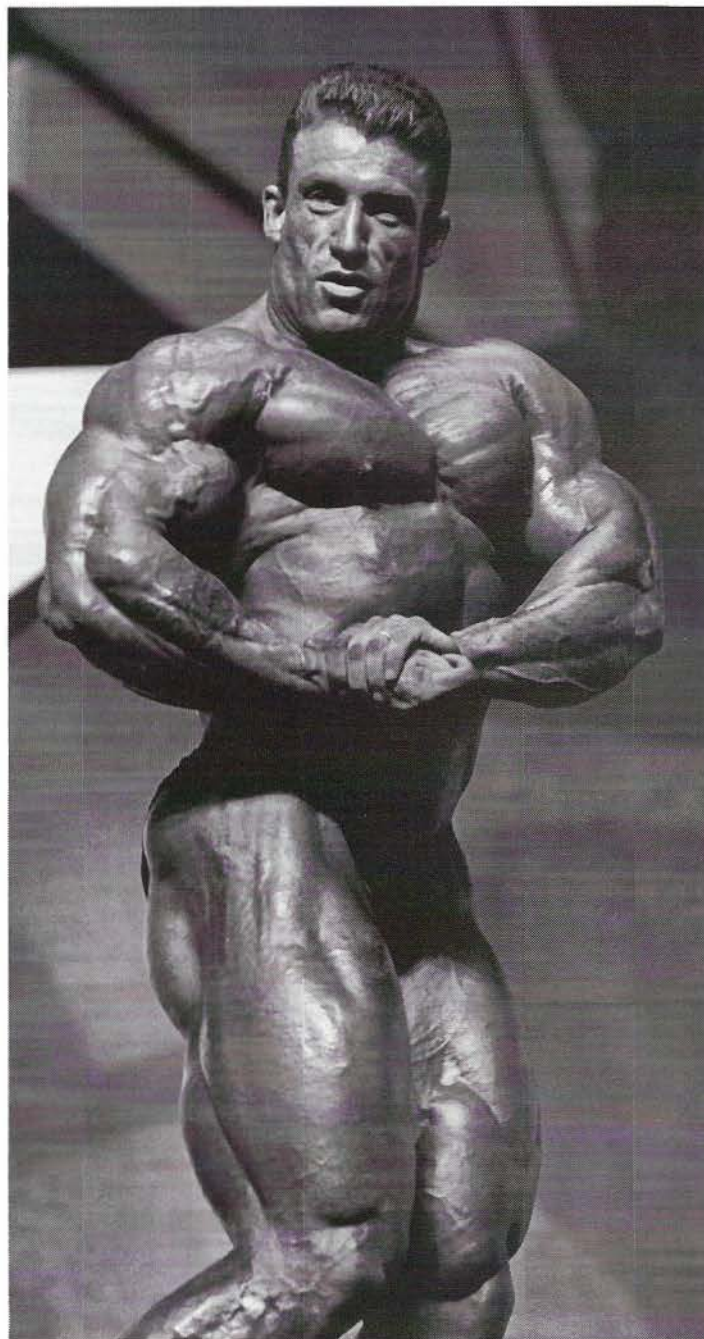
But genetically gifted or not, if you want to be a complete bodybuilder you need to develop your chest properly, and this means making up with skill, effort, and technique for what nature may have neglected to hand you on a silver platter.



*As Steve Reeves demonstrates, with proper chest development your pectorals will not disappear when you lift your arms above your head.*



*Really thick pectorals allow a bodybuilder to hit a lot of very powerful poses, and when it comes to Herculean chest development, Casey Viator and Dorian Yates have always been among the most impressive.*



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## TRAINING THE CHEST

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There are two basic kinds of exercises for the chest: *Flys*, in which the extended arms are drawn together across the chest in a kind of hugging motion; and *Presses*, in which the weight is pressed upward off the chest with the involvement of the front deltoids and triceps in addition to a primary effort from the pectorals. The basic Bench Press is done with a barbell on a flat bench and is an all-time favorite exercise of bodybuilders as well as one of the three movements used in powerlifting competition. If you do Bench Presses correctly—using the proper grip and getting the fullest range of motion possible—you will be able to develop the overall mass of the chest.

However, changing the angle of the Bench Press—by doing it on an incline, for example—you transfer more of the effort from the middle pectorals to the upper pectorals and front deltoids. I believe in including Incline Presses in your program right from the beginning so that you don't find your upper pecs are underdeveloped relative to the middle and lower portions of your chest. Also, doing a lot of Incline Presses will help you create that split between upper and lower chest that is so impressive in most-muscular poses.

As with training other muscles, the greater the range of motion you get in chest exercises, the more intense the muscle contraction you achieve—which ultimately leads to the maximum amount of muscle growth. Therefore, especially when you are doing *Flys*, it is very important to stretch the pectorals as much as you can. This helps develop maximum flexibility, and increased flexibility results in more development. This is why so many of the top bodybuilders, as massive as you can imagine, are also flexible enough to twist themselves into pretzels.

But simply having large pectoral muscles is not enough if they are hung on a small, unimpressive rib cage. Though it's subject to controversy, I am convinced that I could effectively expand the rib cage by performing Dumbbell Pullovers. Be aware, however, that Pullovers performed on machines do not have the same effect. When you are locked into a machine the latissimus muscles bear most of the stress, so you do not get as much expansion of the rib cage.

As you progress in your training, you need to build on the basics and pay more attention to details. So that every area is reached for complete pectoral development I recommend including in your program a lot of Dumbbell *Flys*, Cable Crossovers, Dips, and other pectoral exercises.

Also, as you become more advanced, the program is designed so that you superset chest training with back movements. I believe that the pectorals, like the lats, need to be stretched as much as possible as well as developed by resistance exercise. Therefore, after you do an exercise like a Bench Press, you should immediately go to something like Chins, which

stretch the pecs to the fullest. This is also a highly time-efficient way to train, since you can work a different set of muscles while the first group is recuperating, making your workouts go much faster and burning off extra calories.

In the Advanced Program you also need to concern yourself with the serratus muscles, which are just below and to the side of the chest. The serratus will be dealt with in a special section, along with the intercostals. Development of these muscles shows the judges that you have achieved a high degree of quality as well as mass.

## **BEGINNING AND ADVANCED PROGRAMS**

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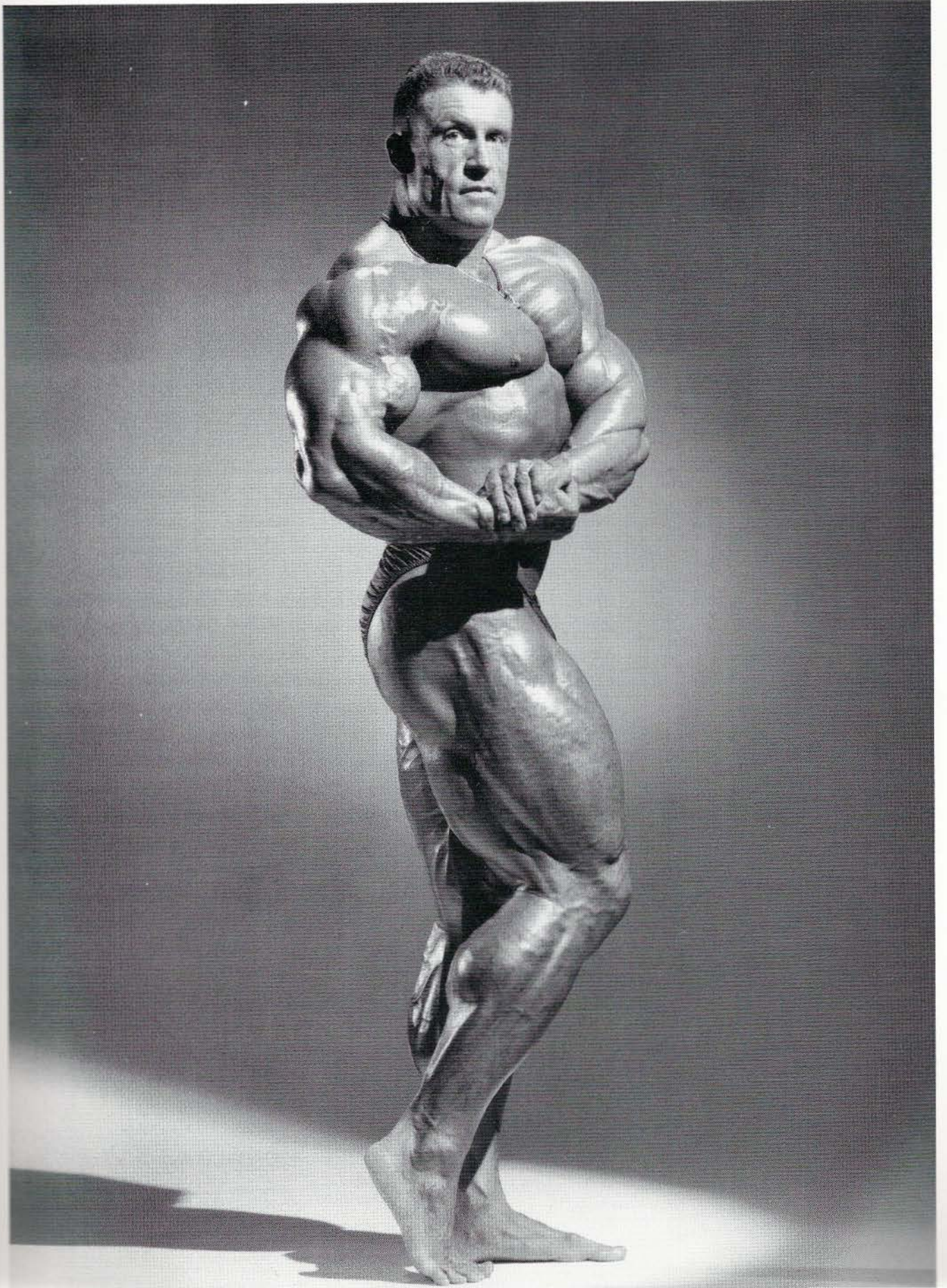
In my own early training, I practiced what I am now preaching: I started with the basics—Bench and Incline Presses, Dumbbell Flys, Dips, and Pullovers. After three years I was still doing only these five basic chest exercises.

When I moved to Munich after having been training for about four years, my pectorals were huge and I had certain weaknesses—upper pecs, for example. There I began training with my friend Reinhard Smolana, who showed me a very different kind of pectoral training. We would begin by doing Incline Presses standing and leaning back against a bench—which meant we had to clean the weight, fall back against the bench, do the set, then manage to stand upright again and put the weight back down. Only after we finished our Incline Press sets would we go on and do Bench Presses and Flys.

This emphasis on Incline Presses had its effect—after a while my upper pecs grew enormously until I could literally stand a glass of water on the upper part of my chest when I hit a side chest shot. Seeing how a change in one's training program can overcome a weak point was an important lesson for me.

Incidentally, this particular way of doing Incline Presses, having to clean the weight and handle the bar as I was falling back against the bench, gave me a secondary benefit—it enabled me to develop enormous strength, and with that strength came the added thickness and density that results from power training with heavy weights.

*Dorian Yates has great upper chest development*



By increasing the development of my upper pecs, I was learning two important lessons about how to sculpt the body and train for physical perfection: (1) It pays to put special emphasis on weak areas, especially to train them first when you are strong and fresh (Priority Principle); and (2) changing your training routine so that the body has to perform in unexpected ways accelerates development (Shocking Principle).

I also discovered how much the training ideas in any gym affect those who train there: In Austria, where the first exercise bodybuilders wanted to do was Curls, everyone had great biceps; in Munich, where we all used the same chest routine, everyone had good upper pecs; in Reg Park's gym, everyone had terrific calves and deltoids, just like Reg, but relatively less developed pecs because Reg himself believed excessive pec development interfered with the impressiveness of shoulder width.

It was also in the early days that I discovered the advantages of stretching the pectoral muscles while training them. Doing Dumbbell Flys or cable exercises, I would always stretch the chest muscles to their limit and then frequently include some back movements to further stretch the pecs.

One's particular anatomy can make certain exercises more or less effective. Bodybuilders like Nasser El Sonbaty, with huge, barrel-like chests and short arms, get very little out of doing regular Bench Presses unless they use an extraordinary amount of weight. When Nasser lowers the bar down to his massive chest and then lifts the bar back up, because of his relatively short arms he has more limited range of motion than somebody with a different structure, so the pectorals never get the kind of workout they need. People with this body type usually need to include more Incline Presses in their workouts or do Presses with dumbbells instead of a barbell so that they can lower the weights down past the top of the chest. This doesn't mean they shouldn't do Barbell Bench Presses at all, just that they must also include exercises with a greater range of motion. (I have also seen a bar used that has a curve in the middle, allowing you to drop your hands much lower when doing a Bench Press and thereby extending the range of motion considerably.)

Ken Waller (featured in both *Pumping Iron* and *Stay Hungry*) had enormously strong front deltoids. When he did a Bench Press, his delts got a tremendous pump and his pectorals seemed to work hardly at all. So Ken always relied a lot on Decline Dumbbell Presses instead.

In all matters involving your genetic inheritance and your natural leverage advantages and disadvantages, you are going to have to learn to adjust your training accordingly.

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## COMPETITION PROGRAM

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When I first came to the United States, I already had plenty of size so I began to concentrate on detail training. I developed a more sophisticated program with additional exercises which included a lot of isolation movements for each of the important pectoral areas. Experts like the late Vince Gironda gave me a lot of ideas, so I went from simply having huge pecs to having first-rate chest development.

Each time I competed I learned something more. Gradually, I mastered all of the training principles outlined in this book from the Stripping Method to forced reps, and so on. And I learned from competitors like Serge Nubret, Frank Zane, and Franco Columbu that it takes a lot of dieting and, especially, endless hours of posing to give the chest the totally finished, muscular and defined look.

I have always gotten good results finishing off my chest workout with a triset—for example, a set of Dumbbell Flys, then Dips, followed by Cable Crossovers. This pumps an enormous amount of blood into the area and forces you to go all out at the end, rather than pacing yourself and taking it easy—to make you hard, defined, and competition-ready.

As you prepare for competition, you need to concern yourself with even more specific details—things that you would hardly notice at other times suddenly become major weak points. For example, I have seen bodybuilders hitting a side chest pose and showing striations in the inner pecs, but not farther up on the chest. This kind of detail can make a big difference in a close contest. Therefore, I would advise these bodybuilders to superset Incline Presses (with a barbell or dumbbells) with Cable Crossovers to rectify this weakness. Sergio Oliva used to force his muscles to work in harder and unexpected ways by doing only three-quarter movements, lifting the bar off his chest in a Bench Press, for example, but not going all the way up, so that the triceps never came into play in the movement and his chest never got any rest at all. After using this method of training for just a few months, I found my chest became much harder-looking and more defined—which shows you how relatively small alterations in your training technique can make very substantial differences in your physique.

The Competition Program for the chest is designed on a push-pull basis, combining movements for chest and back done as supersets and trisets. Combining these exercises gives you a tremendous pump, and will really blast your chest muscles and give them the size, shape, definition, and tie-ins you need for successful competition.

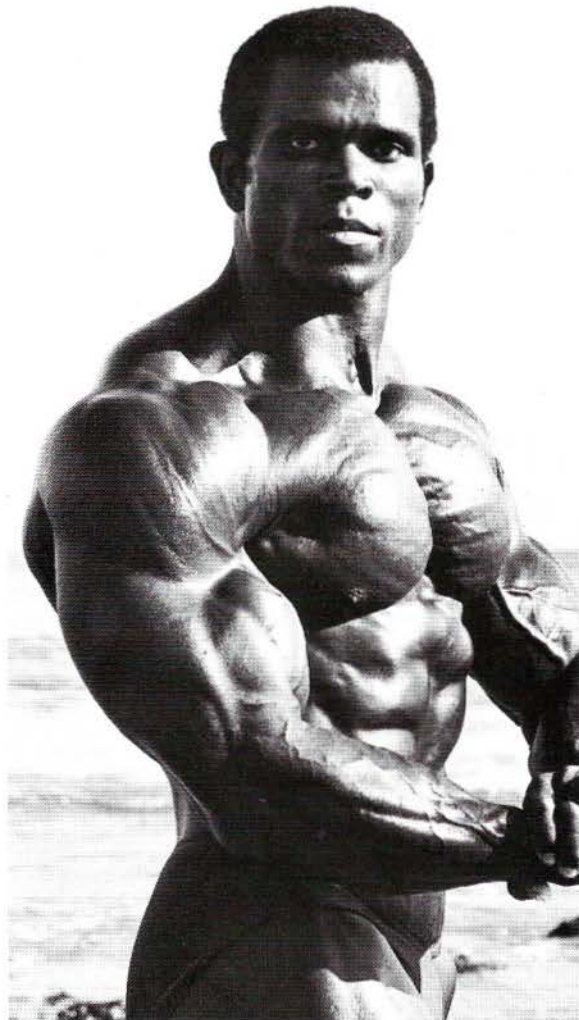
Supersets like Weighted Chins plus Incline Bench Presses, Flat Bench Presses plus Wide-Grip Chins, and Dumbbell Flys plus Bent-Over Barbell Rows keep the back and chest pumped at the same time and allow you to train pectorals and lats each in turn—muscles which work in

opposition to each other—so that one has a chance to rest while the other does a set. And since you are dealing with opposing muscles, every set for the back helps stretch the pectorals while they are recuperating for the next chest set.

## WEAK POINT TRAINING

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As with any other body part, once you have been training for a while you are likely to notice that some areas of the chest are developing better and more rapidly than others. To correct this imbalance, you will have to alter your program and include more exercises to stimulate the areas that are lagging behind. Following is a list of exercises for improving each area of the chest, though no exercise works in complete isolation.



*Serge Nubret has developed one of the most balanced chests in the world, with every one of the pectoral areas in complete proportion to the rest.*



**UPPER PECTORALS**

Incline Presses with a barbell or dumbbells or Smith machine  
Incline Flys

**LOWER PECTORALS**

Decline Presses with a barbell or dumbbells or machines  
Dips  
Decline Flys  
Cable Flys

**INNER CHEST**

Cable Crossovers  
Presses or Flys holding the contraction at top for several seconds  
Bench Presses done with narrow grip

**OUTER CHEST**

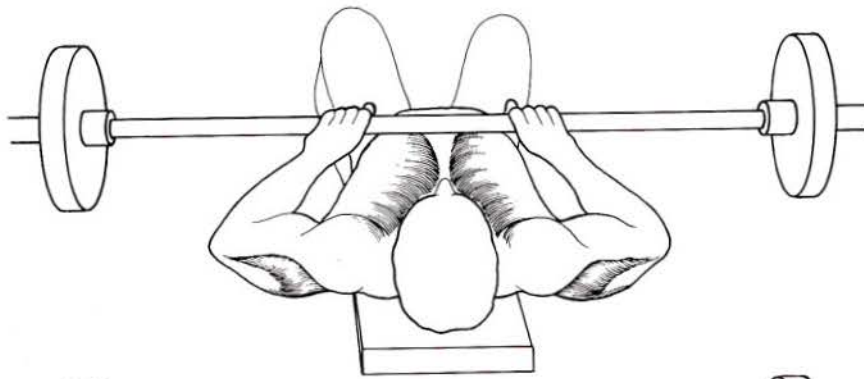
Dumbbell Flys concentrating on full stretch and lower range of motion  
Dips  
Incline Presses and Bench Presses done with a wide grip and lower three-quarter movement  
Dumbbell Flys  
Dumbbell Bench Presses stretching at bottom, coming up only three-quarters of the way and not letting dumbbells touch  
Incline Presses with bar

**RIB CAGE**

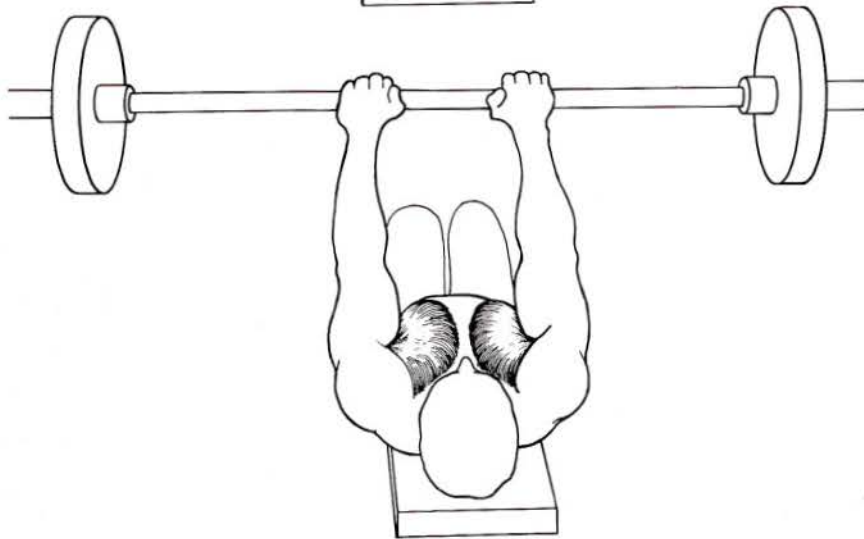
Dumbbell and Barbell Pullovers

When you have a weak point in chest development, train your pectorals according to the Priority Principle, doing the exercise for that weak area first, when you are fresh and at your strongest. In the early stages of my career, I always felt I suffered from a comparative lack of upper pectoral development. So I would begin my chest training with Barbell Incline Presses followed by Dumbbell Incline Presses to really hit this area. Only then would I go on to regular Bench Presses and the rest of my chest routine.

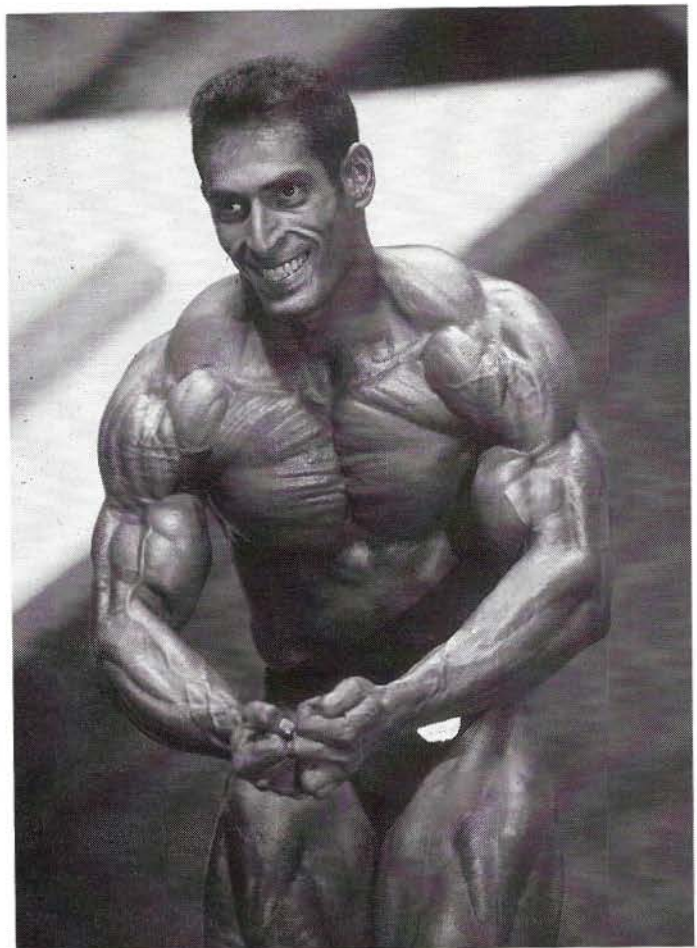
But there are times when this kind of specialized weak point training is not justified. For example, if you have problems with the inner chest, I would not recommend starting out your routine with an exercise like Cable Crossovers. Instead, try to work on this area as you are doing the rest



*This is the proper way to do  
Narrow-Grip Bench  
Presses: Keeping the elbows  
out and away from the body  
at the bottom of the  
movement . . .*

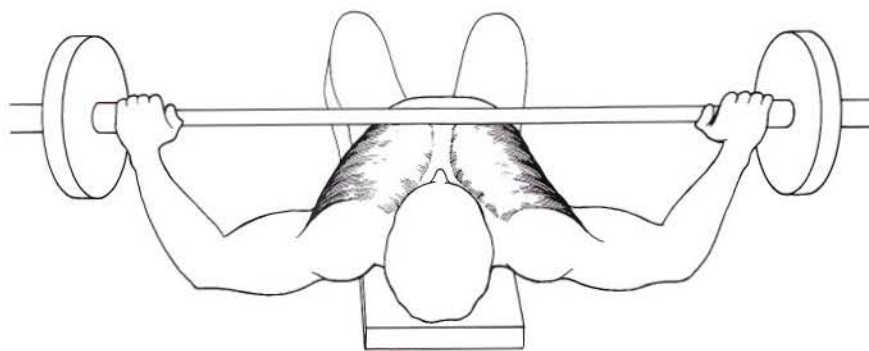


*. . . allows a full contraction  
of the pectorals at the top,  
which helps to develop the  
inner part of the chest.*

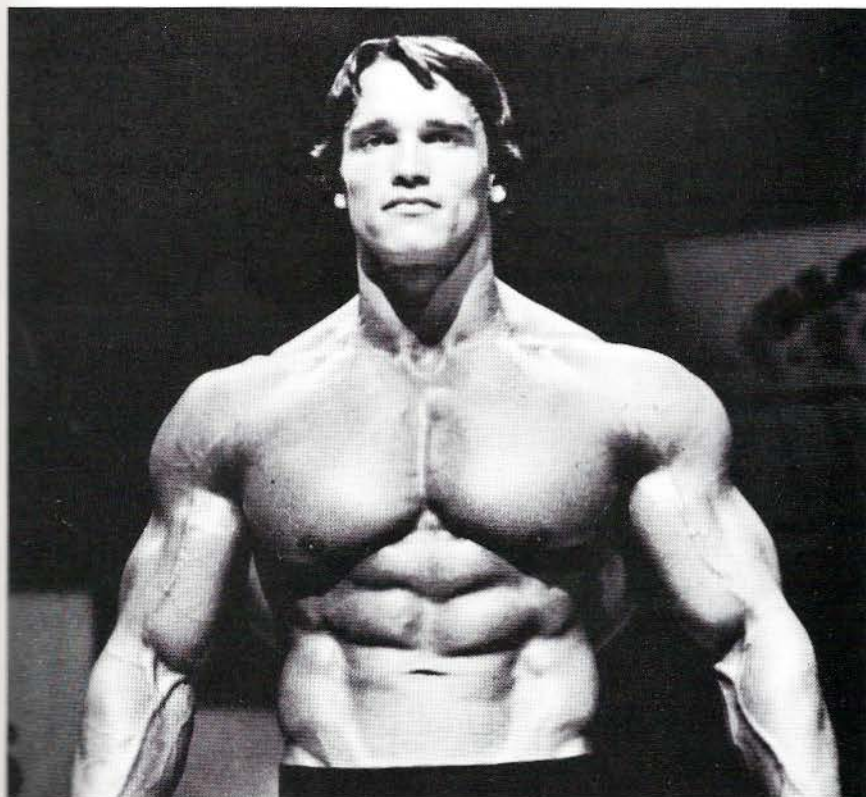
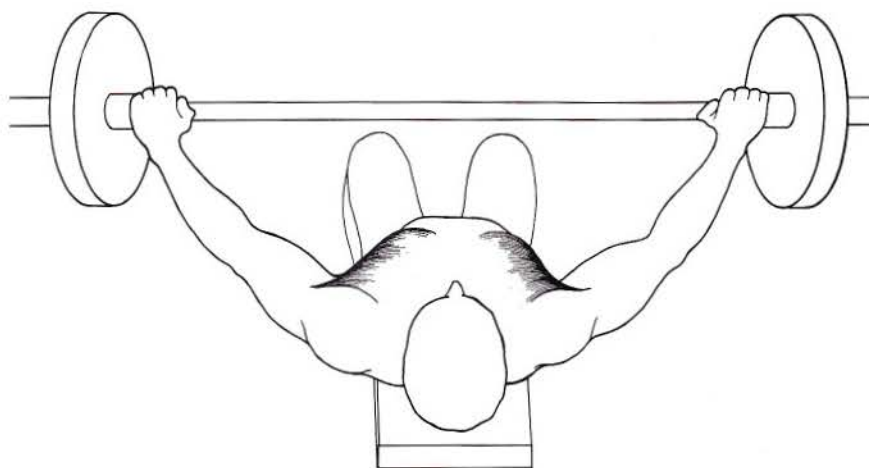


*This shot of Hamdullah Aykutlu shows clearly the  
sharp and defined development of his inner chest.*

*Taking a wide grip on the bar . . .*



*. . . allows you to get a tremendous stretch in the pectoral muscles as you lower the weight. This is very effective in developing the outer pectorals.*



*The development of the outer chest is what gives the pectorals a really full look when seen from the front. In this photo I am standing relaxed, but my outer pecs and biceps are almost touching.*



*This picture of Dorian Yates shows how important a good rib cage is for executing a side chest pose.*

of your chest workout—perhaps locking out all of your pressing movements, and really tensing and contracting the inner pecs. Then, at the end of your workout, you could add on some extra Cable Crossovers or other exercises specifically designed to hit the inner chest.

The same thing can be done for outer chest development. You can emphasize this area during your routine by lowering the weights a few inches farther when doing Dumbbell Flys and by getting the fullest possible stretch with other pectoral exercises. You don't have to schedule specific outer pec movements at the top of your routine in order to deal with this weak point the way you would if your problem was the upper, lower, or middle chest. The most adjustment I would recommend for pectoral weak points would be to widen your grip while doing Bench Presses in or-

der to hit the outer pecs or use a narrow grip to work the inside pecs harder.

When doing Presses the area of the pecs you work hardest is determined by the angle at which you do the exercise. For example, in training the upper chest I used to start out doing 3 sets of Dumbbell Incline Presses at an angle of only 15 degrees. I would go to 25, 35, 50 degrees, and so on, doing 3 sets at each angle. At the end of a workout like that, I could feel I had really blasted the entire upper chest and that no part of that area had escaped attention.

Barbell exercises normally allow you to use more weight, so you develop maximum mass and strength. Dumbbell exercises give you a longer range of motion, so you get more extension and contraction. Cables allow you to work at a variety of angles, so you get more shaping for a better finished look. A disadvantage of machine training for the chest is that the apparatus only lets you work at very specific angles, but you can turn that to an advantage if you want to work the muscle at that angle to develop a weak area.

Dumbbell Flies are ideal for developing the outer pecs, but you need to employ a particular technique to get the most out of this movement. Lie on a bench and let the dumbbells down just as far as you can. Then when you come up, stop about three-quarters of the way. This technique puts all the effort on the outer pecs and never lets them disengage from the exercise.

But you can use Dumbbell Flies to work the inner pectorals as well, by bringing the weights all the way up, squeezing the muscles together at the top, and even crossing the dumbbells over slightly to get a full contraction of the inner pectorals.

Inner pectoral development in general comes about by working the top range of pectoral movements—a Bench Press with a narrower grip, for example, with the bar pushed all the way up; or Cable Crossovers, letting the arms cross over each other, which really contracts the inner pecs.

Decline exercises work the lower pec region more intensely. These include Decline Presses, Decline Flies, Decline Cable movements, and Dips. I like Dips because, by bending farther forward or holding yourself straighter, you can change the way the stress hits the muscle even right in the middle of a set.

If your pectorals just seem to disappear when you raise your arms over your head, I recommend doing a series of Incline Dumbbell Presses at a variety of angles, starting out almost flat and going up until you are almost doing a Shoulder Press. This will produce the kind of total development that gives you impressive pecs even when your arms are raised or when doing a front double-biceps shot.

There are exercises you might do for weak point training that you would never do in a normal workout if you weren't trying to overcome a problem. This is why I caution young bodybuilders against simply copying

what they see a champion doing in the gym. He may be doing some sort of One-Arm Cable Lateral motion at a special angle in order to deal with a weak point. If you assume that exercise is a standard one and include it in your regular routine, you might end up wasting a lot of time and energy and holding back your overall progress.

Remember, even when doing weak point training, don't totally neglect any area of the muscle group. However, you can cut down on the number of exercises that work a strong area while adding extra movements to work a weak point.

Some experts say that you can't develop the size of your rib cage once you reach a certain age—about the early twenties. It is certainly true that the cartilage binding the rib cage stretches more easily at a younger age, but I have seen too many older bodybuilders improve their rib cage size to believe that this cannot be done. It is just a matter of time, effort, and patience—like so much else in the discipline of bodybuilding.

Finally, remember that the best way to force a weak body part to develop is by using a variety of Shocking Principles to increase training intensity. Chuck Sipes always liked to do Bench Presses using the Stripping Method. He would start off pressing around 400 pounds, do as many reps as he could, and then have his training partner strip plates off the bar so that he could keep going and really blast his pectorals. You can also use techniques like forced reps, Rest/Pause, three-quarter movements, Staggered Sets, or anything else that will force the kind of development you need.

I especially like the idea of heavy days for maximum chest development. Once a week I usually trained my chest with extra heavy weight: 5 or 6 reps at the most, 100-pound Flys, Incline Presses using 365 pounds for 6 to 8 reps, super-heavy (450-pound) Bench Presses to produce the maximum pectoral mass and thickness.

## **POWER TRAINING**

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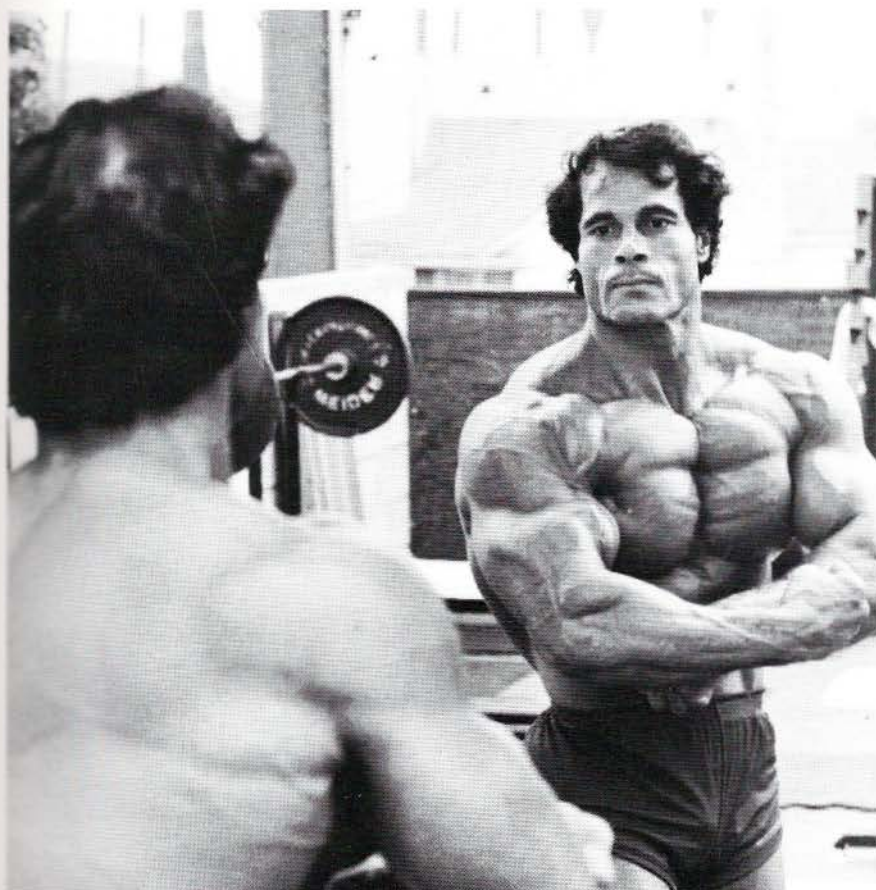
To develop maximum power, mass, and strength in the chest, I recommend a program in which you:

1. Begin with Bench Presses. Do 20 reps the first set, then 10 reps. At this point, raise the weight so you go immediately down to 5 reps, 3 reps, and 1 rep.
2. Continue doing as many sets as you can (at least 5) with a weight that allows you only 1 or 2 repetitions.
3. Perform the last set with a lighter weight that allows you to go back up to high repetitions.
4. Go on to Incline Presses and do them the same way. Afterward, follow the same program with Dumbbell Flys.

## POSING AND FLEXING

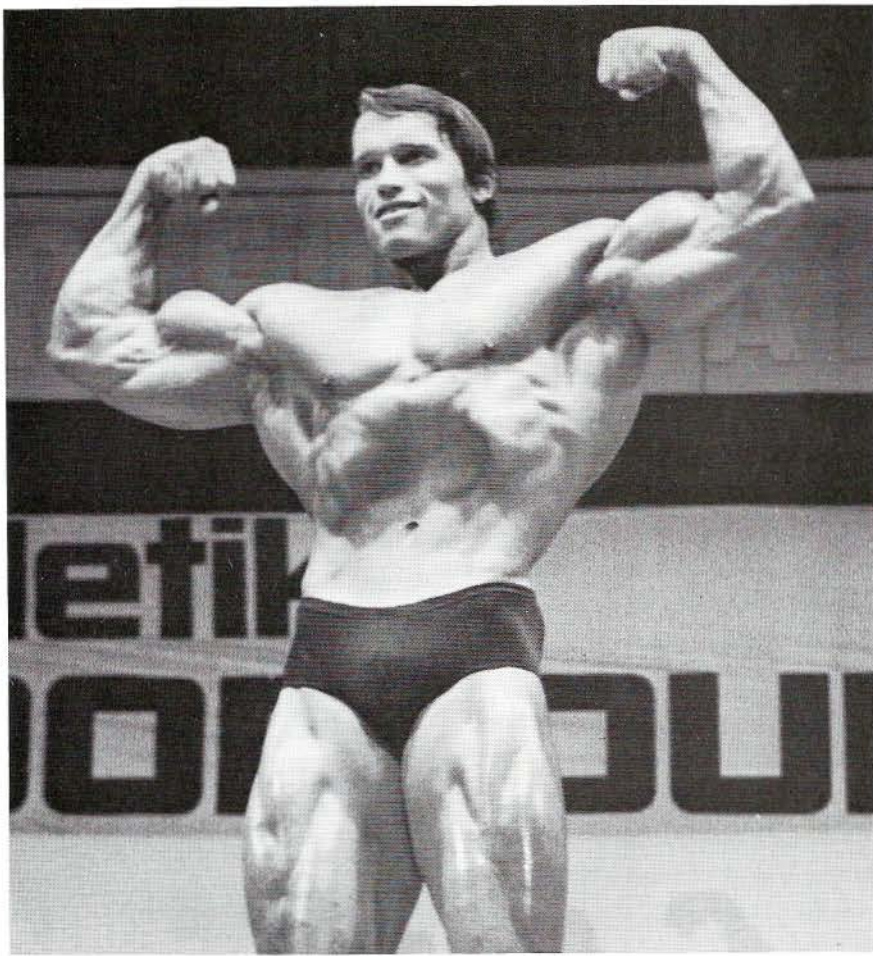
On heavy days especially, I always include a great deal of posing and flexing along with heavy weight training. Hitting a lot of side chest shots and most-muscular poses along with intense training is the best way I know to bring out pectoral striations. I've seen a lot of bodybuilders try to create these striations by artificial means—dehydrating themselves with diuretics, for example—but it just never looks as good as the results you get from hard training, posing, and flexing.

Learning to pose the chest properly takes a lot of practice. When you do a side chest shot, a front double-biceps, a most-muscular, or a front lat shot, in each shot the chest is posed differently and you need to practice each of these poses separately to get the effect you want. For a front double-biceps, you need to pose with your shoulders forward to create that sweeping line of the chest from sternum to deltoid; in the side chest shot, you need to keep the shoulder down and lift the chest to make it look high and full. Flexing the chest as you train it is the only way to create maximum pectoral definition—and endless hours of posing practice is the only method that will give you total control of your physique for presentation.

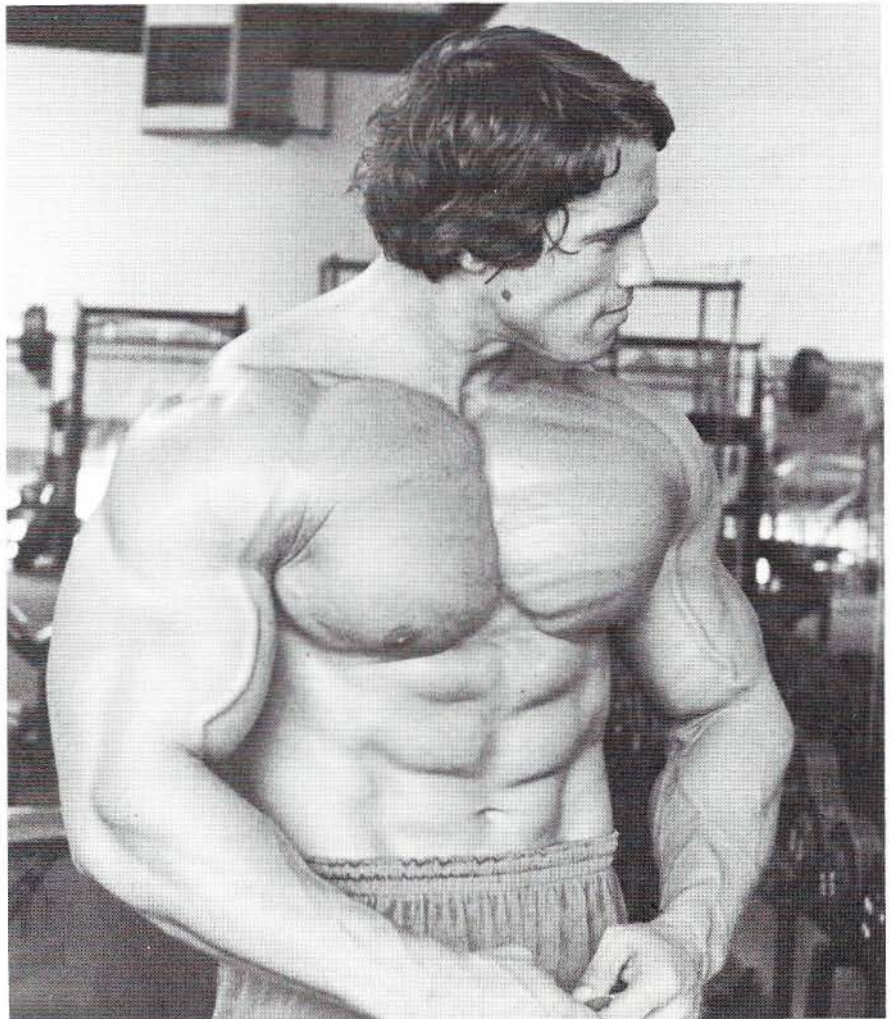


*Not only do you constantly need to pose and flex your pectoral muscles, you also need to practice a variety of ways of showing off the chest. Here, I am doing a side chest shot.*

*Franco Columbu checks out his inner pectoral development.*



*The front double-biceps shot is one of the most difficult in bodybuilding. Any faults you have become immediately visible, especially if your chest tends to disappear when you lift your arms.*

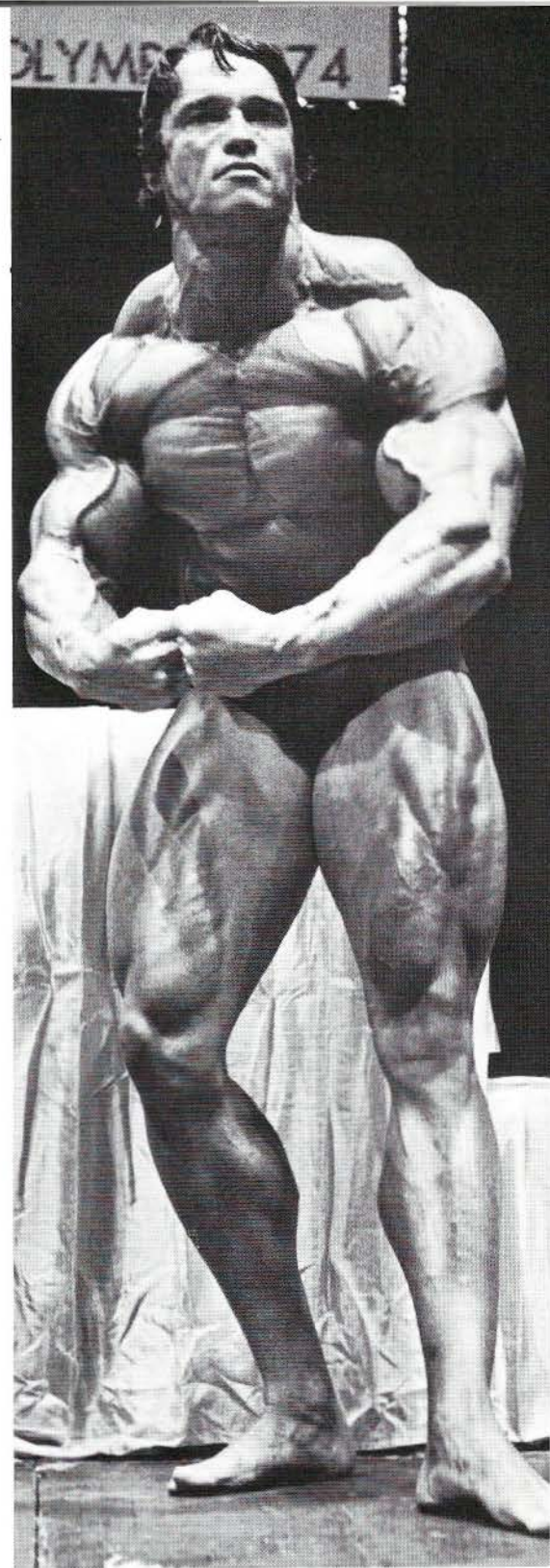
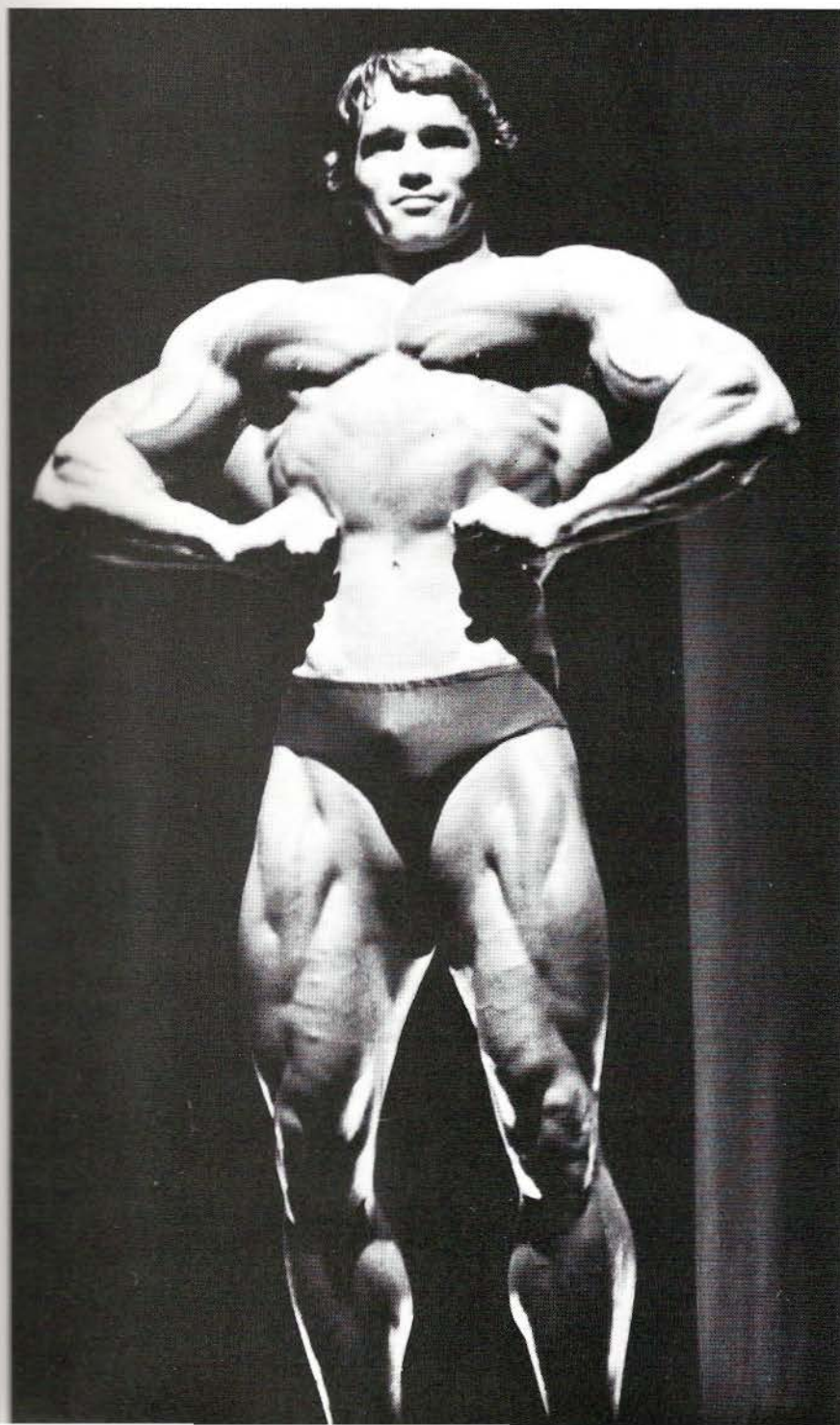


*Sometimes you don't need to pose at all—just flex your pecs as hard as possible, hold it, and see what happens.*

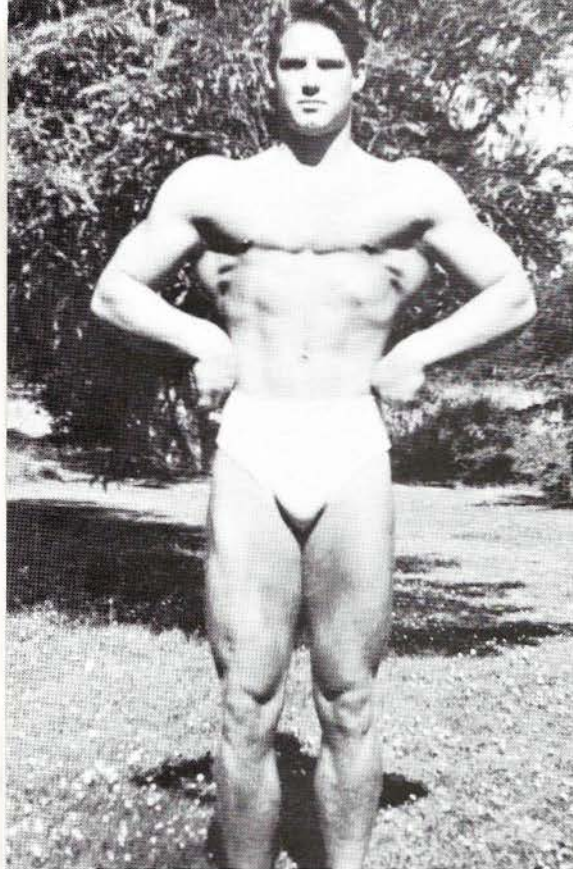


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*When you hit a most-muscular pose, the chest should look like an anatomy chart—every area developed, defined, separated, and striated.*



*Upper and outer pec development is particularly important when you hit a front lat spread.*



*Steve Reeves at fifteen*



*Steve Reeves at twenty-four as Mr. Universe*

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## THE SERRATUS MUSCLES

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The serratus muscles lie parallel to the ribs, coming out from under the lats and forward to tie into the pectorals and the intercostals and downward to the external obliques. When they are properly developed, these muscles look like fingers, with each digitation clearly defined and separated from the others. The serratus muscles are not like other muscles in that you don't measure their level of development with a tape measure; it is their visual impact that makes the difference.

Complete serratus development is important for a variety of reasons: For one, it announces clearly that this bodybuilder has achieved real quality detail training; for another, the serratus helps separate the lats from the chest and the obliques, and aids in making them appear much larger when seen from the front. Good serratus development also helps make you more symmetrical and athletic.

Some people are naturally gifted with great serratus development. There is a photo of Steve Reeves doing a front lat spread when he was fifteen years old and had been training for only a year—and sure enough, you can see the serratus already several fingers deep. Later, when he went on to win the NABBA Mr. Universe contest, his serratus development was really spectacular.

Bill Pearl was able to combine impressive size with aesthetic qualities like highly defined serratus muscles, proving that you can achieve both mass and quality without compromising either. Pearl was able to hit a variety of overhead and front poses because of his outstanding serratus development, and this made him a much more formidable opponent on the competition stage.

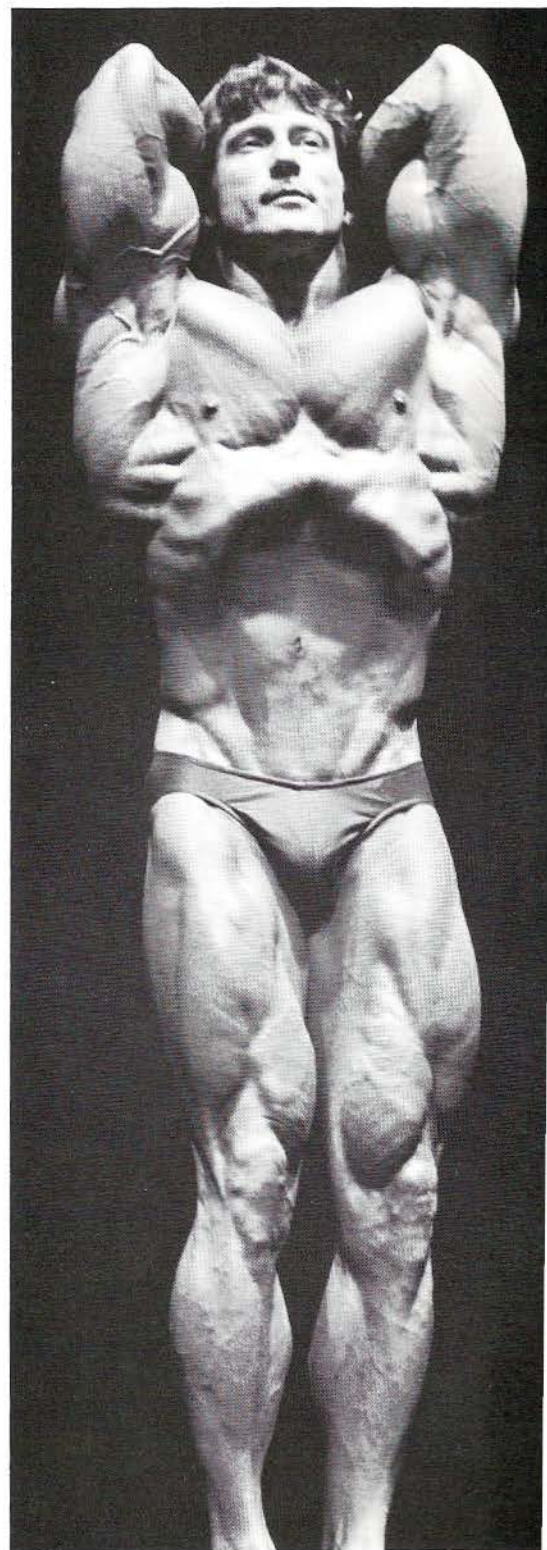
However, if you weren't born with great serratus development you can train for it by making a conscious effort to bring out these muscles. Frank Zane worked very hard at serratus training, and this helped establish him as a model for the complete bodybuilder and win three Mr. Olympia titles. Like Bill Pearl, Zane has found that his superior serratus development allows him to do a greater number of poses effectively, especially the aesthetic hands-over-the-head shots. (I recall standing onstage next to Zane in 1968, outweighing him by fifty pounds, and discovering that his lat spread was more effective than mine because of the tremendous lat separation his serratus development gave him. You can bet I started training the serratus extra hard after that!)

Reeves, Zane, and Pearl were my inspiration for developing the serratus. When they hit poses, especially ones in which the arms are raised, they demonstrated to me exactly what the serratus should look like.

## TRAINING THE SERRATUS

Since a basic function of the serratus is to pull the shoulder forward and down, you train these muscles whenever you do movements like Chins, Close-Grip Pulldowns, various kinds of Dumbbell and Barbell Pullovers, and when you use the Nautilus Pullover machine. (When I do Dumbbell Pullovers, the structure of my body is such that this exercise becomes a rib cage expander. For others with different proportions—like Frank Zane and Bill Pearl—Dumbbell Pullovers tend to hit them more in the serratus.) There are, however, two exercises that work those muscles more specifically and that you can use if you have a weak point in this area: Rope Pulls and One-Arm Cable Pulls. In both cases, you have to do the movement as strictly as possible to get the maximum effect.

Working the chest and back with Chins and Pullovers, you will have already done some serratus work. This is the time to consciously isolate the serratus, to concentrate on making these muscles burn. It is not enough just to throw in a few sets for the serratus, any more than for abs, calves, or intercostals. You need to train each muscle with maximum intensity if you want a complete and quality physique.



*The combination of outstanding serratus development and an impressive vacuum make this hands-over-the-head pose one of Frank Zane's best.*

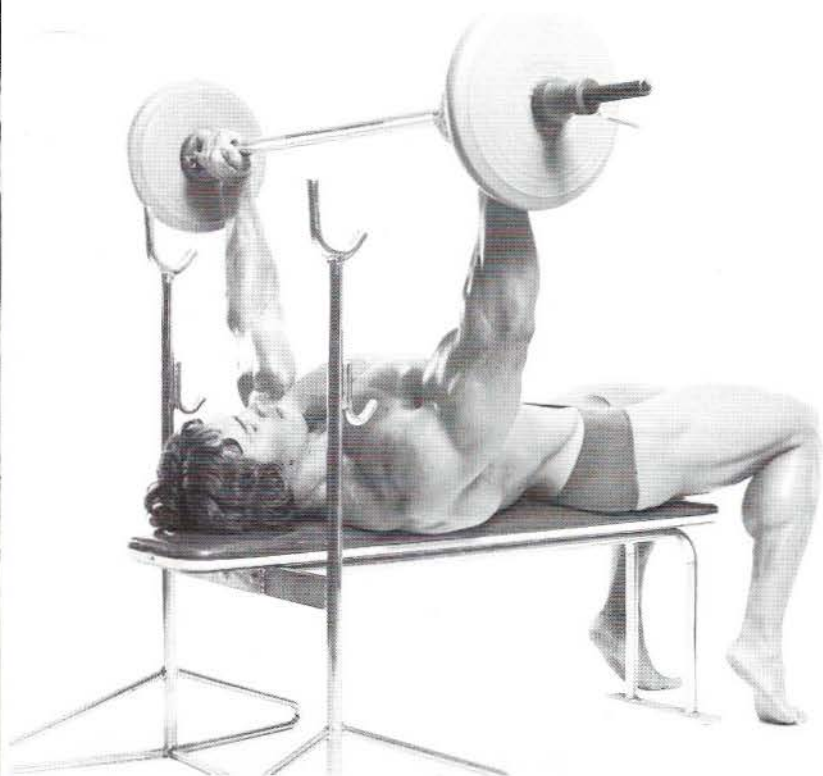
## Chest Exercises

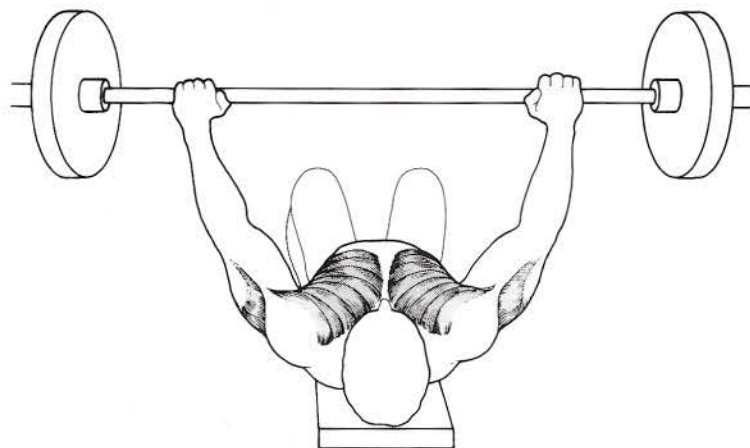
### BARBELL FLAT BENCH PRESSES

**PURPOSE OF EXERCISE:** To build mass and strength in the pectorals, front delts, and triceps.

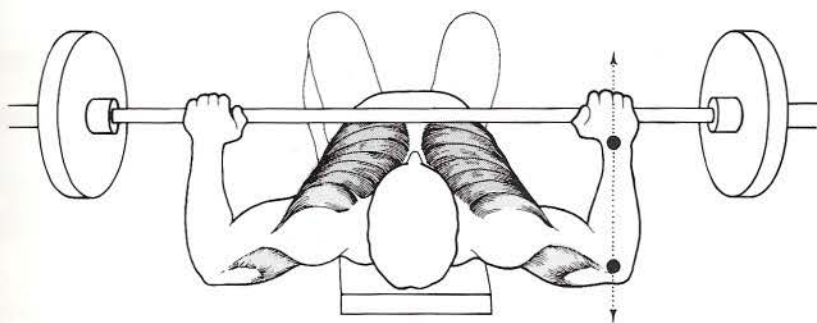
The Bench Press is a fundamental compound exercise for the upper body. It produces growth, strength, and muscle density, not only for the chest muscles but for the front deltoids and triceps as well.

**EXECUTION:** (1) Lie on a flat bench, your feet on the floor for balance. Your grip should be medium-wide (which means that as you lower the bar to your chest, your hands should be wide enough apart so that your forearms point straight up, perpendicular to the floor). Lift the bar off the rack and hold it at arm's length above you. (2) Lower the bar slowly and under control until it touches just below the pectoral muscles. Keep the elbows pointed outward in order to fully involve the chest. The bar should come to a complete stop at this point. Press the bar upward once more until your arms are fully locked out. Always go through a full range of motion unless instructed specifically to do otherwise.





*The classic Bench Press starting position: The hands are positioned on the bar slightly wider than shoulder width. This distributes the stress so that the pectorals do a major part of the work, with minimal front deltoid and triceps involvement.*



*Notice that as the weight is lowered to the chest, the hand position is such that the forearms end up perpendicular to the floor. This hand position gives the best overall results, developing the complete pectoral muscle—inner, outer, and through the middle.*

*I frequently did my heavy chest training on Sundays at Venice Beach. I got extra motivation for doing reps with 450 pounds because so many people were standing around watching me.*



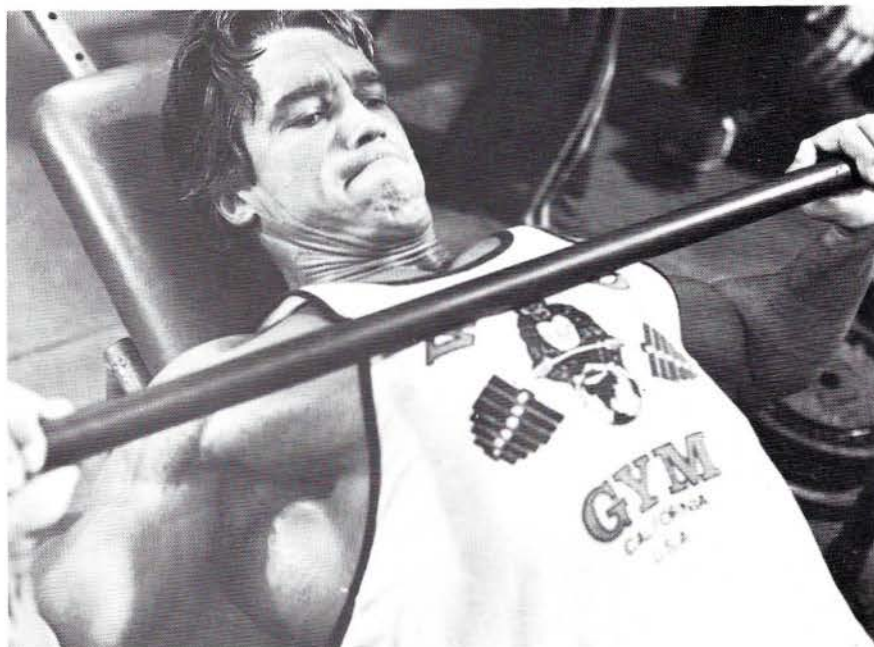
## BARBELL INCLINE BENCH PRESSES

**PURPOSE OF EXERCISE:** To develop the mass and strength of the pectoral muscles (middle and upper regions) and front deltoids.

Changing the angle of the movement so you are pressing at an incline tends to put extra stress on the upper chest muscles and make the deltoids work harder. But you will find you can't lift as much weight as you can when doing a Flat Bench Press.



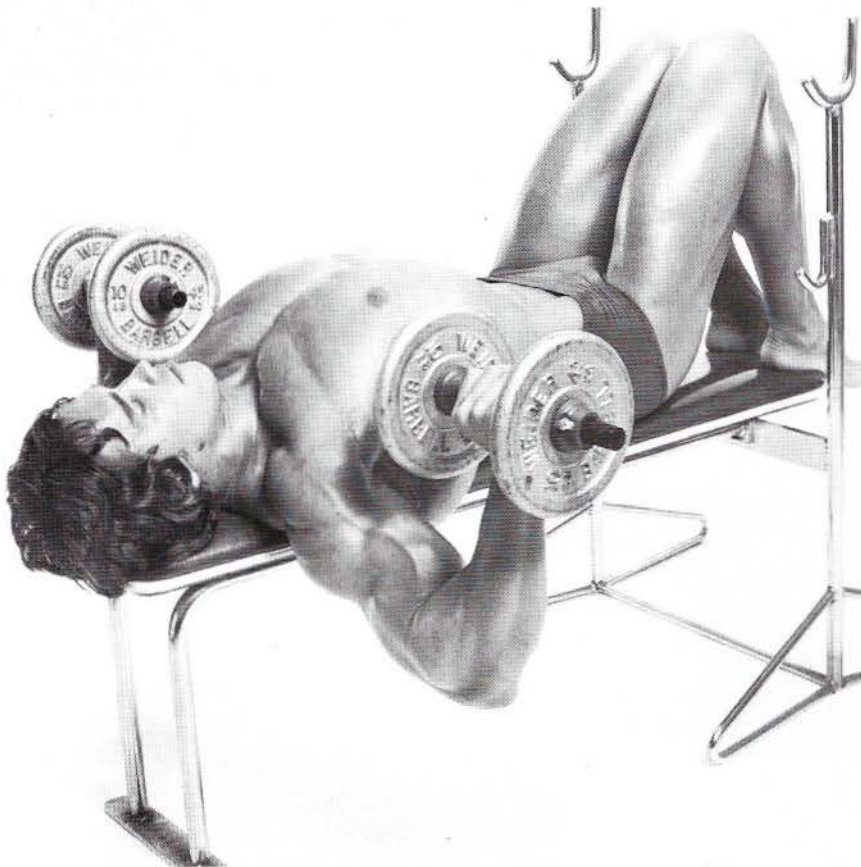
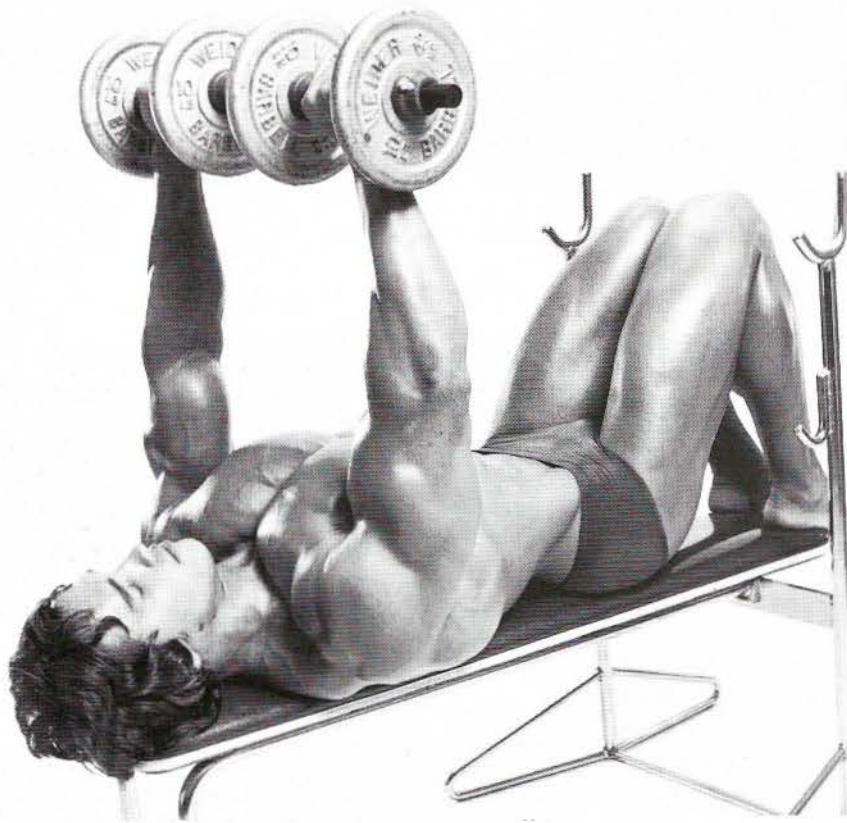
**EXECUTION:** (1) Lie back on an incline bench. Reach up and grasp the bar with a medium-wide grip. Lift the bar off the rack and hold it straight up overhead, arms locked. (2) Lower the weight down to the upper chest, stop for a moment, then press it back up to the starting position. When working at an incline, it is extremely important to find the right “groove” or you are likely to find the bar drifting too far forward. It is useful to have a training partner to spot you while you are getting used to this movement.



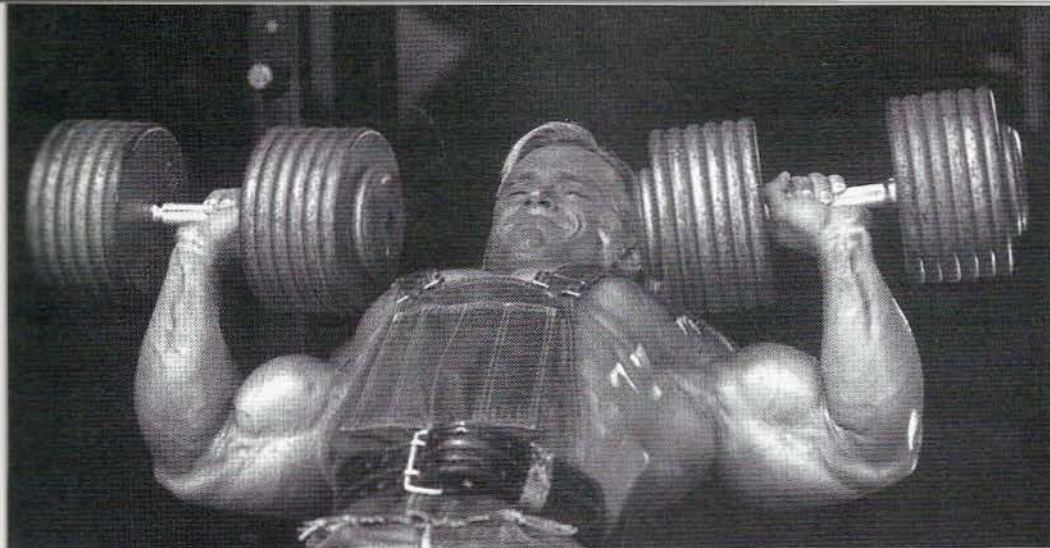
## DUMBBELL FLAT BENCH PRESSES

**PURPOSE OF EXERCISE:** To develop the mass and strength of the middle and outer pectoral muscles. By using dumbbells rather than barbells, you can work the chest muscles through a greater range of motion, and the need to balance and coordinate two separate weights forces stabilizer muscles to assist as well.

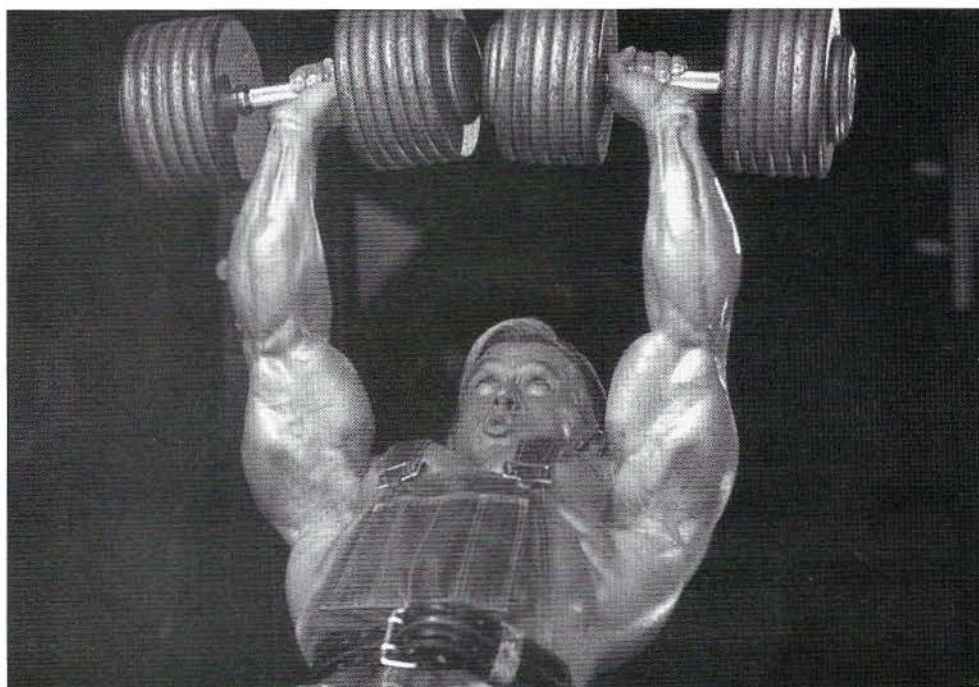
**EXECUTION:** (1) Lie on a flat bench, knees bent, feet flat on the bench or floor. Take a dumbbell in each hand and hold the weights straight up overhead. Turn the dumbbells so that your palms face forward. (2) Lower the weights toward your outer chest, concentrating on keeping them fully balanced and under control. Lower them as far as you can, feeling a complete stretch in the pectoral muscles. Press the weights back up and lock your arms straight overhead.







*Lee Priest*



## **INCLINE DUMBBELL PRESSES**

**PURPOSE OF EXERCISE:** To develop the middle and upper pectoral muscles. You can vary the angle of the incline bench from almost flat to almost upright; the more upright the bench, the more you work the delts.

**EXECUTION:** (1) Take a dumbbell in each hand and lie back on an incline bench. Clean the dumbbells and hold them at shoulder height, palms facing forward. (2) Lift them simultaneously straight up overhead, then lower them back to the starting position. As a variation, you can begin with palms facing each other and twist your wrists as you lift so that the palms face forward at the top, then twist them back to the starting position as you lower the dumbbells. You can vary the angle at which you train from workout to workout, or from set to set in the same workout. If you do the latter, begin at a steep incline and work downward toward a flatter angle or increase the angle set to set.



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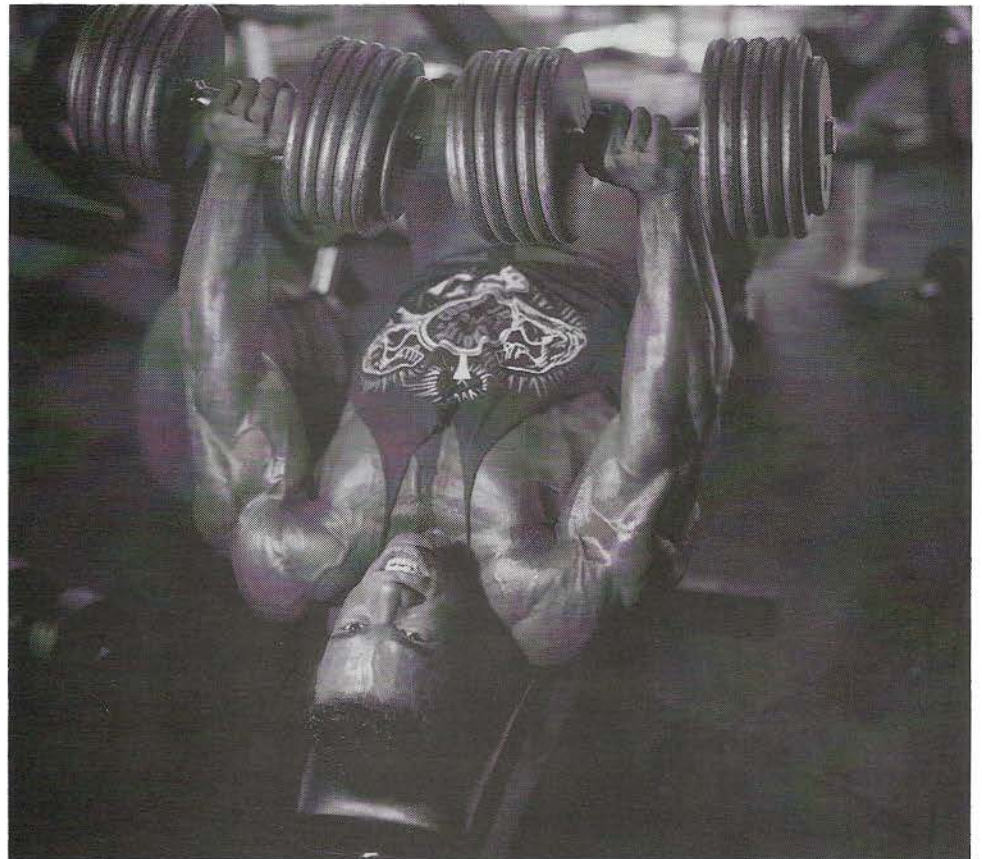
## DECLINE DUMBBELL PRESSES

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**PURPOSE OF EXERCISE:** To develop the middle and lower pectoral muscles.

**EXECUTION:** (1) Take a dumbbell in each hand and lie back on a decline bench. Hold the weights at shoulder height, palms facing forward. (2) Lift the dumbbells simultaneously straight up overhead, then lower them slowly back to the starting position.

*Kevin Levrone*



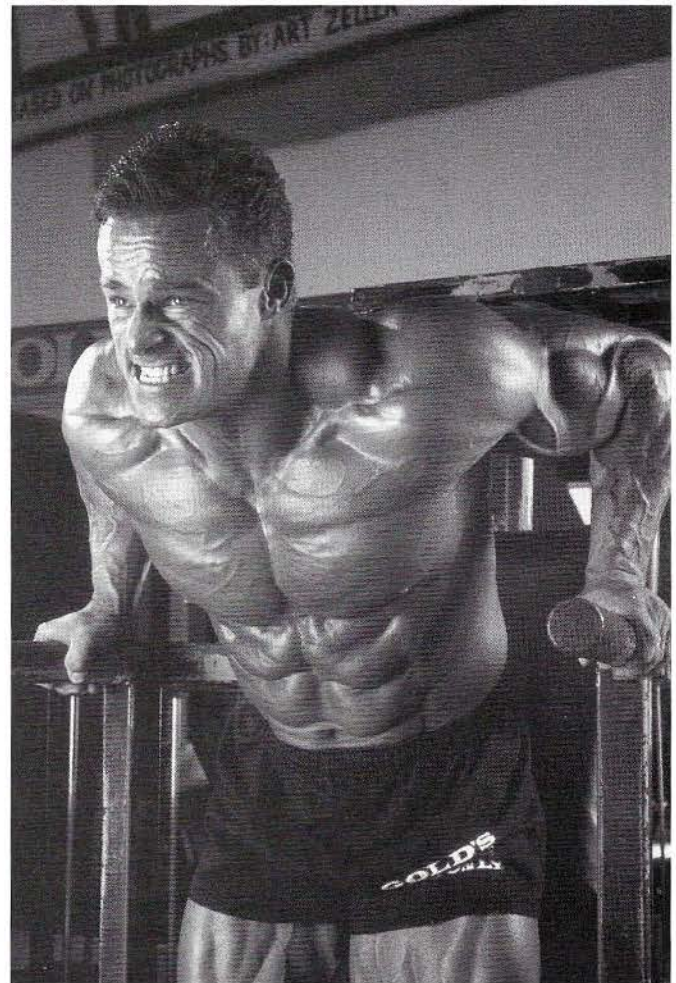
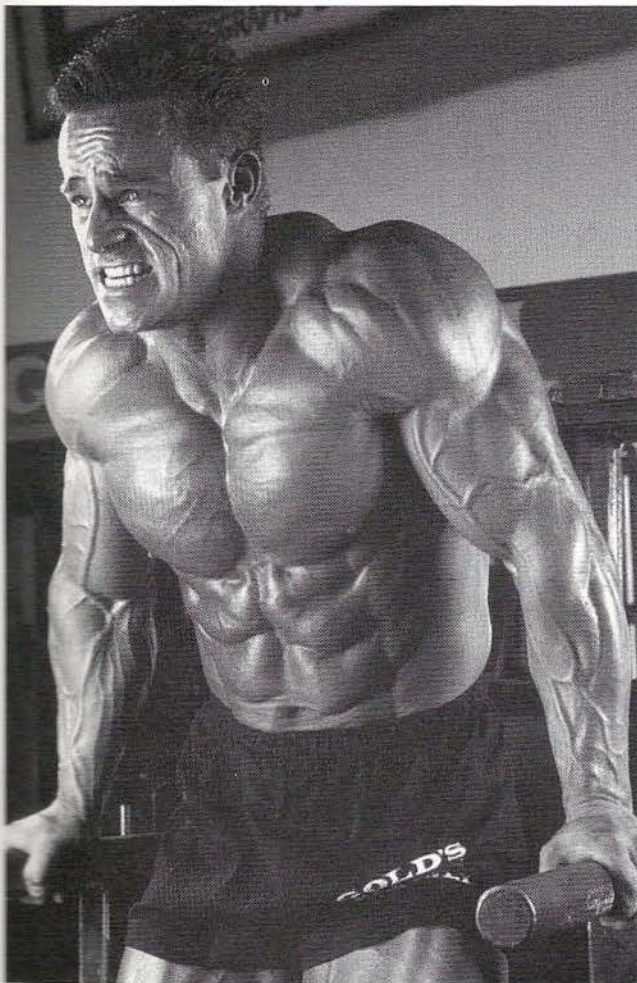
## PARALLEL BAR DIPS

**PURPOSE OF EXERCISE:** To develop the pectoral muscles, triceps secondarily.

Dips are a chest and triceps exercise that have a similar effect on the body as Decline Presses. However, with Dips you begin training with your own body weight, but can continue to progressively increase the resistance by holding a dumbbell between your legs or hooking a weight to the appropriate kind of belt. You can get a very long range of motion with this exercise.

**EXECUTION:** (1) Hold yourself at arm's length above the bars, (2) then lower yourself slowly as far as you can. From the bottom, press back up to the starting position, tensing the pectorals at the top. In this movement, the farther forward you lean, the more chest you involve, so try crossing your feet behind your glutes, which will shift your center of gravity forward and hit the pectorals harder.

*Porter Cottrell*





## MACHINE PRESSES

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**PURPOSE OF EXERCISE:** To work the pectoral muscles. One of the advantages of doing Presses on a machine is that the machine stays in a certain groove, precluding any need for spending energy on balance and coordination. This is especially beneficial for people rehabbing a shoulder injury. Also, using a machine, your workout partner can push down on the mechanism to allow you to do heavy forced negative repetitions. However, being forced to stay in that groove somewhat limits the stimulation to the muscles.

*Flat Bench Machine Presses.* The pectoral station of most machines is constructed to give you a flat Bench Press movement.

*Incline Machine Presses.* Using an incline bench and a Smith machine, you can mimic certain angles of the free-weight movement in a very strict manner.

*Decline Machine Presses.* A decline bench on a Smith machine effectively allows you to press at a decline angle.

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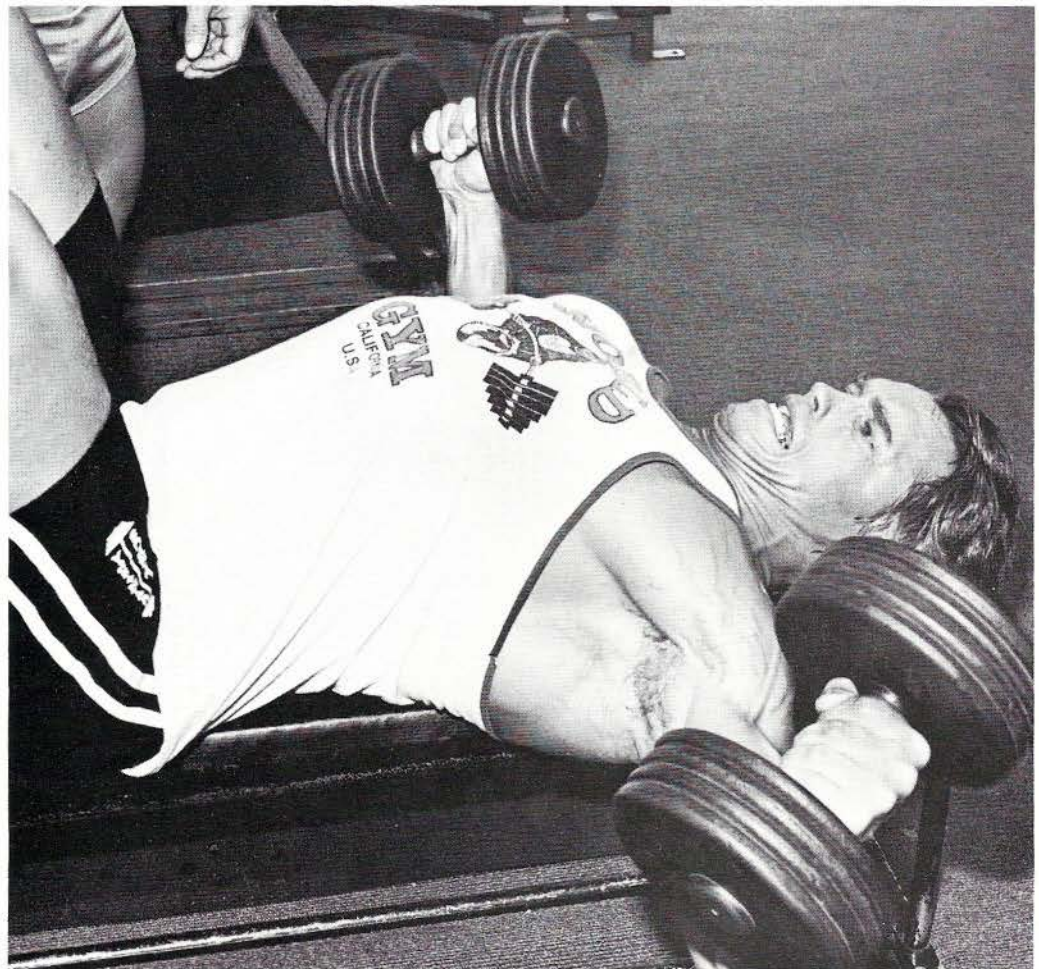
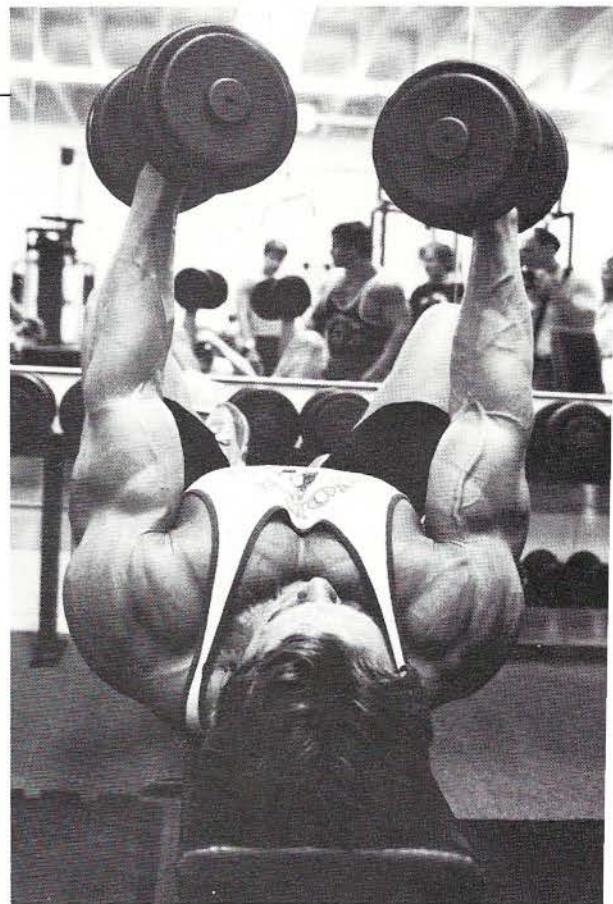
## DUMBBELL FLYS

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**PURPOSE OF EXERCISE:** To develop the mass of the pectorals.

The function of the pectorals is basically to pull the arms and shoulders inward across the body, and this is exactly what you do using a Dumbbell Fly movement.

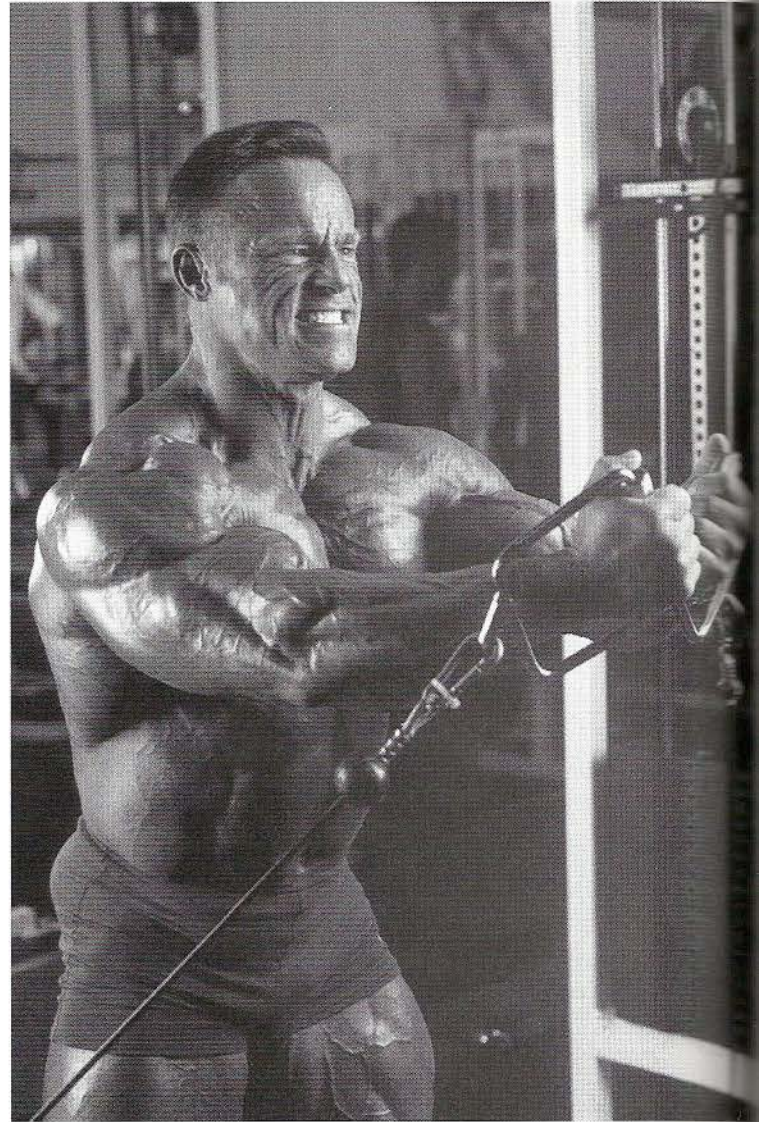
**EXECUTION:** (1) Lie on a bench holding dumbbells at arm's length above you, palms facing each other. (2) Lower the weights out and down to either side in a wide arc as far as you can, feeling the pectoral muscles stretch to their maximum. The palms should remain facing each other throughout the movement. Bend the arms slightly as you do the movement to reduce the stress on the elbows. Bring the weights to a complete stop at a point in line with the bench, your pectorals stretched as much as possible, then lift them back up along the same wide arc, as if giving somebody a big bear hug, rather than coming in and pressing the weights up. Bring the weights back up to the starting position and then contract the pectorals further, giving a little extra flex to make the muscle work that much harder.



## BENT-FORWARD CABLE CROSSOVERS

**PURPOSE OF EXERCISE:** To work the inside of the middle and lower pectoral muscles.

**EXECUTION:** (1) Using two floor-level pulleys, grasp a handle in each hand and bend forward, extending your arms out to either side. (2) Draw your hands toward each other, allow them to cross, and continue pulling until you feel your pectorals contract to the maximum. Hold for a moment and flex for extra contraction, then release and let your arms be pulled back to the starting position.



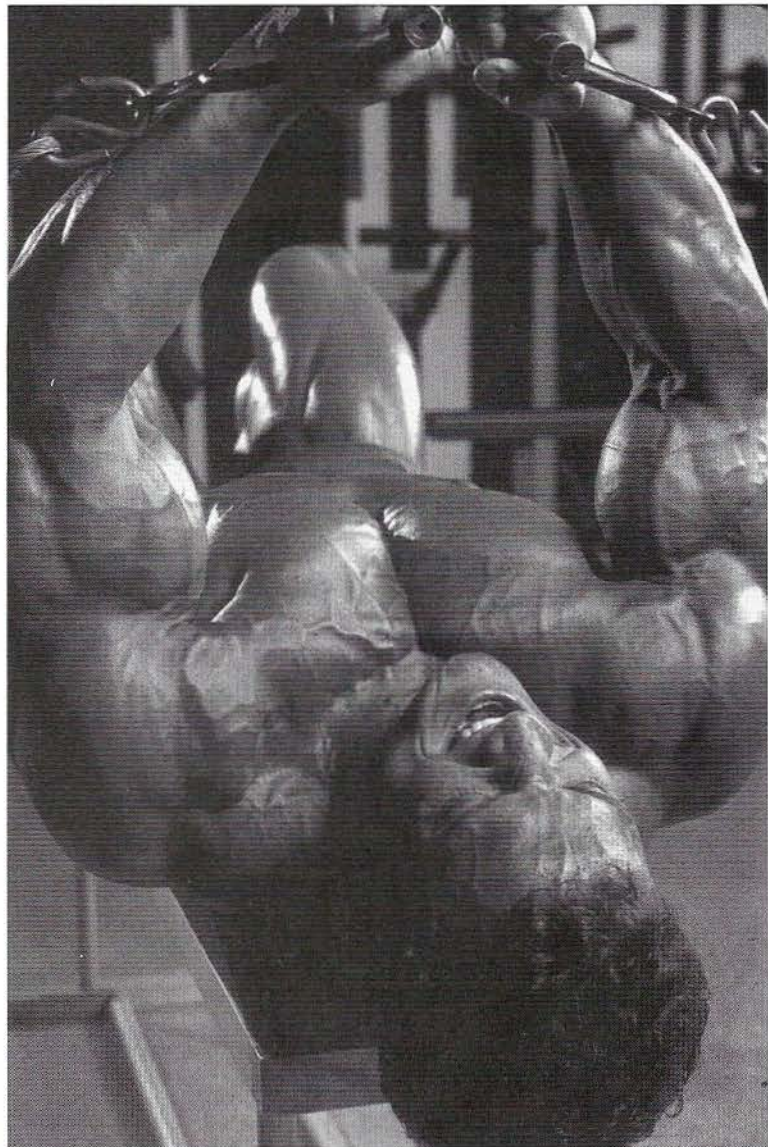
*Porter Cottrell*



## FLAT BENCH CABLE CROSSOVERS

**PURPOSE OF EXERCISE:** To develop and define the middle and inner pectoral muscles.

**EXECUTION:** (1) Lie on a flat bench between two floor-level pulleys. Take a handle in each hand and bring your hands together at arm's length above you, palms facing each other. (2) With your elbows slightly bent, lower your hands out to either side in a wide arc until your pectorals are fully stretched. Bring your arms back toward the starting position, passing through the same sweeping arc as if giving a big hug. You can stop at the top or continue on and cross your arms over slightly to create the fullest possible contraction of the pectorals.



*Lee Labrada*



## MACHINE FLYS

**PURPOSE OF EXERCISE:** To build middle chest size and definition and striations in the pectoral muscles.

Fly machines are not your best choice for building mass, but are very useful in creating definition.

**EXECUTION:** Many gyms are equipped with a variety of “pec decks” that approximate the flying motion. When using these in your training, work toward getting the fullest possible range of motion, stretching the pectorals to the maximum at full extension, then giving the muscles an extra, isometric contraction once you’ve brought your arms as close together as possible.



*Sonny Schmidt*



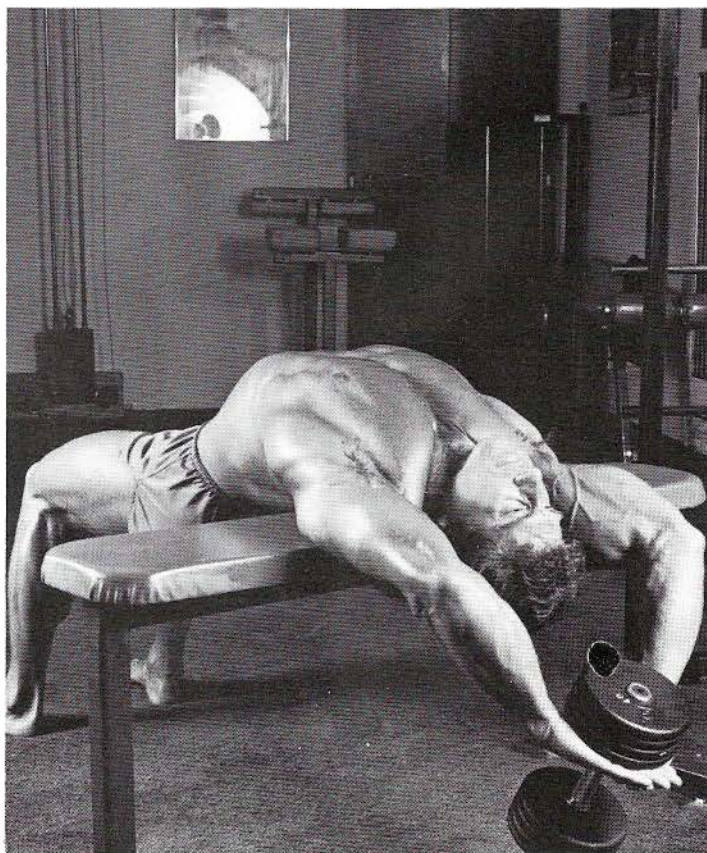
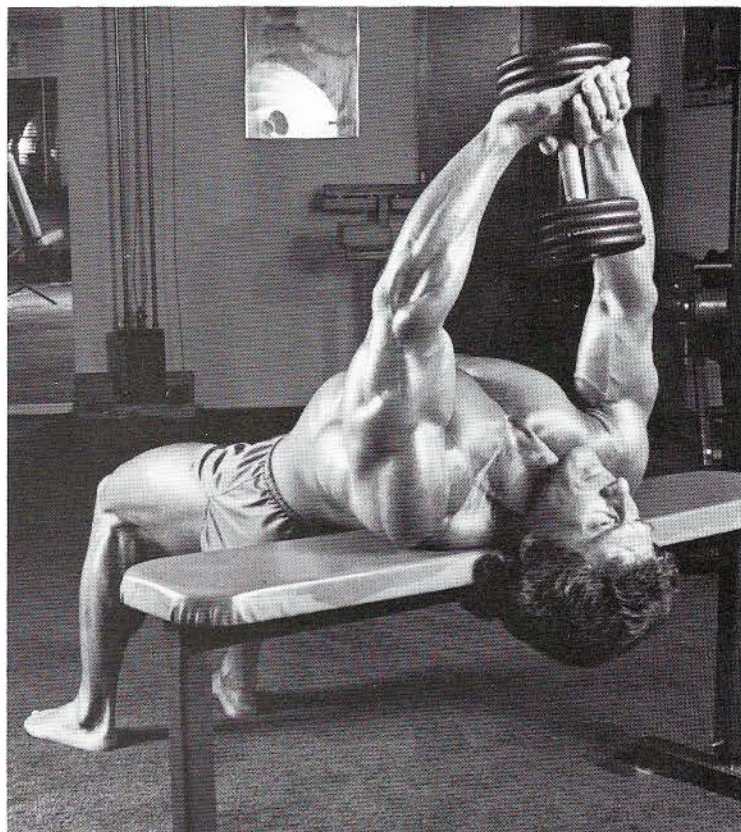
## STRAIGHT-ARM PULLOVERS

**PURPOSE OF EXERCISE:** To develop the pectorals and expand the rib cage.

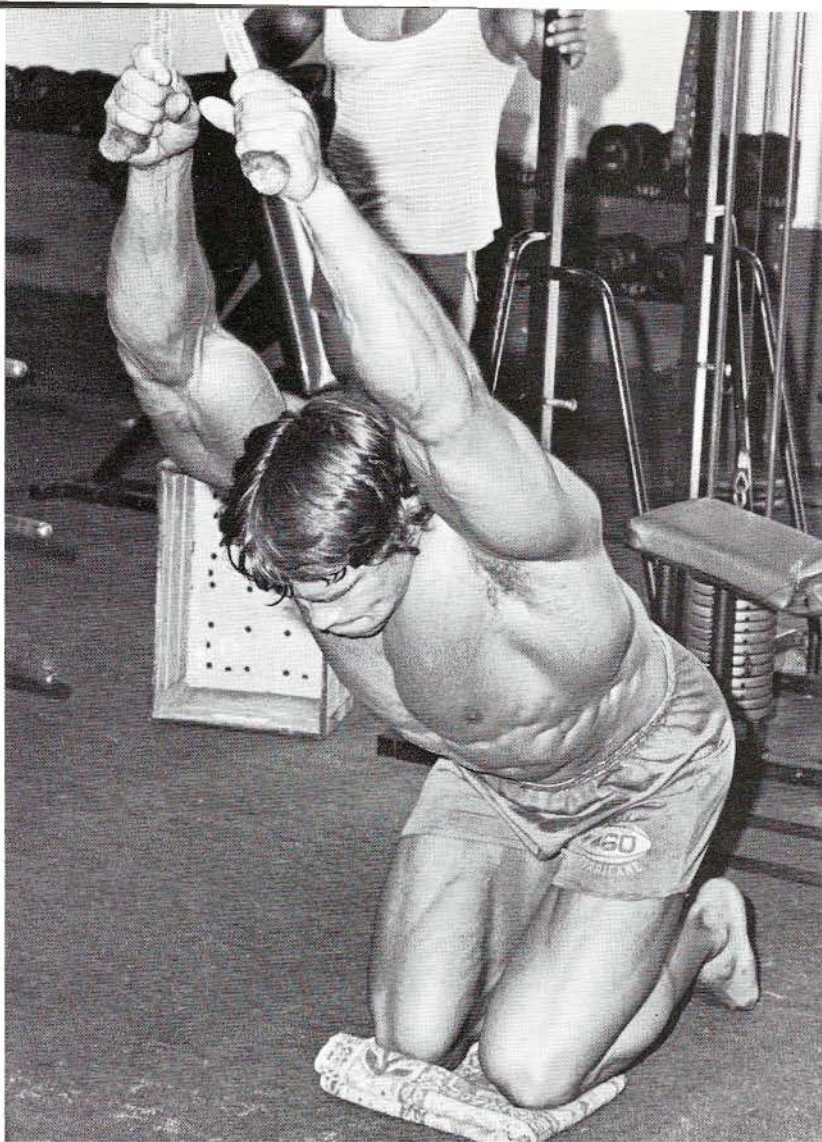
This is the best movement for expanding the thorax as well as working the pectorals and building up the serratus anterior muscles.

**EXECUTION:** (1) Place a dumbbell on a bench, then turn and lie across the bench with only your shoulders on its surface, your feet flat on the floor. Grasp the dumbbell with both hands and hold it straight up over your chest, with both palms pressing against the underside of the top plate.

(2) Keeping your arms straight, lower the weight slowly down in an arc behind your head, feeling the chest and rib cage stretch. Drop the hips toward the floor at the same time to increase this stretch. When you have lowered the dumbbell as far as possible, raise it back to the starting position through the same arc. Don't let your hips come back up as you lift the weight. Keep them low throughout the movement to ensure the maximum possible stretch and therefore the greatest expansion of the rib cage.



*Pullovers can be used to develop the serratus as well as the pectorals. For serratus, do the regular pullover movement, but concentrate on making the serratus muscles do a maximum amount of the pulling.*



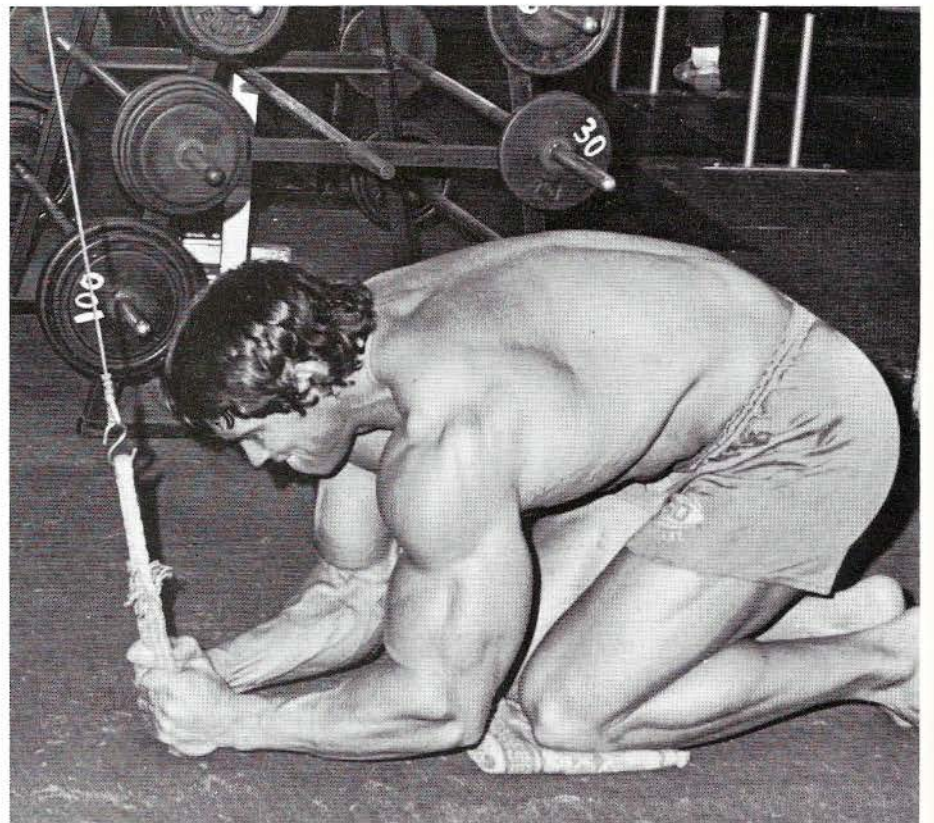
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## ROPE PULLS

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**PURPOSE OF EXERCISE:** To develop the serratus muscles.

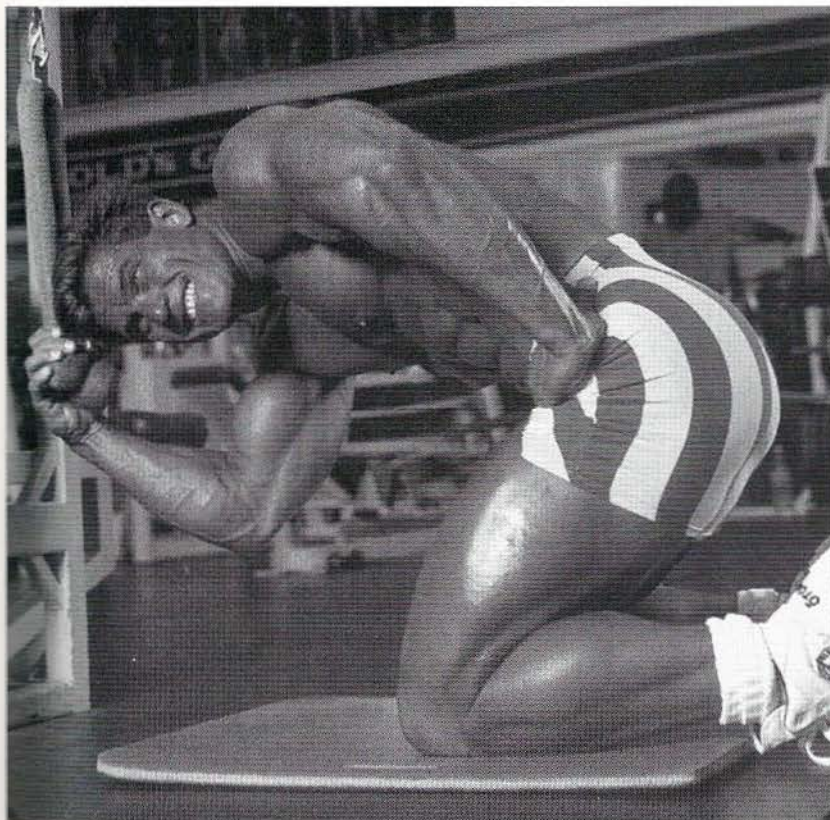
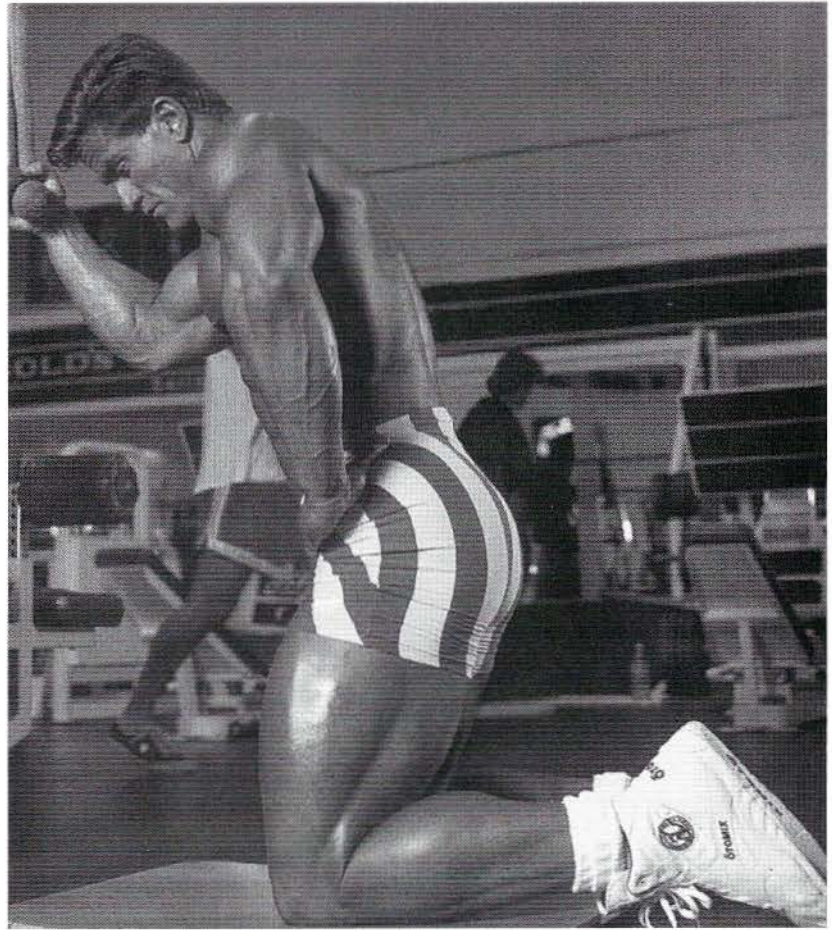
**EXECUTION:** (1) Kneel on the floor holding on to ropes attached to a cable and overhead pulley. (2) Keeping your arms extended above you, curl your body forward and down, pulling with the lats. Continue this motion until your head is almost touching your thighs. Bring your elbows down to the floor, pulling with the elbows. Release, uncurl, and come back up to the starting position, straightening your arms and feeling the stretch in your lats. You need to be very strict with Rope Pulls, not try for maximum weight. Try to make the serratus really burn by the end of the set—and you'll be feeling it in your abdominals as well.



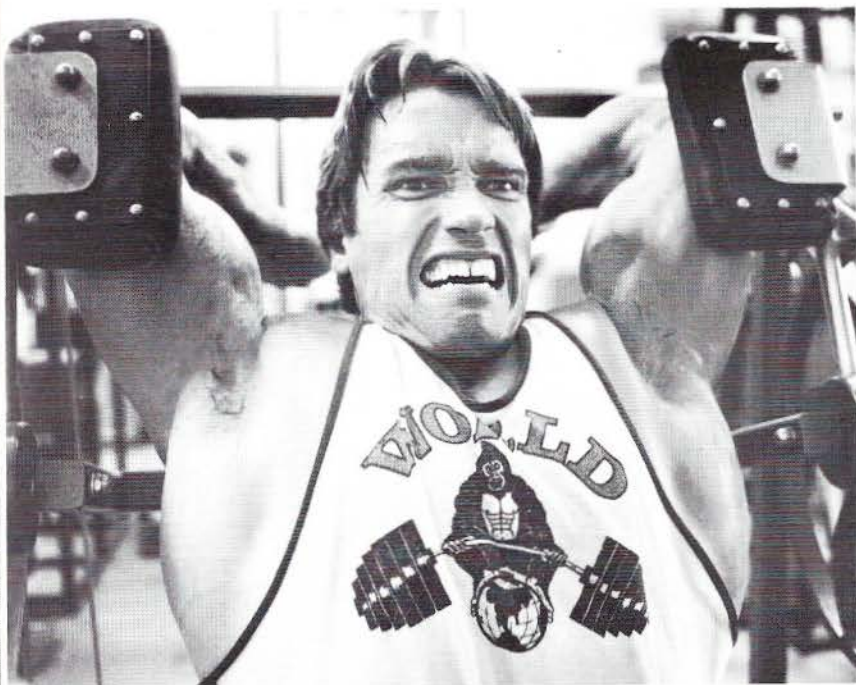
## ONE-ARM CABLE PULLS

**PURPOSE OF EXERCISE:** To work the serratus muscles.

**EXECUTION:** (1) Kneeling on the floor, grasp a handle attached to a cable and overhead pulley with an underhand grip. (2) Pulling with the lats, bring your elbow down to your knee. Consciously crunch the serratus and lats, getting a full contraction. Release and come slowly back to the starting position. The key to this exercise is absolute strictness. Do the movement slowly and under control, concentrating on feeling the contraction in the lats and serratus. Repeat using the other arm.



*Lee Apperson*



## MACHINE PULLOVERS

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(See page 379.)

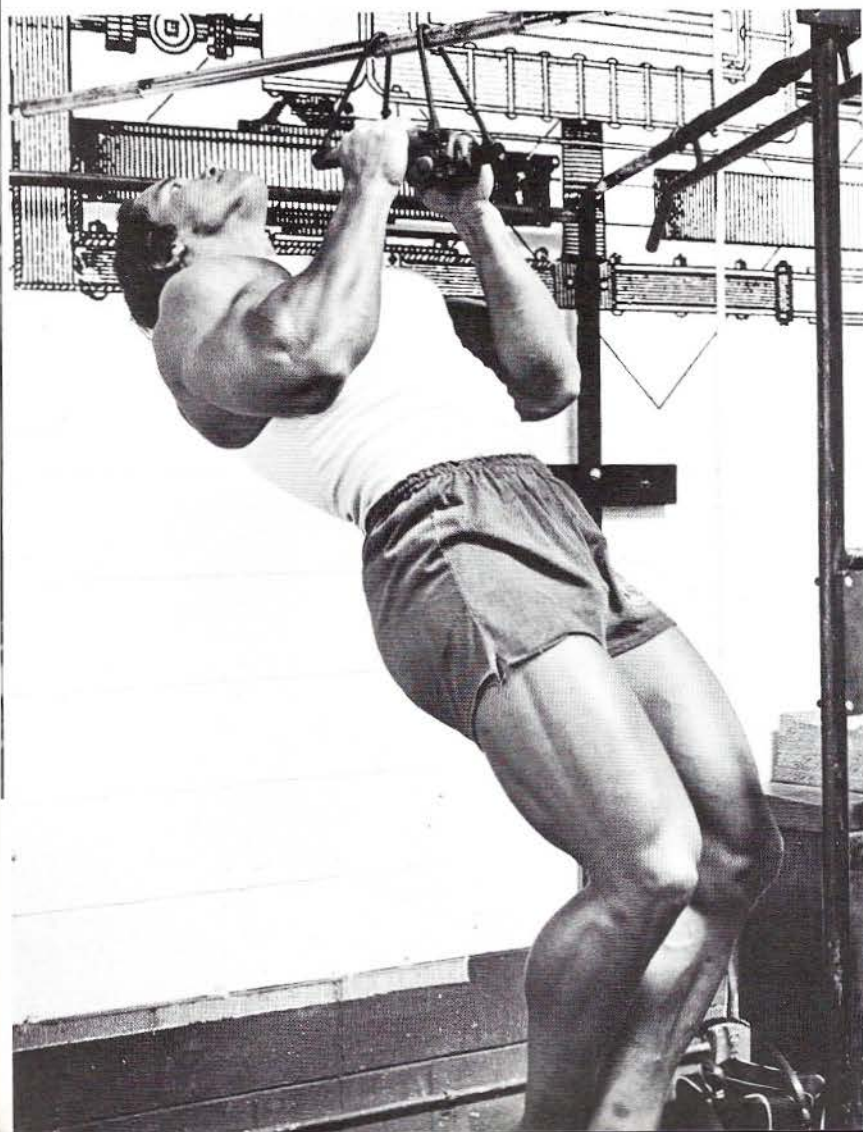
Machine Pullovers can be used to develop the serratus as well as the lats. Learn to feel when the serratus muscles are working the hardest, and adjust the position of your body and the movement of your elbows until you feel them contracting to the maximum.

## CLOSE-GRIP CHINS

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(See page 367.)

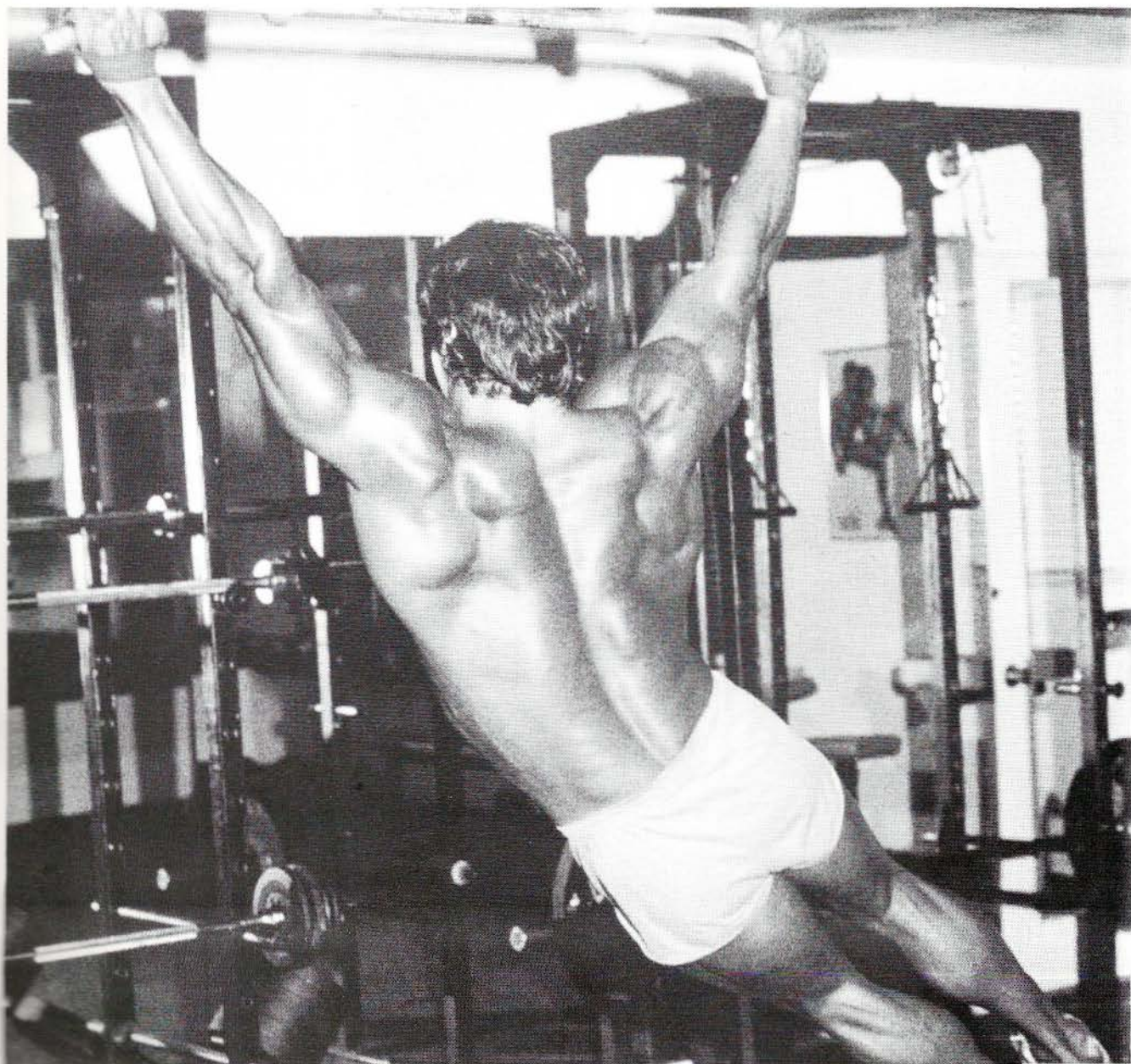
By concentrating on contracting the serratus during this movement, you can change it from a lat exercise to one that also involves the serratus to a great degree.



## HANGING SERRATUS CRUNCHES

**PURPOSE OF EXERCISE:** To isolate and develop the serratus.

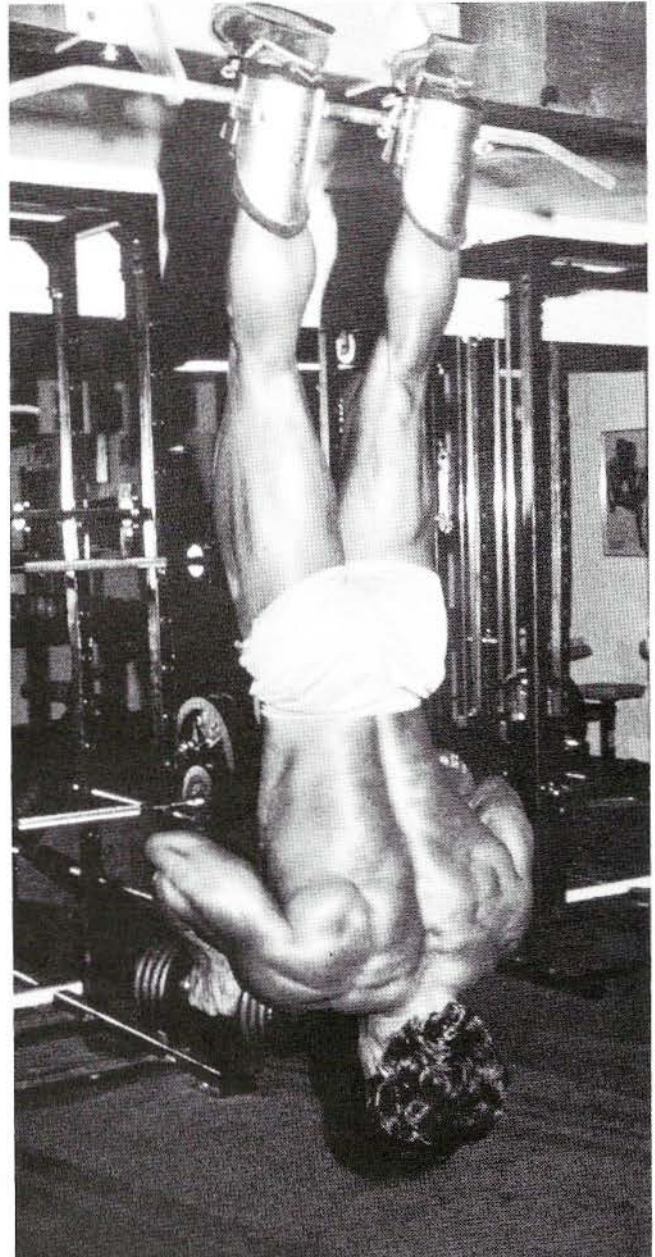
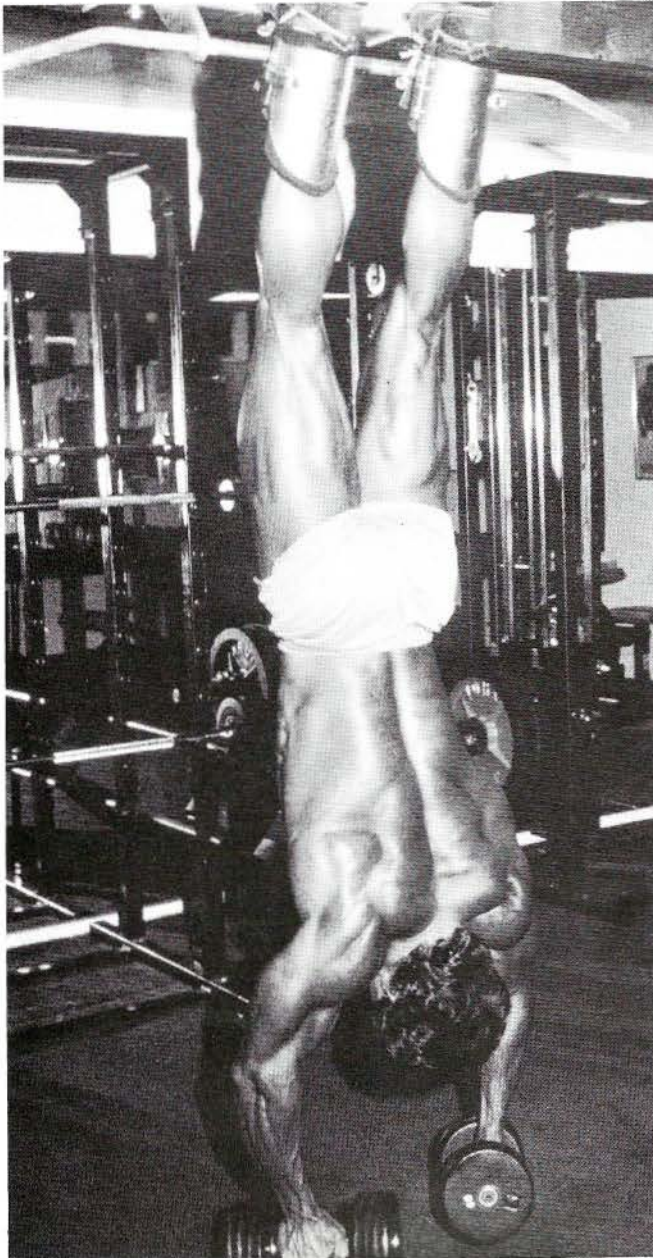
**EXECUTION:** (1) Hold on to a chinning bar with a palms-forward grip. (Using lifting straps will take some of the strain off your hands and wrists.) (2) Slowly swing your legs up and to one side, feeling the serratus muscles stretch fully on one side and contract to the maximum on the other. Slowly came back to the center, then repeat the movement to the other side. Concentrate on trying to get the maximum stretch possible and on executing the movement just with the serratus, isolating these muscles as much as possible. This exercise calls for complete control and strict technique. Bring your legs deliberately to each side; do not swing them back and forth like a pendulum.



## HANGING DUMBBELL ROWS

**PURPOSE OF EXERCISE:** An advanced exercise to develop the serratus.

**EXECUTION:** (1) Using a pair of gravity boots, hang upside down from a chinning bar. Take a dumbbell in each hand and let the weights hang down below you, feeling the serratus muscles stretch to their maximum. (2) Concentrating on using the serratus in isolation as much as possible, lift the dumbbells up in front of you. As you lift, your elbows come toward the front, not out to the side. Hold at the point of maximum serratus contraction, then lower the dumbbells slowly back to the starting position, feeling the serratus stretch once more. During the movement, be sure to keep your elbows and the dumbbells as close to your body as possible.



# The Back

## THE MUSCLES OF THE BACK

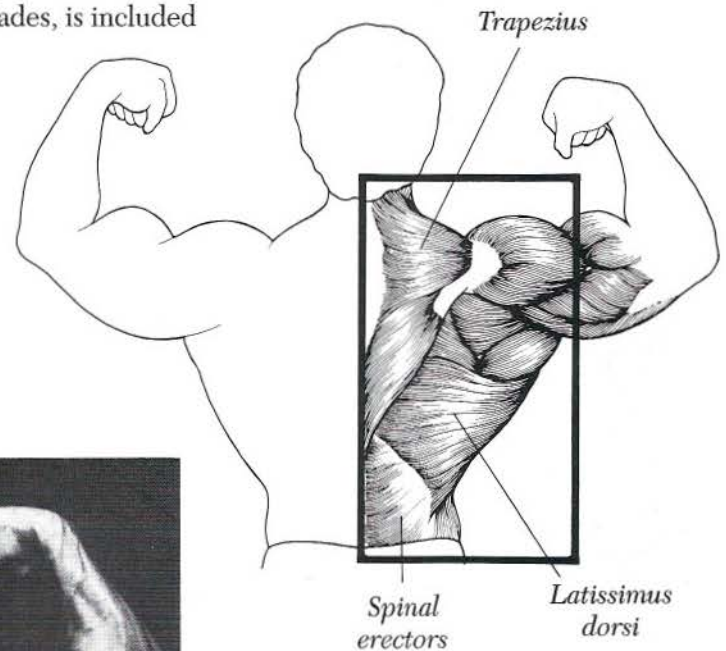
The **latissimus dorsi**, the large triangular muscles that extend from under the shoulders down to the small of the back on both sides. These are the largest muscles of the upper body.

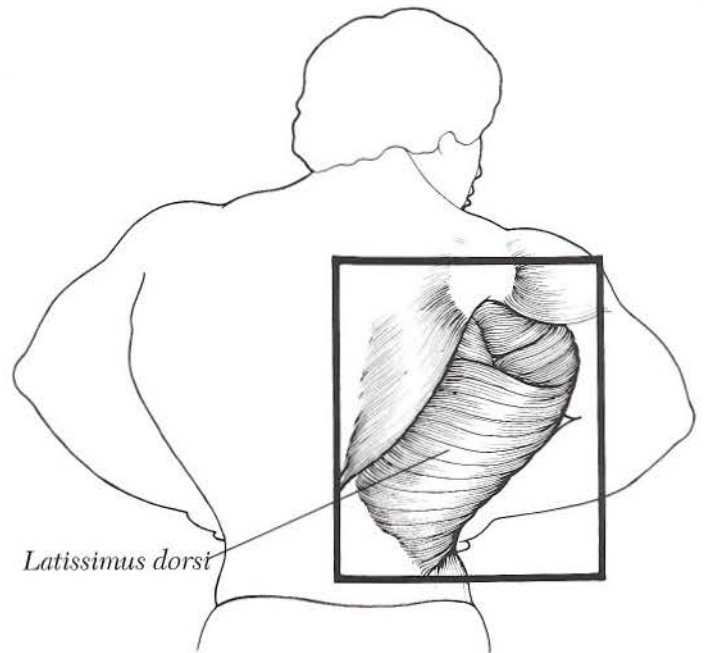
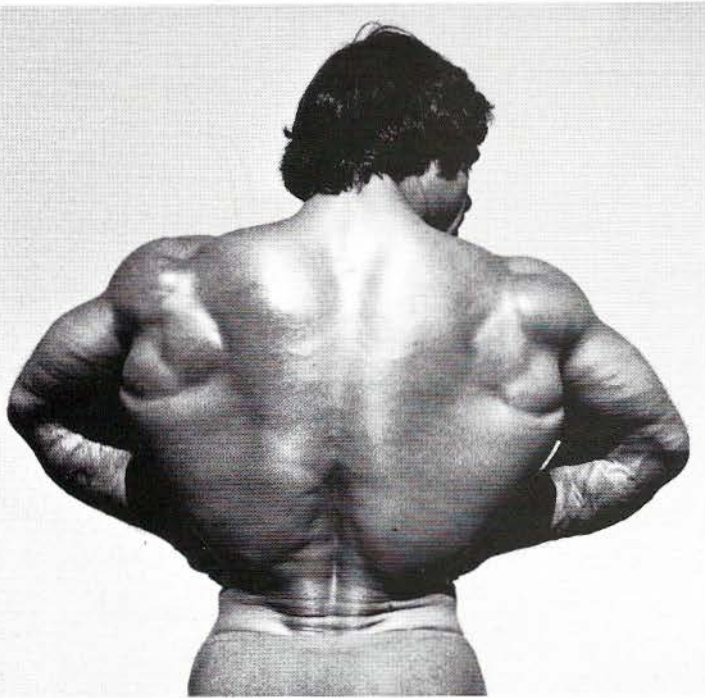
**BASIC FUNCTION:** To pull the shoulders downward and to the back

The **spinal erectors**, several muscles in the lower back that guard the nerve channels and help keep the spine erect. They are also the slowest muscles in the body to recuperate from heavy exercise.

**BASIC FUNCTION:** To hold the spine erect

Note: The **trapezius**, the flat, triangular muscle that extends out and down from the neck and down between the shoulder blades, is included in the shoulder section.





## TRAINING THE BACK

Developing a broad, thick, and massive back is absolutely necessary in the creation of a quality bodybuilding physique. Strong back muscles are essential for lifting and carrying heavy weight, and a highly muscular back has always been considered the measure of a man's strength.

"My back is a weapon I use to destroy my opponents," says two-time Mr. Olympia winner Franco Columbu. "I place my thumbs in the small of my back and begin to spread my lats. It doesn't all come on at once. First I flex them a few times and then begin to let them extend their widest. Each time the audience and the judges think that is all, I flex harder and they come out farther. And just when everyone is gasping with surprise that a human being could achieve such development, I lift my arms into a powerful double-biceps shot, displaying enormous muscularity, thickness, and separation. Only the very best of bodybuilders can stand beside me when I do this without being blown offstage by the shock wave."

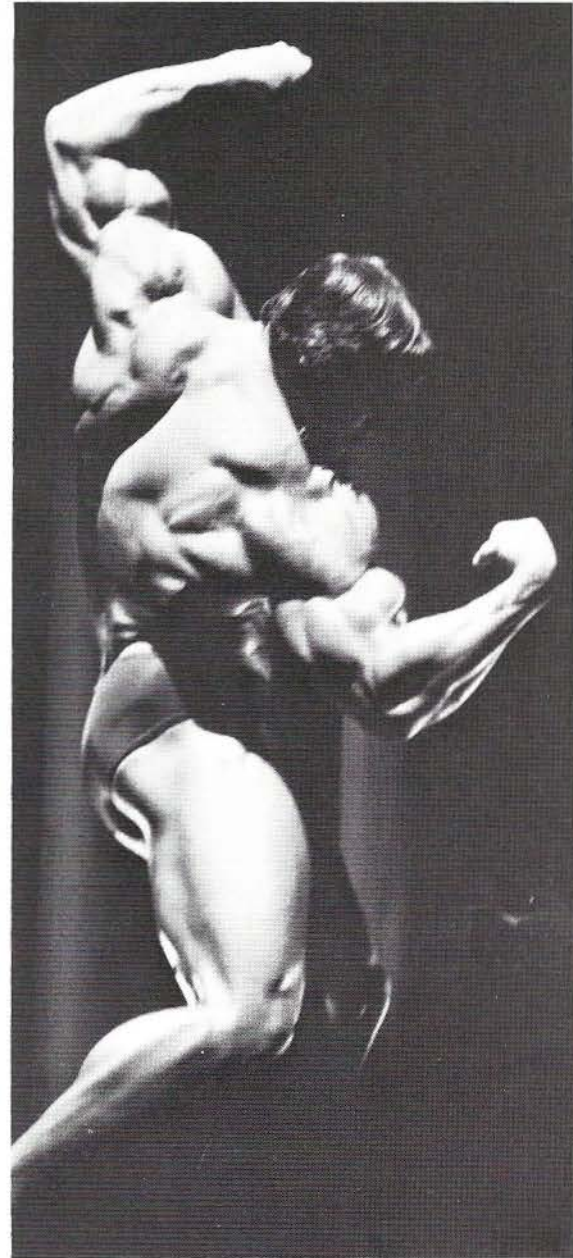
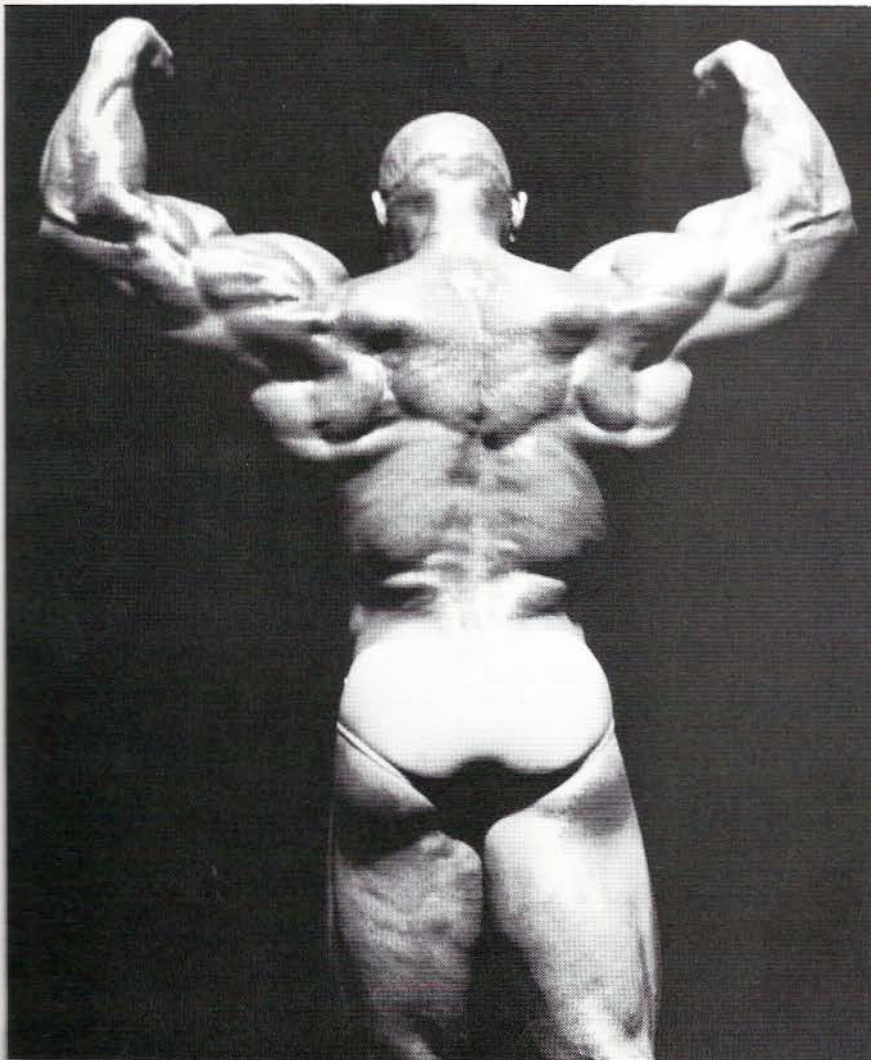
When a bodybuilding judge looks at a competitor's back, there are three things he is especially interested in: (1) the thickness and muscularity of the upper back; (2) the sweep and width of the lats; and (3) the definition and development of the lower back and lower lats.



## THE UPPER BACK

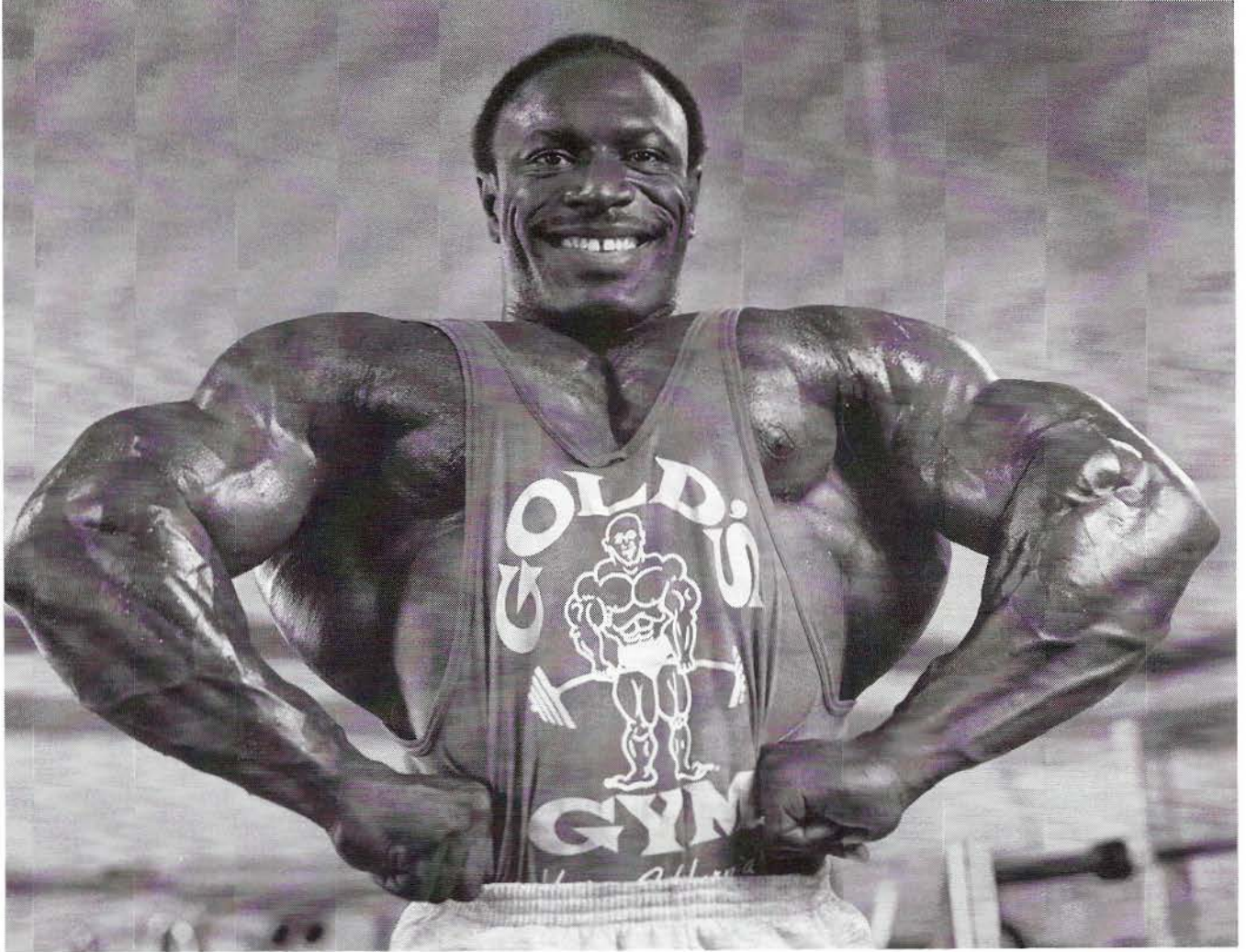
Upper back development involves more than just the back muscles themselves. When you hit a rear double-biceps pose, the traps and the muscles of the upper and middle back are dominant, but all the muscles from elbow to elbow play their part, including the biceps and the rear delts.

The central muscle of the upper back is the trapezius, an angular muscle that extends down to the shoulders from either side of the neck, then comes together over the spine about halfway down the back. In a highly developed back the traps will be full and massive, balancing off the lats on either side and clearly separated from them in back poses. Exercises that specifically work the traps include anything which involves lifting the shoulders—Shrugs and Upright Rows, primarily, but also Rowing in certain positions and some kinds of Presses—and are covered in the Trapezius training program (beginning on page 295).



*In a twisting back shot, you need a thick and muscular upper back to balance off the development of the shoulders, biceps, triceps, and forearms.*

*Sergio Oliva is a perfect example of how impressive a thick upper back can be.*



*Lee Haney*

## THE LATS

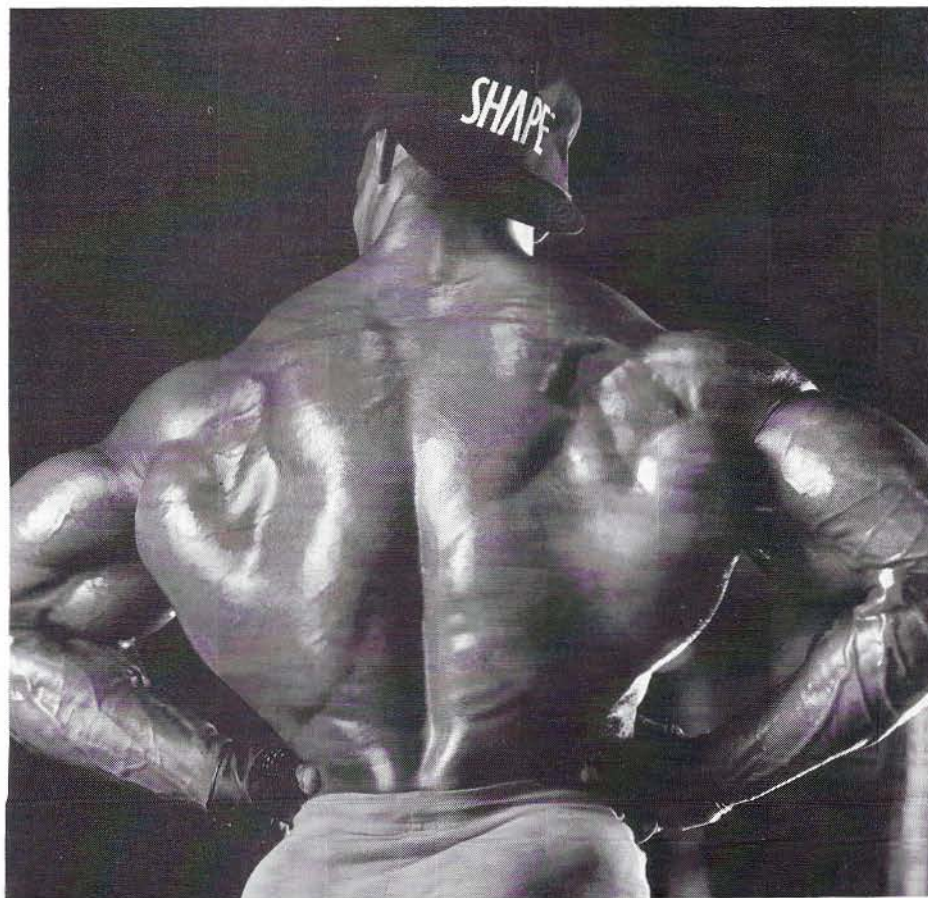
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The most impressive area of a fully developed back is the sweep of the lats. It is this muscular width that declares to the world that you are really a bodybuilder. And it is the lats that are likely to first attract the judges' attention, even when standing relaxed in the first round. The traditional V shape of the bodybuilder—wide shoulders descending to a firm, tight waistline—is dependent on the right kind of lat development. A friend of mine once told me that when he did a lat shot onstage, he imagined his lats were so wide that the audience would think the curtains were closing!

The width of the lats is developed by any kind of pulldown movement, such as Cable Pulldowns or Chins. The precise way that the pulldown movement affects the lats is determined by the angle you are working at, how wide apart your arms are, and whether you are pulling down in front or to the rear. So I have included a variety of close-grip and wide-grip movements as well as front and rear Chins and Pulldowns in the back program to encourage total lat development.

The lats are also evident from the front view, complementing the chest by widening the torso, with the line of the back muscles acting as a frame for the pectorals. The lats contribute to any number of poses, including front and rear double-biceps and a variety of twisting shots.

*Lee Haney, Ronnie Coleman, and Robby Robinson are three great bodybuilders known for the V shape of their torsos—from the back and from the front—which is the result of outstanding lat development.*



*Ronnie Coleman*



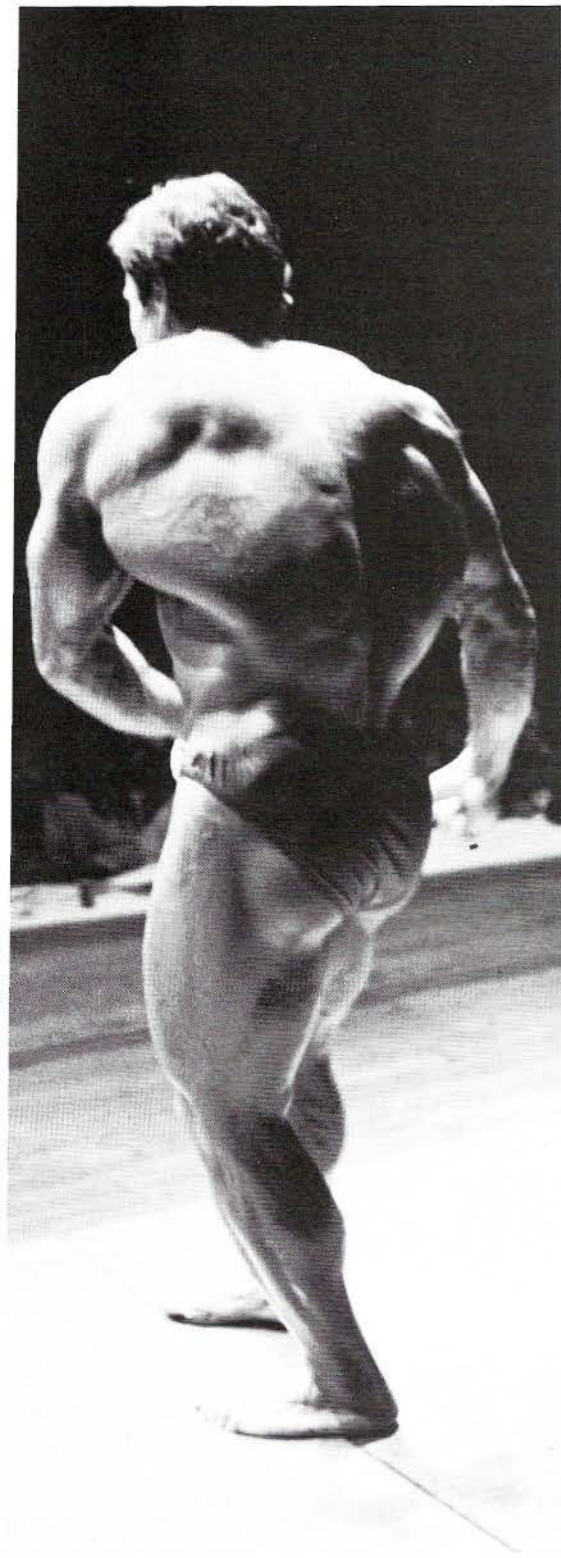
*Robby Robinson*

## LOWER LATS

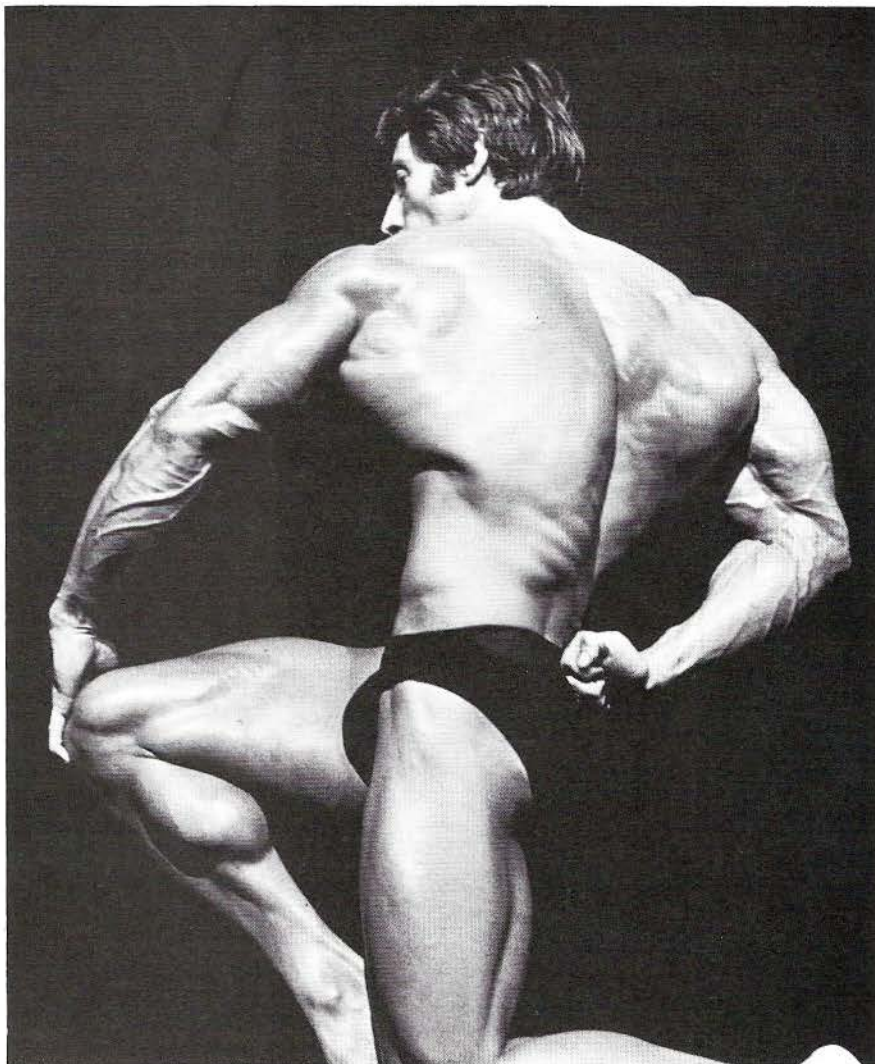
When you see a Franco Columbu or a Frank Zane do a twisting back shot you can't help being impressed by the way their lower lats sweep all the way down and insert into the waistline. This gives the lats a terrifically aesthetic look.

To develop the lower lats, you need to do your back exercises with a very narrow grip—Close-Grip Chins and Close-Grip Pulldowns, for example—as well as One-Arm Cable Rows and One-Arm Dumbbell Rows. It is also important to do stretches between sets, grabbing hold of something with one hand at a time and really pulling until you can feel the lower lat almost down to the hip.

Well-developed lower lats will also help you in rear back poses because they come down at an angle and form a kind of frame that shows off a well-striated lower back.



*Franco Columbu*



*Frank Zane*

## MIDDLE BACK THICKNESS

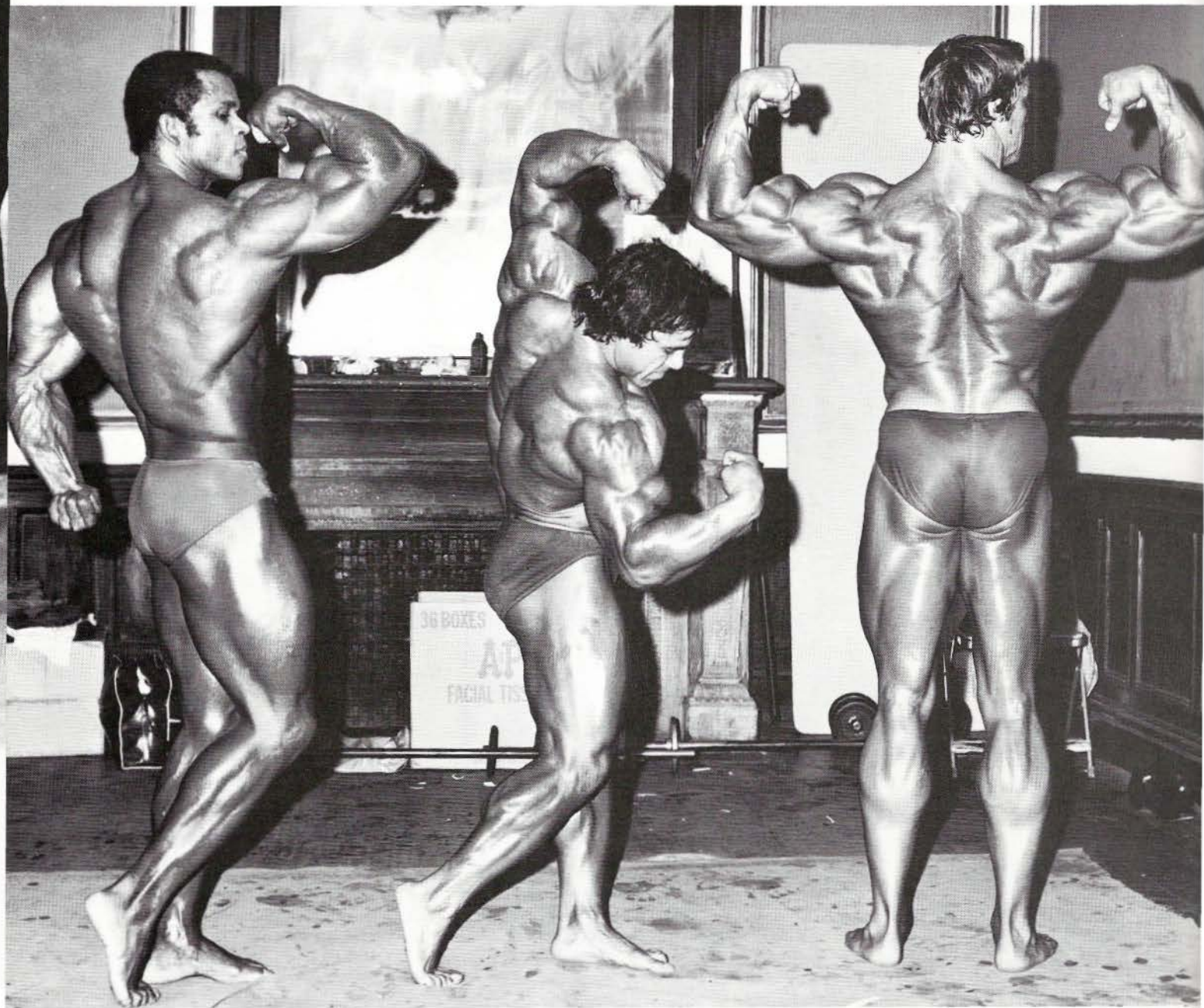
Not only should the lats be wide and sweeping, but they should also look thick and powerful where they come together in the middle back. Many bodybuilders have wide backs with sweeping lats but fail to look their best in back poses because the center of the back lacks that strong, thick look that a really great bodybuilder has to have. When you look at Dorian Yates, for example, you are immediately struck by the solid thickness of his back muscles. Dorian's back shows thickness even when he is standing relaxed.



*Chris Cormier*

*Flex Wheeler is credited with having incredibly good genetics, but the thickness and muscularity of his back indicate just how hard he has trained to realize his potential.*

Thickness in the back is achieved primarily by doing rowing exercises—Barbell Rows, Cable Rows, T-Bar Rows, and so forth. However, if you want to target the middle back, do rowing that gives you a longer range of motion so that you can fully contract that area—Cable Rows with separate cables or a wide grip, One-Arm Rows, or Barbell Rows with a wider grip.



*The back can be posed in a number of different ways, but as you can see, total back development is necessary to make each one effective. Serge Nubret, Franco, and I all show thick upper and lower back development, lots of lat width, and good muscularity.*

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## LOWER BACK

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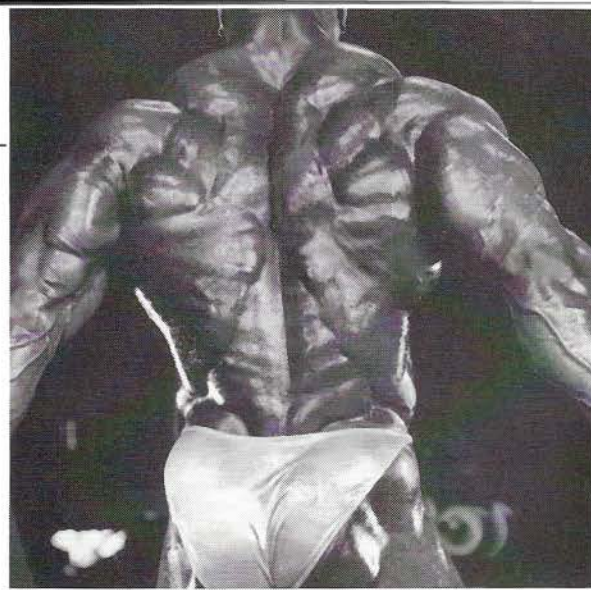
Many top bodybuilders have a great upper back but have never developed the lower back to the degree that they should. A really great lower back has two columns of muscle that stand out on either side of the spine, an indication of years of heavy Deadlifts, Bent-Over Rows, and other power exercises. When you see Boyer Coe onstage you notice the tremendous sweep of his lats, but when he stands next to someone like Danny Padilla, with his thick and powerful lower back, you can see he is weak in this particular area.

A truly Herculean physique needs that lower back development and thickness. Look at a Sergio Oliva, Franco Columbu, Dorian Yates, or Nasser El Sonbaty and you will see magnificent lower back development. Frank Zane at one time was very weak in the lower back. I recommended to him that he begin doing Bent-Over Rows, starting out with a relatively low weight and gradually increasing his poundages as his back developed. Zane is such a dedicated bodybuilder that within a relatively short time his lower back development increased enormously, and within a year you could see striations across the lower back.

Shawn Ray, although he had already won pro titles, eventually found himself threatened by the extreme back development of a number of the increasingly bigger bodybuilders against whom he was competing. Instead of giving up, or mindlessly just trying to gain additional overall mass, Shawn instead concentrated on back development, particularly on back width, to the point where competitors who were often fifty pounds bigger than he was couldn't blow him off the stage in rear lat spread comparisons.

Because we tend to store a disproportionate amount of fat around the waistline, leanness and definition in the lower back are visible proof that a bodybuilder has worked hard to get in shape. When he hits a back double-biceps shot and the judges see a clearly defined, sculpted lower back they know instantly that he has done an enormous amount of work, not just for the lats but for the entire back.

I have included exercises for the lower back right from the beginning so that bodybuilders following my training program will not find themselves with a weak lower back a year or so down the line. Heavy power exercises like Deadlifts are ideal because they not only develop the lower back but also strengthen it; you are able to do a variety of other exercises like Bent-Over Rows without having your lower back give out before your upper back.



*Three of the top bodybuilders, Chris Cormier, Dorian Yates, and Flex Wheeler, demonstrate three different ways to display the muscularity of the back. Note the "Christmas tree" that can be created by the striations and muscularity along the center of the back.*

## **BACK MUSCLE FUNCTIONS**

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The lats have two basic functions as far as bodybuilding is concerned: They pull the shoulder back (a rowing motion) and pull the shoulders down (a pulldown or chinning motion). A common mistake when doing these movements is to use too much biceps effort and not enough back, or to involve the muscles of the lower back in a swaying motion instead of making the lats do most of the work. You have to make an effort when training lats to isolate them so that only these muscles are involved in the movement.

The lower back muscles function differently from most other muscles in the body. They are stabilizers, holding the body steady rather than constantly contracting and relaxing through a full range of motion like, say, the biceps. Therefore, when you do full-range exercises like Hyperextensions or Straight-Leg Deadlifts you put so much strain on the lower back that it can take up to a week to fully recuperate. This means that total-effort lower back training using power exercises and maximum weights is necessary only once a week. On the other days, do your sets with nonpower exercises and less than maximum poundages.

## **DESIGNING A BACK PROGRAM**

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To plan a comprehensive program of back training you need to consider how each of the important back muscles functions so that you include exercises for each vital area. If you don't properly appreciate the complexity of the back and how many different movements it takes to get full back development, you will end up with serious weak points in this part of your physique.

For example, it doesn't do any good to do 5 sets of Chins to the front, 5 sets to the back, 5 sets of Wide-Grip Pulldowns, and 5 sets of Close-Grip Pulldowns and then figure you have worked your back adequately. Every one of those exercises works the pulldown function of the back, which develops the width of the lats, but a complete back program also has to develop the thickness of the back, the lower lats, and the strength and definition of the lower back.

The Basic Training Program starts out with simple exercises like Deadlifts and Chins. Later, to Deadlifts you'll add other back exercises such as Hyperextensions and Good Mornings. Similarly, chinning movements can be supplemented by various kinds of pulldown exercises, two-handed rowing exercises can be replaced occasionally by One-Arm Rows, and so forth. In the Advanced and Competition Training Programs, I have included an even greater variety of back exercises, so that by the time you



are ready to compete you will be doing several movements for each of the important areas of the back.

## **WEAK POINT TRAINING**

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The most common problem of today's competition bodybuilders is incomplete back development. One reason for this may simply be that they do not get to study their backs as clearly as they can a front view, and so are not as motivated to train their backs as diligently as their chests or arms. One other reason, however, is poor back training technique. Back training is more subtle and more difficult than most people realize. For one thing, the basic function of the lats and other back muscles is to pull the shoulder girdle down and back. Many bodybuilders don't understand this and get confused as to which muscles they are supposed to be using. If they lurch back during the exercises and use the lower back or shoulders themselves, then the back muscles never get to work through a full range of motion.

Early in life you learned to coordinate your muscular efforts to make lifting easier. You learned to bend your knees when lifting something, to take as much strain as possible off the back muscles and distribute it more evenly to allow adjacent muscles to help. This is the opposite of what you try to accomplish as a bodybuilder. The trick to effective back training is to learn to isolate the various areas of the back, then make it harder on each individual area of the back instead of easier.

I have watched bodybuilders do Bent-Over Rows with an impossible amount of weight, so that they had to heave the bar into the air using every muscle in the body. This kind of cheating will never build a quality back. When doing Seated Rows, many bodybuilders add weight to the stack, as if lifting heavy weights is all that matters and then sway way back, using too much lower back, in an effort to finish off the movement.

Also, many bodybuilders allow the biceps to do too much pulling when they are doing pulldown or rowing exercises, which results in some powerful arm development but doesn't do much for the back. They need to concentrate on using the arms simply as a link between the back and the bar or handle, and not as a primary means of lifting the weight.

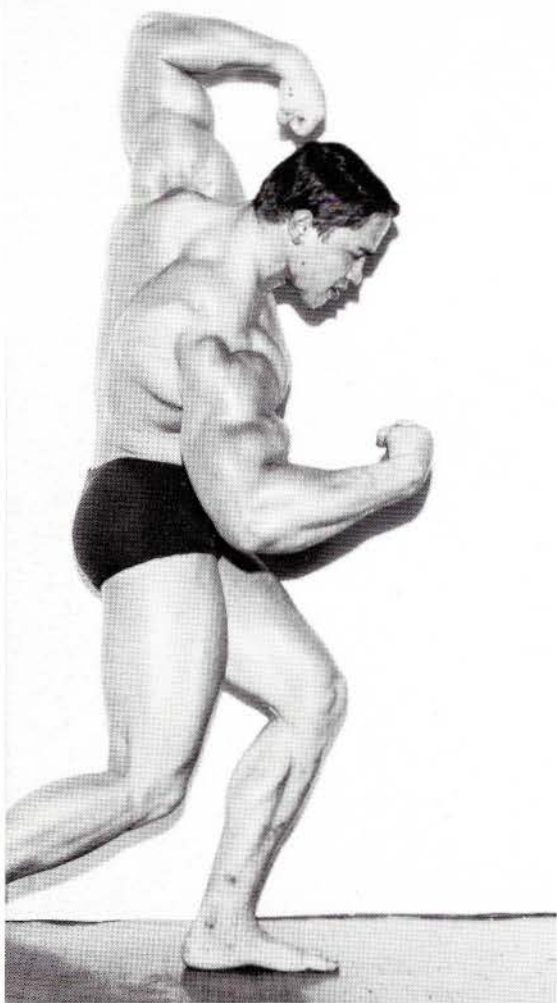
But even if you learn absolutely correct back training technique, the back consists of a number of complex and interrelated muscles and they do not necessarily all develop at the same rate in all individuals. As you become more advanced in bodybuilding and you begin to see which areas of the back have responded more quickly than others, you will want to alter your program to include more work for the muscles that are lagging behind.

## Outer Back Development

The outer back responds to Rows done with a narrow grip because with a narrow grip the handles or bar allows you to go back no farther than the front of the torso and shortens the range of motion. One of my favorite outer back exercises is T-Bar Rows, done as strictly as possible.

## Upper Back Development

The primary exercise I recommend for developing the upper back is heavy Bent-Over Barbell Rows. Additionally, you can do Seated Wide-Grip Rows, using a long bar instead of handles. If one side of the upper back is more developed than the other, try doing One-Arm Dumbbell Rows to work each side in isolation.



*What a difference three years can make! At age eighteen, I realized I needed more upper back thickness . . .*

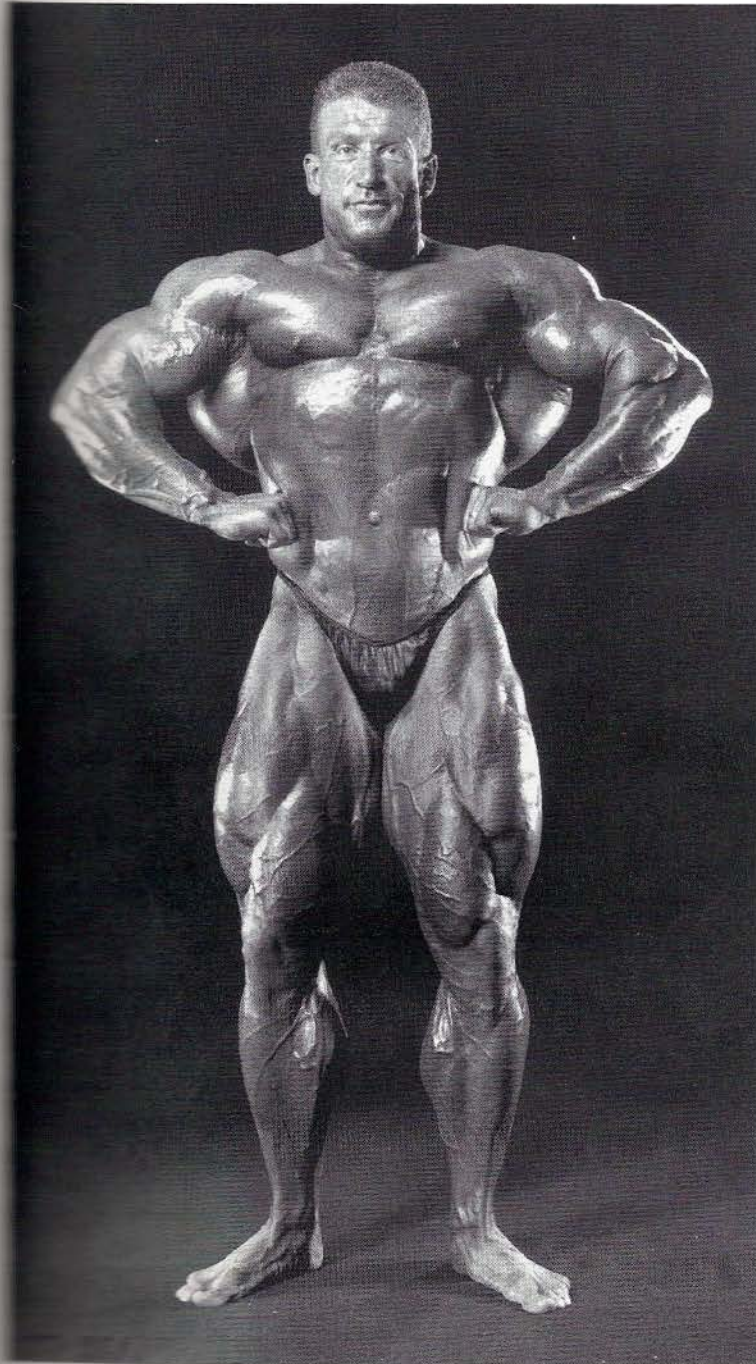
*. . . by age twenty-one, after concentrated weak point training, this area had become my strong point.*



## Lat Width

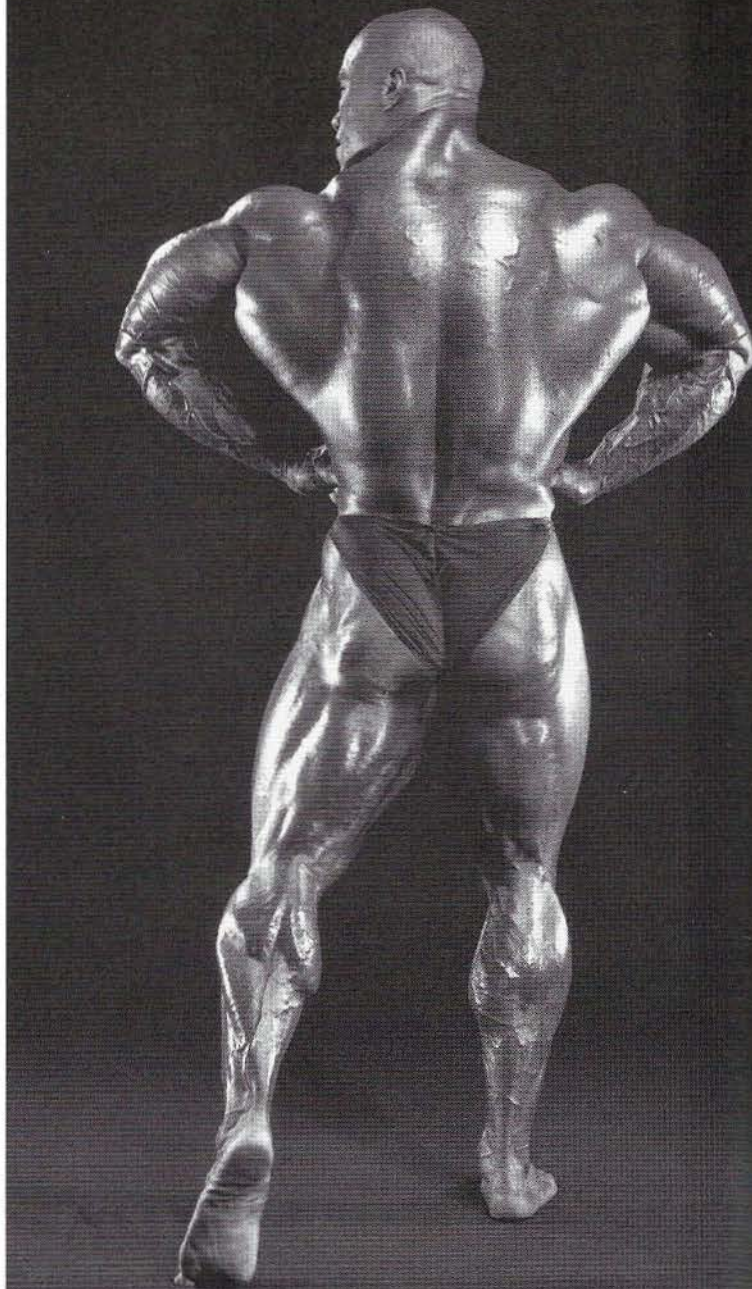
The lats are extremely important for both front and back poses. Dorian Yates and Kevin Levrone have truly Olympian lats, and they look good no matter what pose they hit or what angle they are viewed from. The sweep and width of the lats is accentuated by doing exercises that pull the lats out to the side as far as possible. Wide-Grip Chins and Wide-Grip Pulldowns are the primary exercises for achieving this.

*Dorian Yates*





*Kevin Levrone*



## Lower Lat Development

The sweep of the lats is less effective if the lats do not extend all the way down to the waistline. Exercises to help you train the lower lats include One-Arm Cable Rows and close-grip movements such as Close-Grip Chins and Close-Grip Pulldowns.

## Middle Back Thickness

The middle back receives the greatest amount of work when you extend the range of motion as far as possible. Therefore, Seated Rows done with separate handles, allowing you to bring your elbows farther back, put more stress on the middle back. Rows done with a fairly wide grip or T-Bar Rows done on a machine allowing a wider grip create the same effect.

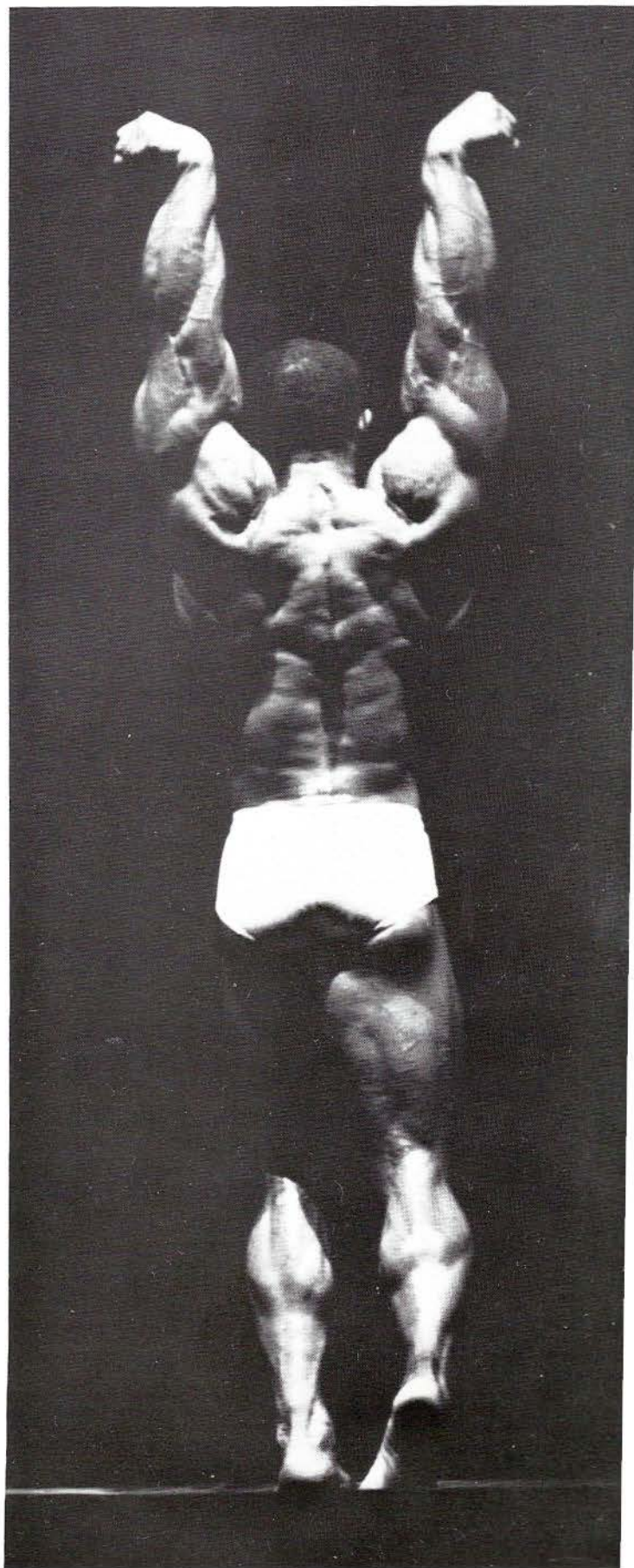
## Lower Back Development

Many bodybuilders forget that the lower back is an essential element in making any back shot really effective. Heavy Deadlifts force the lower back to work to the maximum. But you can also use exercises like Good Mornings and Hyperextensions to isolate and develop this area.

## Overall Back Development

Remember that other muscle groups contribute to your back poses, especially straight-on back shots like the rear double-biceps and rear lat spread. Therefore, you need to be concerned with muscles like the rear deltoids, the trapezius, and even the biceps and triceps. Everything ties in with everything else, and judges may watch you pose and give you low marks for the back when in reality it was some other aspect of your development that was at fault.

*Sergio Oliva displays perfect middle and lower back thickness.*



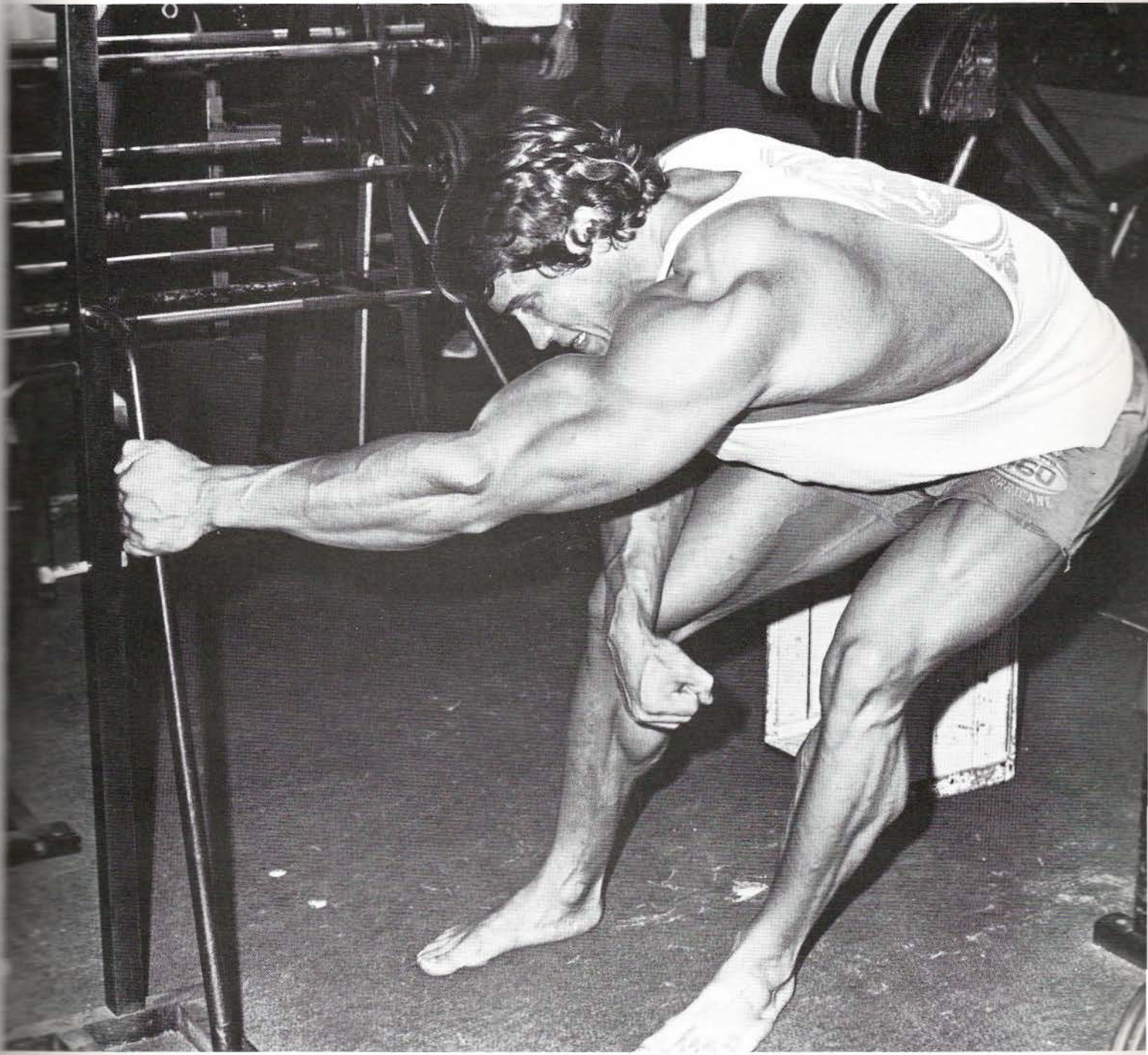
## STRETCHING AND FLEXING

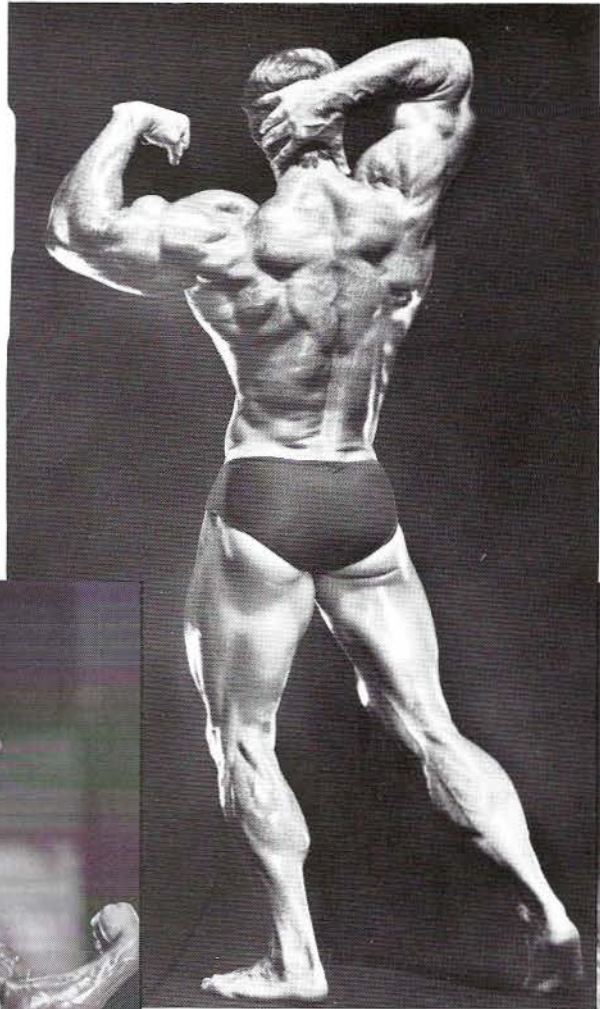
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I am a firm believer in flexing and posing the muscles between each set. This is especially true for the back. You have to keep posing and flexing your back in order to gain full control over the muscles needed to show it off effectively in competition. Continually stretching the lats also helps achieve that long sweep and low tie-in at the waistline that make the champions' backs so impressive.

Flex the back or hit poses like a back double-biceps shot between sets of Rows and Pullovers. If you pose while your training partner is doing his set, you will keep the muscles pumped and warm and ready to really hit the next set.

When you are training lats with Chins and Pulldowns, between sets grab hold of something solid and really stretch them out one at a time as pictured here, or both at once. Also, all the serratus exercises (beginning on page 340) can be used to stretch the lats. This lengthens the muscles, helps you get a fuller range of motion and a deeper contraction, and develops the lower area of the lats as they extend down to the waist.





*Ken Waller*



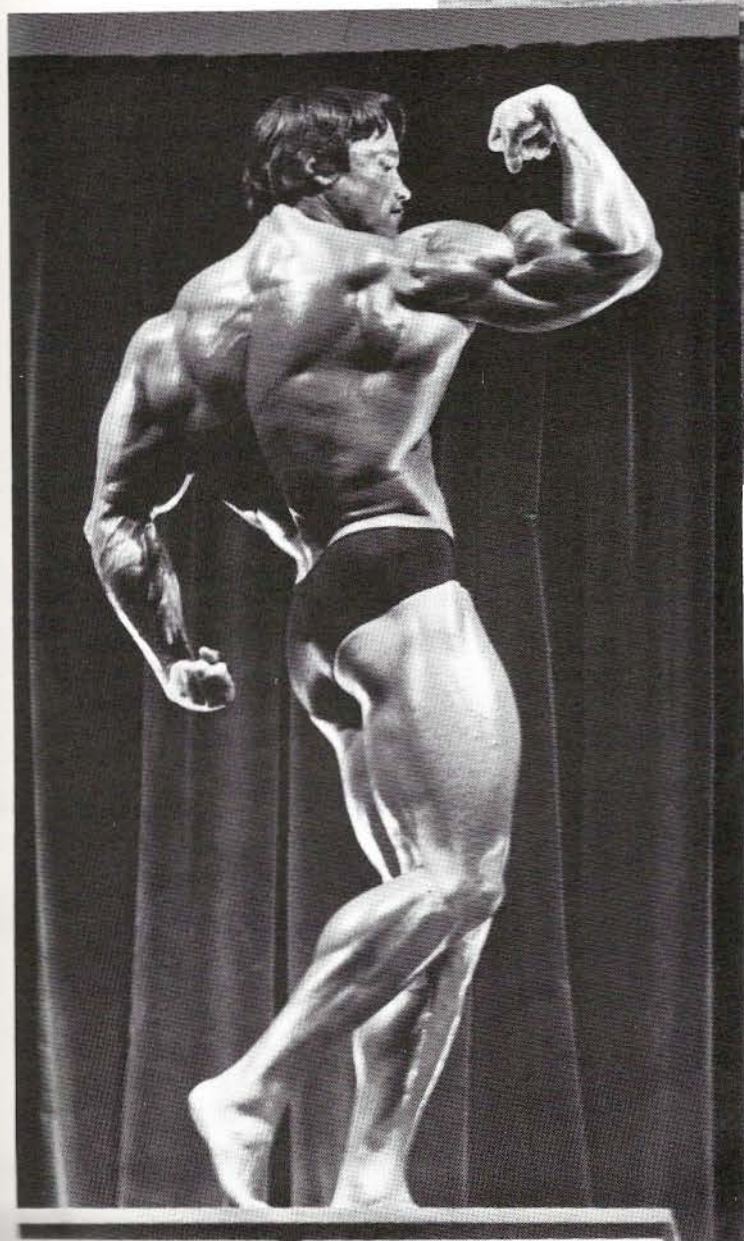
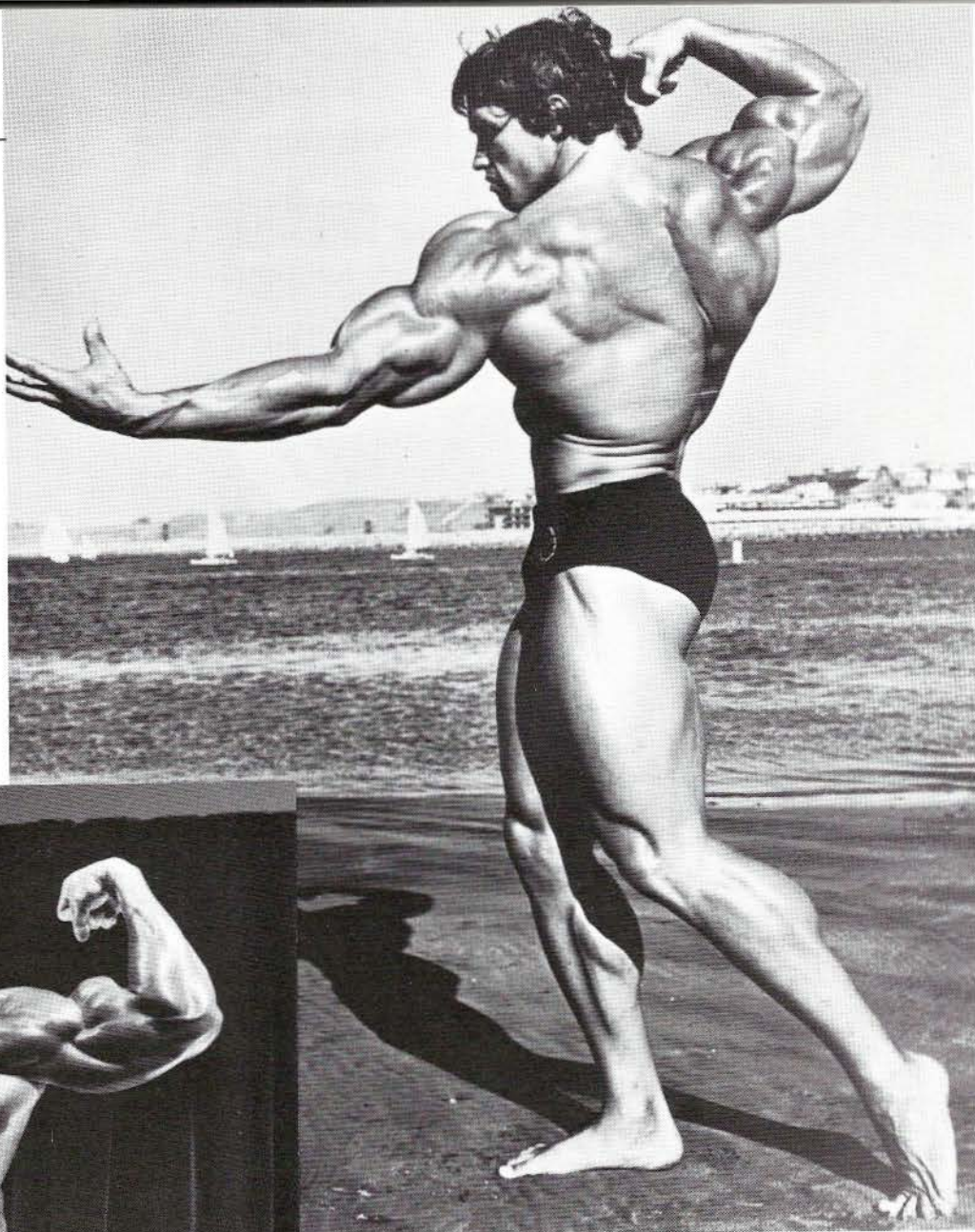
*Shawn Ray*



*Dorian Yates*



*This series of poses demonstrates the number of different ways the complex muscle system of the back can be presented, and why it is necessary for the aspiring bodybuilder to achieve total back development in order to ensure success.*





*Franco Columbu*

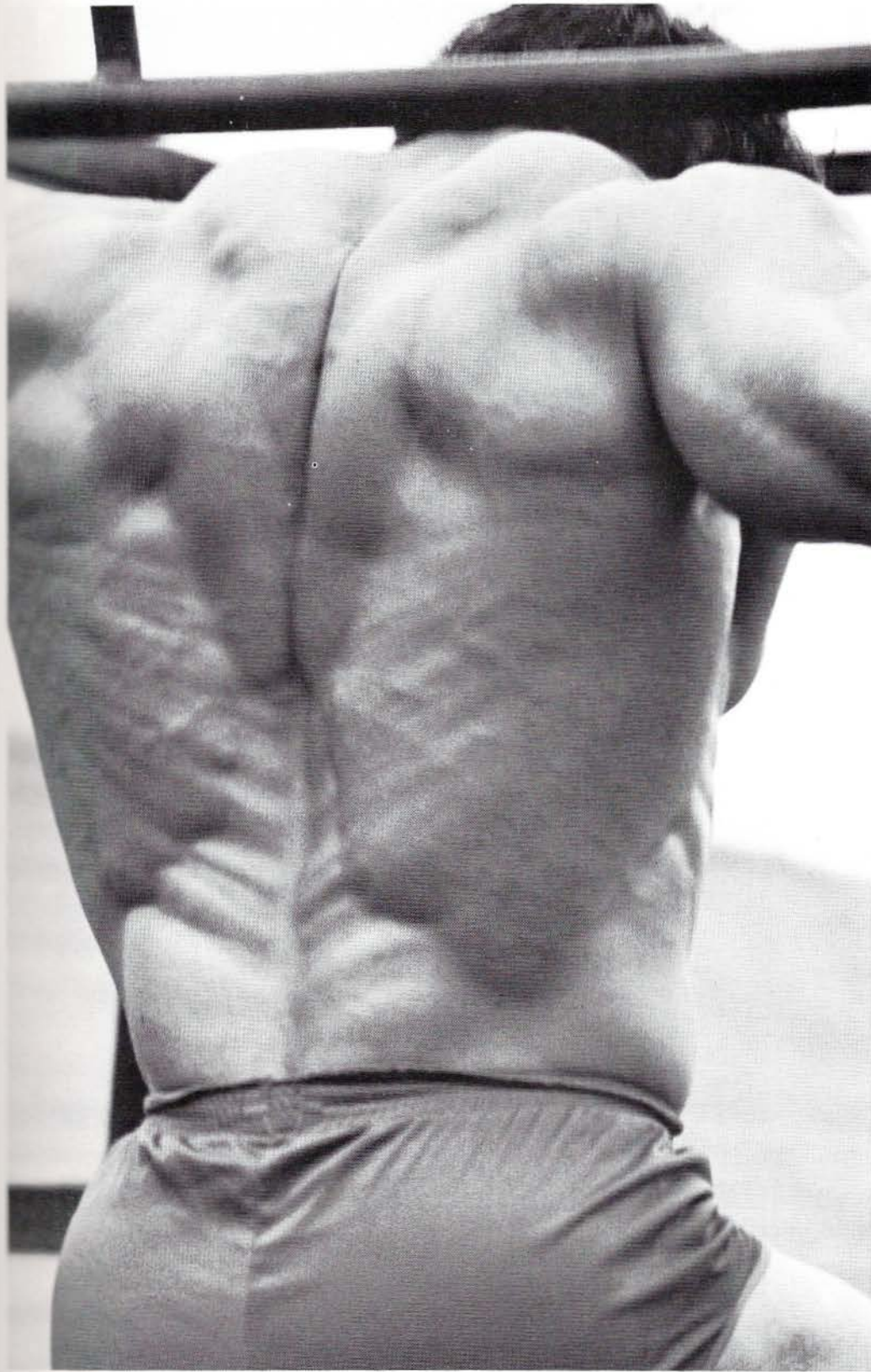
## Back Exercises

### WIDE-GRIP CHINS BEHIND THE NECK

**PURPOSE OF EXERCISE:** To widen the upper back and create a full sweep in the lats.

Wide-Grip Chins widen the lats and develop the entire shoulder girdle. This exercise is primarily for the upper and outer regions of the lats and also spreads the scapula, making it easier to flare the lats.

**EXECUTION:** (1) Take hold of the chinning bar with an overhand grip, hands as wide apart as practicable. (2) Hang from the bar, then pull yourself up so that the back of your neck touches the bar. This is a strict exercise, so try not to help your back by kicking up with the legs. At the top of the movement hold for a brief moment, then lower yourself slowly back to the starting position. Chins involve your entire body weight, so some beginners may not be able to do the requisite number of repetitions for each set. I recommend they do what I used to do: Instead of trying to do 5 sets of 10 reps each, do as many reps as possible at a time—maybe only 3 or 4 until a total of 50 reps is achieved. The stronger you get, the fewer sets it will take to get to 50 reps and the shorter the time it will take to do it.





## **WIDE-GRIP CHINS TO THE FRONT (OPTIONAL)**

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**PURPOSE OF EXERCISE:** To widen the upper back and create a full sweep in the lats.

Chinning yourself so that you touch your chest to the bar rather than the back of the neck gives you a slightly longer range of motion and is less strict, allowing you to cheat slightly so you can continue your reps even after you are tired.

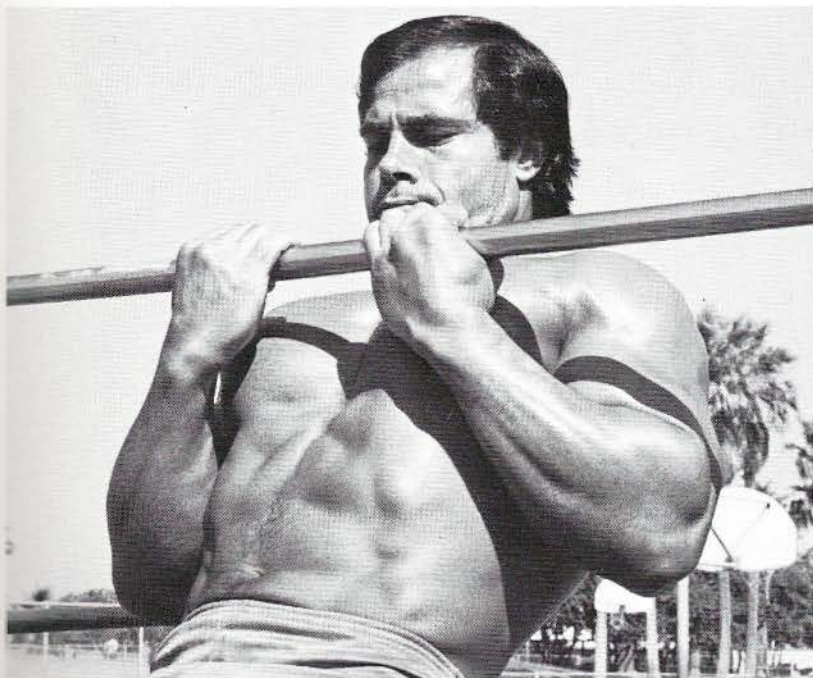
**EXECUTION:** (1) Take hold of the chinning bar with an overhand grip, hands as wide apart as practicable. (2) Hang from the bar, then pull yourself up, trying to touch the top of your chest to the bar. At the top of the movement, hold for a brief moment, then lower yourself back to the starting position.

## CLOSE-GRIP CHINS

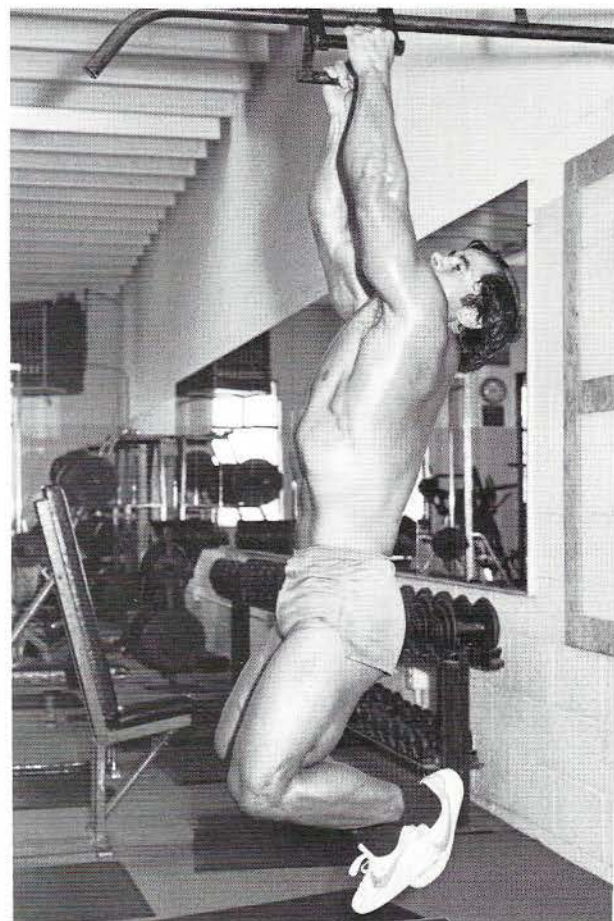
**PURPOSE OF EXERCISE:** To work the back muscles, widen the lower lats, and develop the serratus.

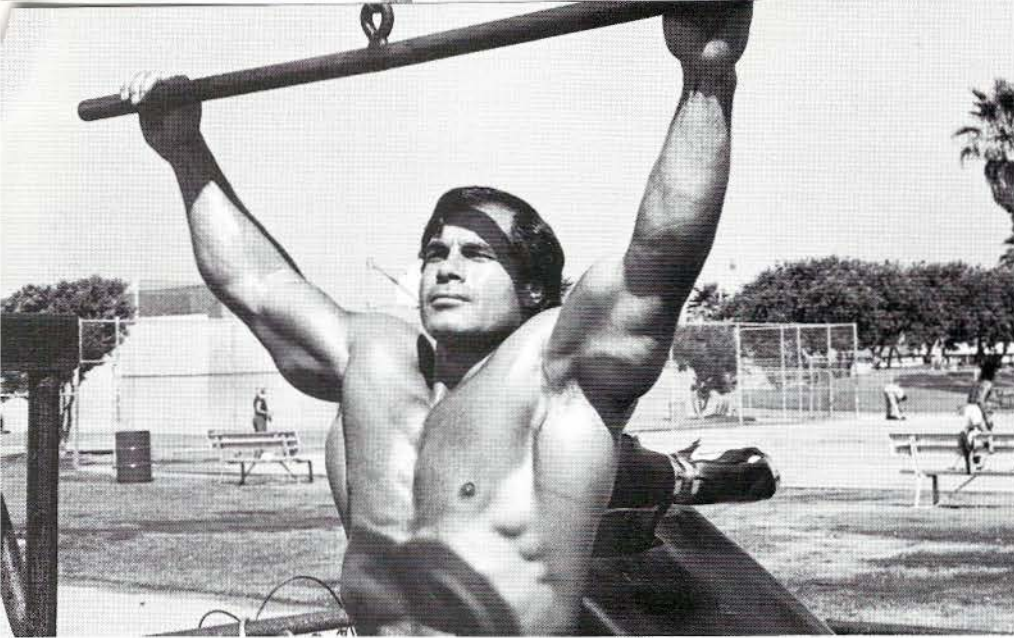
This exercise is great for widening and lengthening the appearance of the lats. It also develops the serratus anterior, those little fingers of muscle that lie under the outside of the pecs, which add so much to front poses such as double-biceps or any other overhead pose.

**EXECUTION:** (1) Take hold of the chinning bar (or close-grip triangle device found in many gyms) with your hands close together, one hand on either side of the bar. Hang below the bar. (2) Then pull yourself up while leaning your head back slightly so that the chest touches (or nearly touches) your hands; lower the body slowly for a full stretch of the lats. Work for the fullest range of motion.



*You can also do Close-Grip Chins by pulling on a straight bar instead of a double handle.*





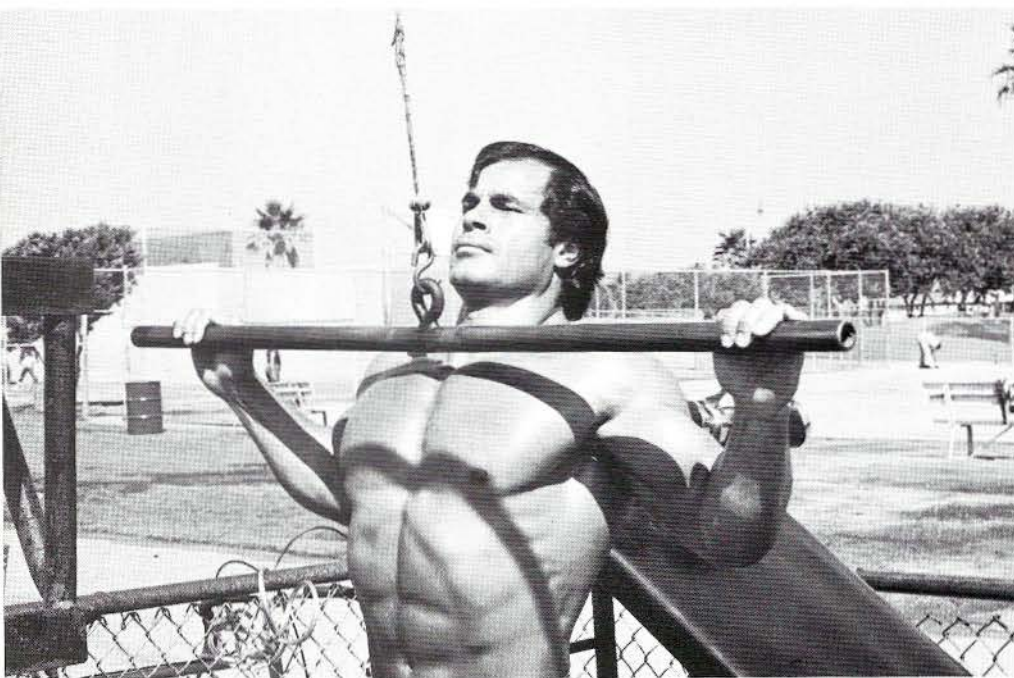
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## LAT MACHINE PULLDOWNS

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**PURPOSE OF EXERCISE:** To widen the upper lats.

This exercise allows you to do Chins with less than your total body weight, so you can do a lot of extra reps for the upper back if you feel you need more work in that area (but it should not replace Chins as the standard exercise for widening the upper lats).



**EXECUTION:** (1) Using a long bar, grasp it with a wide, overhand grip and sit on the seat with your knees hooked under the support. (2) Pull the bar down smoothly until it touches the top of your chest, making the upper back do the work and not swaying back to involve the lower back. Release, extend the arms again, and feel the lats fully stretch.

**VARIATION:** Try doing Lat Pull-downs behind the neck instead of in front.

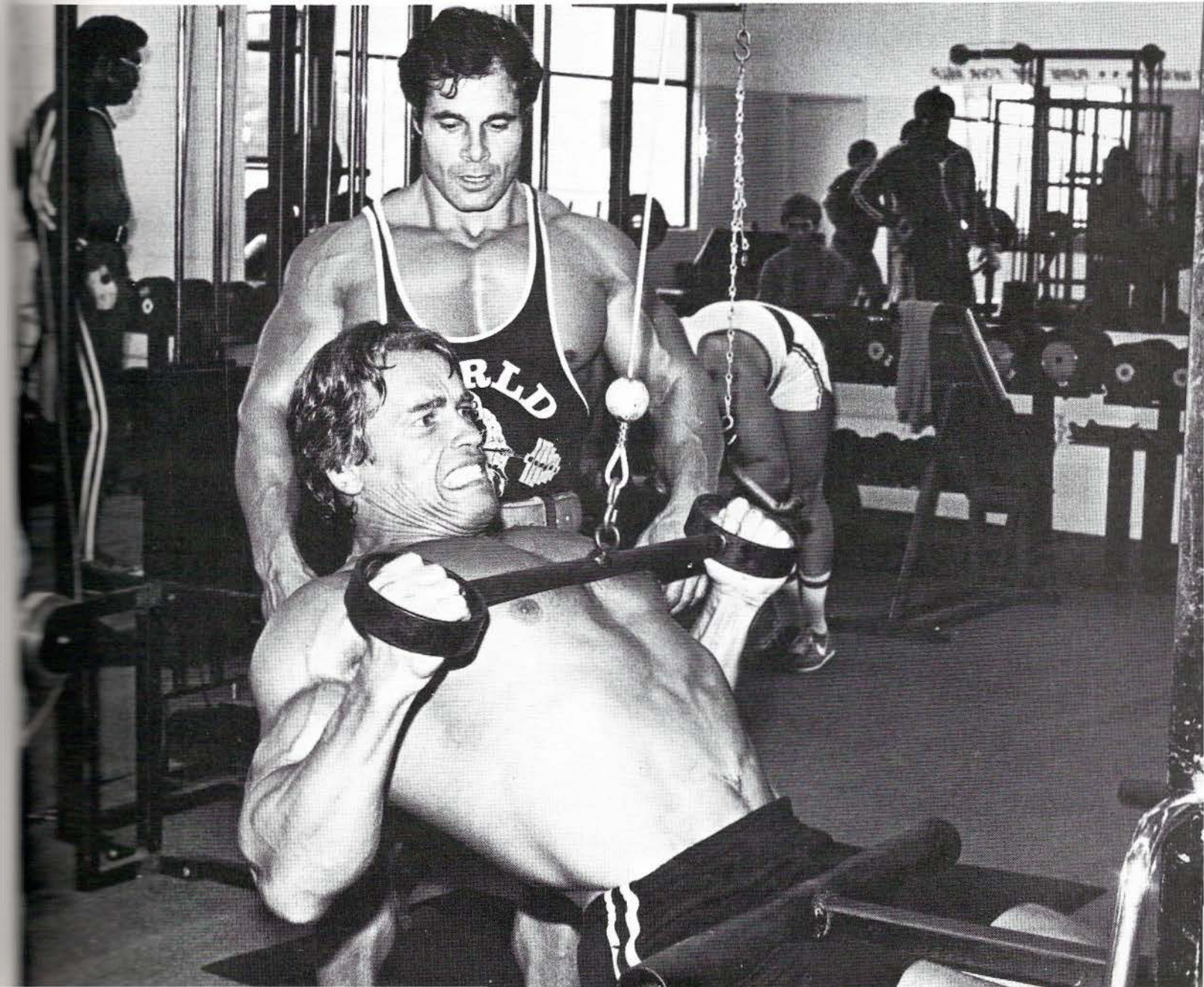


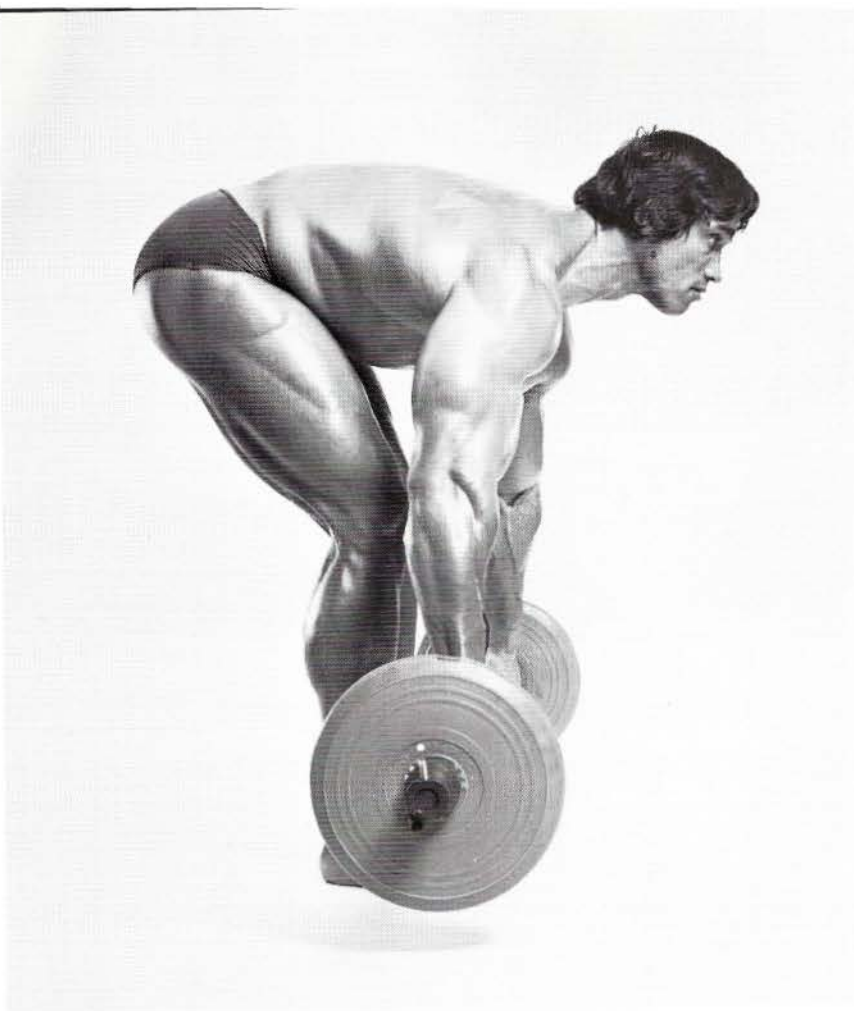
## CLOSE- OR MEDIUM-GRIP PULLDOWNS

**PURPOSE OF EXERCISE:** To work the lats, especially the lower lat area.

Again, working with an overhead cable and weight stack allows you to do the chinning movement with less than body weight.

**EXECUTION:** (1) Grasp the handles or a bar using a narrow- or medium-close grip and pull down to your upper chest. Don't sway backward, but try to concentrate on using the lats to do the movement. (2) Draw the shoulders down and back and stick the chest out. Let the handles go upward again until your lats are fully stretched out.





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## BENT-OVER BARBELL ROWS

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**PURPOSE OF EXERCISE:** To thicken the upper back.

This exercise also helps widen the upper back and, to a lesser degree, adds density to the lower back.

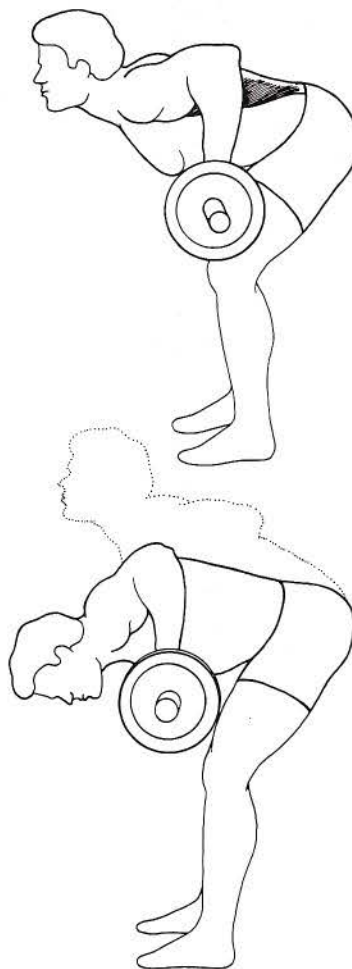
**EXECUTION:** (1) Standing with feet a few inches apart, grasp the bar with a wide, overhand grip. With your knees slightly bent, bend forward until your upper body is about parallel to the floor. Keep your back straight, head up, and let the bar hang at arm's length below you, almost touching the shinbone. (2) Using primarily the muscles of the back, lift the bar upward until it touches the upper abdominals, then lower it again, under control, back to the starting position; then immediately start your next rep. It is important to make the back work so as not to make this a biceps exercise. Think of the arms and hands as hooks, a way of transmitting the contraction of the lats to the bar. Don't bring the bar up to the chest area itself; bringing it only to the abdomen reduces the role of the arms. Make sure your first set of any rowing exercise is relatively light to let your back get warmed up. By the time you get to your last set, a little bit of cheating is all right to get you through it, but keep it to a minimum.



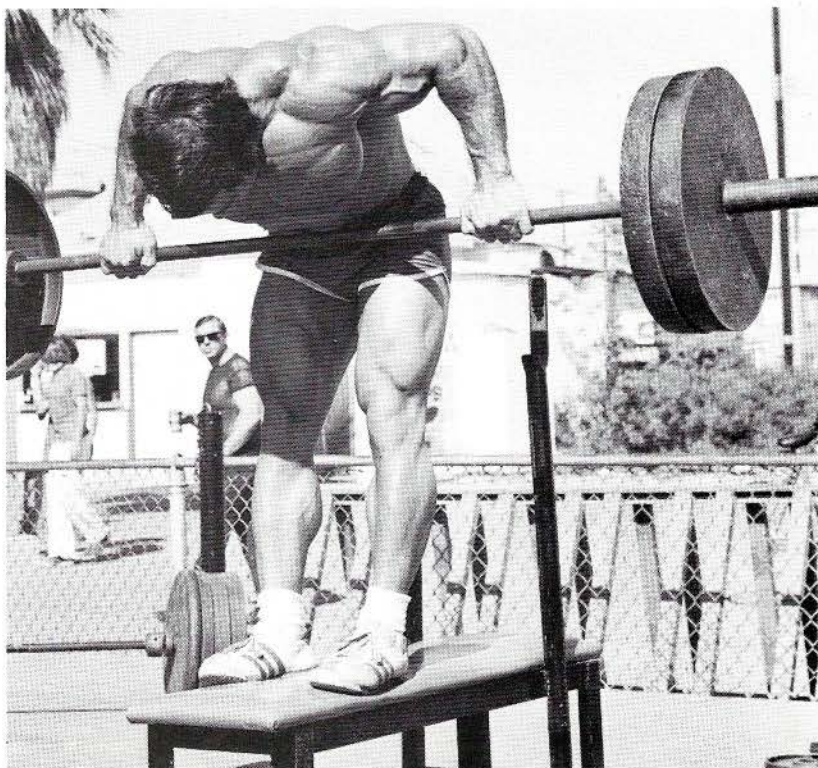


*In Bent-Over Barbell Rows, you pull with the lats but don't lift with the lower back. Keep your upper body parallel to the floor all through the exercise. Notice how the bar is pulled up to the abdomen rather than up toward the chest.*

*This drawing illustrates two major mistakes: If you don't hold your body steady when doing Bent-Over Barbell Rows, you involve the lower back muscles rather than isolating the lats. And if you lift the bar up toward the chest instead of the abdomen, you involve the arms, so that the biceps are doing a lot of the work you are trying to get the lats to do.*



*When you do Rows with an Olympic barbell set with its larger plates you need to stand on a block or a bench so that you can lower the bar all the way down without the plates touching the floor. With your head up, back straight, and knees flexed, you are in a position similar to an Olympic lifter about to clean a heavy barbell.*

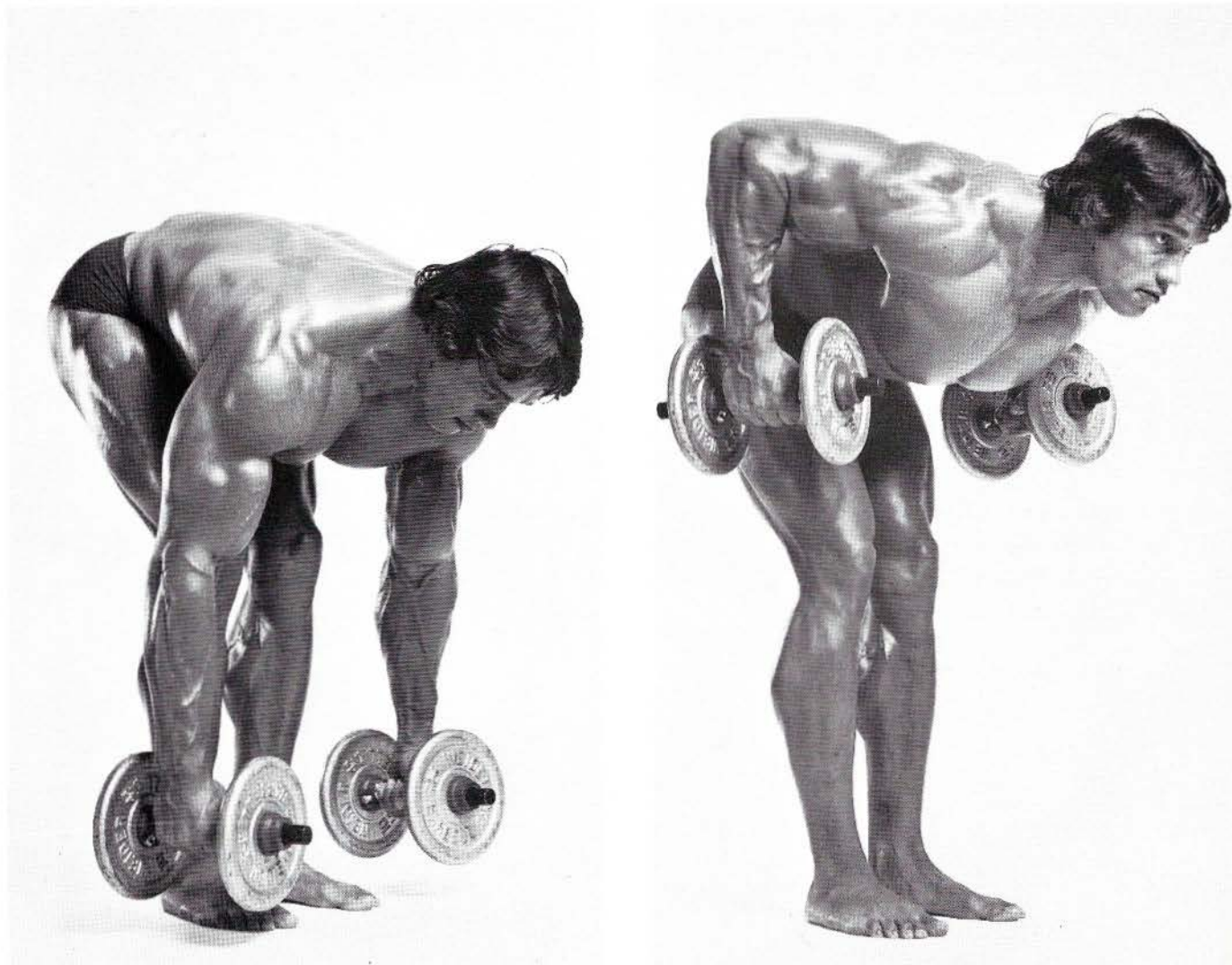


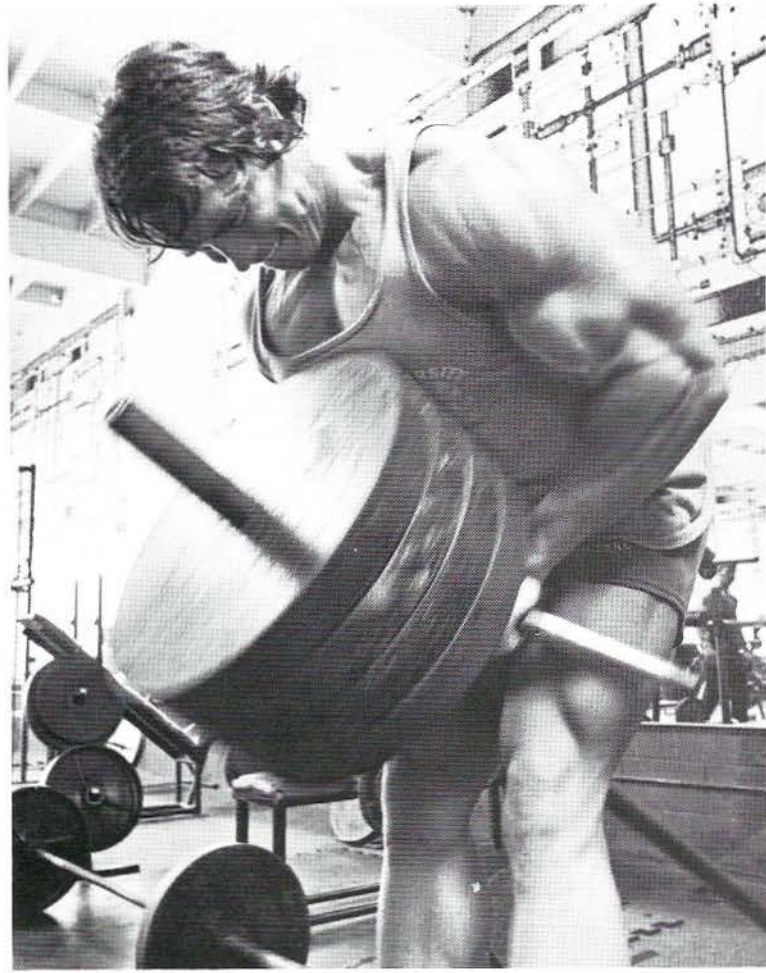
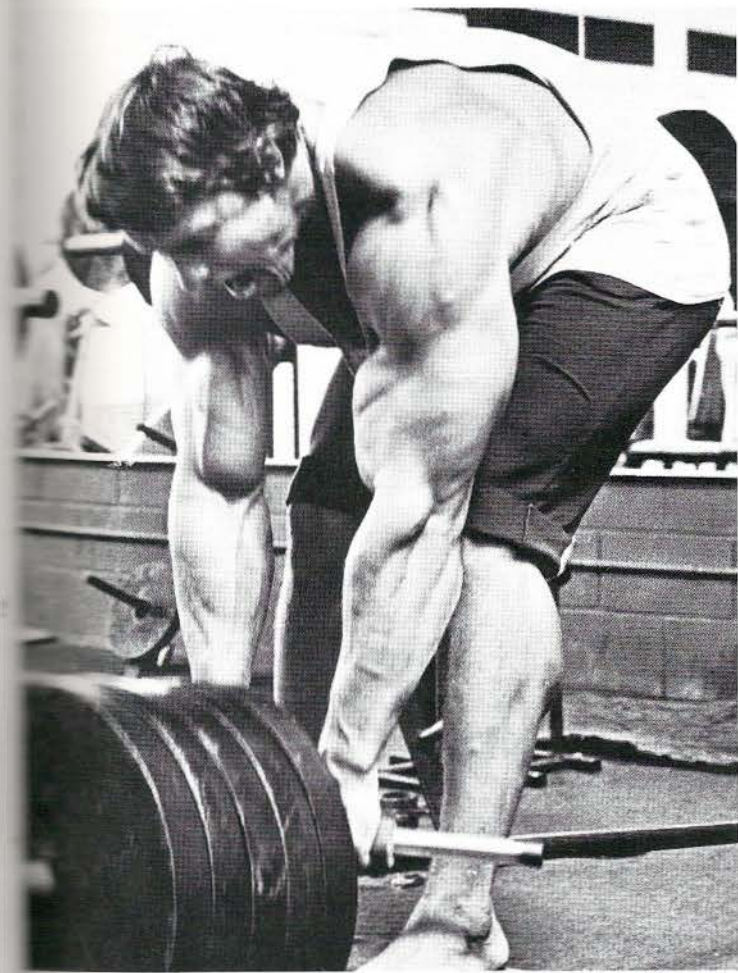
## BENT-OVER DUMBBELL ROWS

**PURPOSE OF EXERCISE:** To work each side of the upper back independently.

You can still work heavy and give your back a good workout using dumbbells, but by using them you force each side of the body to work up to its own capacity, rather than running the risk of having the stronger side help out the weaker one. This is a good weak point exercise for anyone lacking upper back symmetry.

**EXECUTION:** (1) Grasp a dumbbell in each hand, bend your knees slightly, then bend forward from the waist, keeping your head up and your back straight. Let the weights hang at arm's length below the shoulders. (2) Simultaneously lift both weights up as far as possible to your sides, holding your upper body steady to avoid involving the lower back (the weights should come up to your sides, not your chest, in order to keep biceps involvement to a minimum). Then lower the weights again, slowly.





## T-BAR ROWS

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**PURPOSE OF EXERCISE:** To thicken the middle and outer back.

**EXECUTION:** (1) Standing on a block with your feet close together, knees slightly bent, bend down and grasp the handles of the T-Bar machine with an overhand grip. Straighten your legs slightly and lift up until your body is at about a 45-degree angle. Without changing this angle, lift the weight up until it touches your chest, (2) then lower it again to arm's length, keeping the weight off the floor.

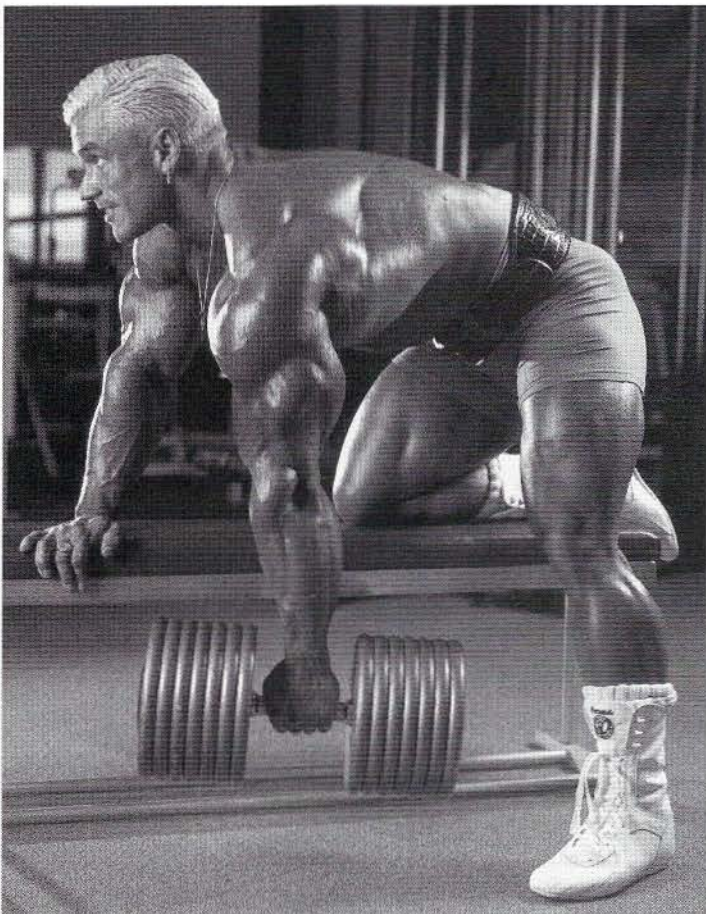
Remember that this is an upper back exercise—you are not supposed to do much lifting with the lower back or legs. If you find you are not able to do this lift without swaying and lifting up with your back to an excessive degree, you are simply using too much weight and should take off a plate or two. However, a small amount of movement is inevitable. But be certain to keep your back straight or even slightly arched and never to bend over hunchback fashion, which could result in injury. By using a narrow grip, this exercise will work mostly the outer lats because you cannot get the range of motion to fully involve the inner back muscles. However, this limited range of motion means that you will eventually be able to lift more weight than when doing Barbell Rows, which makes this a good power movement.

## ONE-ARM DUMBBELL ROWS

**PURPOSE OF EXERCISE:** To independently work each side of the back.

Rowing one side at a time with a dumbbell has two unique advantages over Barbell Rows: It isolates the latissimus muscles on each side, and it allows you to lift the weight higher and therefore get a more complete contraction. Using heavy weight in this exercise is less important than getting the fullest range of movement, which will help develop and define the center of the back.

**EXECUTION:** (1) Taking a dumbbell in one hand, bend forward from the waist until your upper body is nearly parallel to the floor. Place your free hand on the bench for support. Begin with the weight hanging down at arm's length, feeling the fullest possible stretch. Turn your hand so that the palm faces toward your body. (2) Keeping your body steady, lift the weight up to your side, concentrating on doing the work with the back rather than the arm. Lower the weight, keeping it under control. Finish your repetitions with this arm, then repeat with the other arm.



*Lee Priest*

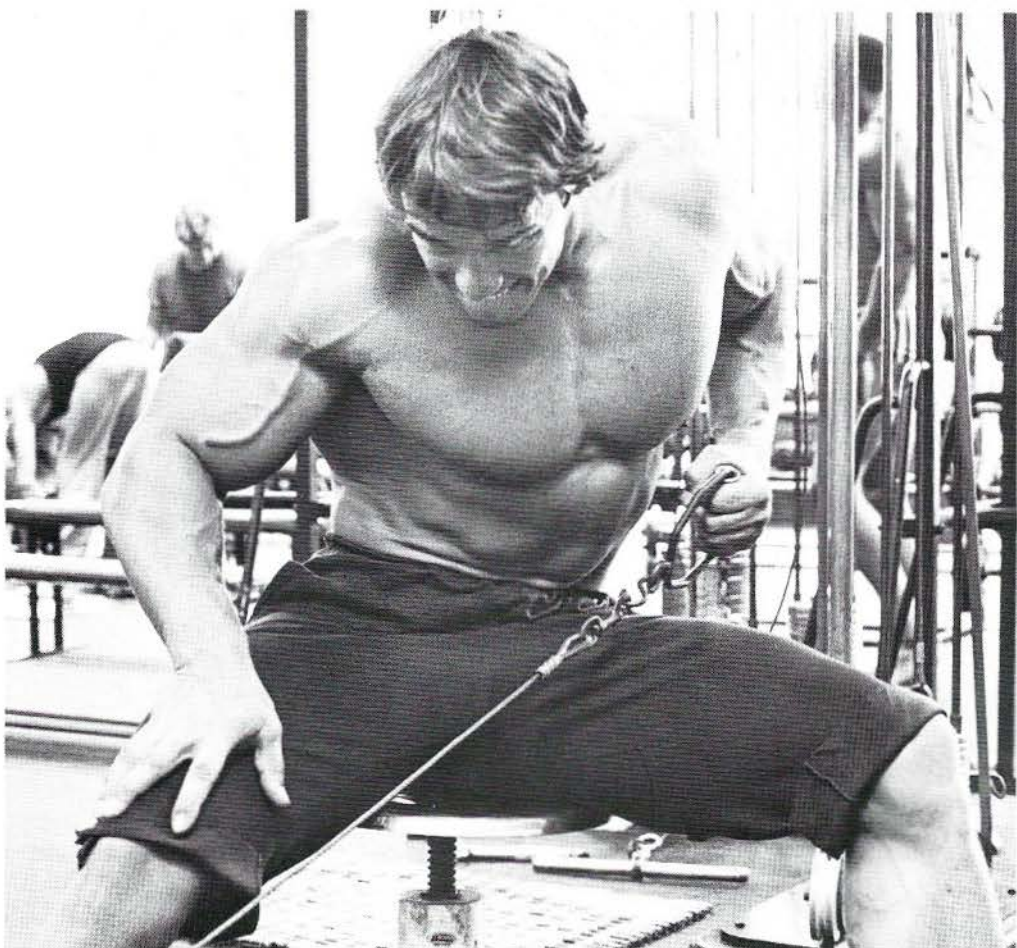
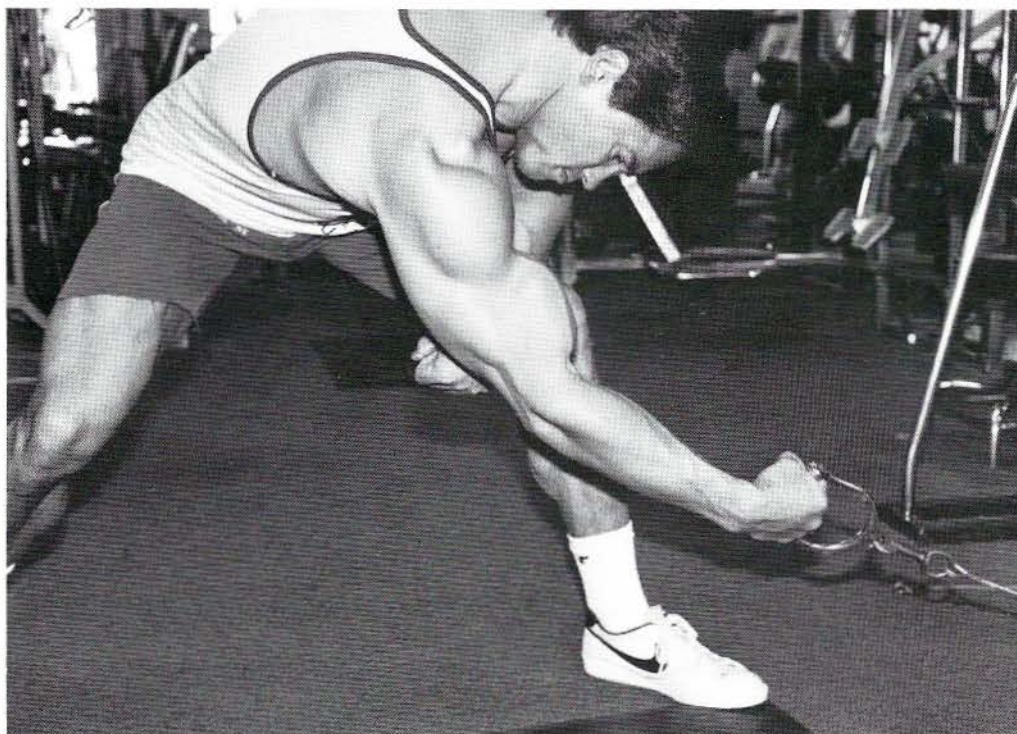
## ONE-ARM CABLE ROWS

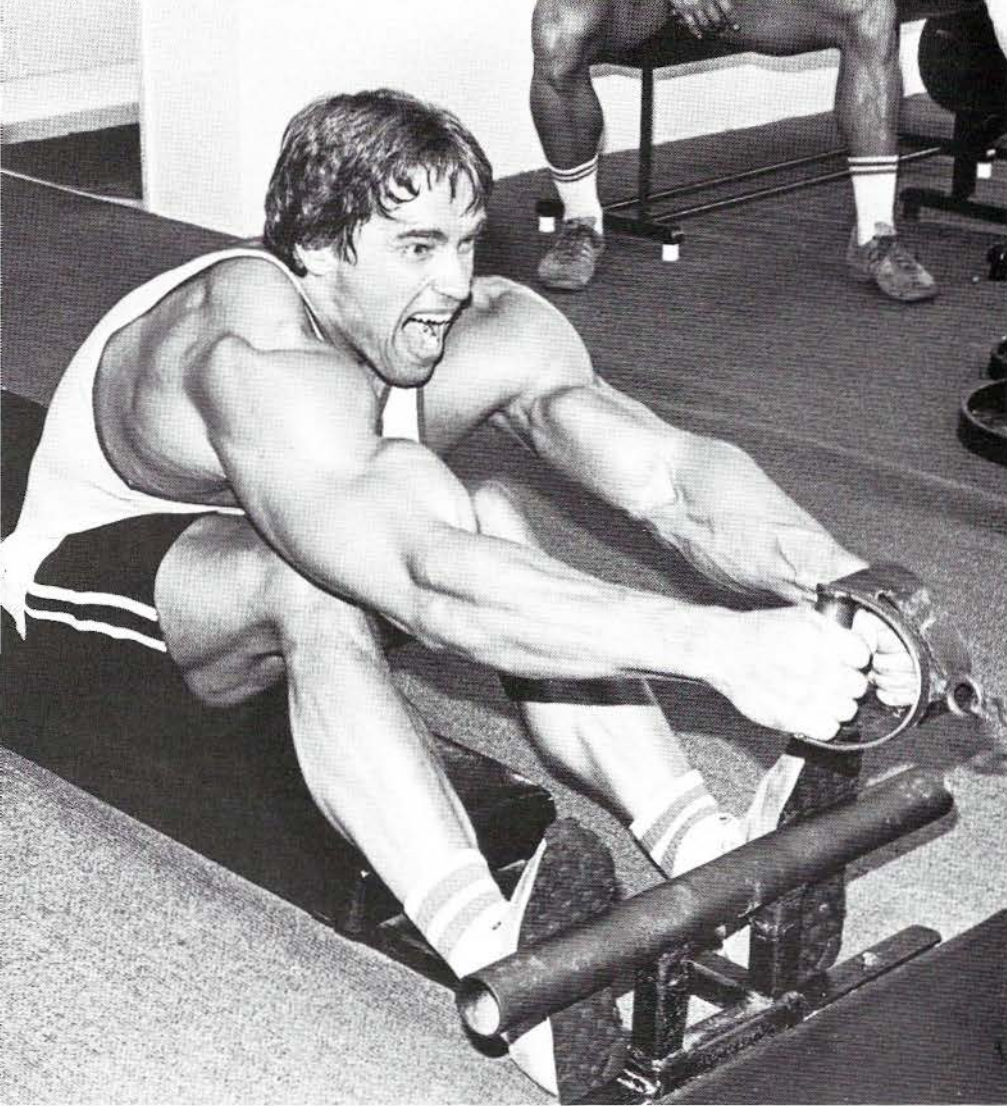
**PURPOSE OF EXERCISE:** To develop the lower lats.

This is an especially good movement for tying in the lower lats to the waist.

**EXECUTION:** (1) Using a floor-level pulley, take hold of a handle with one hand. If done standing, assume a balanced stance, the leg opposite the arm you will be using in the exercise forward, other leg back. (This can also be done while seated.) Begin with your arm fully extended in front of you; you may even want to twist your hand inward so that the thumb is lower than the little finger to create the fullest possible stretch. (2) Pull the handle back by your side as far as you can, twisting your hand outward so that the thumb ends up on the outside, feeling the back muscles contract. Release and extend your arm and twist your wrist back to the starting position. Complete your repetitions, then repeat the exercise using the other arm.

The secret to success doing One-Arm Cable Rows is range of motion. When you pull the cable, bring your elbow as far back as possible—which is a lot farther than you can go doing regular Cable Rows. Also, as you release and lower the weight again, make sure you stretch your arm and lats as far as possible.





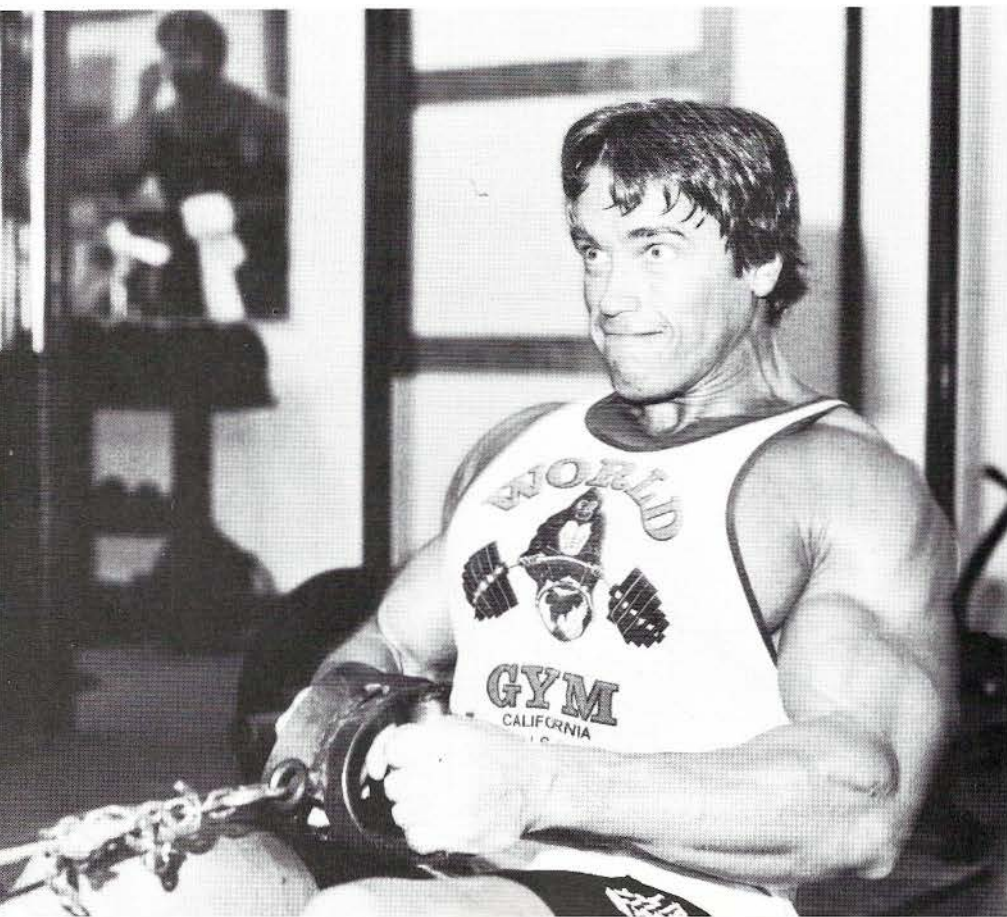
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## SEATED CABLE ROWS

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**PURPOSE OF EXERCISE:** To develop the thickness of the back and the lower lats. This movement also works the lower sections of the lats.

**EXECUTION:** (1) Take hold of the handles and sit with your feet braced against the crossbar or a wooden block, knees slightly bent. Extend your arms and bend forward slightly, feeling the lats stretch. You should be situated far enough away from the weight stack so that you can stretch like this without the weight touching the bottom. (2) From this beginning position, pull the handles back toward your body and touch them to your abdomen, feeling the back muscles doing most of the work. Your back should arch, your chest stick out, and try to touch the shoulder blades together as you draw the weight toward you. Don't involve the lower back muscles by swaying forward and back. When the handles touch your abdomen you should be sitting upright, not leaning backward. Keeping the weight under control, release and let the handles go forward again, once more stretching out the lats.



## SEATED CABLE ROWS (OPTIONAL)

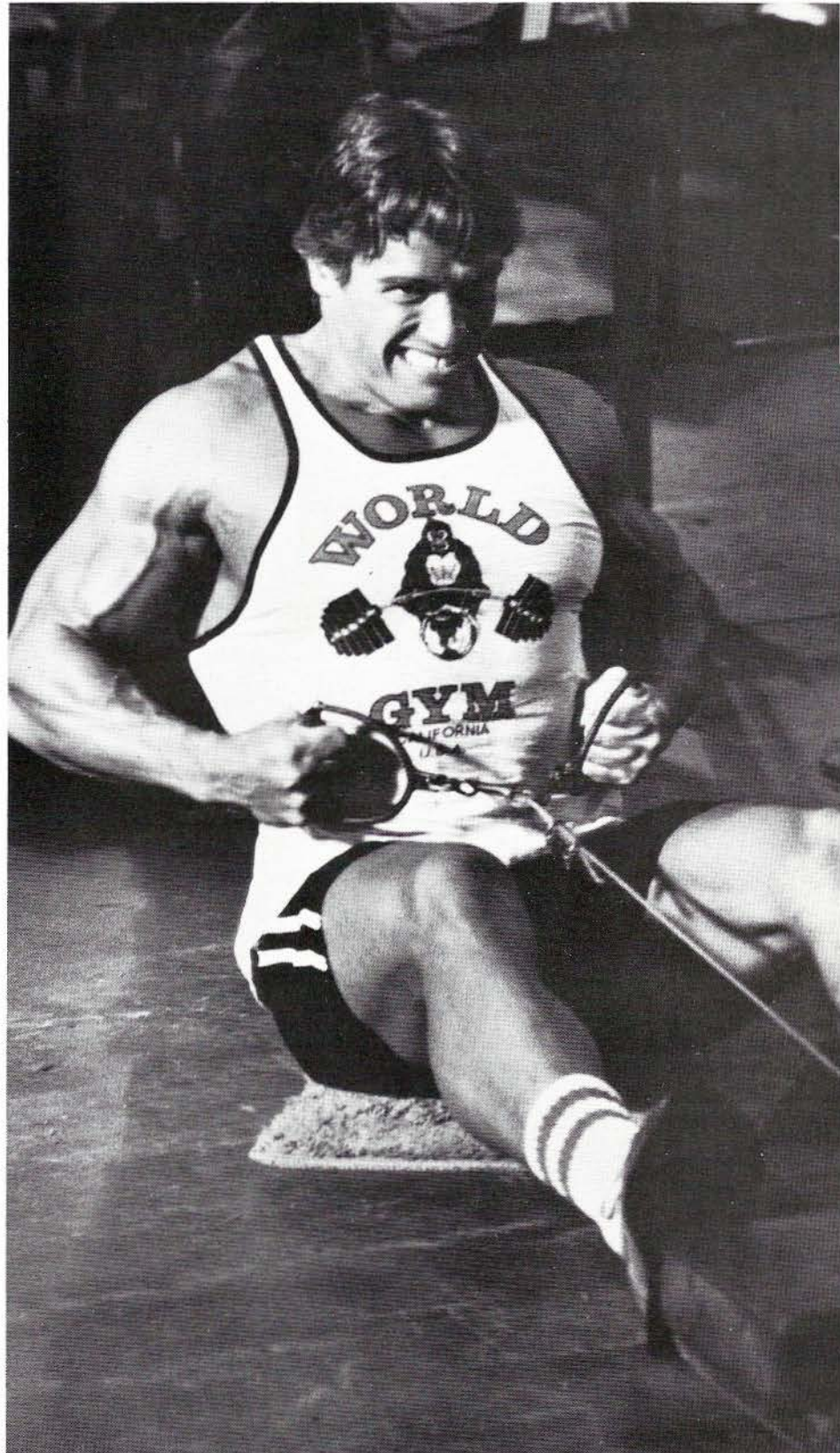
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Using separate handles as pictured here allows you to get your hands and elbows farther back, putting more of the stress on the center of your back.

## MACHINE ROWS

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Many gyms are equipped with a variety of specialized rowing machines. Some duplicate the effect of Seated Rows, while others allow you to do a rowing motion by pushing back with the elbows and not involving the contraction of the biceps. Each of these hits the back a little differently, and all are useful devices to include occasionally in your workouts to provide variety and to surprise the muscles.



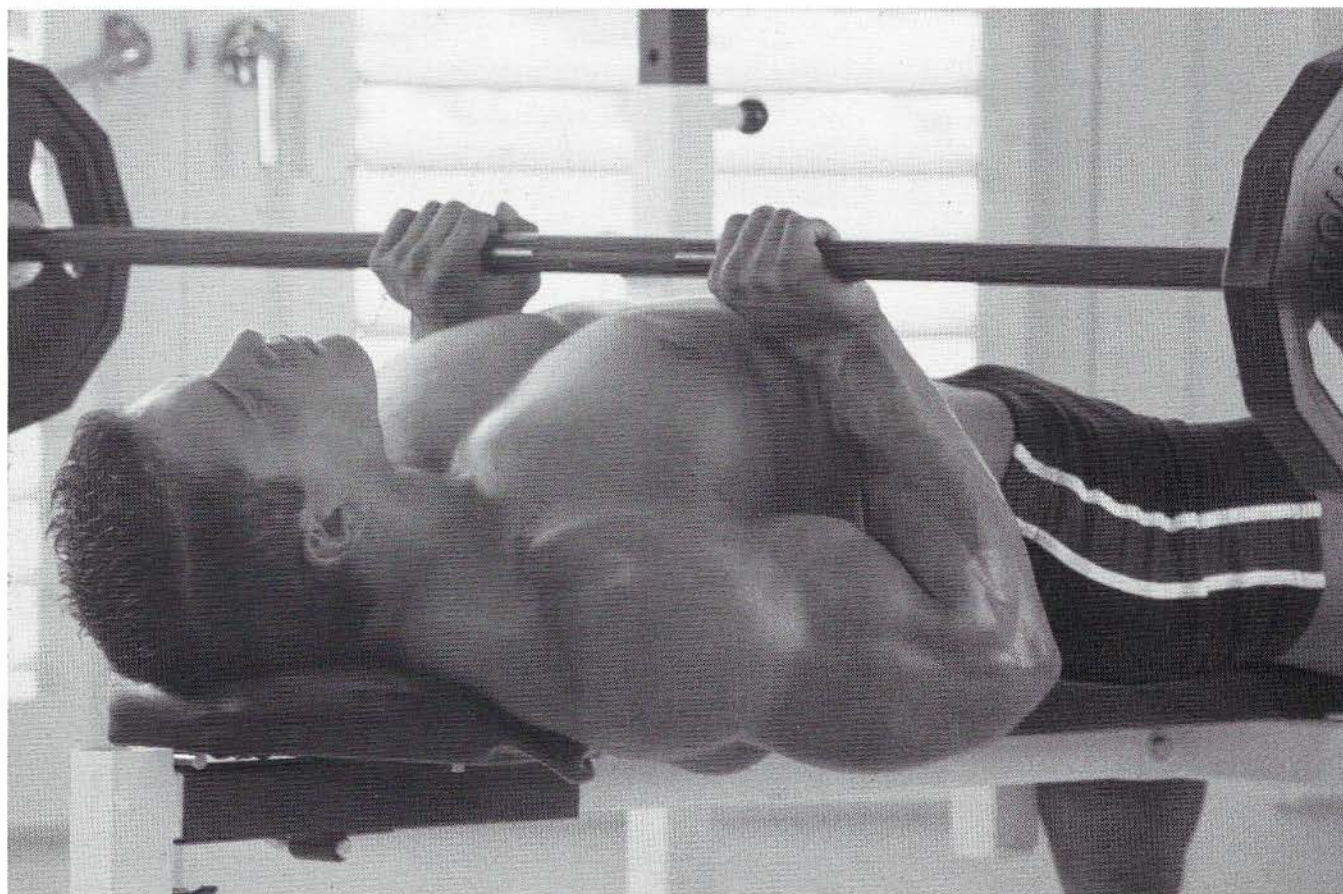
## BENT-ARM PULLOVERS WITH BARBELL

**PURPOSE OF EXERCISE:** To work the lower lats and the serratus. It also stretches the pectorals and helps widen the rib cage.

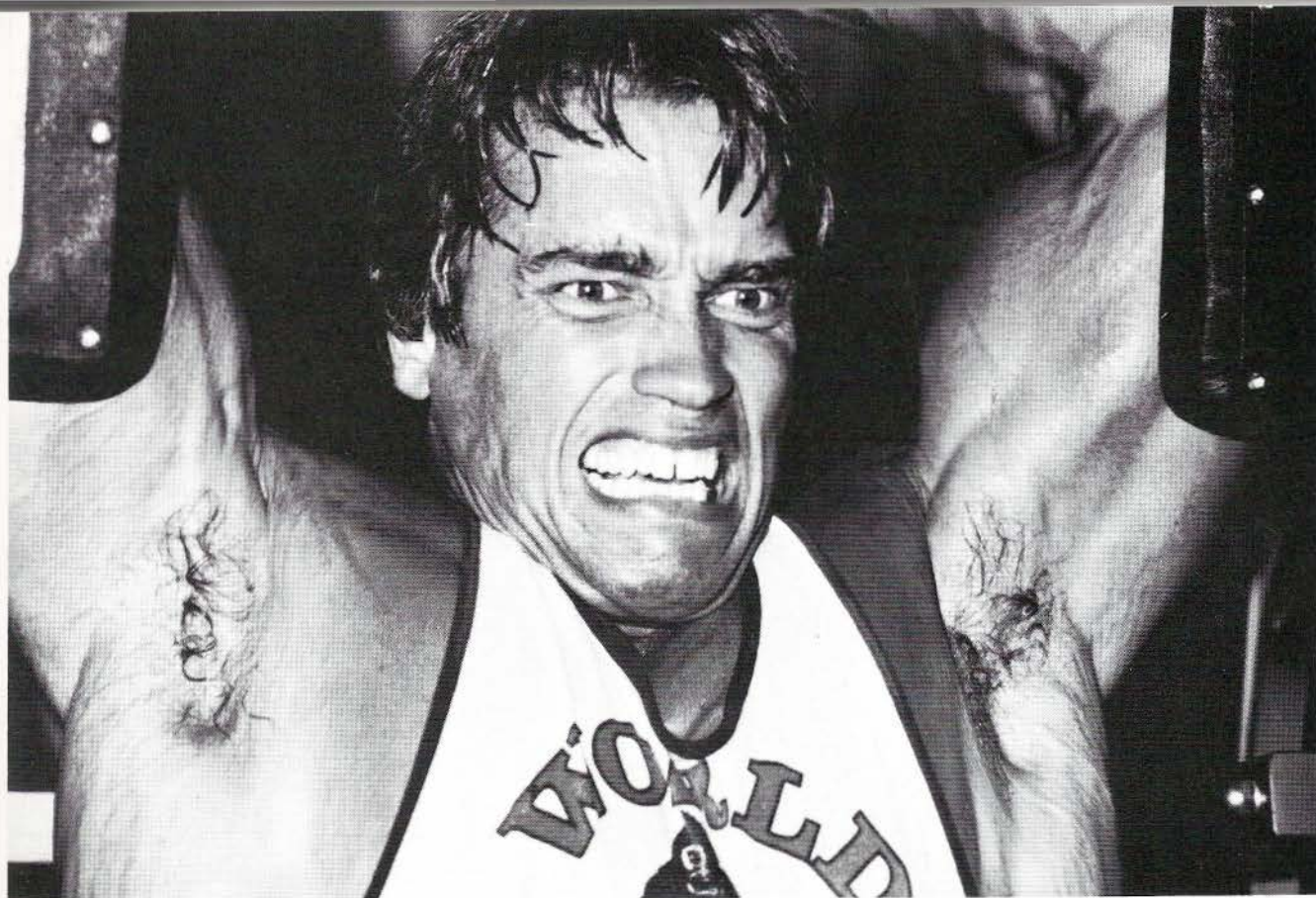
**EXECUTION:** (1) Lie on your back along a flat bench. Place a barbell (or an E-Z curl bar) on the floor behind your head. Reach back and grasp the bar.

(2) Keeping your arms bent, raise the bar and bring it just over your head to your chest. Lower the bar slowly back to the starting position without touching the floor, feeling the lats stretch out to their fullest. When using a heavy weight for this movement, I have someone sit on my knees to stabilize me so that I can put all my effort into lifting the bar.

*Mark Erpelding*



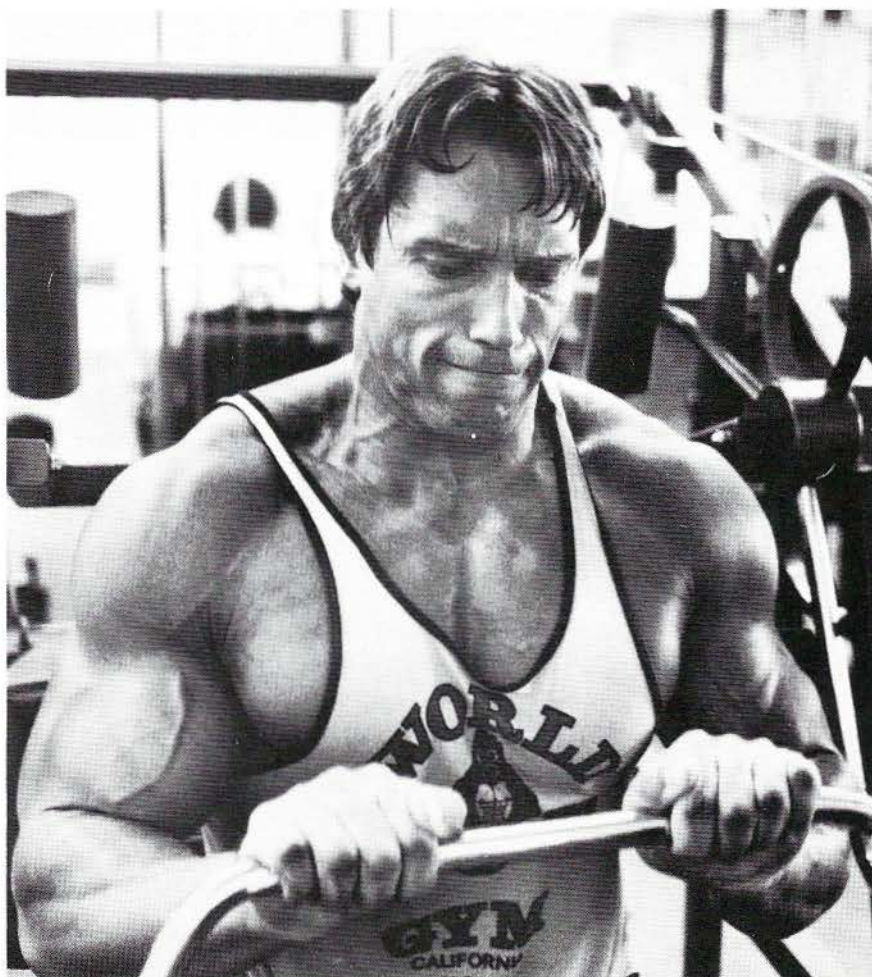


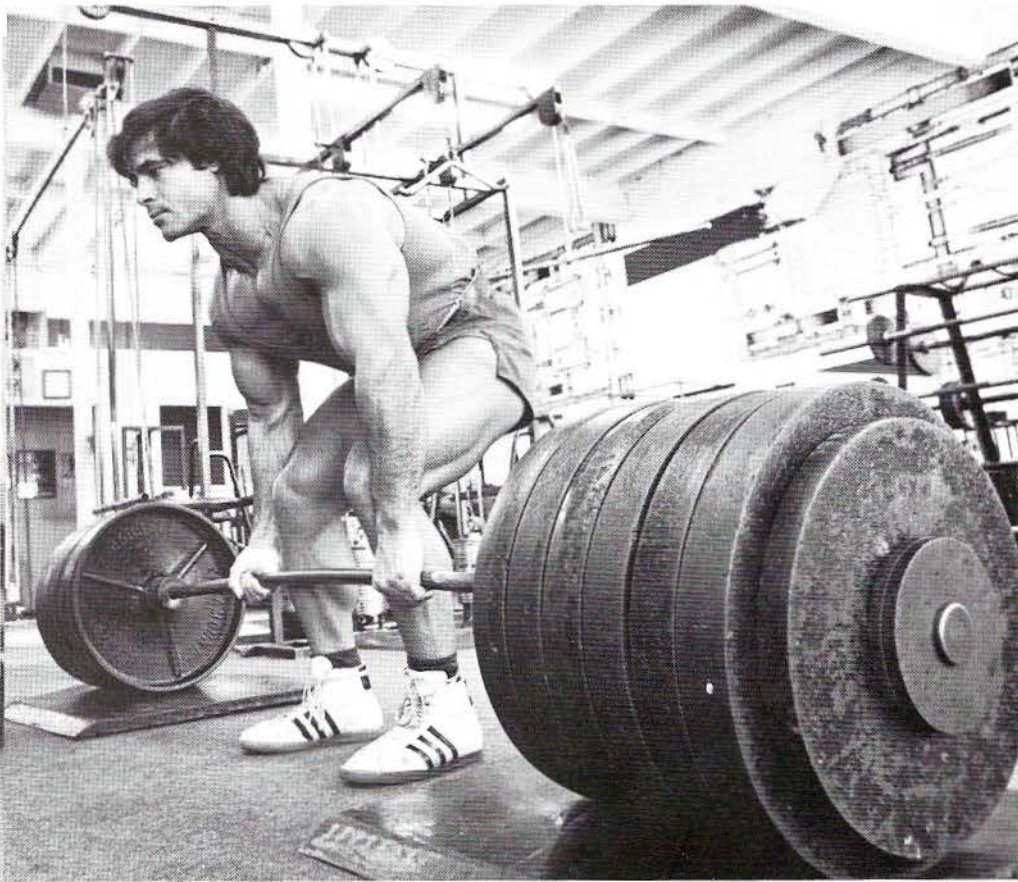


## MACHINE PULLOVERS

The Pullover is actually a circular motion, and it is often difficult to work the muscles through a full range of motion using free weights (although advanced bodybuilders learn to do this purely by experience). Some pullover machines are valuable in that they allow you to work against variable resistance, and some also provide for training one arm at a time, giving you the opportunity for additional isolation. In fact, in my opinion, Pullover machines are among the most valuable exercise machines you will find in a gym.

**EXECUTION:** (1) Grasp the bar over your head, and (2) drive it down, feeling the lats contract. At the end of the movement the bar should be jammed against your abdomen.

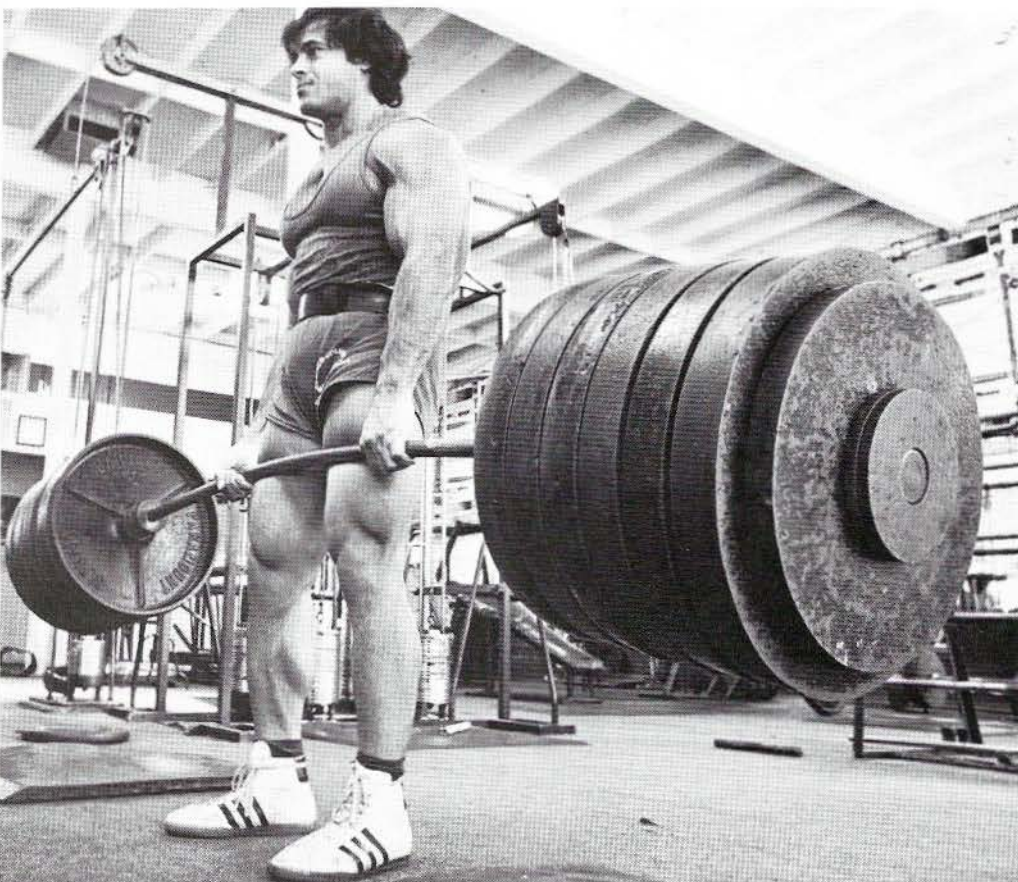


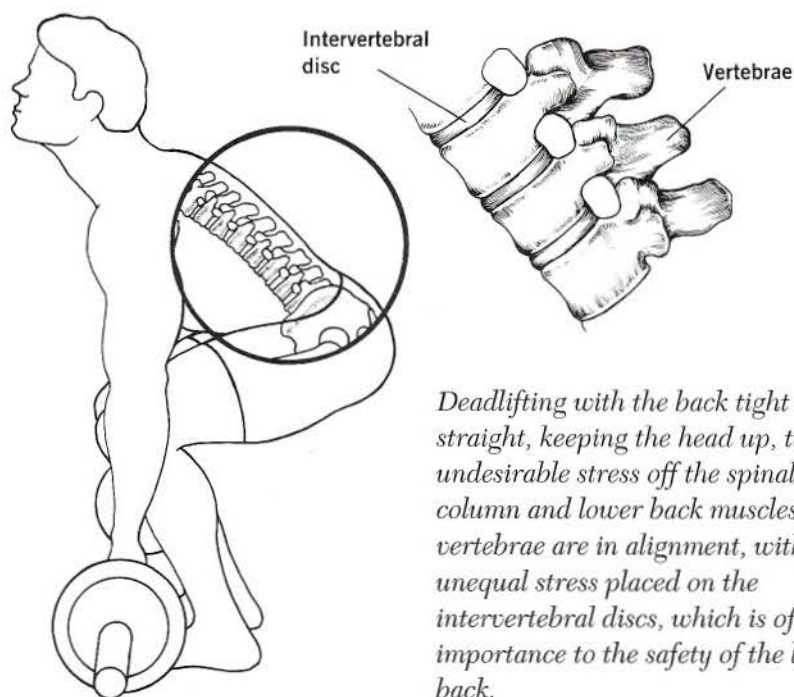


## DEADLIFTS

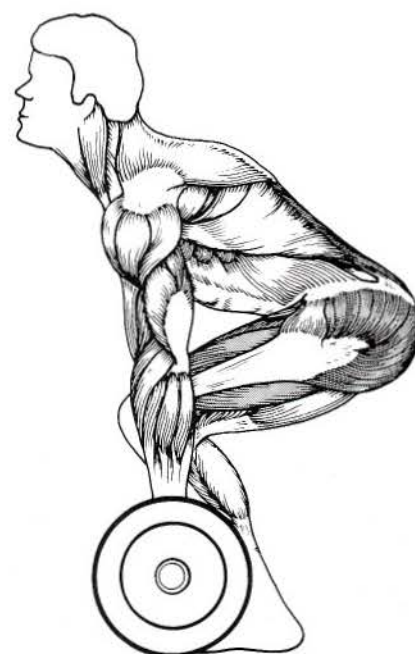
**PURPOSE OF EXERCISE:** To work the lower back. Deadlifts are an overall power exercise that involves more muscles than any other exercise in your routine, including the lower back, upper back, and trapezius muscles, the buttocks, and the legs. A strong lower back is especially important when doing movements like Bent-Over Rows and T-Bar Rows, which put a lot of strain on this area.

**EXECUTION:** (1) Place a barbell on the floor in front of you. Bend your knees, lean forward, and grasp the bar in a medium-wide grip, one hand in an overhand grip, the other in an underhand grip. Keep your back fairly straight to protect it from strain. If you curve your back you risk injury. (2) Begin the lift by driving with the legs. Straighten up until you are standing upright, then throw the chest out and shoulders back as if coming to attention. To lower the weight, bend the knees, lean forward from the waist, and touch the weight to the floor before beginning your next repetition.

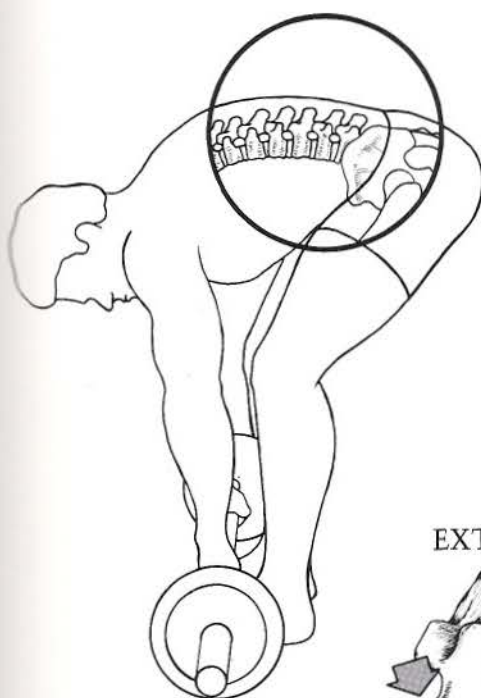




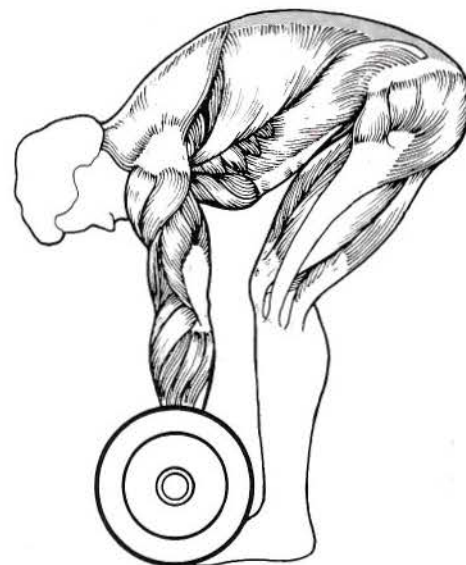
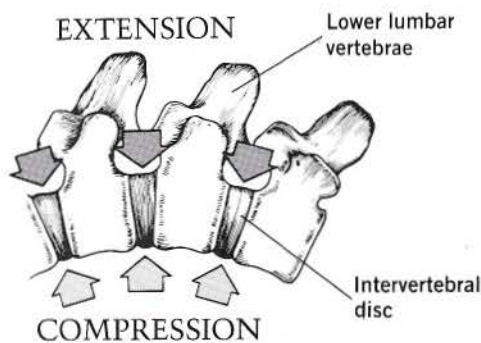
*Deadlifting with the back tight and straight, keeping the head up, takes undesirable stress off the spinal column and lower back muscles. The vertebrae are in alignment, with no unequal stress placed on the intervertebral discs, which is of vital importance to the safety of the lower back.*



*When you begin the Deadlift with your head up and back straight, you allow the glutei, leg muscles, and lower back to drive the bar upward with maximum force.*



*Deadlifting with the back in a rounded position with the head down places unequal pressure on the delicate intervertebral discs and lower back muscles. The discs are simultaneously compressed on one side and extended on the other. Keeping the head up and the back straight distributes the stress and reduces the chance of injury.*

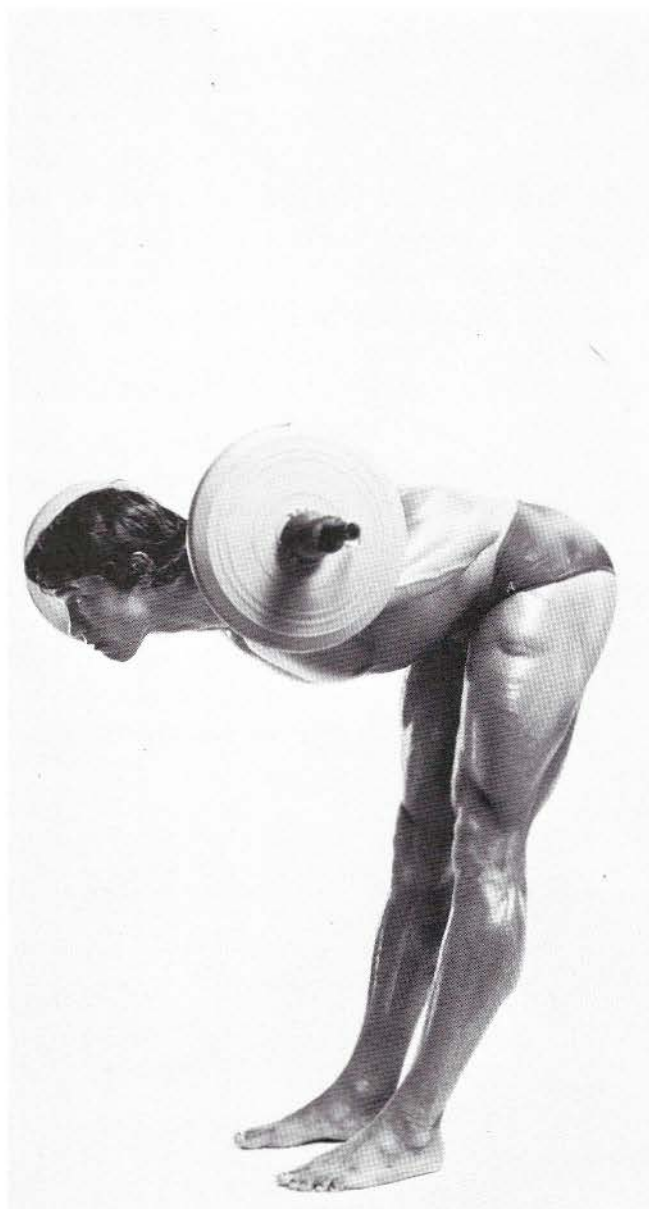
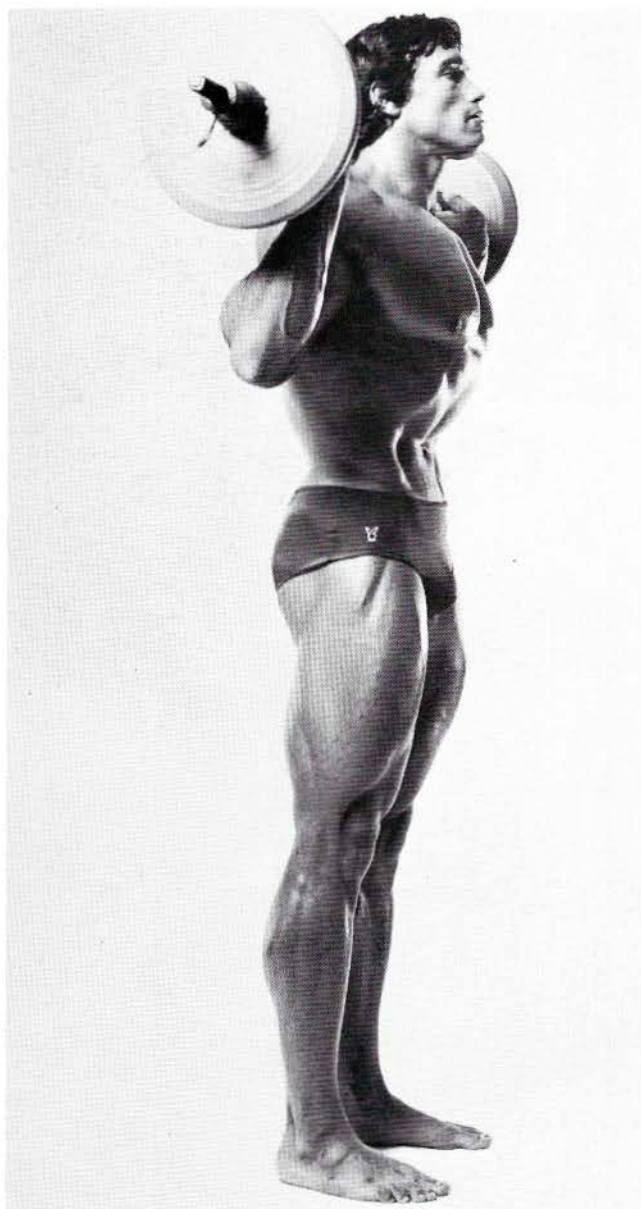


*Starting a Deadlift with your back bent forward means that the lower back is going to have to do most of the initial work to get the bar moving. This is dangerous.*

## GOOD MORNINGS

PURPOSE OF EXERCISE: To work the lower back in isolation.

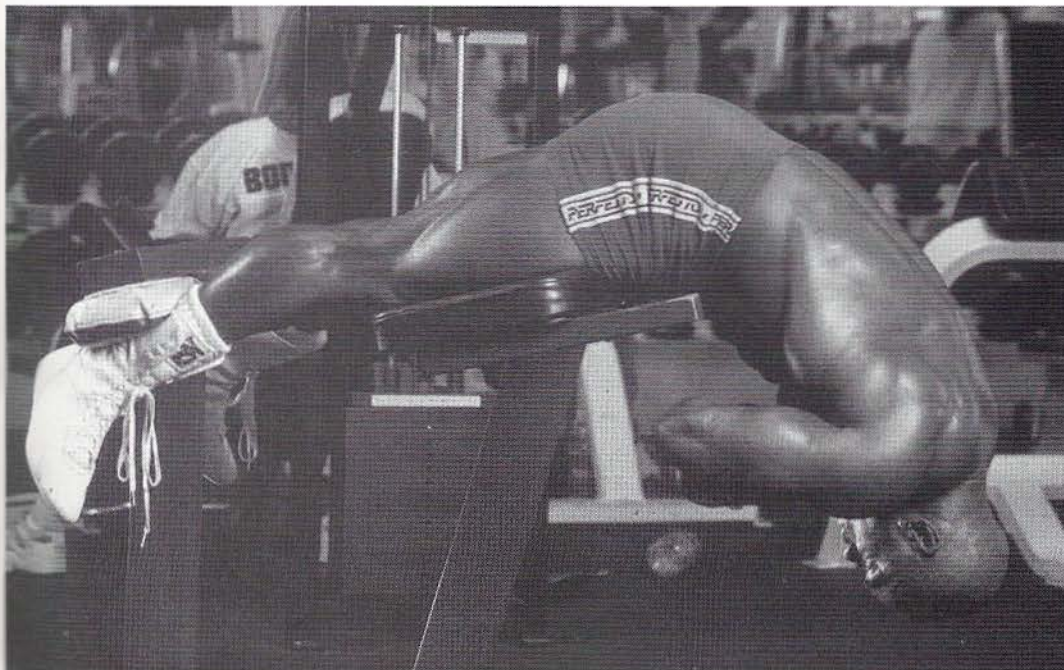
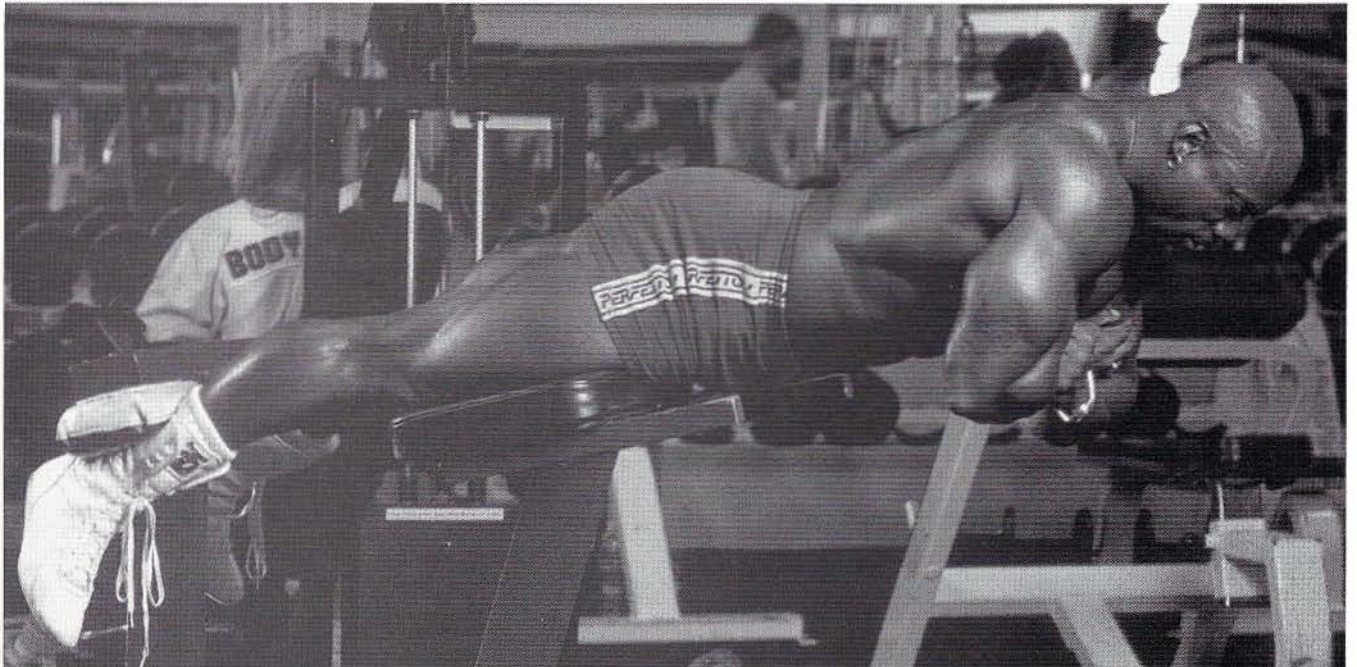
EXECUTION: (1) Standing with feet a few inches apart, hold a barbell across the back of your shoulders as for Squats (see page 497). (2) Keeping your legs locked and your back straight, bend forward from the waist, head up, until your torso is about parallel to the floor. Hold for a moment, then come back up to the starting position.



## HYPEREXTENSIONS

**PURPOSE OF EXERCISE:** To develop the spinal erectors of the lower back.

**EXECUTION:** (1) Position yourself facedown across a hyperextension bench, with your heels hooked under the rear supports. Clasp your hands across your chest or behind your head and bend forward and down as far as possible, feeling the lower back muscles stretch. (2) From this position, come back up until your torso is just above parallel. To prevent hyperextension of your spine don't lift up any higher than this.



*Flex Wheeler*

## The Arms

### THE MUSCLES OF THE ARMS

There are three major muscle groups in the arms:

The **biceps brachii**, a two-headed muscle with point of origin under the deltoid and point of insertion below the elbow

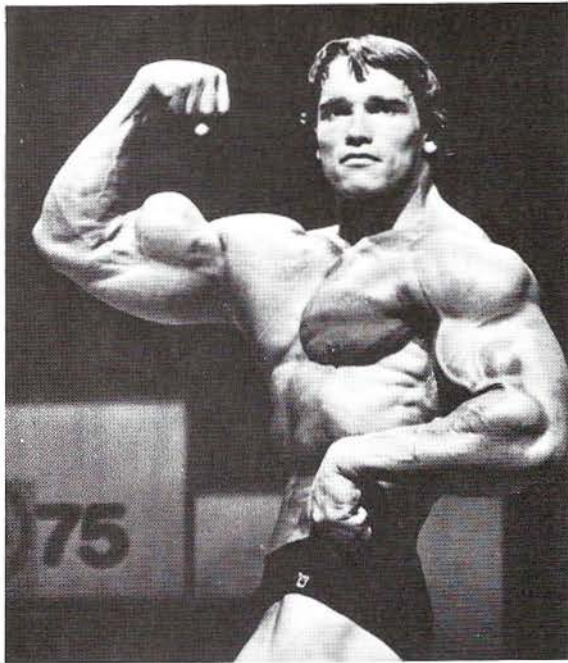
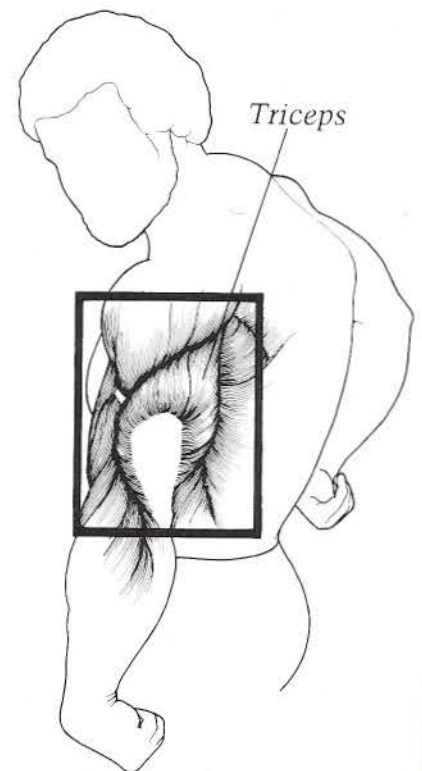
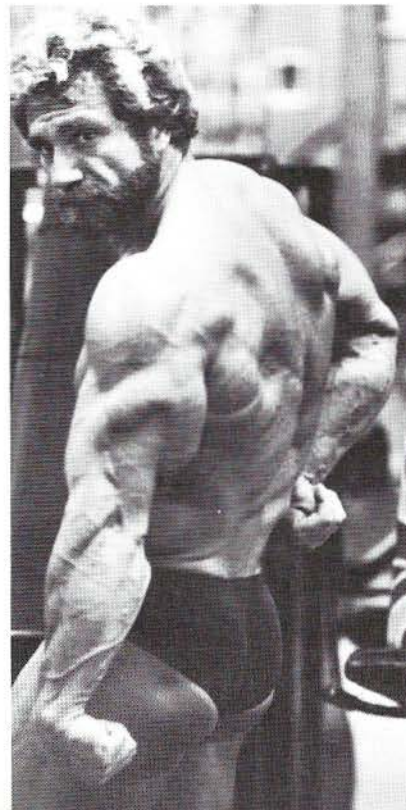
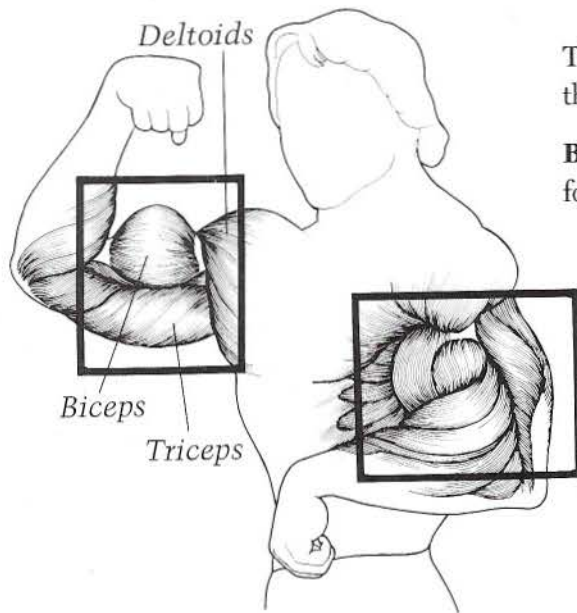
**BASIC FUNCTION:** To lift and curl the arm, to pronate (twist downward) the wrist

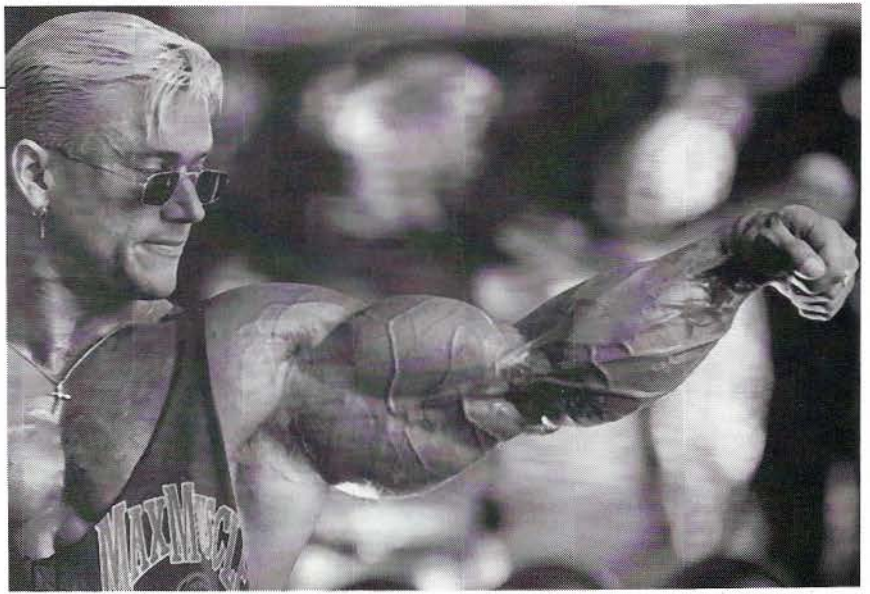
The **triceps brachii**, a three-headed muscle that works in opposition to the biceps, also attaching under the deltoid and below the elbow.

**BASIC FUNCTION:** To straighten the arm and supinate (twist upward) the wrist

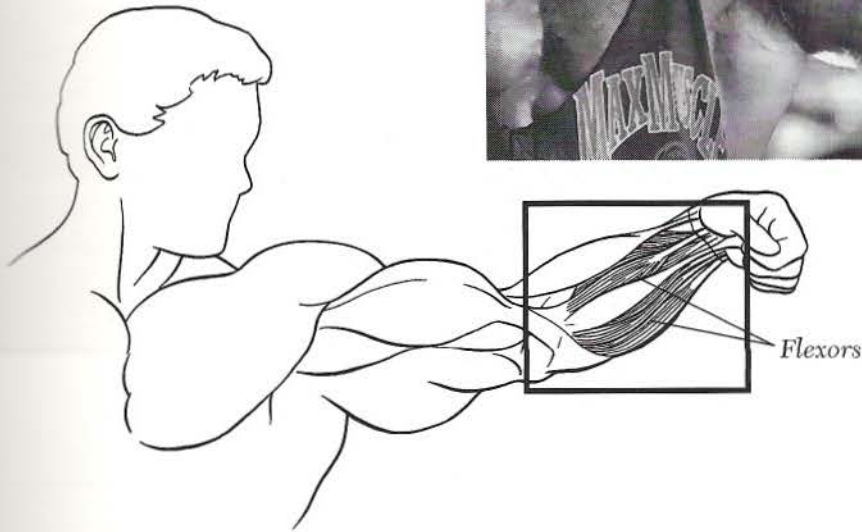
The **forearm**, involving a variety of muscles on the outside and inside of the lower arm that control the actions of hand and wrist

**BASIC FUNCTION:** The forearm flexor muscles curl the palm down and forward; the forearm extensor muscles curl the knuckles back and up.

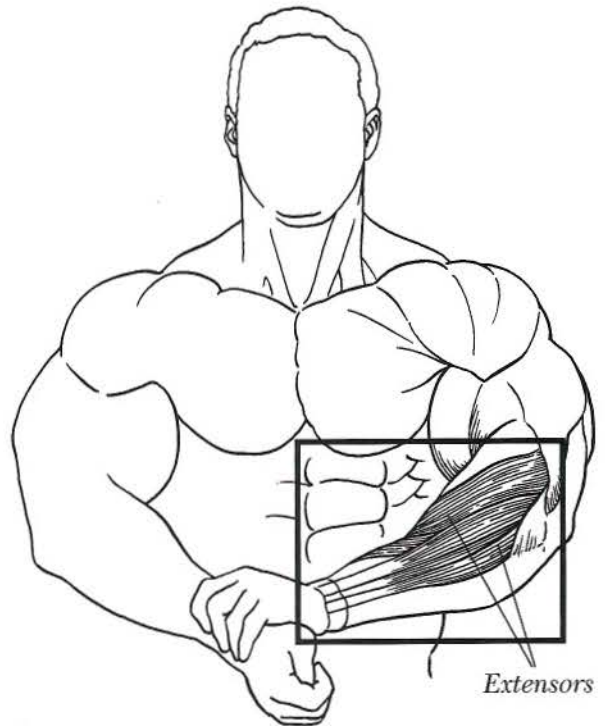


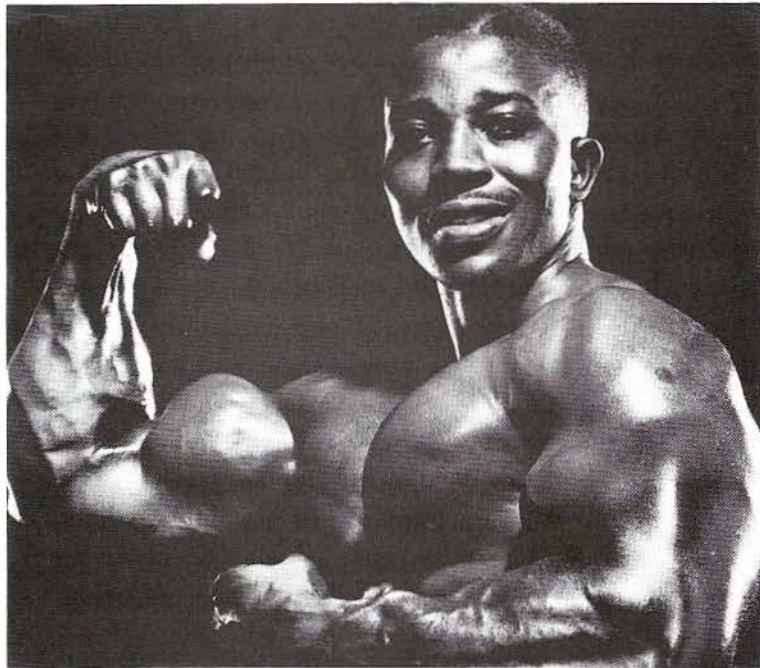


*Lee Priest*



*Kevin Levrone*



*Leroy Colbert*

## TRAINING THE ARMS

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Along with the chest and back, bodybuilders have always considered massive arms the most impressive body part, an indicator of truly outstanding size and strength. When I began training I would study photographs of bodybuilders, and what drew my attention most was the huge biceps. Leroy Colbert, for example, could hit fantastic biceps poses. Reg Park, Bill Pearl, and Serge Nubret were all known for tremendous arm development. I would go through the magazines, page by page, looking for examples of outstanding biceps and vow that someday my arms would look like that, too.

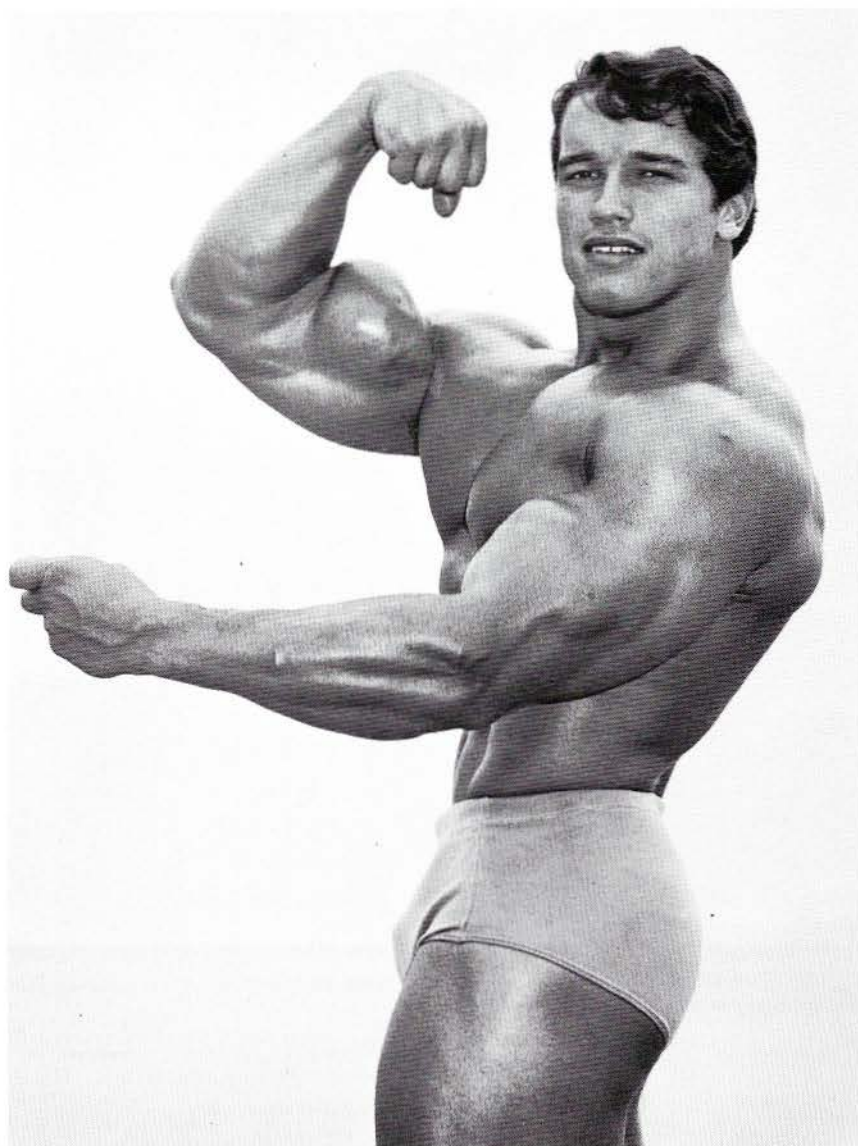
Eventually I did become known for my huge, high-peaked biceps. My arms measured over 20 inches when I was still only nineteen years old, and continued to develop until, at their largest, they measured 22¼ inches pumped. There are few things as thrilling on a bodybuilding stage as true 19- or 20-inch arms.

There is one great advantage when it comes to training arms. Because muscles and big arms are so closely associated, it is not difficult to get yourself mentally into arm training. If you go into any serious gym around the country you will probably see young bodybuilders who are just beginning to show overall signs of competition potential, but who already have made great strides in arm development.



One of the reasons this happens is that bodybuilders, especially when starting out, train the arms according to the Priority Principle, whether they know it or not. They train arms first, with great concentration and energy. They flex and pose them all the time, measuring them constantly to see if they have made any progress, so naturally they grow. If they thought the same way about their other body parts, we no doubt would see a lot of them walking around with 20-inch calves as well as huge arms.

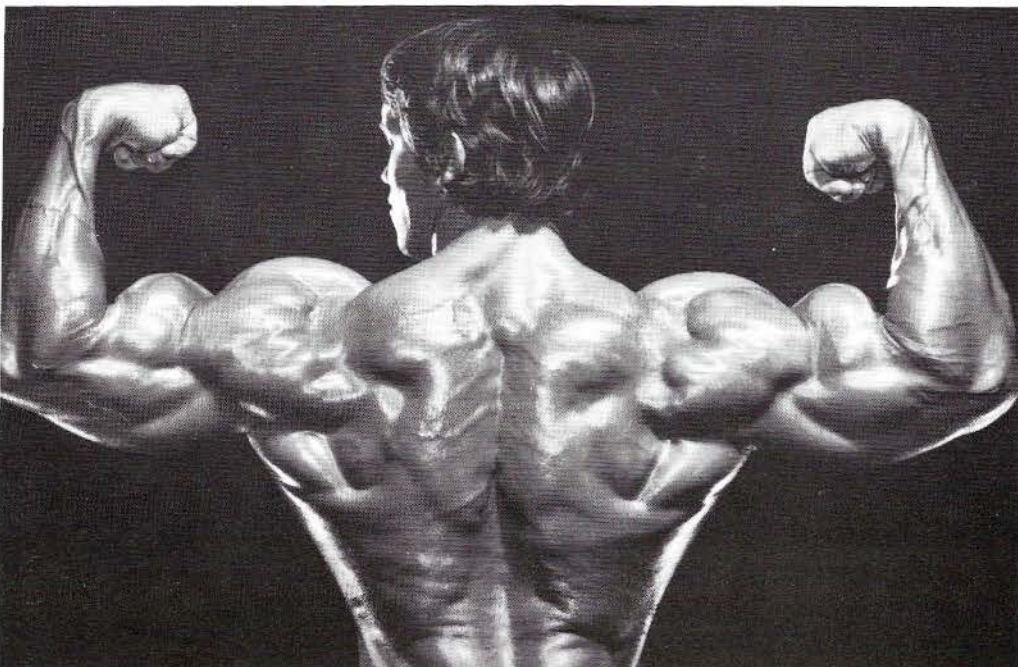
But developing top-quality arms for competition is more than just a matter of size. They need to look good in a lot of poses and from a number of different angles. This means that every part of the arm muscles, every contour and angle, must be fully brought out. This takes a lot of thought and planning. You don't develop championship-level arms simply by throwing around a heavy barbell doing Curls and blasting out some reps for triceps.



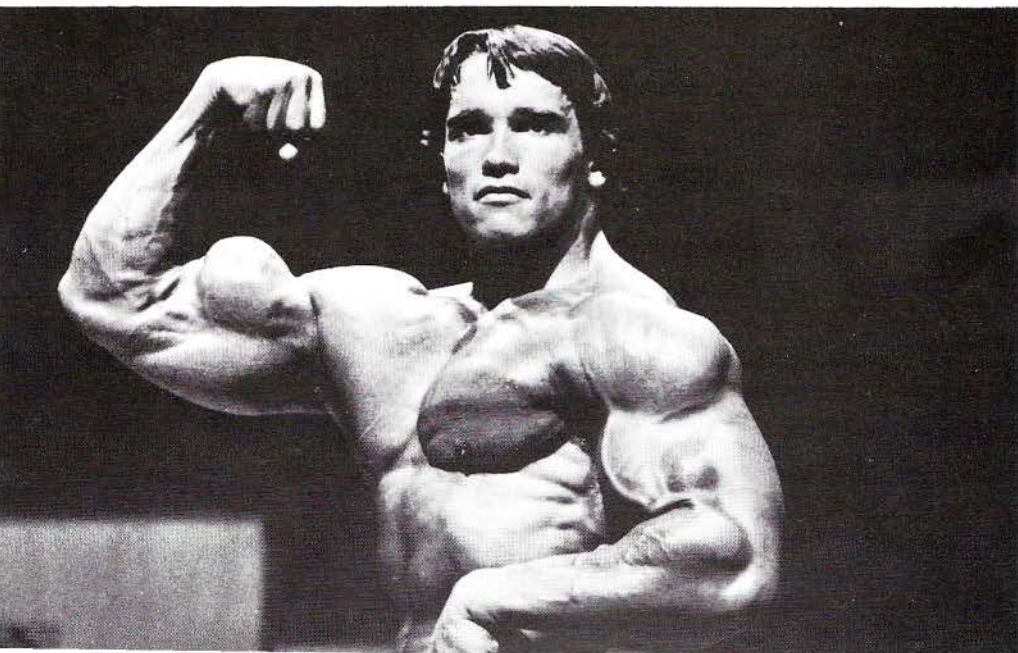
*Me at nineteen*



*Front double-biceps pose*



*Back double-biceps pose*



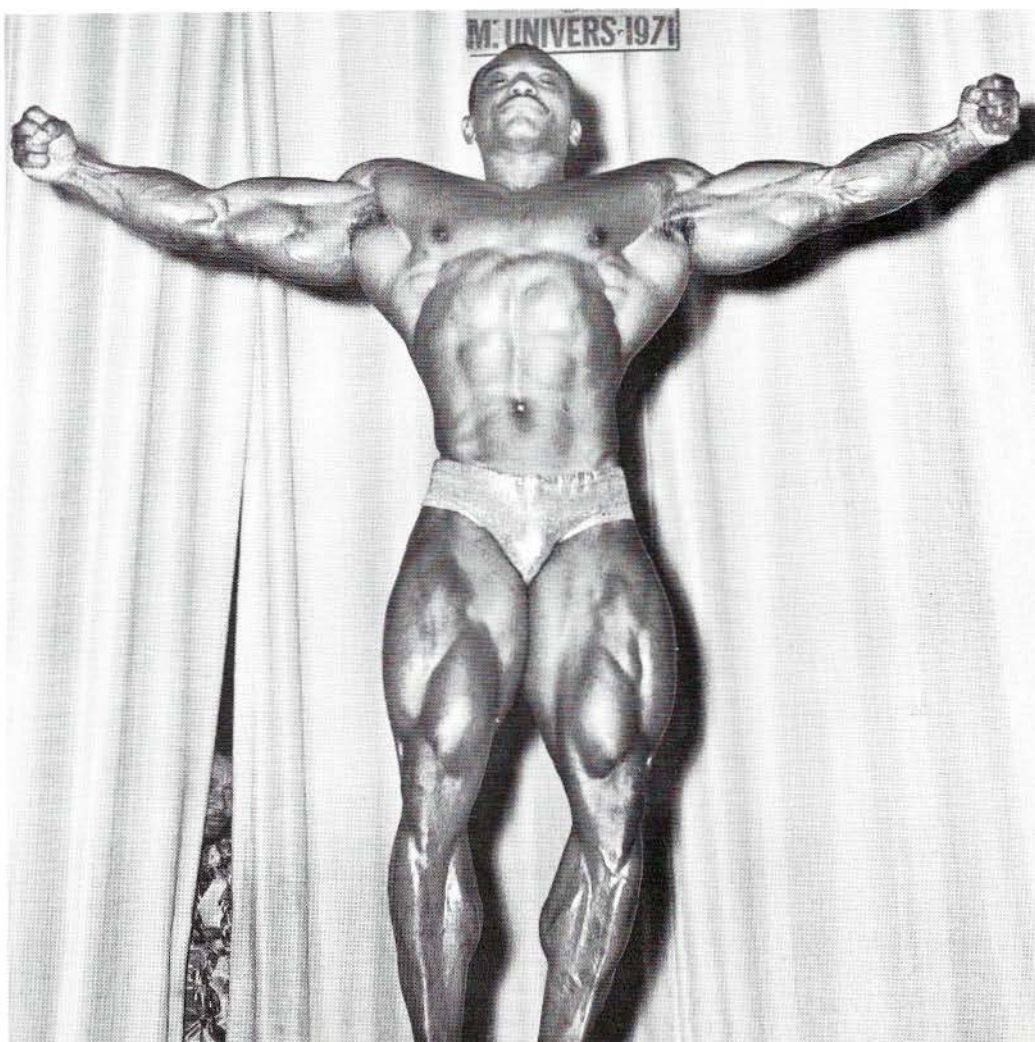
*Two aspects of the biceps. In the right arm, a high peak, great shape, and clear definition and separation; in the left, the biceps provides the mass and separation that helps make the arm look huge.*

For a front double-biceps pose, for example, you need high-peaked biceps, triceps that hang impressively below the arm, and a well-defined separation between biceps and triceps. For the same pose from the back, you need forearm development at the elbow, good development of the outside head of the biceps, and a clear, visible tie-in between the deltoid and the muscles of the upper arm.

Along with biceps and triceps development, you need to build and shape your forearms so that they are in proportion to the muscles of the upper arm. When you look at the arms of Flex Wheeler or Kevin Levrone—or in the past, Frank Zane, Dave Draper, Bill Pearl, Larry Scott, or Sergio Oliva—you see biceps, triceps, and forearms all developed in proportion to one another.

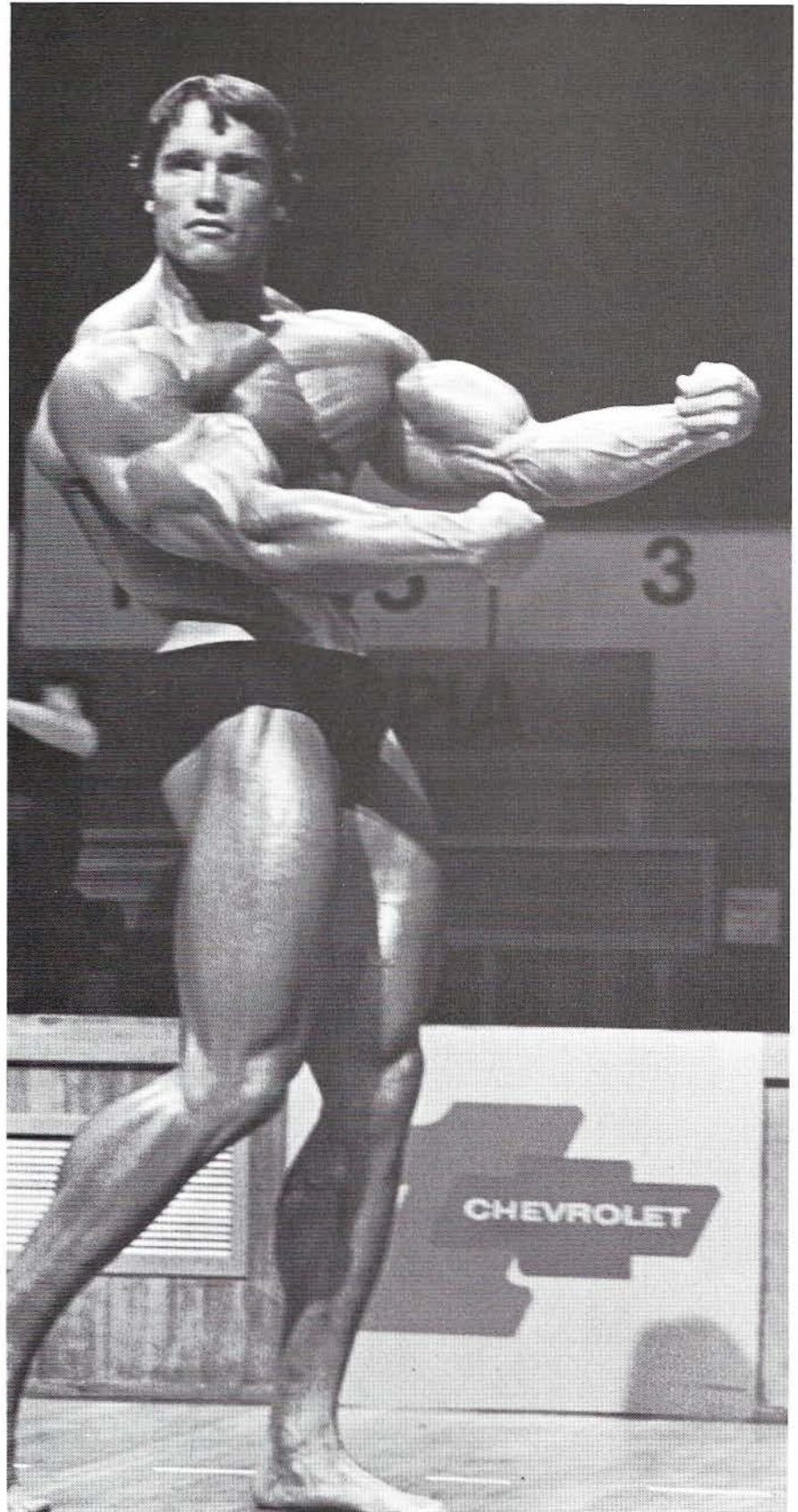
These various aspects of development do not come about by accident. You need to work at it, which means breaking the muscles of the arms down into separate categories and making sure that each gets its share of hard training.

*Sergio Oliva in a  
straight-arm pose*





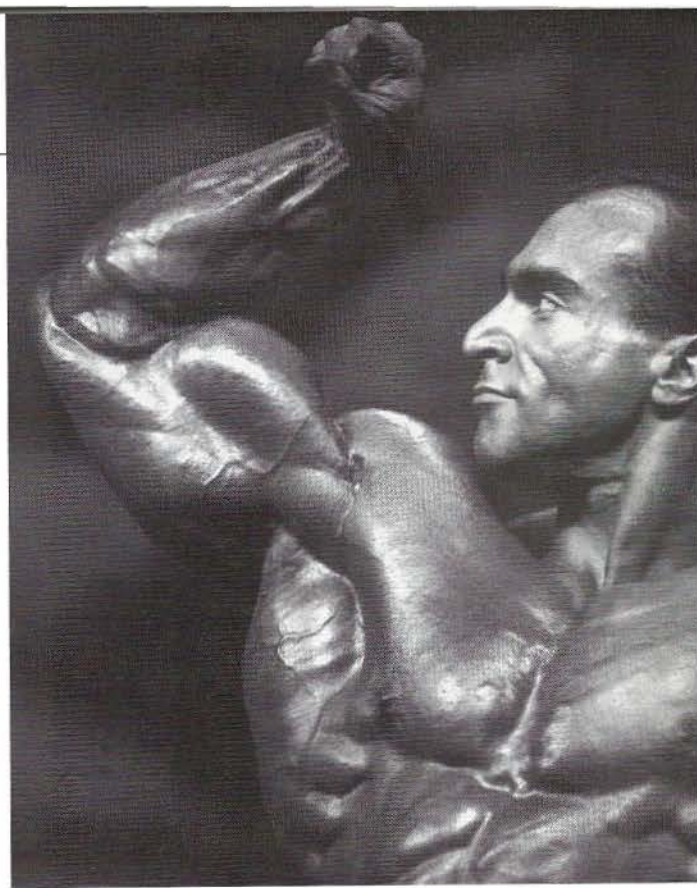
*Side chest pose*



*Another straight-arm pose*



*Awesome arm development from Mike Matarazzo—full, high-peaked biceps, a balance between biceps and triceps development, and full, powerful arms.*



*Nasser El Sonbaty*



*Larry Scott, the first Mr. Olympia, was one of the first modern bodybuilders with what I would call perfect arms.*

*Having big arms isn't enough. The shape of the biceps and triceps is also important, as are the proportions of the entire upper arm.*

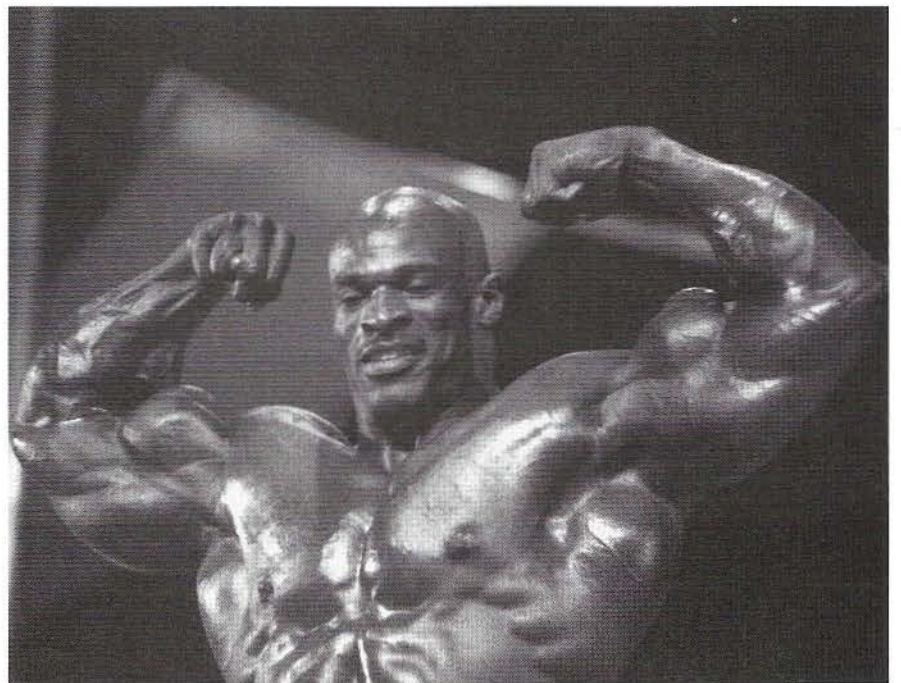


*When it comes to total arm development, Mike Matarazzo is able to hold his own with just about anybody.*

## DEVELOPING PERFECT ARMS

The front double-biceps pose is one of the hardest to do well. Flex Wheeler carries it off because he has everything: proper proportion, good biceps, triceps, deltoids, and pecs, a full rib cage, sweeping lats, and a small waist.

Though we tend to think of giant, bulging biceps when we think of well-developed arms, in point of fact the triceps are the larger, more complex muscle group. The biceps have two heads, the triceps have three. The ideally proportioned arm is usually one-third biceps and two-thirds triceps.



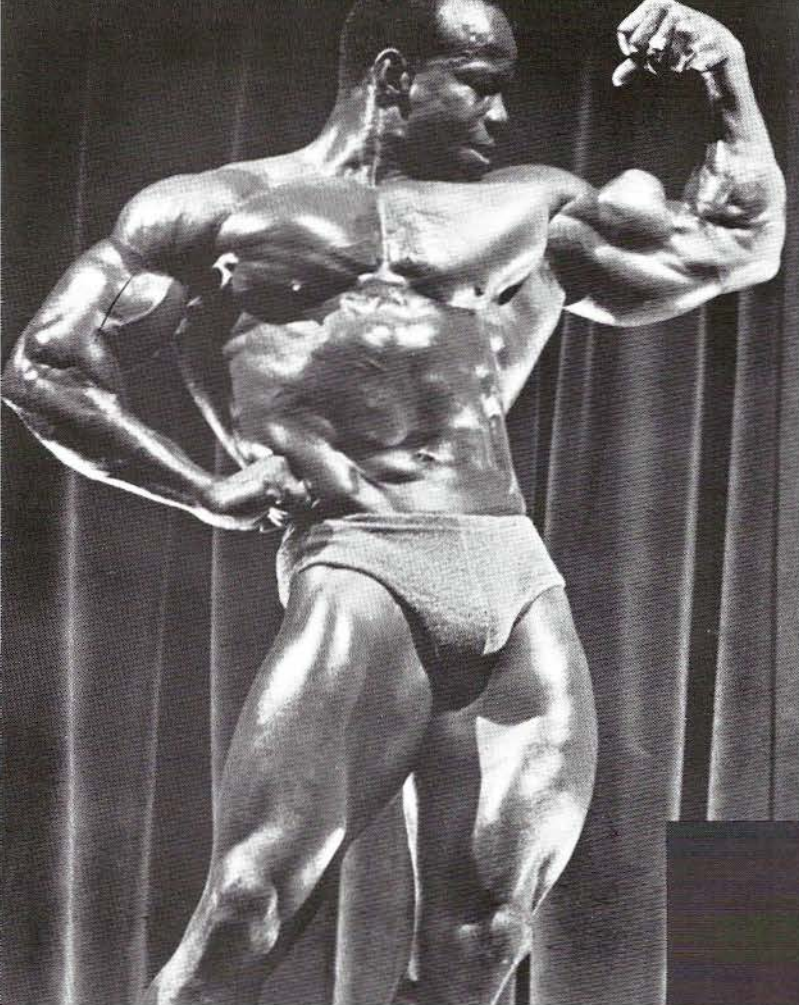
*Ronnie Coleman*



*Lee Priest proves that impressive muscularity—and tremendous arm development—is possible for competitors of all statures.*

*Nasser El Sonbaty and Jean-Pierre Fux don't rely solely on incredible mass when they step onstage to compete. They have complete physiques, including proper forearm proportion, outstanding biceps, triceps, deltoids, and pec development.*





*Albert Beckles displays one of the best peaked biceps in bodybuilding history.*



*Paul Dillett shows the importance of proportion in creating a championship physique. It isn't enough for a bodybuilder this big to build big arms. They have to be big in proportion to the rest of his body, as is the case here.*



Achieving arm perfection means knowing which muscles to train, with which exercises, and what amount of effort to give to each. There are different ways of approaching arm training. You can train the whole arm in one workout, either finishing each muscle group before going on to the next or alternating sets for biceps and triceps, getting the whole arm pumped at one time. Or you can break up your training so that you train triceps one day, biceps the next, and forearms whenever it suits you.

As with other body parts, total development comes about only when you are able to shock the arms into responding, no matter how big they become. Employing variety, change, and as many of the Shocking Principles as possible will all help give you the kind of quality arms you are training for.

*Lee Priest is a "giant killer" in the tradition of Danny Padilla and Franco Columbu, and this view of the outstanding development of his upper arms and forearms shows why.*



## Biceps Training

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Biceps have always been one of my best body parts. When I was young, building up my biceps was especially important to me, so I worked very hard and soon they blew up like balloons.

However, as hard as I may have worked, I now realize that my outstanding biceps development is largely hereditary. My biceps are like Tom Platz's thighs—once subjected to the hard work to *make* them develop, they possessed the genetic potential to be among the best in the world.

Hard work and proper training technique will bring out the full potential of any muscle, but not everybody has the same degree of potential. Some bodybuilders have longer biceps, some shorter; some with a higher or lower peak; some that develop enormous thickness and others that do not. You can work on each of these aspects of your development, bring up weak points with intelligent planning, but it certainly helps if you have a predisposition to great shape and proportion in the first place.

Actually, there are many different-shaped biceps that can still be considered first-rate. Among the bodybuilders against whom I competed, Larry Scott was noted for long biceps, both thick and full at the same time. My own were noted for an extremely high peak. Franco Columbu's biceps were high, but short. Sergio Oliva had long biceps, but not particularly high. Boyer Coe had high, long biceps, but narrow. Despite these different arm structures, each of these bodybuilders won impressive titles. The same is true today—you will see bodybuilders with different proportions, different genetic gifts, but each can be a champion if he or she possesses a certain "package," a balancing set of characteristics.

The underlying bone structure and physical proportions have a lot to do with how the arm will ultimately look. Because Franco has short arms, it was not difficult for him to develop biceps that looked proportionately massive. But Lou Ferrigno, with his very long arms, needed 22-inch biceps just to have them look in proportion to his 260-pound body. If he had had 20-inch arms, even though they might be the biggest onstage, he would have looked proportionately underdeveloped.

Proportion and the relative strength of various other muscles can also make a difference in how the biceps are trained and developed. For example, when watching Franco Columbu and Ken Waller doing Barbell Curls, it seemed to me that because the front delts were so powerful, these muscles were taking over a lot of the lifting effort from the biceps. Therefore, they had to make a special effort to isolate the biceps, or else they would never have gotten the training they required. One way they did this was by using the "Arm Blaster" to lock their elbows in place while doing Curls. (You can see me using this apparatus on page 429.) Another was by doing a lot of biceps training using a preacher bench to further isolate the arm muscles.

If you have a similar problem but don't have this kind of specialized equipment, you can simply do your Curls standing with your back against a wall in order to minimize cheating.

Since my front delts were not so proportionately strong, I didn't have that problem. Therefore, I found doing regular Barbell Curls very beneficial. I did not have to make the special effort to isolate the biceps, which was just as well since I didn't know that much about the physiology of training in my early years.

Nonetheless, you can't use other muscles to help with the lift and expect to develop great biceps. You also need to find the right groove—doing any Curl movement through the longest range of motion. When you do a Curl, you must bring your hand directly up to your shoulder. If you change that line an inch to the inside or the outside, you are taking stress off the biceps and you won't get the same results.

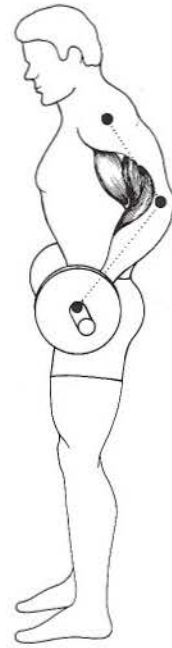
Another mistake I see all the time—Sergio Oliva used to do this—is starting off a Curl movement with a Wrist Curl—bending the wrist back, then curling it up just before engaging the biceps. All this does is take stress away from the biceps by using forearm strength rather than biceps strength, and the result will be huge forearms and mediocre biceps.

But one Curl movement is not enough to work the entire biceps. The biceps not only lift and curl the arm, they also rotate the wrist. Lifting with a bar produces biceps mass, but it locks the wrists and keeps them from moving. So I always include a number of dumbbell exercises that let me twist the wrist to the outside as I lift the weight, giving me a more complete biceps contraction. Working with dumbbells, I'm able to get a better brachialis development at the elbow, and that creates a much sharper separation between the biceps and triceps in a rear double-biceps pose.

Biceps length is also important. Many people do Reverse Curls as a forearm exercise, but I have noticed this exercise also increases the apparent biceps length. The muscle should extend all the way down almost to the elbow and then swoop into a full and powerful-looking curve.

I also like to change my hand position as much as possible when doing Curls in order to completely stimulate all the different areas of the biceps. The Barbell Curl locks the hand, the Dumbbell Curl lets you rotate the hand, the Reverse Curl brings the hand up in a palm-down position, and lifting a dumbbell with the thumb on top, a kind of Hammer Curl, hits the brachialis directly and is necessary for complete biceps development. And I add variety to my biceps workouts by using different kinds of equipment—the Arm Blaster, a straight bar, an E-Z curl bar, a preacher bench, a prone bench, barbells, dumbbells, cables, and machines. Again, the major mistake I see in biceps training is lack of a full movement. There is probably no body part in which training for a full range of motion is so important. You will restrict the range of motion if you do things like lifting your elbows up or holding them too far back and therefore not getting a wide enough arc in the exercise.

*This is an incorrect beginning position for Barbell Curls. The arms are bent and elbows back, which prevents the biceps from being fully extended and drastically shortens the range of motion. Since the arms never get stretched out using this technique, you never fully stress the lower part of the biceps.*



*Starting the lift from a bent-over position is one of the most common mistakes made when doing Barbell Curls. If you begin the lift and straighten up at the same time, the lower back becomes involved. This produces extra momentum during the movement that causes you to swing the weight up instead of lifting it with an intense contraction of the biceps, so the lower part of the biceps never gets properly stimulated. For the correct approach to this exercise, see page 428.*



Some bodybuilders don't want to lower the weight to full extension, with their arms locked out, because they can't lift as much weight that way. But they forget that it is this lower area of the range of motion that creates the real thickness in the lower biceps and makes the muscle appear to come right out of the forearm—an important look when you do poses with your arms extended. This part of the muscle also rolls up and helps create height when you flex.

You see bodybuilders locking out their arms on Curls, but then they ruin the movement by not doing a strict curling motion right from the beginning. Instead, they lift the weight up, using a little shoulders and some back, so the first few inches of the movement are wasted because the biceps are simply not involved.

Another mistake is to bring the weight all the way up and then neglect to flex and contract the muscle. When the weight is up at your chin, the bones and joints are taking most of the strain. To keep the muscle working, you have to really flex it hard or it remains soft because you are not keeping it under stress. You are never going to have full, hard, and thick biceps with which to impress judges if you get lazy at the top of your Curl movements.

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## CHEAT CURLS

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Curls are one of the exercises where cheating can be used effectively. Curls are essentially a rotary movement, yet the resistance of the weight works vertically. In other words, you are lifting with a circular motion but gravity continues to pull the weight straight down. Sometimes during the movement you are lifting out, other times lifting up, but the resistance is always up and down. So you are not continuously lifting in direct opposition to the weight. This makes the exercise less effective in certain parts of the movement.

The designers of Curl machines state that their equipment, which acts with a rotary rather than linear motion, is better for doing Curls than barbells or dumbbells. However, you don't need a complicated machine to overcome this difficulty. Instead, you can do some of your Curls using a weight that is too heavy for a strict movement. So even though you are using your back and shoulders to help "force" the weight up, you are also forcing the biceps to work to the maximum at every point along the movement.

The barbell or dumbbell is harder to lift at the point where your forearms are parallel to the floor than at the beginning of a Curl when your arms are pointed more toward the floor. Doing Cheat Curls, you can use a weight that feels very heavy in the "easy" part of the movement and then

cheat a little to get you past the “hard” part where the resistance is too great to overcome using strict technique.

Doing exhibitions for Reg Park in South Africa I would do 5 repetitions of Barbell Cheat Curls with 275 pounds. Handling this amount of weight does not help create great biceps shape or give the muscle a high peak, but it certainly is effective as a mass builder. However, Cheat Curls should be no more than 10 percent of your biceps program. You also need a variety of strict movements to develop the complete quality of the muscle.

## **BEGINNING PROGRAM**

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The Barbell Curl, done strictly for beginners, is the fundamental exercise for building mass in the biceps. The Barbell Curl remains in the program all the way through, from Beginning to Competition Training. This is the only way to continue to build and maintain maximum muscle mass and thickness. But I also recommend including Dumbbell Curls from the very start because this exercise allows you to supinate your wrist, which gives you a more complete contraction and helps develop the full shape of the muscles.

I also recommend One-Arm Curls almost from the beginning. When doing these, I hold on to something with one hand to steady myself, lean a little to the side to give myself a free range of motion, and concentrate totally on each biceps in turn—something you can't do when you are working both arms at the same time.

## **ADVANCED PROGRAM**

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When you get into Advanced Training, you continue trying to build additional mass, but you must also be concerned with creating separation and shaping the entire biceps structure. If your biceps lacks peak, work on height. If it's not thick enough, make it thick.

Incline Dumbbell Curls are the best exercise for developing the shape and quality of the biceps and getting an even greater stretch in the muscle. Along with this, the Concentration Curl can help add biceps height.

As you progress, you will begin to superset your exercises, creating more intensity by cutting down the time interval. I like the idea of supersetting biceps and triceps, which gives an enormous pump to your arms and makes you feel gigantic. Also, you can handle heavier weights for tri-

ceps when your biceps are pumped like a pillow, giving you a kind of cushion you can bounce off with each triceps repetition.

Supersetting different muscles is also valuable in preparing you for competition, when you will need to pump your whole body at the same time. If you aren't used to this, you will not be able to show yourself at your best when you step out onstage.

The closer you get to competition, the more you have to be certain that you do enough additional exercises to fully develop every aspect of the biceps. Besides the mass-building Barbell Curls, you need to do more Incline Curls, which help develop the lower part of the muscle. I often would go even further and actually lie on a flat bench to do Dumbbell Curls, stretching the biceps even more. You also need additional cable and dumbbell work which allows you to twist your wrist and more fully shape the muscle.

## COMPETITION PROGRAM

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At each level, you are required to do something extra, to continue to overload and demand more of the muscles. This principle is even more important when you are training your arms for competition. One good way of increasing the intensity of your training is by doing Alternate Dumbbell Curls instead of Barbell Curls. In this way you are able to isolate each biceps, and concentrate all your energy on each arm in turn. Because of the way this exercise is done—with one arm coming up as the other is going down—you are able to achieve a much stricter movement with very little cheating. You can increase intensity by going farther and locking in the elbows by doing Preacher Curls, which force you to work in a stricter manner while hitting the lower biceps to a greater degree.

The degree of time-intensive training you need for competition preparation is greater than ever before, involving trisets—three exercises in a row without any stopping to rest in between. This will be difficult at first, but as your conditioning increases you will find this accelerated program gives you a tremendous pump and allows you to do an enormous amount of training in a very short time.

Above all, you need to employ as many techniques as possible to shock the biceps into further development. I always liked, for example, to do Barbell Curls with a partner: I would do a set, hand the weight immediately to him to do his set, have him hand it back to me immediately for my next set, and so on until exhaustion.

*For total competition development, I made sure I did a lot of single sets, supersets, and trisets with a large variety of exercises—a set of biceps*

once an hour every hour the day before a contest; cheating reps; partial reps; forced reps; negative reps; Curls to the inside, Curls to the outside—nothing left out, nothing left to chance.

I attacked my biceps for competition with the Stripping Method, but also with 21s, combining a lot of partial reps and full reps, and supersetting one biceps exercise with another as well as supersetting biceps with triceps, or biceps with whatever.

I also used a lot of visualization in biceps training. In my mind I saw my biceps as mountains, enormously huge, and I pictured myself lifting tremendous amounts of weight with these superhuman masses of muscle.

This kind of intense training will ensure that you build enough mass in the biceps; that you gain biceps length, thickness, and height; that you develop the inside and outside of the biceps and the separation between biceps and deltoids and between biceps and triceps—all of which you have to have if you want to build a championship physique.

## **WEAK POINT TRAINING**

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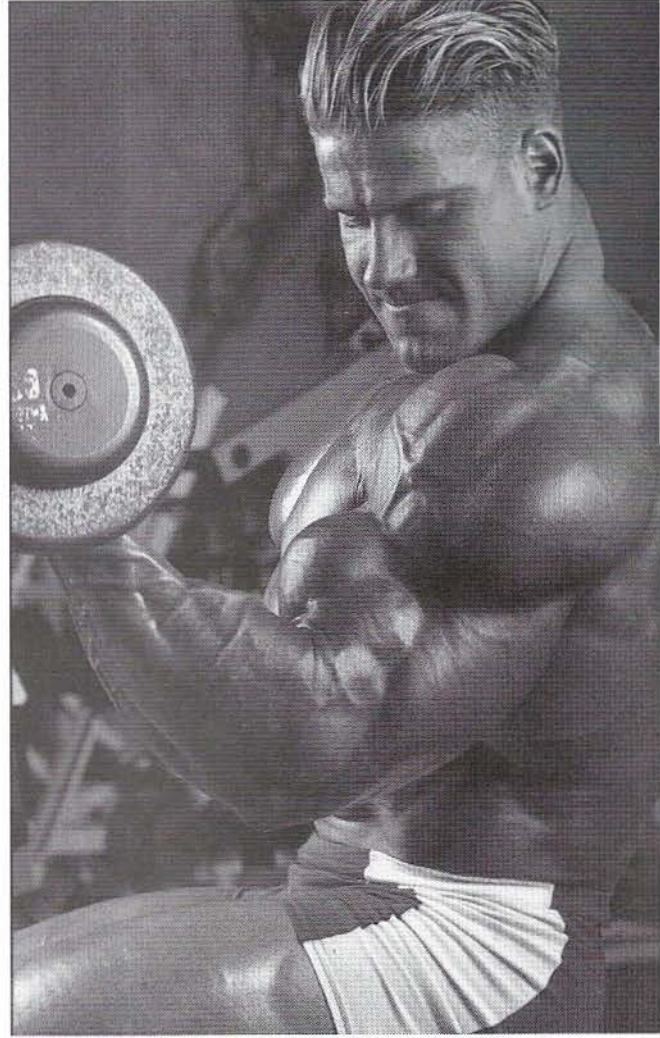
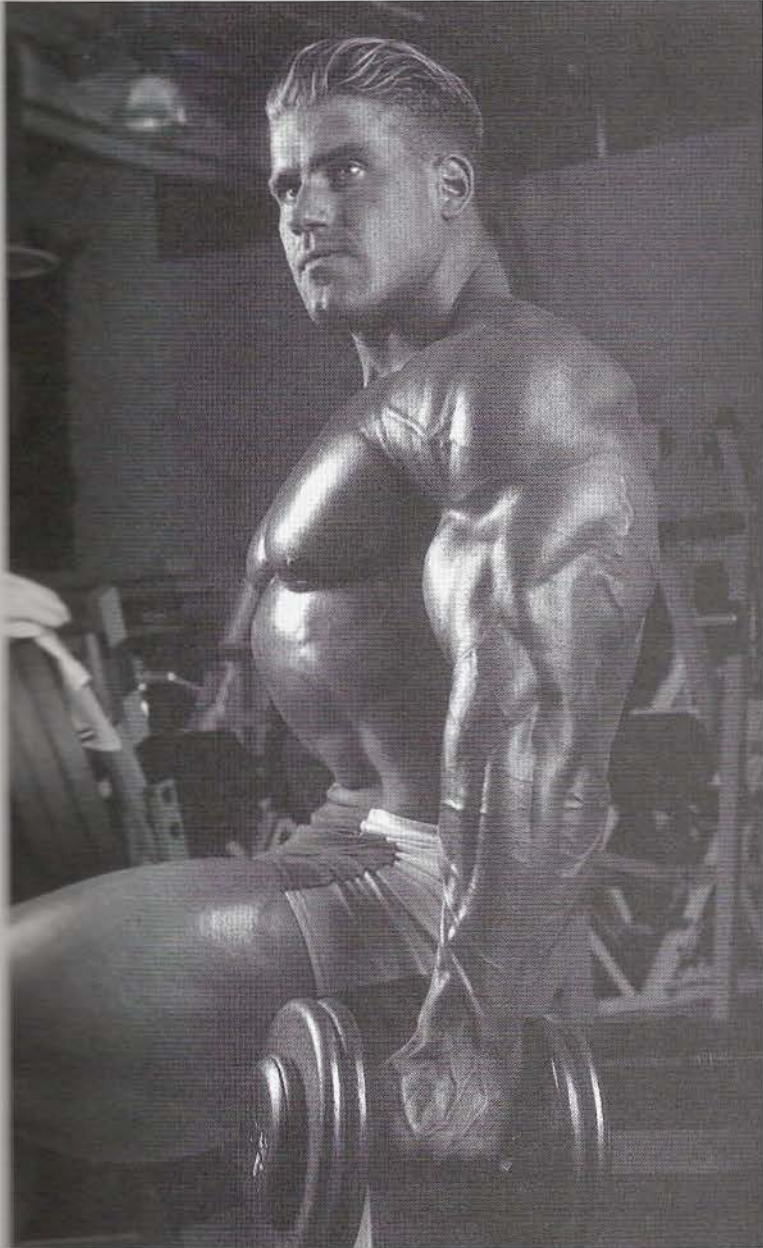
But even if you do everything I have just outlined, and more, you may still find that certain areas of the biceps are relatively less well developed than others.

In general, when you are trying to build up a weak area of the biceps, the best technique you can employ is one-arm dumbbell exercises. Doing an entire set with just one arm at a time allows for maximum concentration and intensity, and ensures that each arm works to its maximum. This keeps a stronger biceps from overshadowing the weaker, which can result in asymmetrical arm development. Also, be sure to twist the wrist during the movement for total biceps contraction.

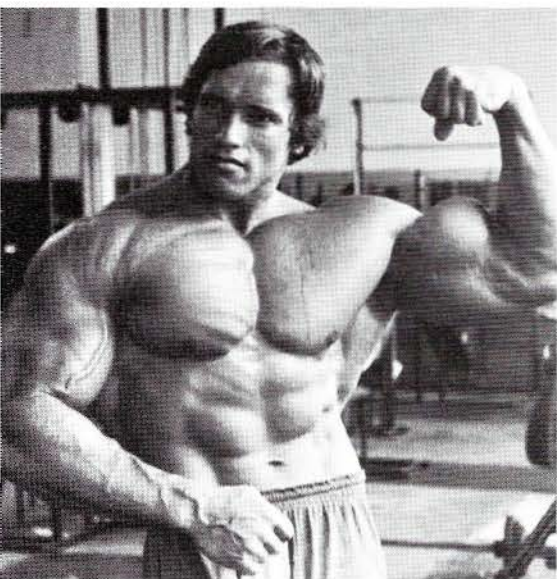
However, I believe one major reason bodybuilders show weak points in the biceps is that they do the exercises incorrectly. You need to master proper technique—keeping the elbows steady, lowering the weight rather than dropping it, employing as many Shocking Principles as possible—and then you will be much less likely to have problems in this area.

For example, I see a lot of bodybuilders using their forearms when they do Curls, starting the motion with a kind of Wrist Curl which takes away from the effectiveness of the exercise. Or they will do a Curl and, at the top, instead of flexing their biceps—to maintain maximal tension—they will just throw the weight back toward their shoulders, leaving the biceps loose and not working at all. I recommend instead using the peak contraction principle—flexing the biceps as hard as possible when you get to the top of the Curl.





*One-Arm Dumbbell Curl (Jay Cutler)*



*This photo shows my arms at their most massive, when I weighed 245 pounds and relied heavily on Barbell and Cheat Curls using very heavy poundage. Notice how thick and huge the unflexed arm looks.*

*The longer and thicker your biceps, the better they will look when you hold your arm straight out, and the bigger and higher they will be when you curl and flex your arm in a biceps shot.*

But sometimes biceps development lags behind simply because they aren't being trained hard enough, the bodybuilder feeling that 5 sets of biceps is plenty and ending up with big but relatively shapeless masses of muscle where he should have beautifully sculpted biceps.

To correct specific weak points in the biceps, I recommend the following exercises:

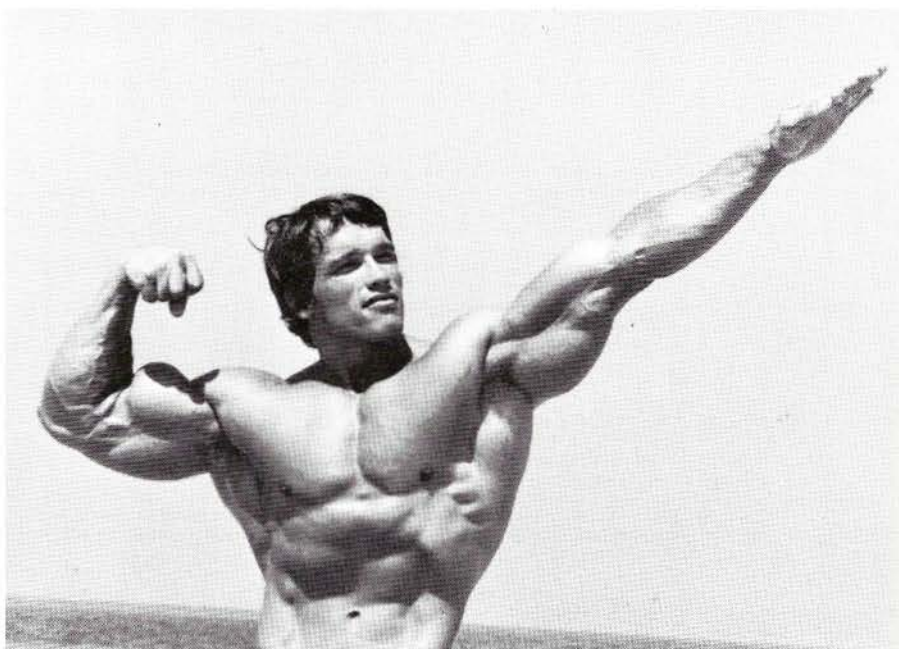
#### **FOR MASS**

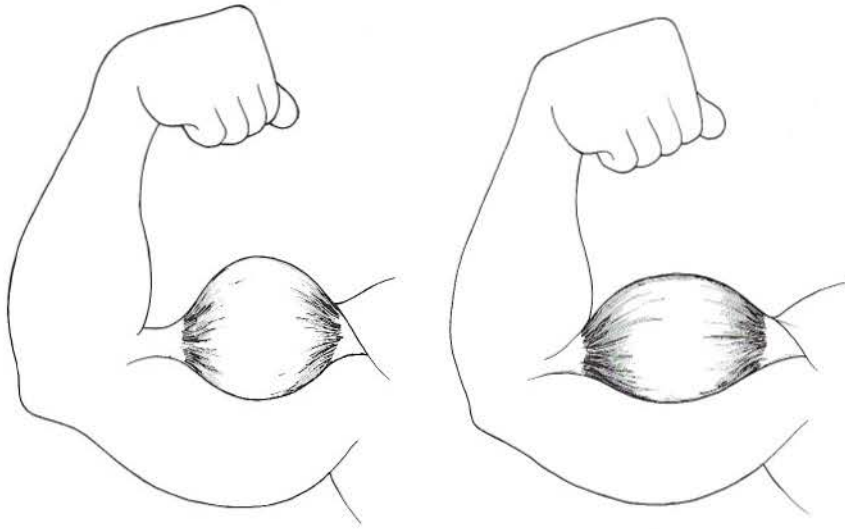
Heavy Barbell Curls and Cheat Curls. Muscle size comes from lifting heavy weights. If you can curl 110 pounds and you train up to the point where you can curl 130 pounds, your biceps are going to get bigger. Try using my visualization technique to imagine your biceps growing to superhuman size.

#### **FOR LENGTH AND THICKNESS**

Curls that concentrate on the lower third of the range of motion Incline or Prone Curls to stretch the biceps to their maximum Strict movements, like Preacher Curls or Curls with the Arm Blaster, to lock your elbows and allow you to get the fullest extension of the biceps

After completion of each set of my Dumbbell Curl exercise, rotate the wrists 180 degrees 5 or 6 times.



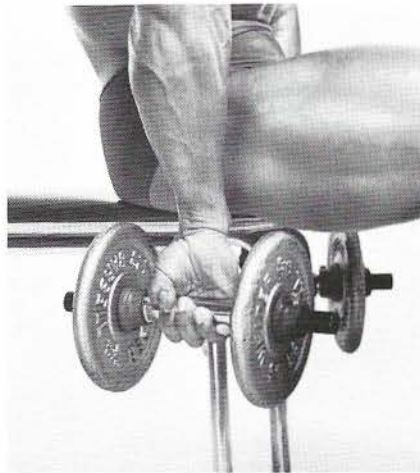


*This is a biceps with a high peak but a short head. The muscle belly does not extend completely down to the elbow, which leaves a gap.*

*This biceps has a long head, but it lacks height.*

*Many bodybuilders don't realize that the function of the biceps is to twist the wrist as well as lift and curl. This is why I always started a curling movement as shown in pictures 1 and 2.*

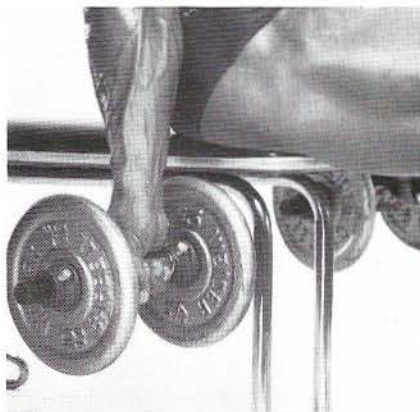
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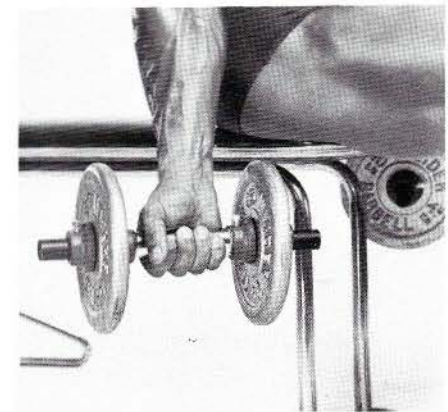
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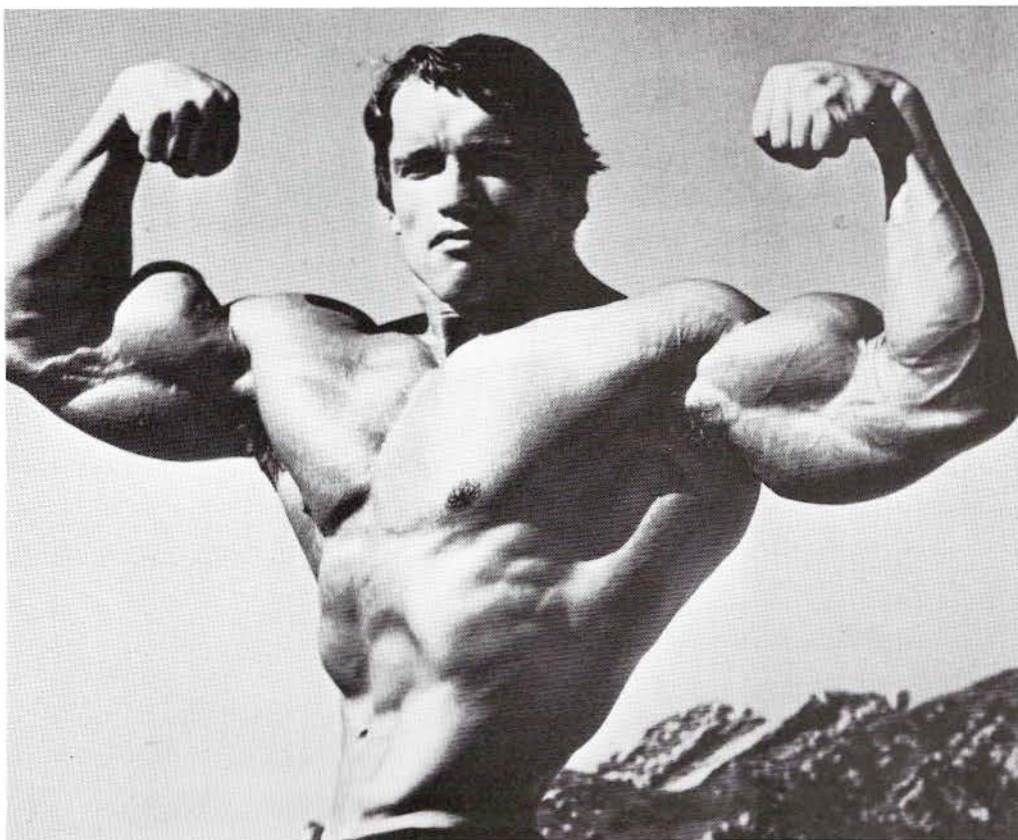
3



4



*The hand positions in pictures 3 and 4 are good if you want to eliminate wrist rotation while doing Dumbbell Curls.*



*Thickness in the biceps is important, but height is a quality that is often overlooked. I have always worked hard on developing peaks, and I feel that I won a lot of competitions because of my high biceps.*

#### **FOR HEIGHT**

Concentration Curls with a dumbbell or cable

Dumbbell movements emphasizing a twist of the wrist (turning the thumb outward) as you raise the weight, making certain you concentrate on the top third of the range of motion

Use the peak contraction principle—flexing the biceps as hard as possible at the top of the movement—and do a series of contractions and relaxation.

Keep going until you get a tremendous pump.

Include burns in your workout—finishing off by bringing up the weight and fully contracting the biceps, then bringing the weight down a third of the way, then back up to another full contraction.

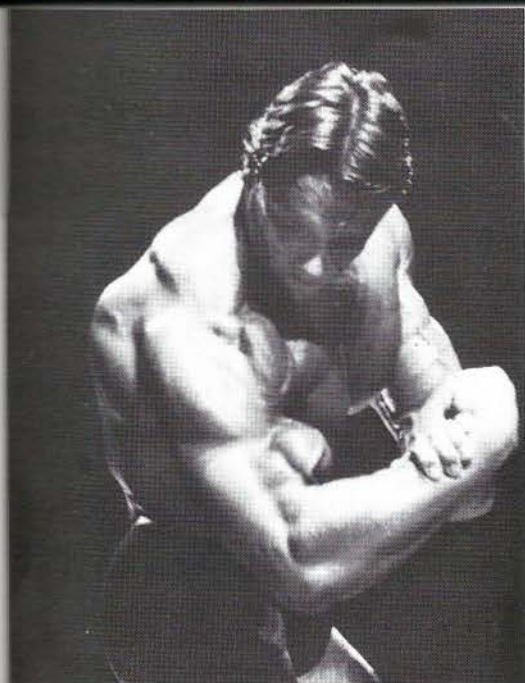
Do 3 or 4 reps of this movement and then put the weight down and pose and flex your biceps.

#### **FOR BICEPS MASS AND OUTER THICKNESS**

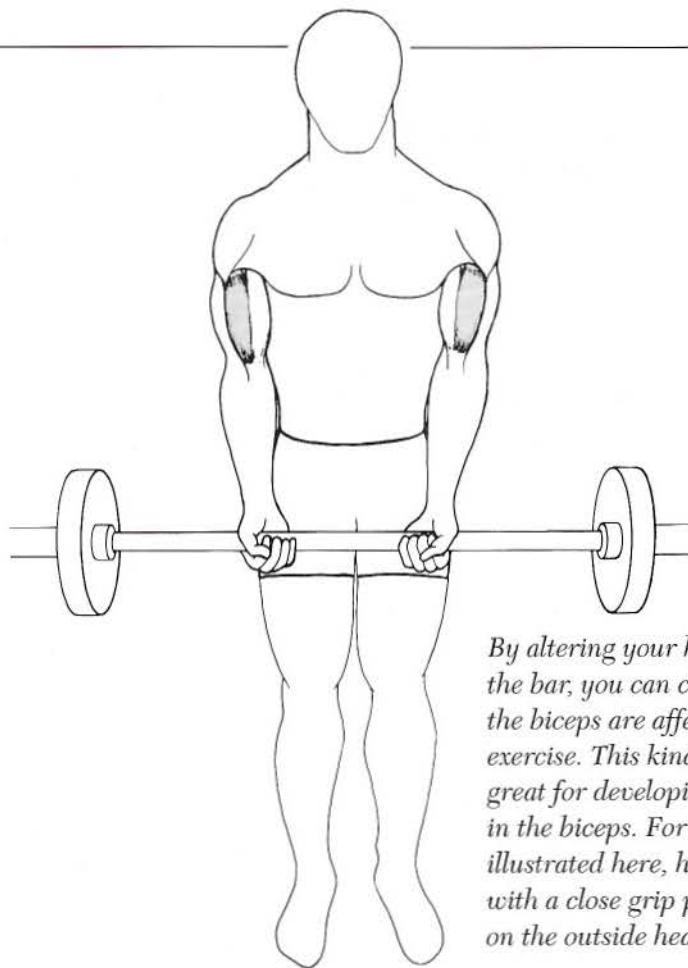
Curls done inward toward the center of the body, such as Close-Grip

Barbell Curls or Close-Grip Preacher Bench Curls

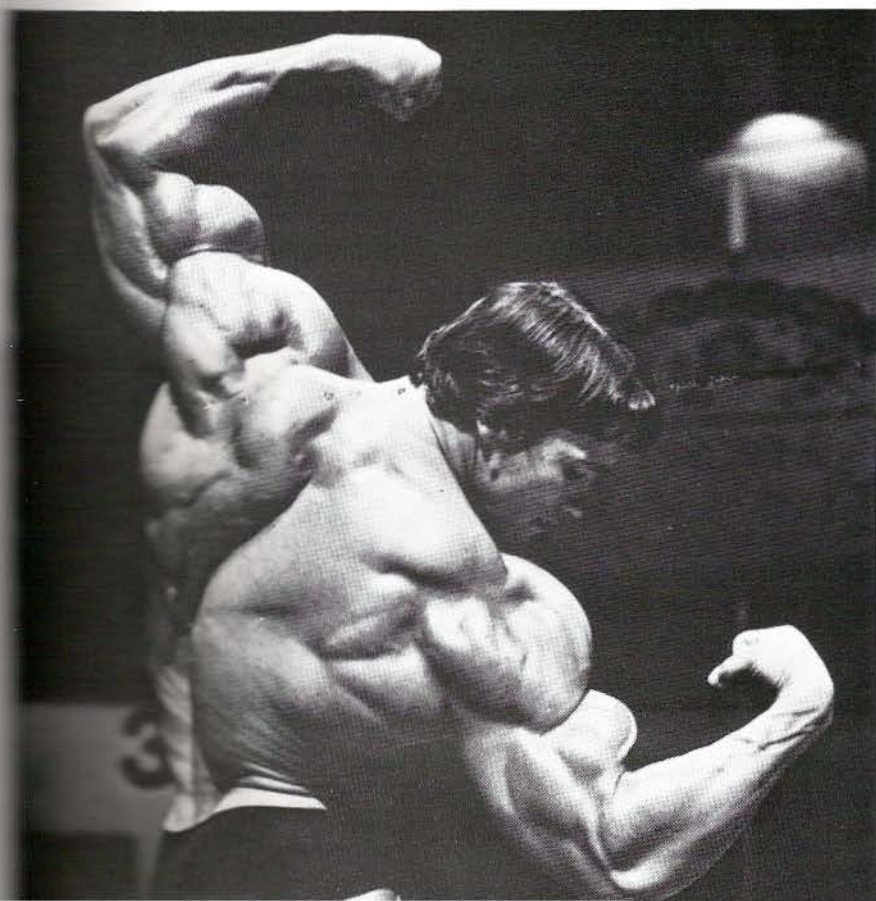
Concentration Curls that bring the weight into your chest



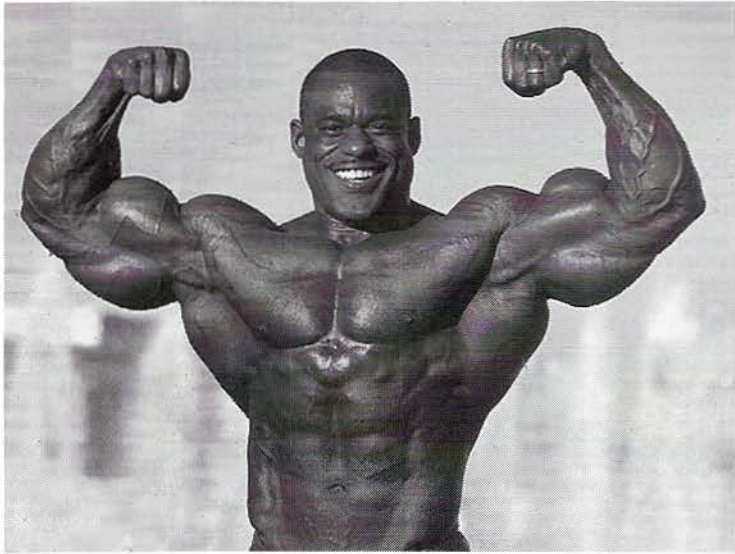
*Well-developed outer biceps allow you to hit a number of poses effectively. For example, one of my favorite biceps poses is where I simply flex my arm and show the judges the outer biceps. But to get this kind of development you need to work the biceps from all angles.*



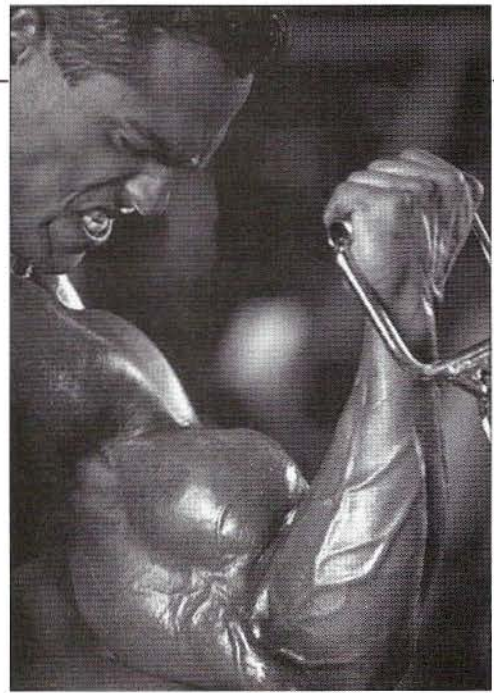
*By altering your hand position on the bar, you can change the way the biceps are affected by the exercise. This kind of variation is great for developing weak points in the biceps. For example, as illustrated here, holding the bar with a close grip puts extra stress on the outside head of the biceps.*



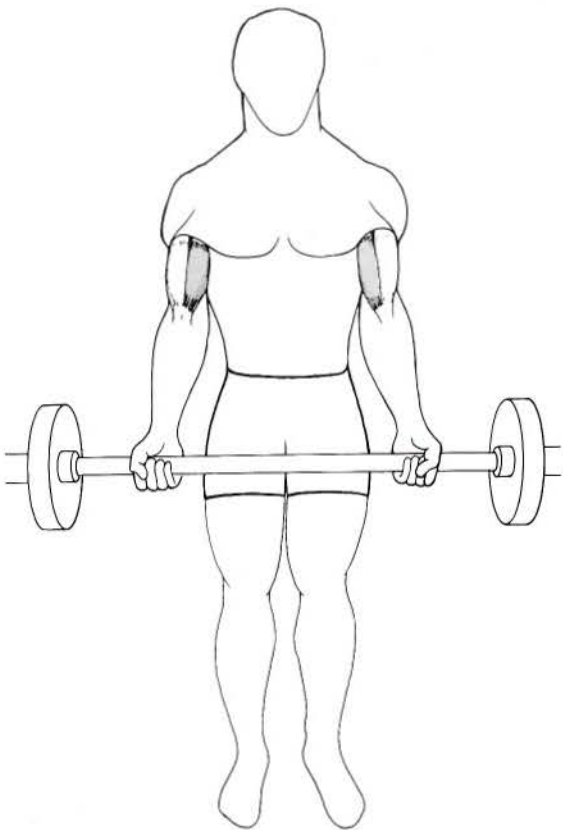
*In order to make back poses like this twisting three-quarters back shot work, you have to have good outer biceps and brachialis development (at the elbow) in order to separate the biceps and triceps.*



*Vince Taylor*



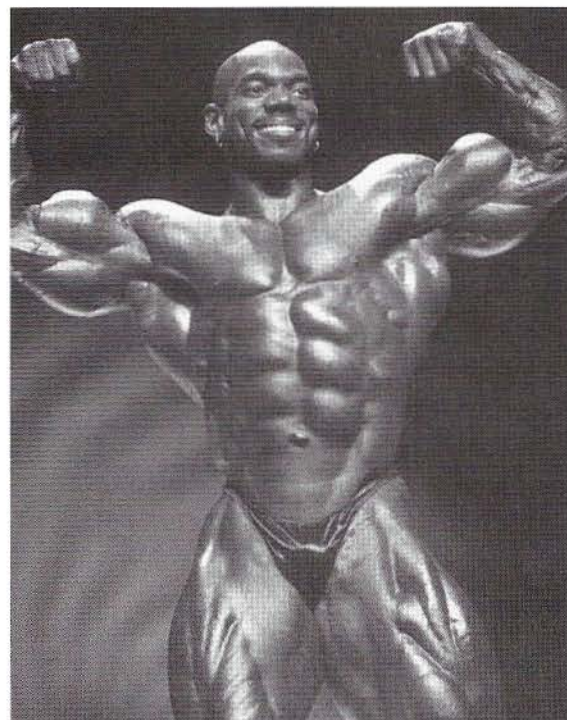
*David Hughes*



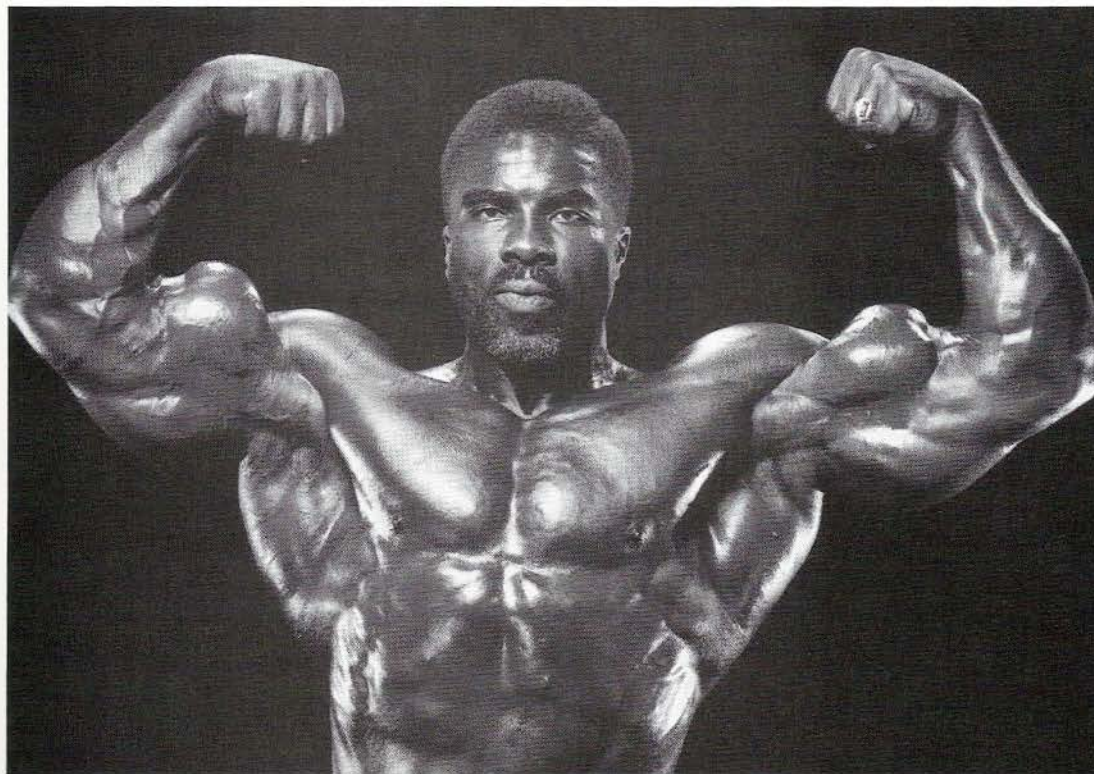
*If your weak point is the inner region of the biceps, you can put more stress on this area by holding your hands in a wide grip for Barbell Curls.*



*Lee Priest*



*Flex Wheeler*



*Robby Robinson's arms are one of the best examples of biceps definition and separation. Looking at Robby in this photo is like examining an anatomy chart.*

#### **FOR BICEPS MASS AND INNER THICKNESS**

Hold dumbbells in a “hammer” position—palm turned toward the inside rather than facing upward. You can feel how this changes the stress on the biceps.

Standing Barbell Curls

Barbell Preacher Curls done with a wide grip

Seated or Standing Dumbbell Curls

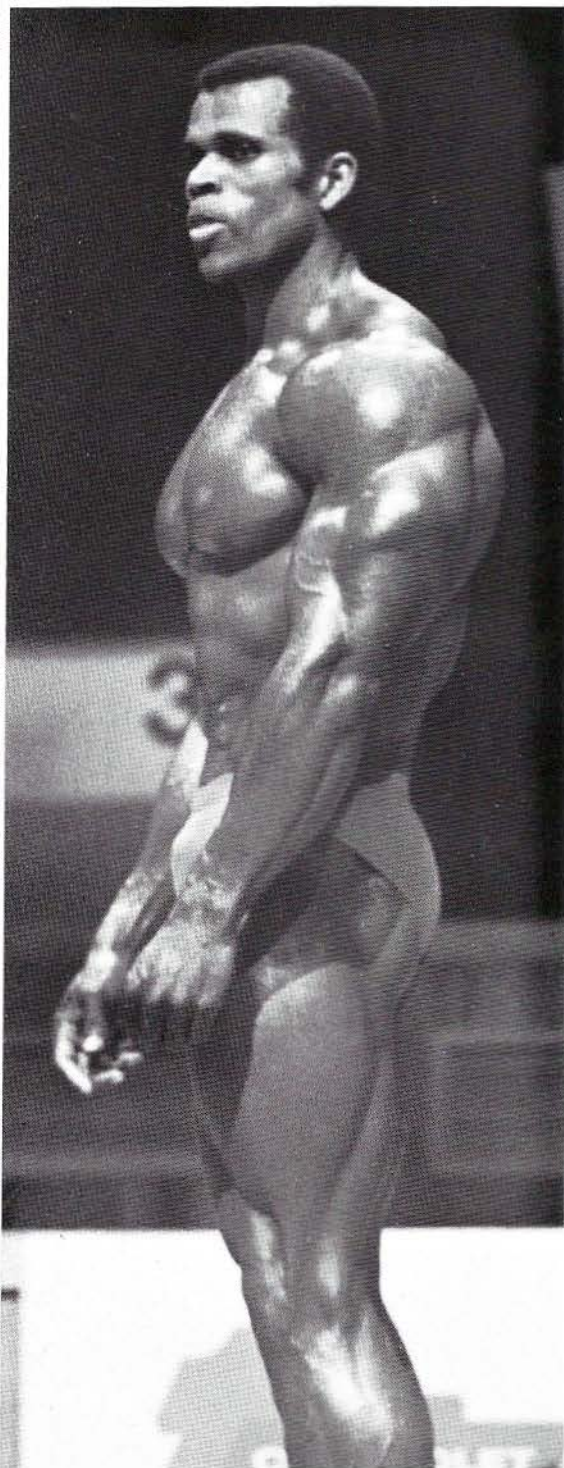
Incline Dumbbell Curls

Standing Alternate Dumbbell Curls in which your arms are kept wide, angling away from the body. If you curl out and downward and turn wrists slightly outward, dropping your thumbs slightly, you will feel the exercise much more specifically in the inner biceps.

#### **FOR SEPARATION AND DEFINITION**

High set training, supersets, and trisets. Try to use as many different biceps exercises as possible, especially dumbbell movements that allow you to train at the greatest variety of angles and lots of one-arm movements to create maximum isolation.

Reverse Curls, to develop brachio radialis and biceps that look so good when you do a rear double-biceps shot. Remember to keep your elbows steady as a pivot point and your wrists steady throughout the movement.



*Serge Nubret has full, thick triceps, so his arms still look massive even when he is standing relaxed.*

## Triceps Training

The triceps is a larger muscle mass than the biceps, and it needs training from more angles. Like the biceps, the triceps have to look good from any view. But unlike the biceps, the triceps need to make your arm look big, massive, and impressive when your arms are not flexed as well. When somebody says, "Wow, look at the size of that guy's arms!" you can be sure it is the triceps that are creating that effect. They are visible 90 percent of the time you are onstage, whether you are standing relaxed or hitting poses.

Bill Pearl, Serge Nubret, Sergio Oliva, Albert Beckles, Freddy Ortiz, Casey Viator, Jusup Wilkosz, and Frank Zane are all good examples of bodybuilders who have great triceps. The triceps need to be developed in such a way that they look good when you do a side triceps shot, a front or rear biceps shot, or pose with your arms raised overhead or held straight out (a pose Larry Scott, Dave Draper, and I were noted for and which requires outstanding triceps). Imagine doing a rear lat shot and how effective good triceps can be from that angle. Or a most-muscular pose, with the triceps sticking out right from the elbow and continuing on to the rear deltoid. Or a front abdominal shot where your hands are behind your head.

While it is possible to hide weak biceps to some extent, weak triceps are obvious in almost any pose. When the judges look at you standing relaxed in round one they will know immediately if you have good triceps or not. Sergio Oliva, for example, could just stand there, his triceps looking huge and powerful, and make an impression on the judges, even though his biceps were not that outstanding.

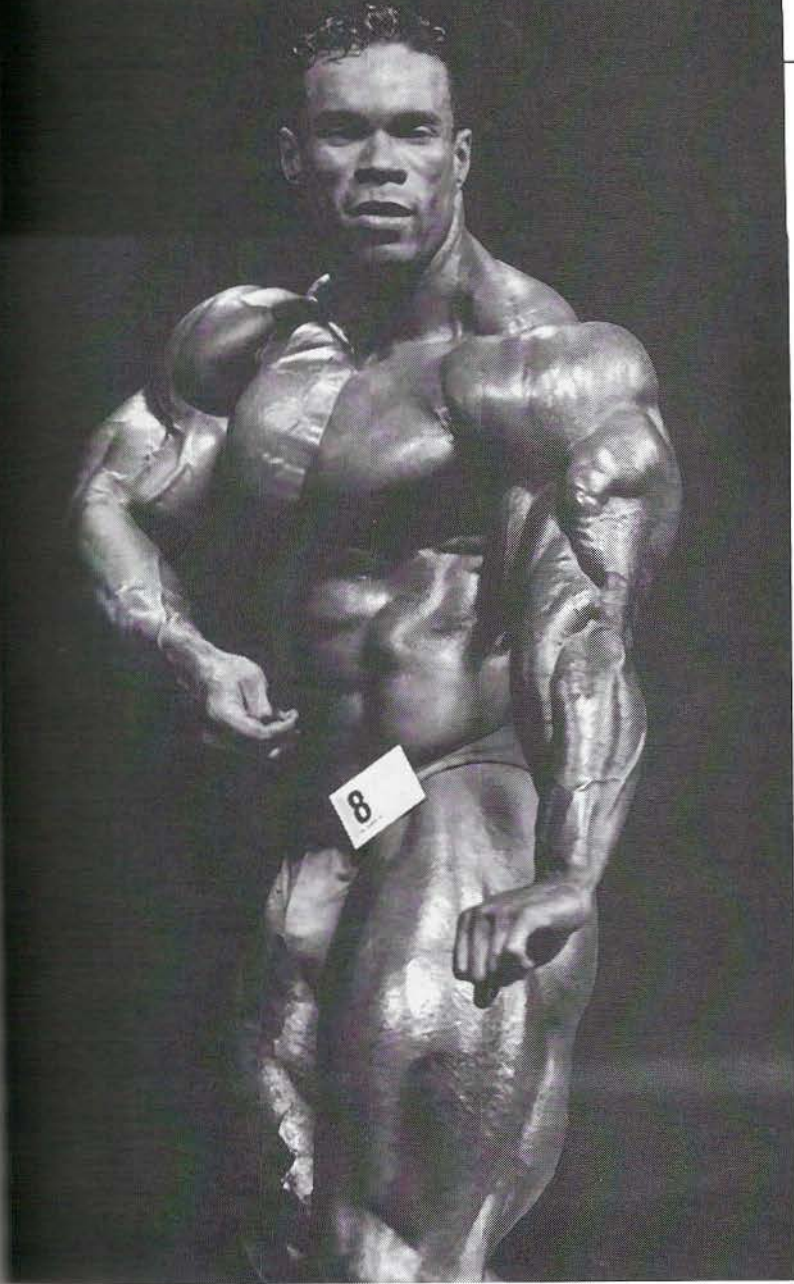
However, just as with other body parts, there is a difference between big triceps and good triceps. Every part of this relatively complex muscle needs to be fully developed. When your arms hang, the triceps need to be evident all the way from the elbow to the rear deltoid. When they are flexed, each of the heads must be fully shaped, separated, and distinct.

### BEGINNING AND ADVANCED PROGRAMS

The first step in training triceps is to build up the mass and strength of the muscle structure. This means doing the basic triceps press and extension movements, gradually adding more and more weight until the area begins to respond. Different kinds of presses and extensions are designed to develop specific areas of the triceps. But there are also techniques you can use to maximize your triceps training. Remember that anytime you straighten your arm against resistance—whether you are specifically doing triceps training or not—you will involve the triceps muscles.



*A well-developed triceps looks like a horseshoe at the back of the upper arm.*



*Kevin Levrone*

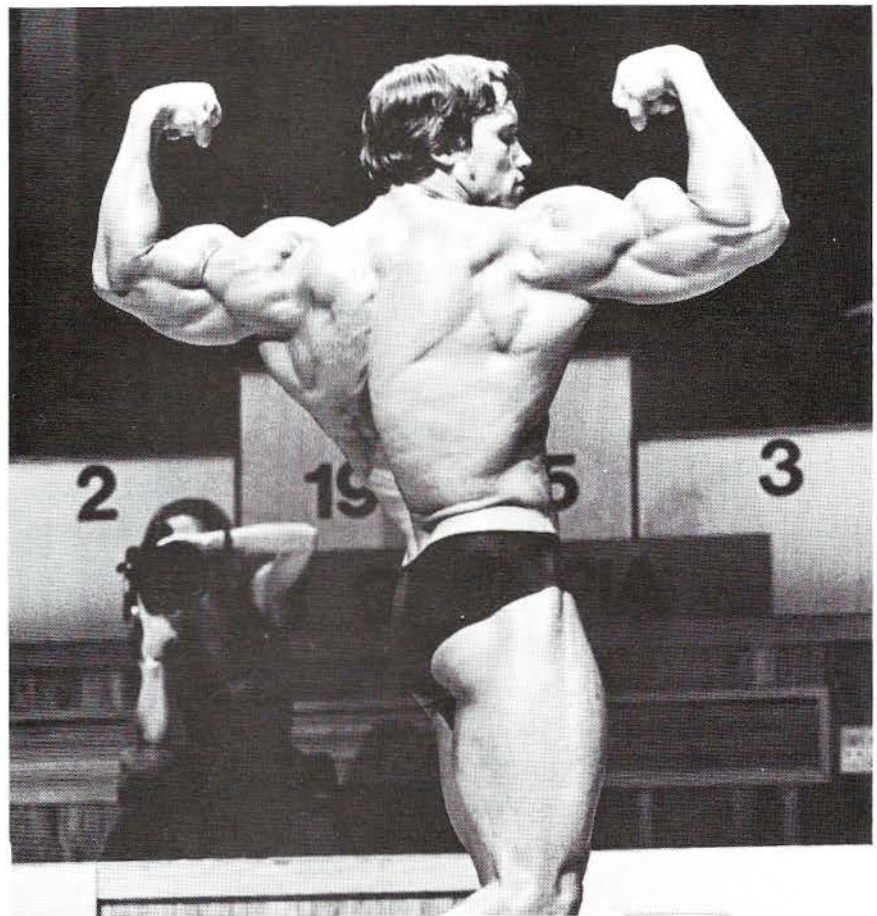


*Lee Priest*

*The mass of the flexed triceps and the great shape of the triceps of the straight arm blend in perfectly with the outstanding muscularity of Albert Beckles's back.*



*Triceps are just as important in any back double-biceps shot as when you are doing specific triceps poses. Here you can see the way the triceps hang below the arm, and the separation between triceps, deltoids, biceps, and forearms.*



In most cases, muscle mass and strength are enhanced by employing a cheating technique, but you don't need to cheat in order to put extra stress on the triceps. With all the effort you expend doing power training with Bench Presses, Dumbbell Presses, and Shoulder Presses, you are already putting an enormous strain on the triceps area.

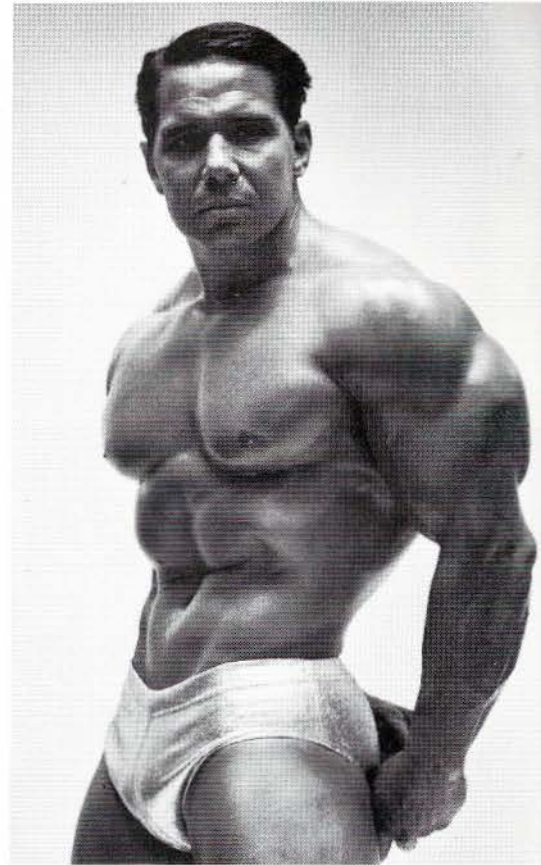
Even though the triceps are involved in a wide range of different exercises, it is also necessary, especially as you become more advanced, to isolate the heads and put the stress on each part directly to make certain you get full development of the muscle structure. For this, I recommend a number of different Triceps Extension movements, using barbells, dumbbells, and cables, each of which tends to hit a different area of the triceps.

Proportions and bone structure of individual bodybuilders will make it easier for some to develop good triceps. When doing Triceps Pressdowns, for example, it is easy for some to isolate the triceps, while others with different proportions and muscle attachments will find themselves involving the pectorals or even the lats instead of just the triceps. You see this a lot when some bodybuilders try to do Triceps Pressdowns and end up with a good chest pump. In a case like this, learning to totally isolate the triceps becomes extremely important, and can be accomplished by doing One-Arm Triceps Extensions or Barbell Triceps Extensions.

Lying Triceps Extensions work the muscle from the elbow to the rear deltoid, and are also great for developing the triceps for straight-arm poses. One-Arm Triceps Extensions help develop the triceps so that they look good when you are doing biceps shots, with the fullness of the triceps offsetting the peak of the biceps. Lying Dumbbell Extensions work the outer head of the triceps to a greater degree, giving you the shape and thickness you need for total triceps development.

Your hand position makes a difference in how an exercise affects the triceps. If you hold your hand so that the thumb is up, palm facing the inside, you work the outside of the triceps, to a slightly greater degree, as when doing Triceps Pressdowns holding on to a rope rather than pressing down on a bar or performing Dumbbell Kickbacks. If you turn your hand so that the palm is facedown, as in a Triceps Pressdown, you put more stress on the inner part of the triceps. If you twist your wrist, thumbs in and down, which is easiest when doing One-Arm Cable Triceps Pressdowns, you really hit the muscle a little bit differently.

Advanced training also involves supersetting, hitting the muscle with one exercise after another to develop size, strength, shape, and endurance. You need to work the upper and lower long, lateral, and medial heads. Adding on exercises is important only if you pursue them with the kind of intensity that forces the muscles to continue to grow, no matter how advanced you become.



*Bill Pearl is the king of this particular triceps pose, which is a great way of showing the development of the upper triceps.*

## COMPETITION PROGRAM

Until you have seen a top-rated bodybuilder in shape for competition hitting a triceps shot, you probably have no idea what the muscle structure is supposed to look like. It is, in fact, almost like a horseshoe that curves up from the elbow, separated clearly from the deltoids above it and the biceps on the other side of the arm. In a bodybuilder, this muscle can be awesome.

The Competition Program, which will help you achieve this kind of look in your own physique, uses additional exercises besides those you have already learned, and a lot of time-intensive supersets to create the maximum training intensity.

Exercises like Cable Pressdowns, Kickbacks, Close-Grip Presses, and Dips tend to fully work the triceps. Almost any triceps exercise will help develop the lower part of the muscle if you work only the lower range of motion. Take hold of the weight and bend your elbows, stretching the triceps as fully as possible. Then start to straighten out your arms, but stop after going through only about a third of the range of motion. Go back and forth just through this partial range and you effectively work the lower area.

For upper triceps, completely lock out your arms on any triceps exercise and hold this contraction for 3 or 4 seconds, tensing the muscle isometrically. Following your set, pose and tense the muscle while your training partner does his set and you will get even more response from the upper triceps.

Remember, too, that the triceps rotates the wrist in opposition to the biceps. Just as you twisted the wrist outward in biceps exercises, you should do some triceps exercises in which you twist the wrist in the opposite direction. This will give you complete contraction of the triceps muscle. Behind-the-Neck Dumbbell Extensions and One-Arm Cable Pressdowns are exercises for this purpose.

*Lee Haney displays the ultimate in triceps mass. He doesn't have to squeeze his arm in against his lats to make the triceps appear huge; all he has to do is extend the arm downward and flex.*



## WEAK POINT TRAINING

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If you have a real problem with the triceps, I recommend training them according to the Priority Principle, working them first, when you are fresh. I did this myself years ago when I realized that my biceps had developed out of proportion to my triceps. I began to concentrate on this area, using the Priority Principle, and soon they began to respond so I had an Olympia-quality arm rather than just Olympia-quality biceps.

I also found that supersetting triceps exercises, going right from one to the other, was another way of getting extra triceps development. I would first do a few sets to pump up the biceps, which creates a “cushioning” effect, and then really blast the triceps. After the superset I would continue to flex and pose the triceps, never giving them any relief.

If triceps are an especially weak point for you, I recommend changing your program so that you train them by themselves from time to time, allowing you to concentrate only on the back of the arms to totally shock and stimulate the triceps. To overcome specific weak points, I recommend the following exercises:

### FOR MASS

Use a heavy weight in each exercise:

- Close-Grip Barbell Presses
- Weighted Dips
- Dips Behind the Back



*Dorian Yates*

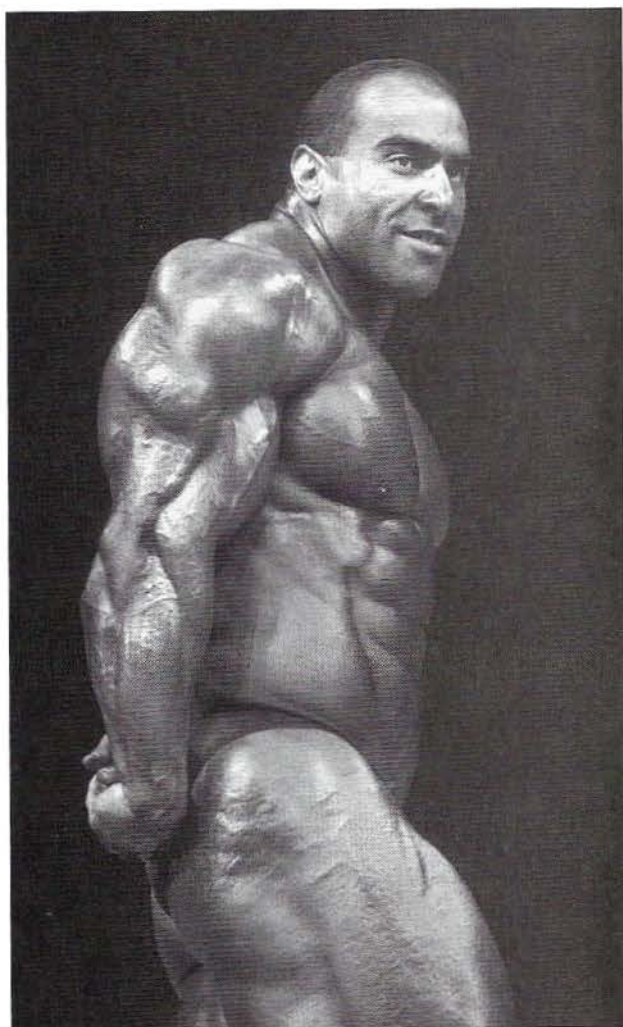
**FOR MASS AND UPPER TRICEPS**

Cable Pressdowns and One-Arm Cable Pressdowns (regular and reverse grip)

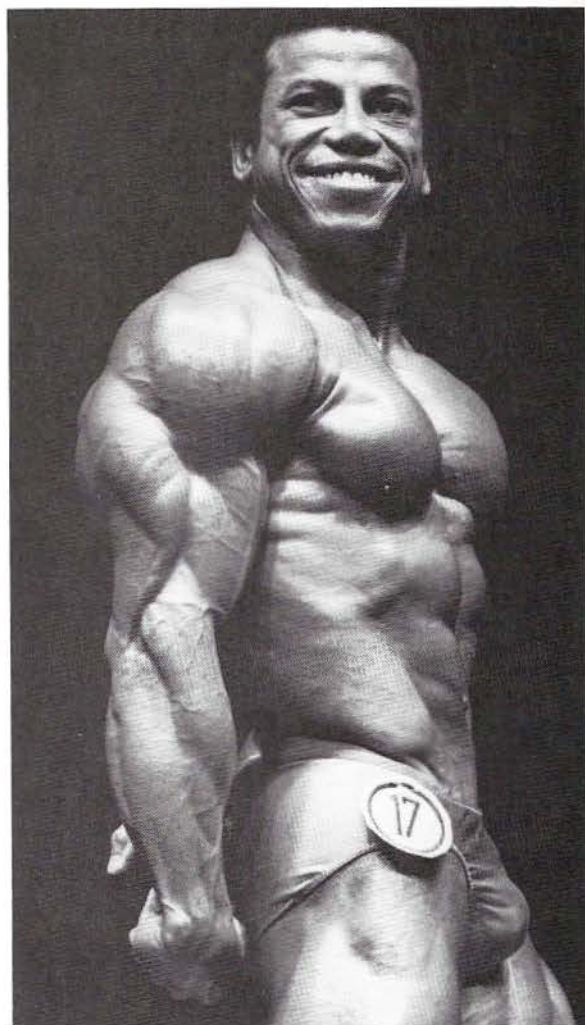
Kickbacks

Dips

Do all triceps exercises strictly so that you really flex them totally, concentrating on locking out on each movement. Use the peak contraction principle, holding the full contraction for a few moments at the top of each repetition.



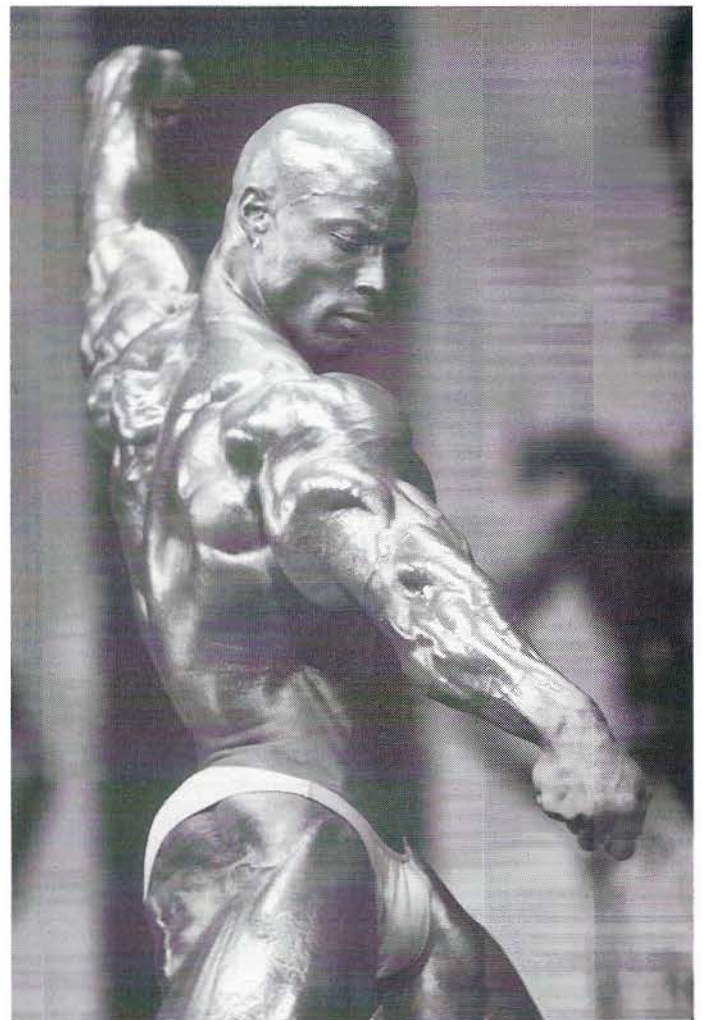
*Nasser El Sonbaty*



*Chris Dickerson is not known for having huge arms, but his triceps—particularly his upper triceps—are so well developed that his arms look really massive in this pose. Notice also the kind of superb separation between triceps and deltoid that helped Chris win the 1982 Mr. Olympia title.*

**FOR MASS AND LOWER TRICEPS****Weighted Dips**

**Dips Behind the Back**—doing partial reps in which you go all the way down, but come up only about three-quarters of the way (and not locking out) to keep the lower area of the triceps under stress the whole time (the more your arm is bent, the more your lower triceps takes up the stress)



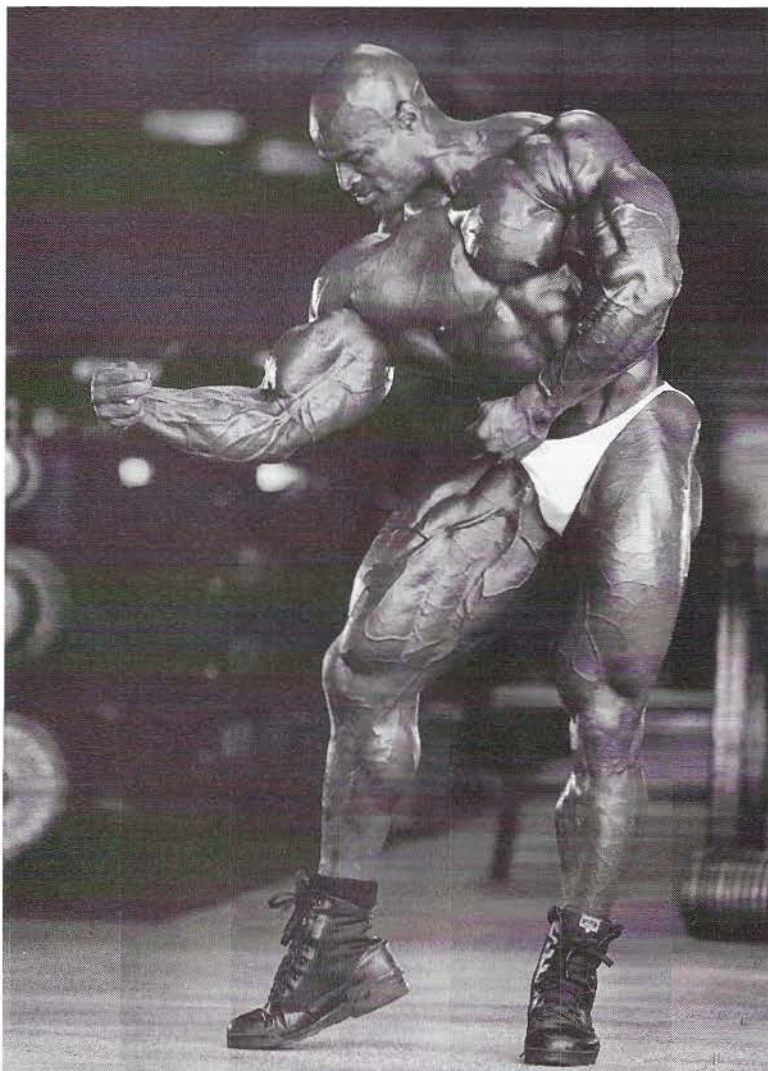
*Here Shawn Ray demonstrates two different and effective ways to display outstanding triceps development.*

## Forearm Training

Forearms should be taken just as seriously as any other body part if you want to develop a truly quality physique. They are involved in nearly every exercise for the upper body, either by helping you grip a piece of equipment or by being a part of all pushing and pulling actions. So they get a lot of incidental training even when you are not specifically doing forearm exercises. In fact, anytime you flex the elbows or wrists, you put stress on the forearm muscles.

Good forearm development is necessary to create a championship physique, but forearm strength is just as important. Strong forearms allow you to train with heavier weights and, in exercises such as Chins and Cable Rows, in which the hand and wrist are generally the “weak link,” give you the capacity to train hard and put more stress on other muscles.

As with other muscles, genetic structure is a factor in determining the potential size and strength of the forearms. The reason some forearm muscles seem to extend all the way to the hand, with almost no tendon intervening, is that that person has an extremely long “muscle belly”—the



*Ronnie Coleman's arm development is a perfect example of how inner biceps development helps create the necessary separation between the biceps and triceps, as well as between the biceps and forearms.*



actual contractile part of the muscle-tendon structure. Muscle size is affected by the length of the muscle belly because mass is a product of *volume*—that is, three dimensions rather than just one. So having two inches more length in the forearm actually translates into a lot of extra potential when you consider what the increase in cubic measurement can be. Many bodybuilders constructed like this claim they do not need to do forearm training but get adequate results with exercises like heavy Barbell Curls. However, when I trained with Casey Viator, who had incredible forearm development, I saw him doing Barbell Wrist Curls with 155 pounds and Reverse Curls with 135 pounds. Sergio Oliva did endless sets of Reverse Curls on a preacher bench to get that enormous upper forearm development. Dave Draper did a lot of forearm training. So, even if you are genetically gifted with good forearms, this doesn't mean you don't have to train them.

It is also possible to have high forearms—that is, to have a relatively short muscle belly and a long tendon, limiting the cubic volume of the muscle mass. Most bodybuilders, myself included, are somewhere in between, with neither the full forearm structure of a Sergio Oliva nor impossibly high forearms. With this kind of forearm, it is possible to build the muscles up to where they are proportionate to the upper arm, but you have to train them hard to do so.

## BEGINNING PROGRAM

Forearm training should be included as a part of your regular workout schedule right from the beginning, but these workouts will differ somewhat from those for other body parts. Because forearms are involved in so



*Casey Viator demonstrates a basic forearm pose.*

*These poses by Lee Labrada require great forearm development to balance the mass and separation of the upper arm.*



many other exercises, you will not need very many forearm exercises to start with—Barbell Wrist Curls and Reverse Wrist Curls will suffice. I do not recommend doing as many sets for forearms as for legs, back, or other body parts, but I have found that doing sets of relatively high reps gives the best results.

One mistake many bodybuilders make with forearm training is that they don't use enough weight. Forearms are somewhat like calves in that they are accustomed to continual use and heavy stress. So you need to use a fairly heavy weight in order to really stimulate the muscles.

Strict technique is also necessary to totally isolate the forearms and not let the biceps do the work. This is done by laying your forearms firmly on a bench, elbows close together and locked in between your knees.

It may seem to some that concentrating on forearms right from the beginning is not that important, but I disagree—forearm and grip strength are so essential to being able to train hard and heavy that you need to develop the forearms right from day one. And since forearm growth comes slowly to some people, the sooner you get started working on it the better.

## **ADVANCED PROGRAM**

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In the Advanced Training Program I have added One-Arm Wrist Curls to isolate and increase the intensity on each forearm, and constructed the workout so that you superset Wrist Curls and Reverse Wrist Curls, giving you a total forearm pump.

Of course, just the fact that you are training the rest of the body so much more intensely at this point will in itself force the arms to work harder. Your total workout will tend to exhaust forearms so that, once you get to training them specifically, it will take a great deal of concentration and dedication to work these tired and worn-out muscles.

Remember that forearm size, more than almost any other part, depends on genetics. If you have a short forearm muscle belly and therefore have trouble gaining the kind of size you'd like to have, begin thinking about extra forearm work early. Because forearms gain in size slowly, you need time to make the changes you are looking for.

But you might be surprised just how quickly you can develop forearms if you really make the effort. Often, the reason bodybuilders have problems developing forearms is simply that they don't train them hard enough. They tack forearm training onto the end of their workout and do a few halfhearted sets. Believe me, if you want any body part to develop to its maximum you have to take it seriously. Forearm training is no less important than training the chest or biceps—if you truly want to become a champion.

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## COMPETITION PROGRAM

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Once you begin training for competition, I recommend that you make sure you have hit every one of the fourteen muscles by adding Preacher Bench Reverse Curls and Behind-the-Back Wrist Curls to your forearm program.

When you do Reverse Curls for the upper part of the forearms, use a straight bar rather than an E-Z curl bar. As you lift the bar in an upward arc from the area of your thighs, you curl the wrists back and fully involve the upper forearms. Incidentally, many bodybuilders lean back as they do Reverse Curls, but you should actually lean slightly forward. This further isolates the arms, puts continuous stress on the forearms, and gives you a much stricter movement.

Reverse Curls also work well on certain kinds of curl machines and a preacher bench. But no matter which way you do this exercise, always remember to get a full range of movement—all the way down, all the way up, and keep it slow and under control. Remember, too, that your wrists and forearms will also be affected by heavy Barbell Curls and Cheat Curls, Triceps Extensions, and a number of other exercises throughout all the various levels of training.

I recommend doing forearm training at the end of your workout. If you try doing other upper body exercises when your wrists and forearms are already fatigued, you will severely limit your ability to train intensely.

One good method for totally stimulating your forearms is after you do your Wrist Curls—when you are too tired to do any more reps—simply let the bar hang in your fingers and then flex your fingers by opening and closing your hands and getting to those last few available muscle fibers.

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## POSING THE FOREARMS

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There are two different kinds of forearm poses: direct, in which you are deliberately calling attention to these muscles; and indirect, in which you are primarily posing other body parts but the forearms play a part nonetheless. Often when you hit a pose, people watching don't specifically notice forearm development, but they would certainly notice if it wasn't there.

Since forearms are a third of the total arm, without proper forearm development the whole arm looks out of proportion. In a front double-biceps pose, the forearm must look full enough to balance off the development of the biceps. From the rear, in a back double-biceps, the muscularity of the forearm is part of the total effect.

Impressive forearms help you in every pose from side chest to most-muscular and are extremely important when you have your arms ex-

*Dave Draper showing a direct forearm pose*



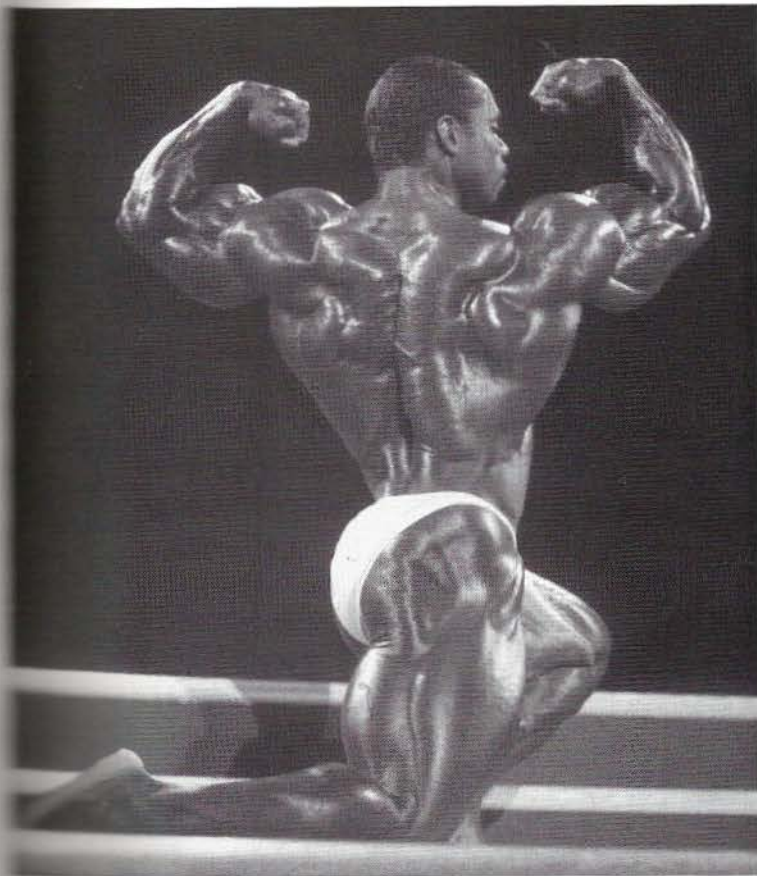
tended, as in the classic javelin-thrower pose in which one arm is flexed, the other extended.

Certain poses are virtually impossible to carry off without exceptional forearm development. One that comes to mind is Sergio Oliva's famous pose where he lifts both hands overhead, flexes his forearms, and flares out his fantastic lats. In spite of Sergio's enormous back, if he didn't have such large and powerful forearms this pose would be much less impressive.

Some bodybuilders have such well-developed forearms that they can turn non-forearm poses into forearm showcases. Casey Viator is one of these. When he stands onstage and simply lifts his arms out to either side, it is impossible not to notice these huge forearms sticking out below the massive upper arms.

Another pose in which good forearms are absolutely essential is one Dave Draper and I both liked so much, in which the arms are held straight out, parallel to the floor. It takes both fully developed biceps and forearms to do this pose effectively.

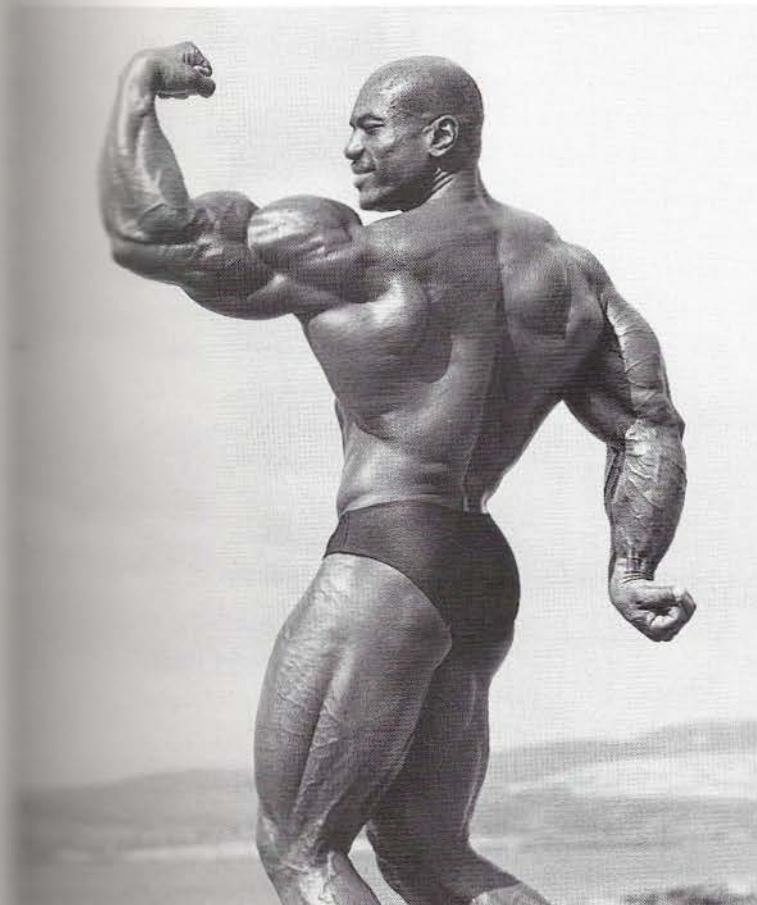
Larry Scott was another bodybuilder who was able to pose his forearms to great advantage. When he won the very first Mr. Olympia contest in 1965, he had a thickness and muscularity that very few bodybuilders had ever attained. But he had also spent a lot of time in detail training, so his forearm development matched the rest of his physique, making many of his other poses that much more effective.



*Flex Wheeler*



*Here I demonstrate a pose in which the back and biceps are featured but well-developed forearms are necessary to make the pose complete.*



*Sergio Oliva*



*Larry Scott*

## WEAK POINT TRAINING

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Many bodybuilders end up with a weakness in forearm development simply because they don't train forearms right from the beginning. Another reason for forearms lagging behind, aside from the obvious one of bone structure, is failing to execute the exercises correctly and in a strict enough manner. The more you isolate the forearms and force them to do the movements without any help from the upper arms, the more they will respond. This means being very, very strict in your execution.

It is also important to work the forearms through a long range of motion. You need to lower the weight as far as possible, getting the maximum stretch, then come all the way back up to get a total contraction of the muscles. Working through only three-quarters of the range of motion is not that beneficial because you already use this part of the muscle in a variety of other exercises.

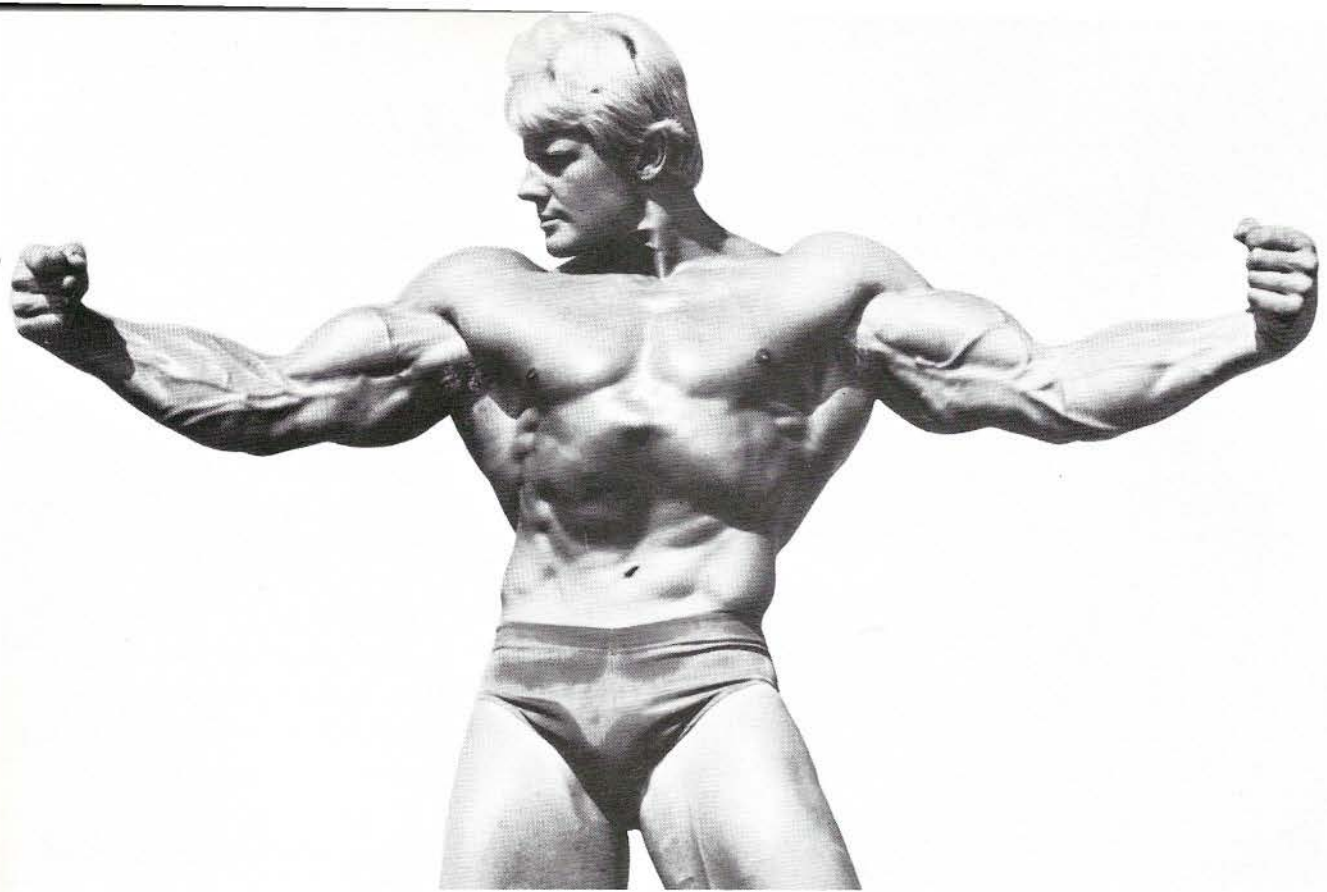
If you want to drastically increase your forearm development, you can use the Priority Principle in a special way: train forearms by themselves when you are rested and strong, or train your forearms on leg days when your arms are rested. You can also keep a barbell or dumbbells at home and do a couple of sets of Wrist Curls and Reverse Wrist Curls as often as you like, even once an hour every hour.

Many bodybuilders forget that you can use the Shocking Principle to help develop your forearms, just as you can other body parts. Every shock method that works with Curls will also work for Wrist Curls—forced reps, supersets, the Stripping Method, partial reps, and so on.

An important technique for bringing up lagging forearms is one-arm training. Forearms that are used to working together to curl a barbell will often be shocked into accelerated development when you force them to lift and control a weight on their own. Dumbbell Wrist Curls and Dumbbell Reverse Wrist curls are two of the primary exercises for accomplishing this. Additionally, doing cable work one arm at a time not only forces each forearm to work independently, but to work against a different kind of resistance as well. For this kind of movement, I recommend One-Arm Cable Reverse Curls.

It is also necessary to pose and flex your forearms as often as possible—not just when you are training them, but between sets of arms, chest, back, and shoulders as well. Your forearms will have to be flexed every time you hit any kind of pose in competition, so you might as well get them used to it. And the effort of contracting them like this will also accelerate their development.

To sum up, the exercises I recommend for forearm weak point training are:



*Here is a pose by Dave Draper in which inner forearm development is extremely important.*

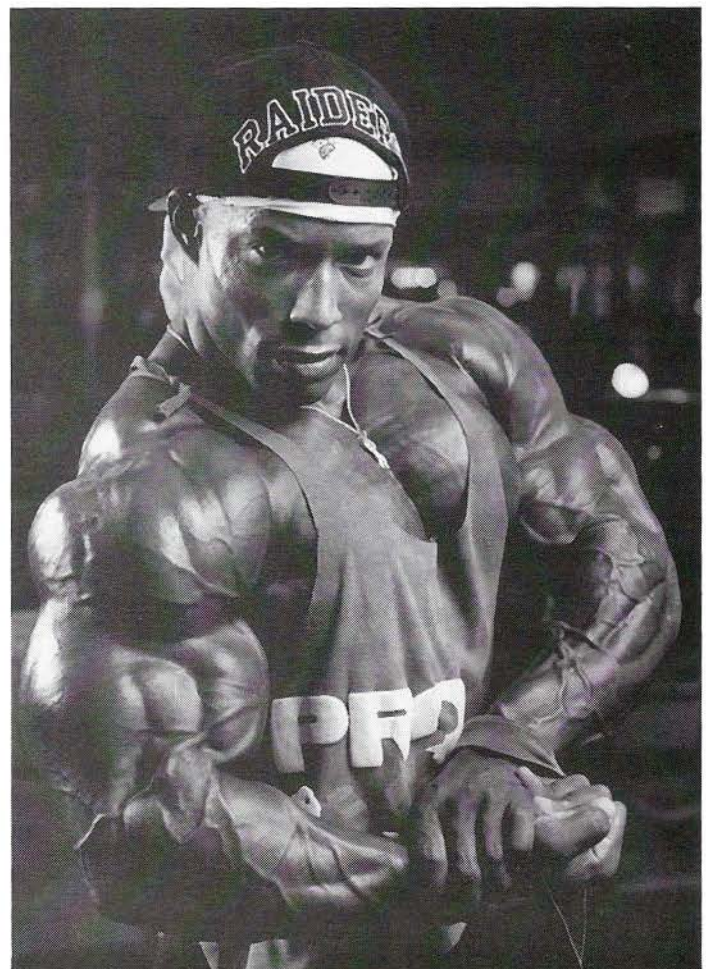
**FOR UPPER FOREARMS/WRIST EXTENSOR MUSCLES**

- Reverse Curls with a barbell, dumbbells, and on a preacher bench
- One-Arm Cable Reverse Curls
- Hammer Curls
- Reverse Wrist Curls

**FOR INNER FOREARMS/WRIST FLEXOR MUSCLES**

- One-Arm Wrist Curls
- Barbell Wrist Curls
- Behind-the-Back Wrist Curls

*In this side chest shot, Shawn Ray shows the importance of good upper forearm development as well as long forearm muscle that inserts all the way to the wrist.*



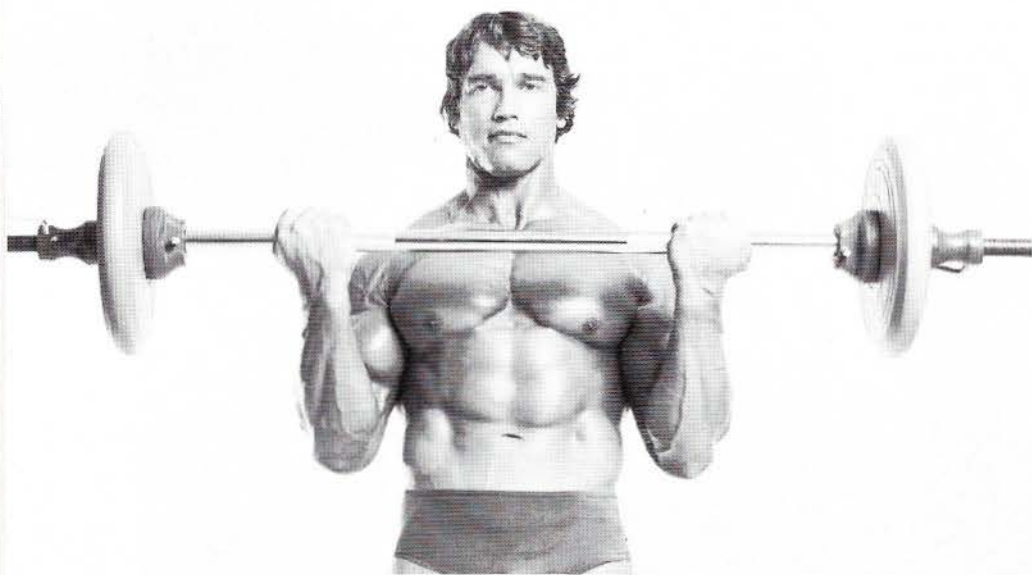
## Arm Exercises—Biceps

### STANDING BARBELL CURLS

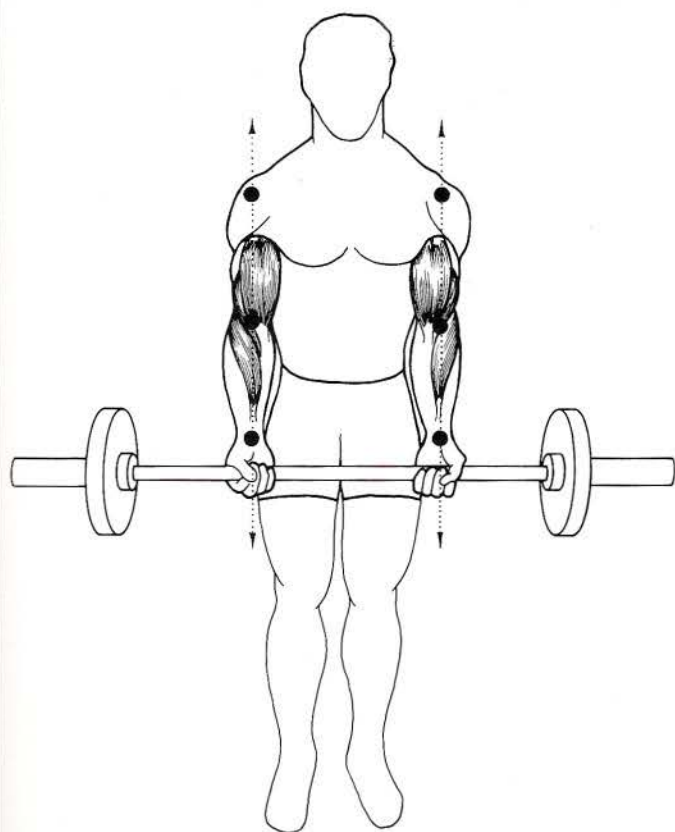
**PURPOSE OF EXERCISE:** To develop the overall size of the biceps.

This is the most basic and popular of biceps exercises.

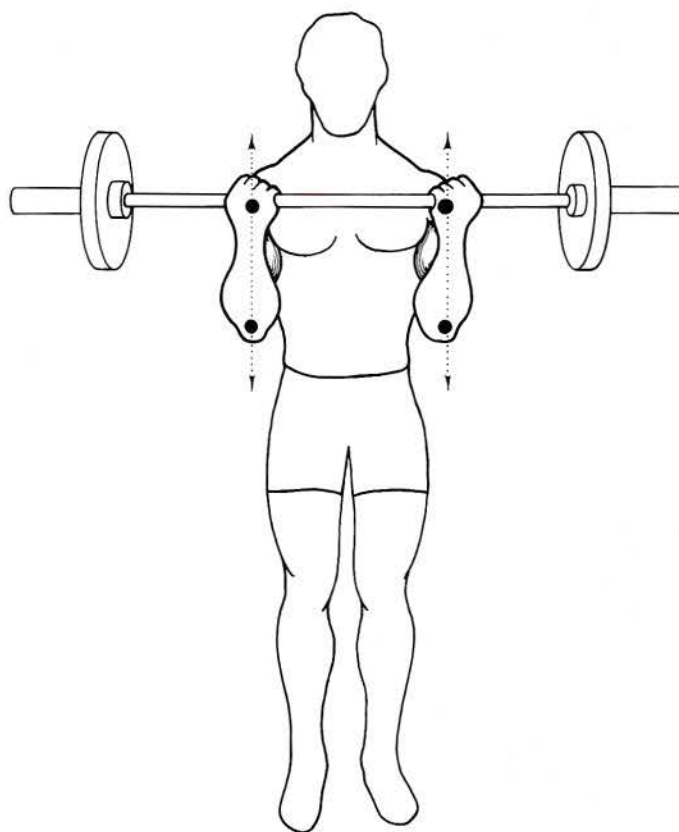
**EXECUTION:** (1) Stand with feet shoulder-width apart and grasp the bar with an underhand grip, hands about shoulder width apart. Let the bar hang down at arm's length in front of you. (2) Curl the bar out and up in a wide arc and bring it up as high as you can, with your elbows close to the body and stationary. Keep the arc wide and long, rather than bringing the bar straight up and making the movement too easy. Fully flex at the top. Lower the weight again, following the same arc and resisting the weight all the way down until your arms are fully extended. A small amount of body movement in this exercise is acceptable because it is a mass-building movement, but this is to be kept to a minimum unless you are doing deliberate Cheat Curls. Bending forward and leaning back cut down on your range of motion.

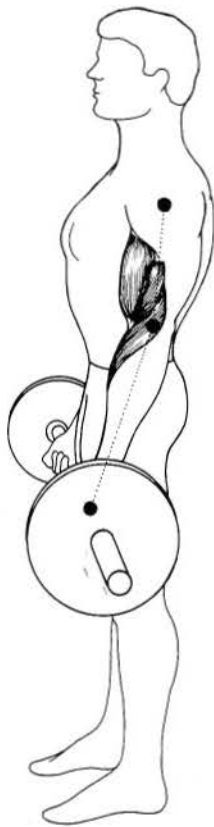




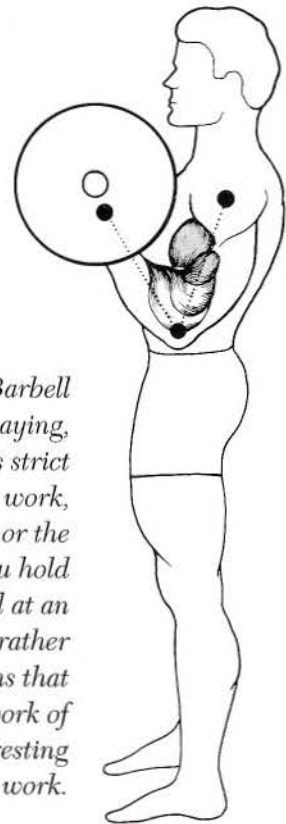


*To build maximum mass and work the total surface of the biceps, do Barbell Curls with your hands shoulder width apart. Notice how this puts the shoulders, arms, and hands in a straight line.*

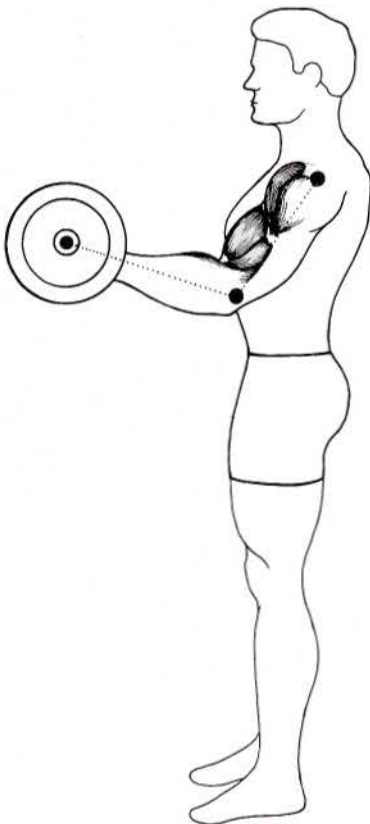




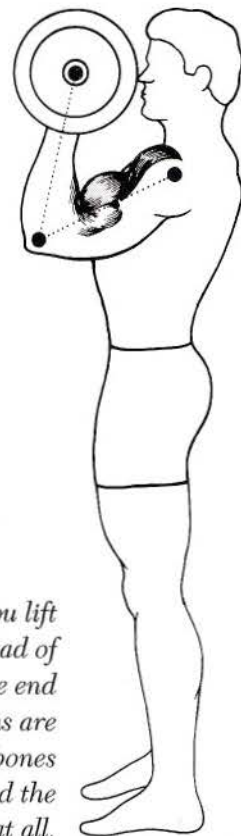
*The correct beginning position for Barbell Curls: standing upright, elbows at sides, arms fully extended to stretch out the biceps*



*The correct finishing position for Barbell Curls: the body upright without swaying, the elbows fixed at the sides. This strict form forces the biceps to do all the work, without any help from the back or the shoulders. Notice too that when you hold your elbows steady your arms are still at an angle at the top of the movement rather than straight up and down. This means that the biceps are still doing the work of supporting the weight, instead of resting while the bones and joints do the work.*



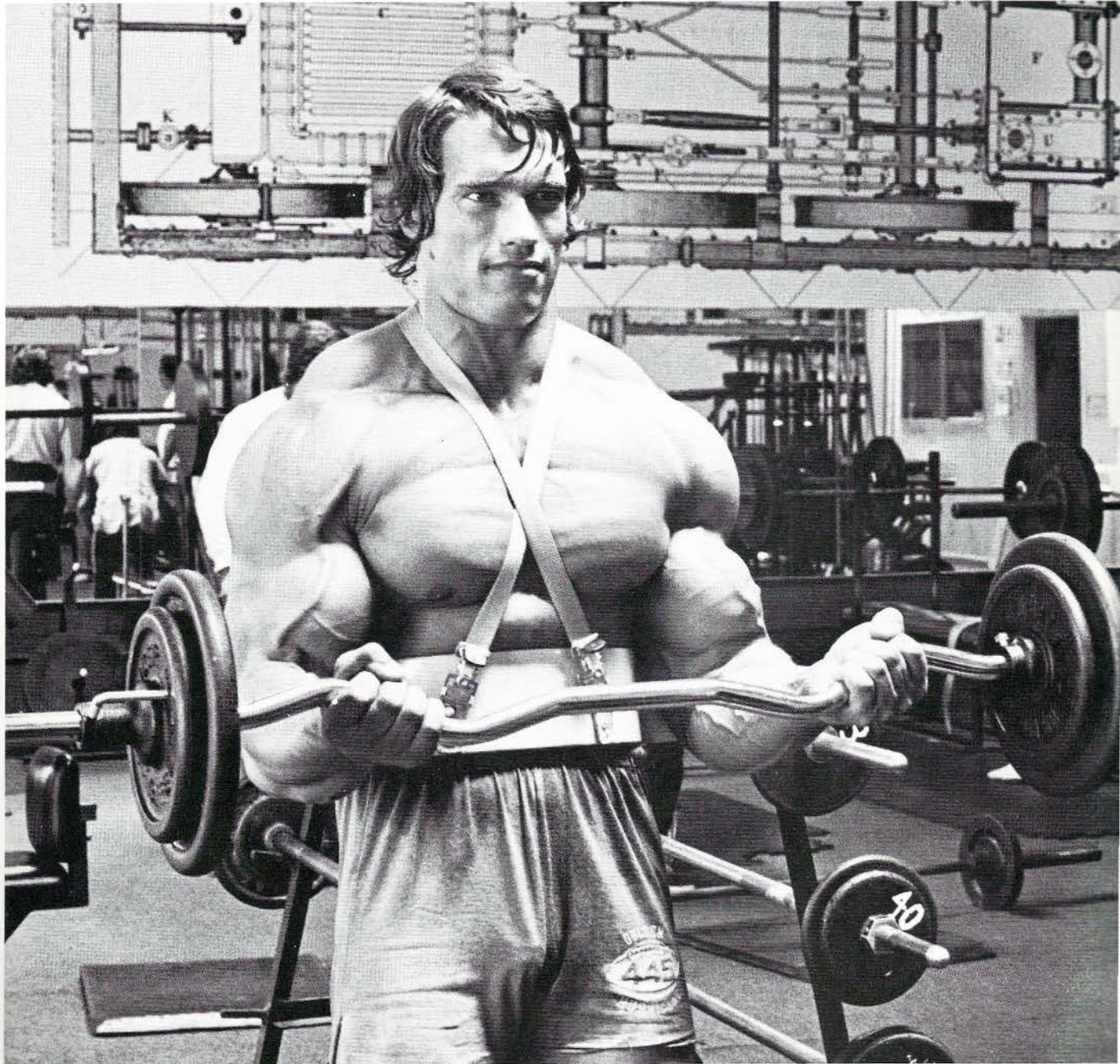
*Notice what happens when you lift the elbows during the Barbell Curl. Instead of isolating and really working the biceps, you are involving the front deltoids, which defeats the purpose of the exercise.*



*Another problem that develops when you lift your elbows during the Barbell Curl instead of keeping them fixed by your sides: At the end position of the movement, the forearms are straight up and down, meaning that the bones are bearing the weight of the bar and the biceps are not doing any work at all.*

## ARM BLASTER CURLS (OPTIONAL)

Doing Curls with an Arm Blaster—a piece of equipment that, unfortunately, you don't see very often today—is a very strict way of working the biceps that minimizes cheating. By using the Arm Blaster, you get the same kind of effect as with a preacher bench—no elbow movement at all and strict isolation of the biceps.



## CHEAT CURLS

**PURPOSE OF EXERCISE:** To develop extra mass and power in the biceps.

**EXECUTION:** Stand and hold the bar as for Barbell Curls, but use enough weight so that it becomes difficult to do more than just a few strict repetitions. At this point, you begin to swing the weight up, using your back and shoulders to help your arms. The trick is to keep your biceps working as hard as they can, and cheat only enough to keep the set going.

Keep the elbows stationary at the waist. I like to combine Barbell Curls and Cheat Curls, doing a normal set of Curls and, when my arms are too tired to do any more strict repetitions, loading on extra weight and doing some Cheat Curls to really blast the biceps.



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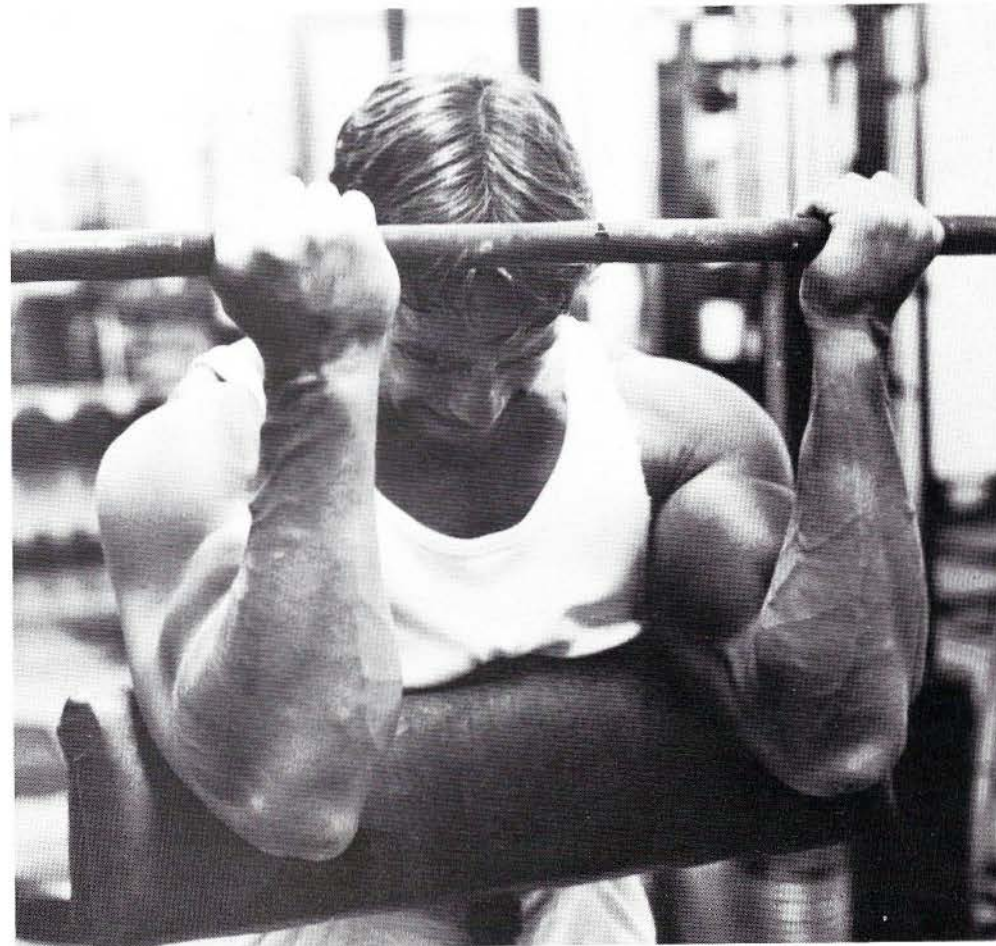
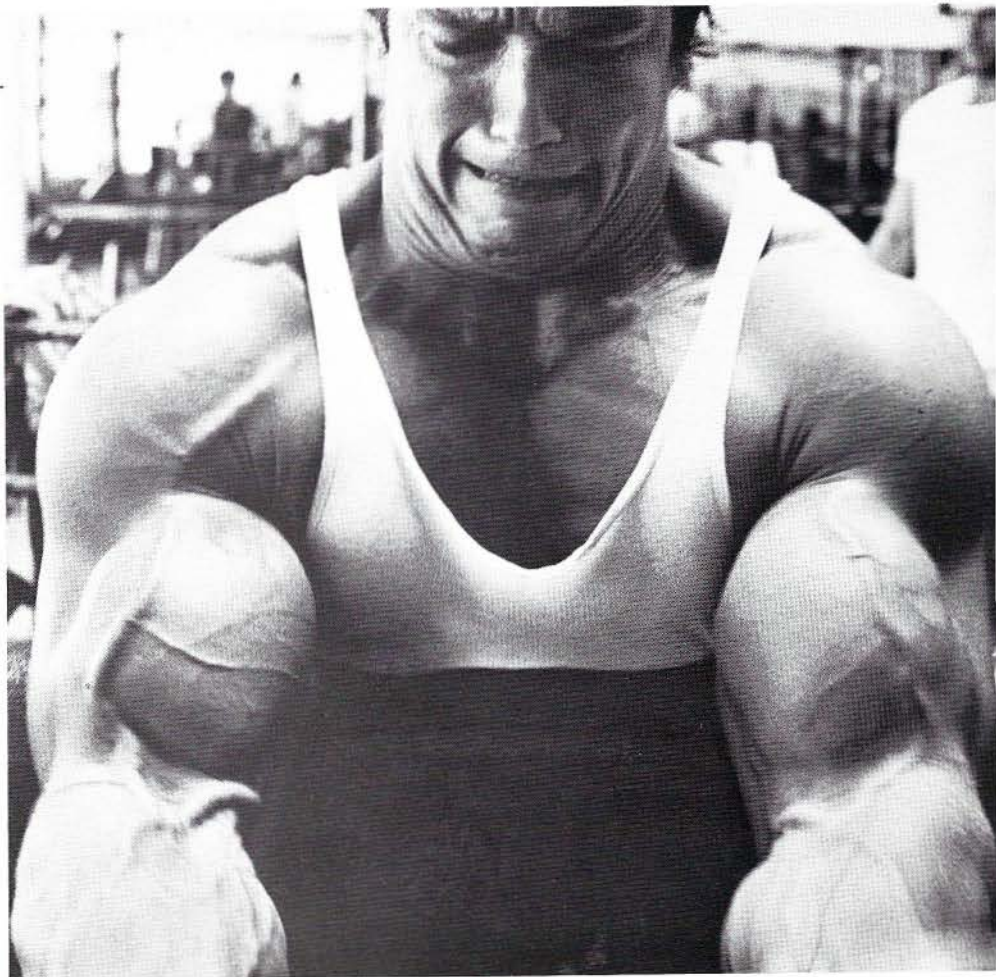
## PREACHER CURLS

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**PURPOSE OF EXERCISE:** To develop the biceps especially the lower end.

This is especially good for anyone who has space between the lower biceps and the elbow joint, to help fill in and shape this area.

**EXECUTION:** Preacher Curls are an even stricter movement than regular Barbell Curls. (1) Position yourself with your chest against the bench, your arms extending over it. This puts the arms at an angle, which transfers additional stress to the lower area of the muscle. Take hold of a barbell with an underhand grip. (2) Holding your body steady, curl the bar all the way up and then lower it again to full extension, resisting the weight on the way down. You can use an E-Z curl bar for this movement, or even use the bench for One-Arm Dumbbell Curls. Don't lean back as you lift the bar, and deliberately flex the muscle extra hard as you come to the top of the movement, where there is little actual stress on the biceps muscles.

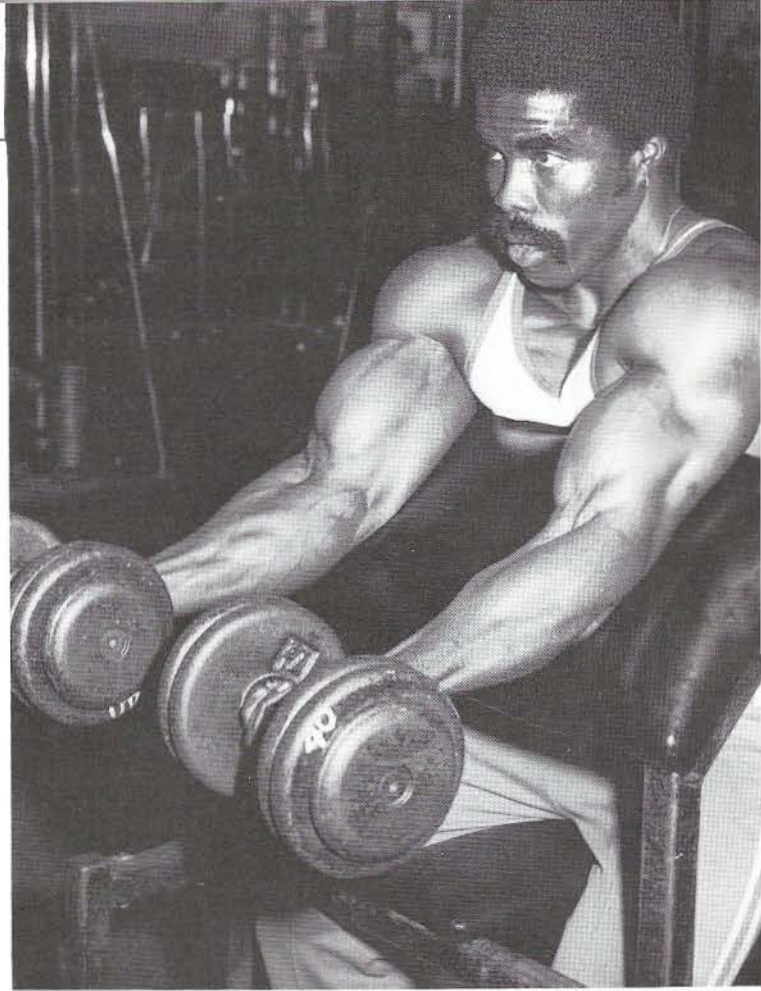




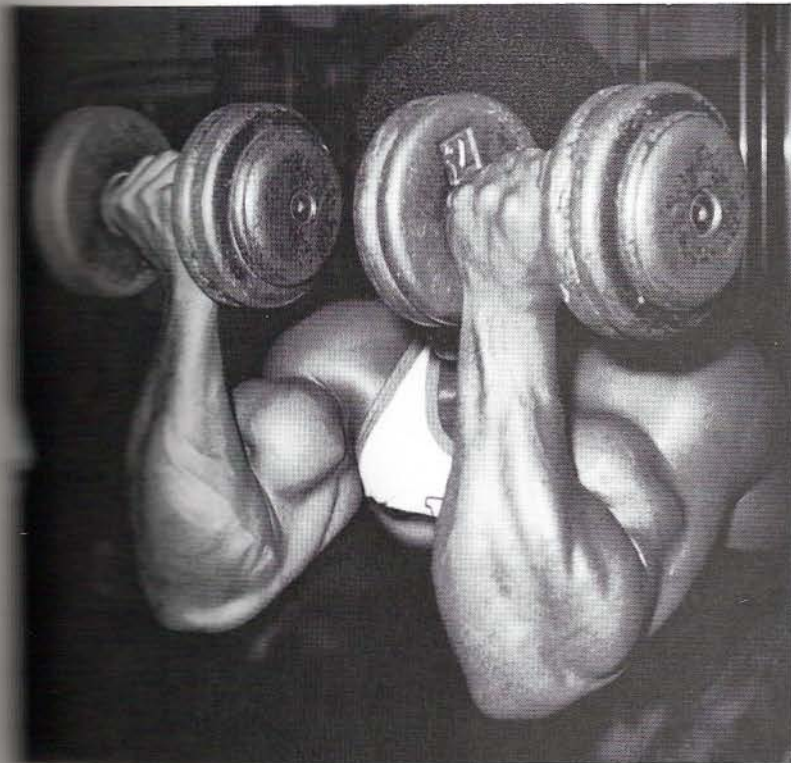
*Preacher Curls can also be done  
with an E-Z curl bar.*

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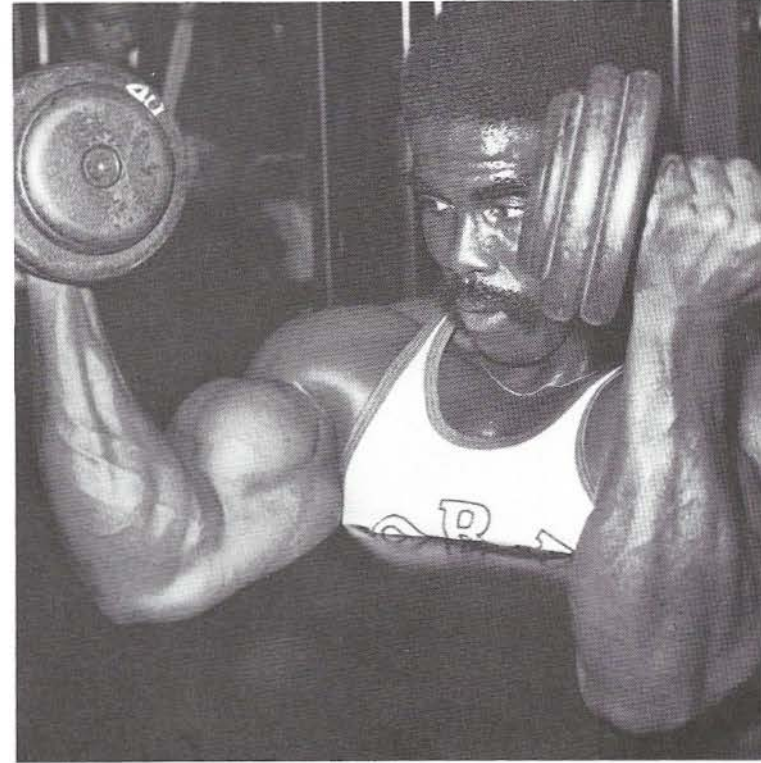
*Doing Preacher Curls with dumbbells forces each arm to work independently.*



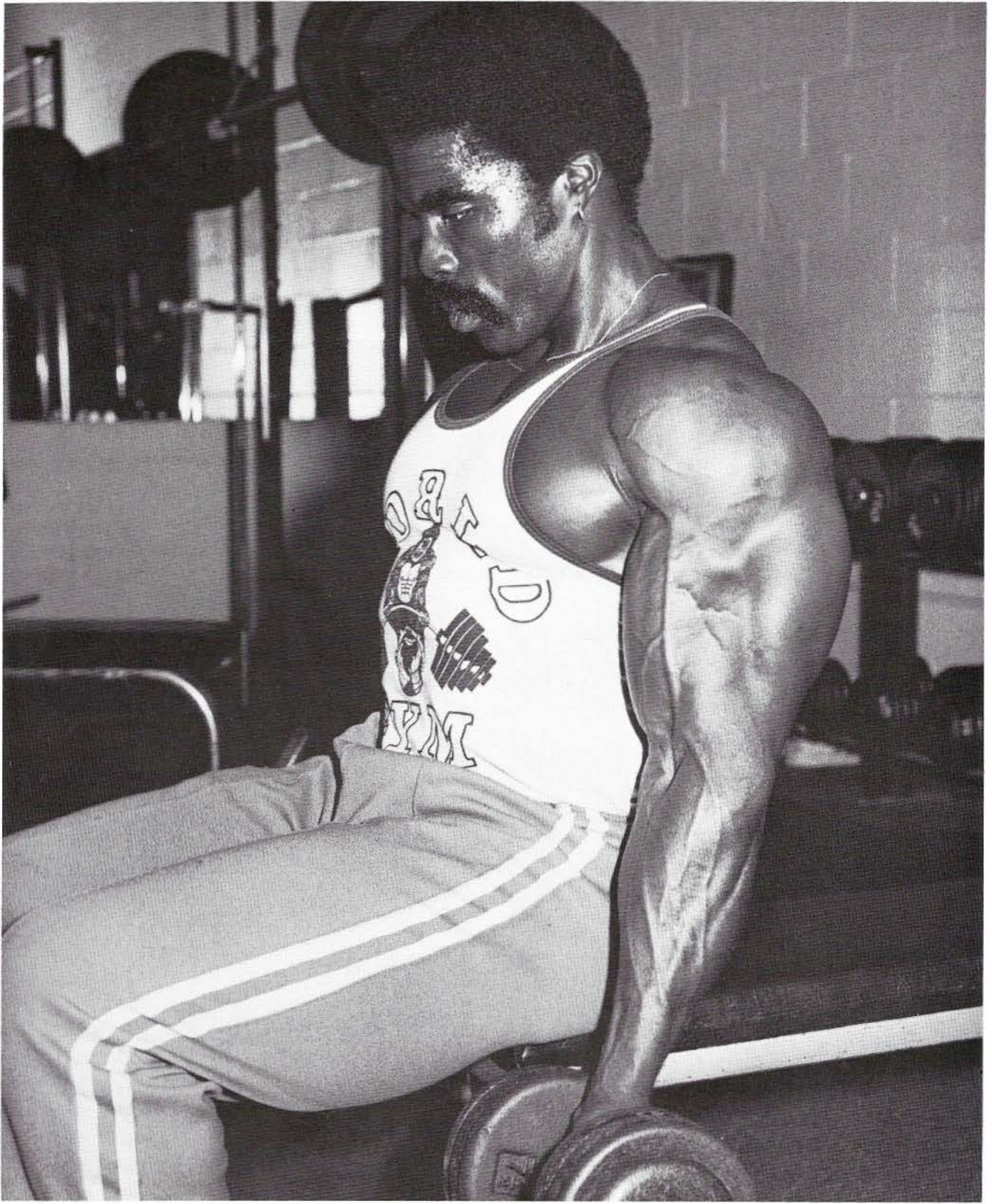
*Robby Robinson*



*Doing this exercise with the dumbbells held closer together works the outer biceps to a slightly greater degree . . .*



*. . . and doing it with the dumbbells apart works the inner biceps more strongly.*



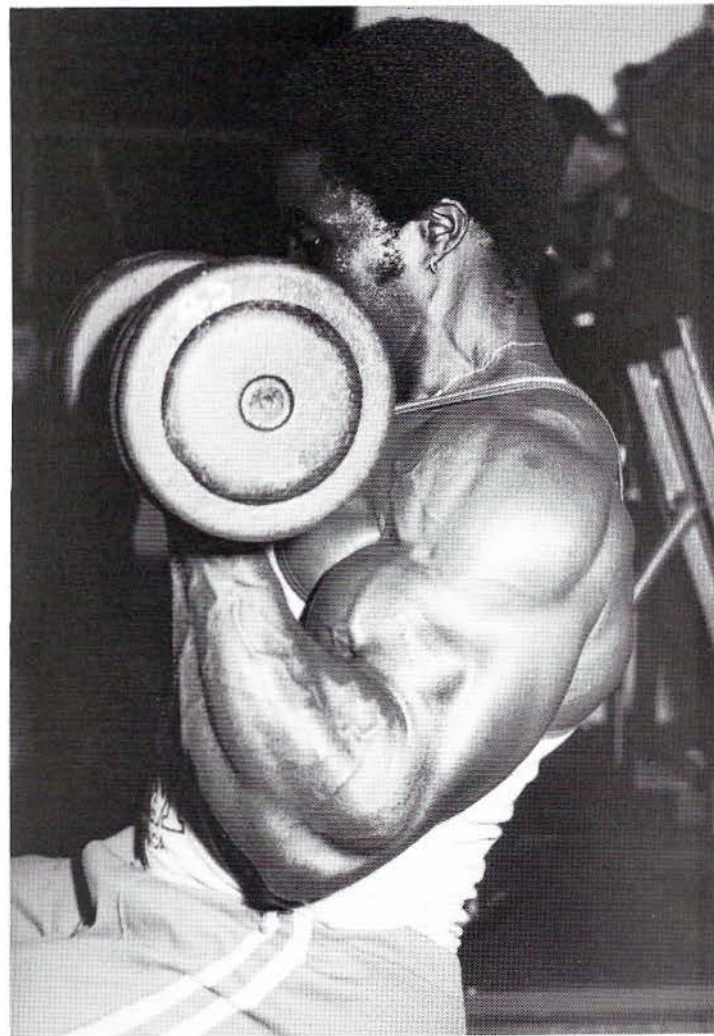
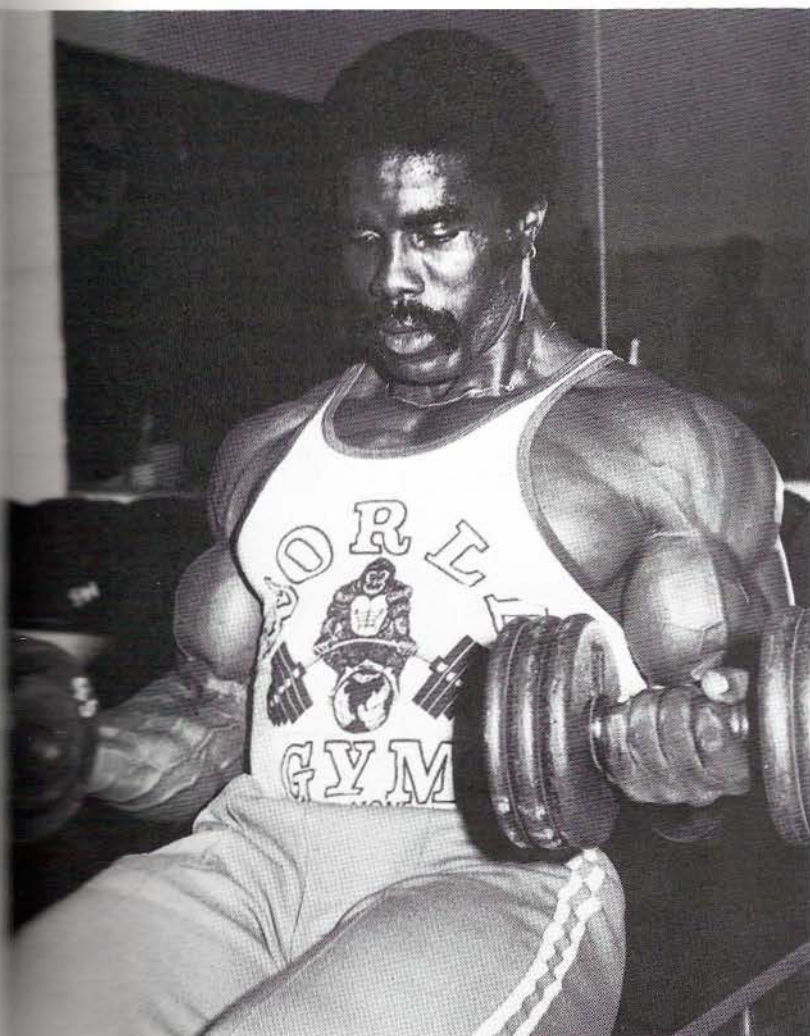


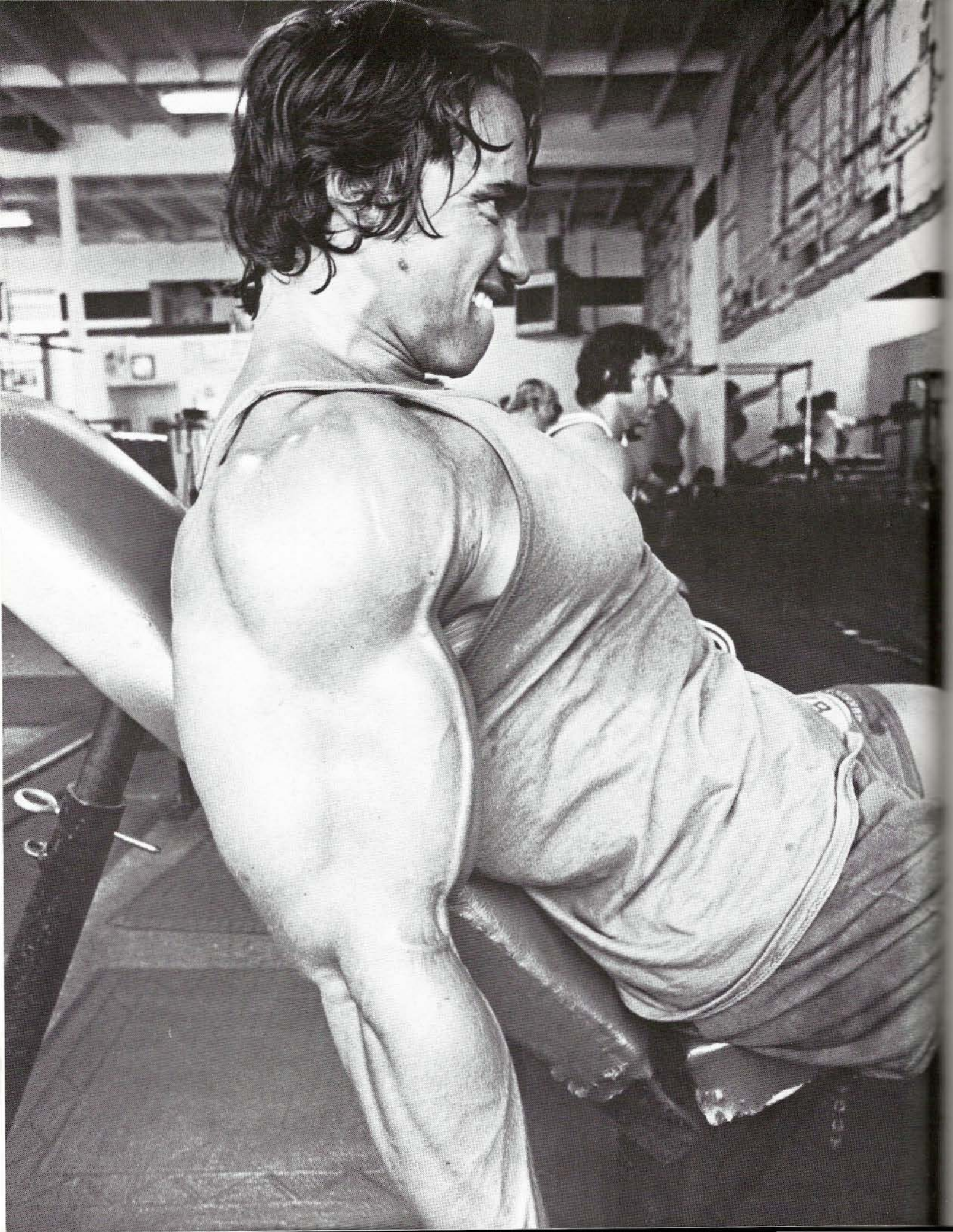
### 3-PART CURLS (21S)

**PURPOSE OF EXERCISE:** To develop and shape the entire biceps area.

This exercise, a combination of partial- and full-range movements, is a great test of endurance. Because of the combination of 3 sets of 7 repetitions each, this exercise is also known as 21s.

**EXECUTION:** (1) From a seated or standing position, take a dumbbell in each hand, holding the weights at arm's length down at your sides. (2) Curl the weights upward but stop halfway, when your forearms are about parallel to the floor, then lower them again to the starting position. Do 7 repetitions of this movement. Then, without stopping, (3) curl the weights all the way up but stop halfway down and do 7 repetitions of this partial movement. At this point, even though exhaustion will be setting in, finish off the set by doing 7 full-range Dumbbell Curls. I like to do this exercise in front of a mirror so that I can really be sure of lifting in exactly the proper range.





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## INCLINE DUMBBELL CURLS

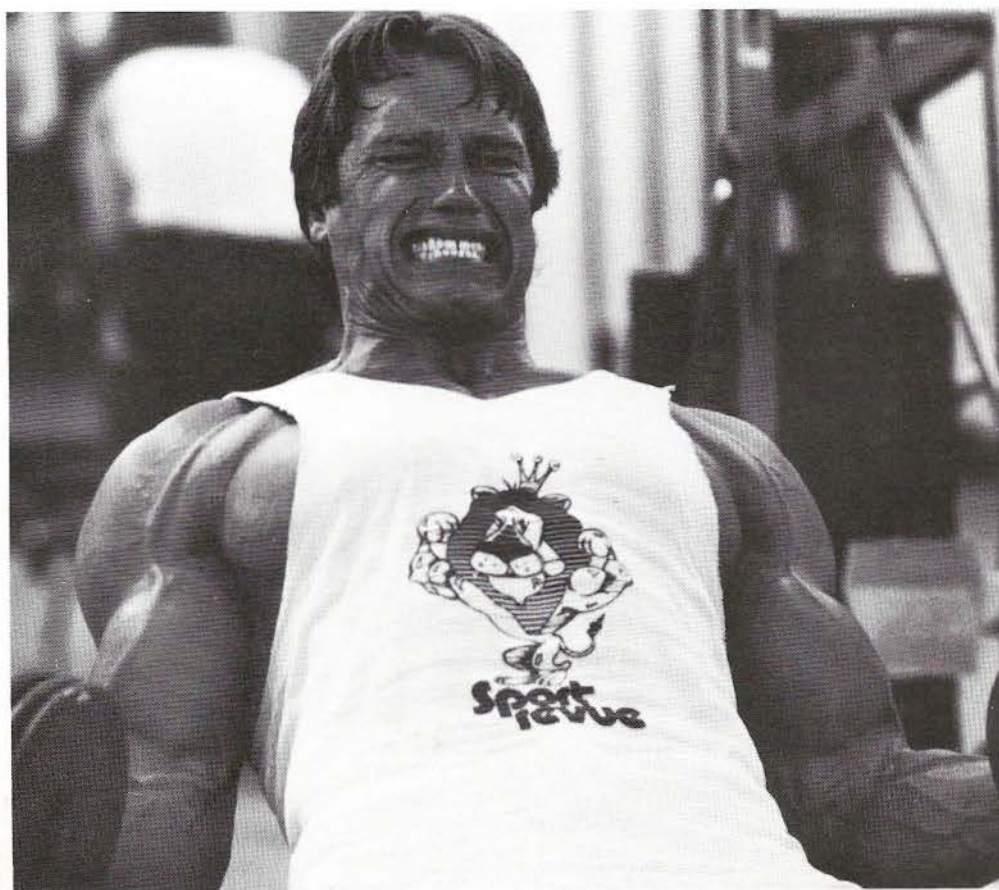
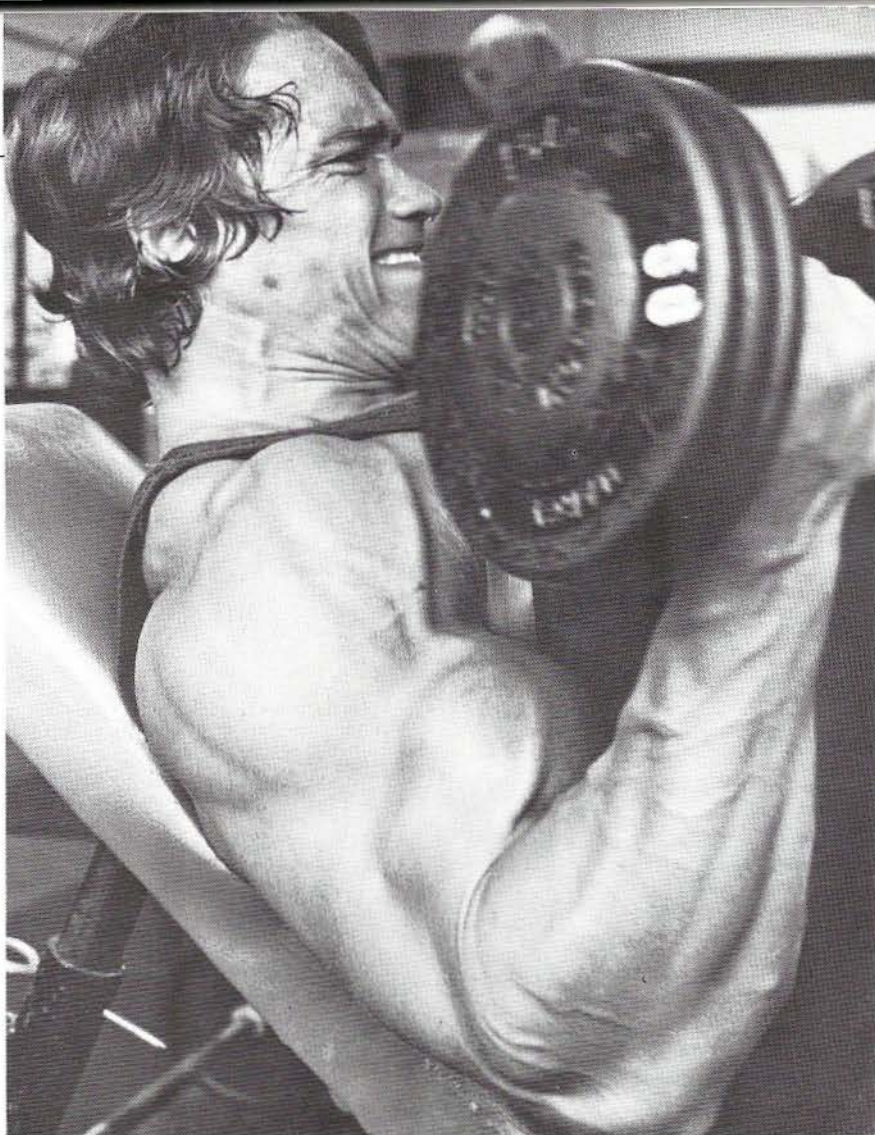
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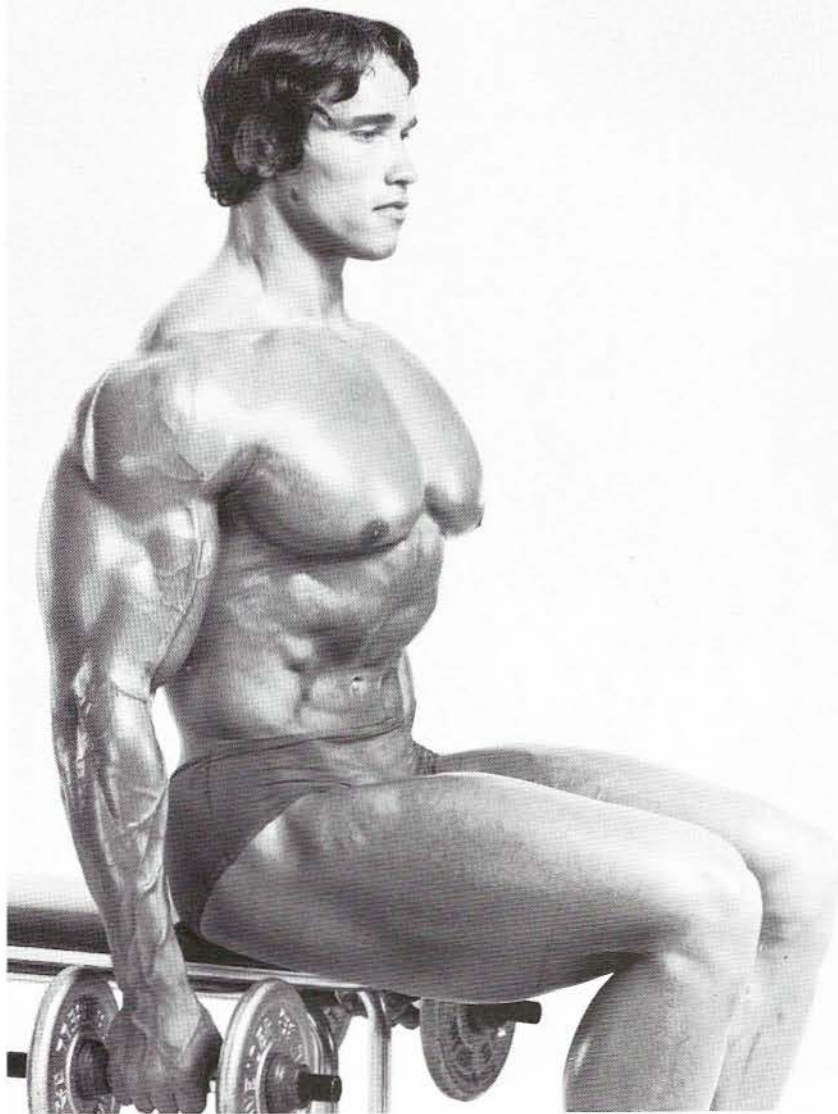
**PURPOSE OF EXERCISE:** To stretch the biceps and for overall biceps development.

This exercise develops mass and biceps peak at the same time. If you do the movement to the front, it is a general biceps exercise. If you do it to the outside, it becomes a specialized exercise that emphasizes the inner part of the biceps.

**EXECUTION:** (1) Sit back on an incline bench holding a dumbbell in each hand. (2) Keeping your elbows well forward throughout the movement, curl the weights forward and up to shoulder level. Lower the weights again, fully under control, and pause at the bottom to keep from using momentum to swing the weights up on the next repetition. I find I get the best results with this exercise by pronating and supinating my wrists during the movement—turning the wrists so that the palms face each other at the bottom, then twisting the weights as I lift so that the palms turn upward, then outward, with the little finger higher than the thumb at the top.

*Dumbbell Curls to the outside help build the inner biceps and are an important part of weak point training.*





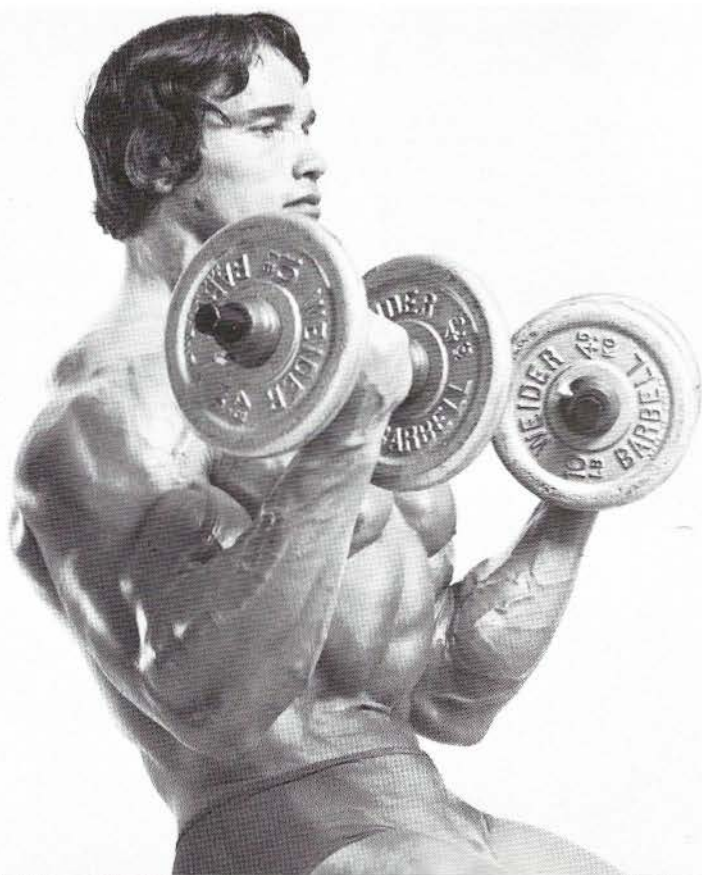
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## SEATED DUMBBELL CURLS

**PURPOSE OF EXERCISE:** To build, shape, and define the biceps.

Doing a standard curl with dumbbells rather than a barbell means you will use slightly less weight, but the arms are left free to move through their natural range of motion and you can achieve an even greater degree of contraction. As with Barbell Curls, you can cheat a little with this exercise, but keep it to a minimum.

**EXECUTION:** (1) Sit on the end of a flat bench, or against the back support of an incline bench adjusted to an upright position, a dumbbell in each hand held straight down at arm's length, palms turned toward your body. (2) Holding your elbows steady as unmoving pivot points, curl the weights forward and up, twisting your palms forward as you lift so that the thumbs turn to the outside and the palms are facing up. Lift the weights as high as you can and then give an extra flex of the biceps to achieve maximum contraction. Lower the dumbbells down through the same arc, resisting the weight all the way down, until your arms are fully extended, the biceps stretched as far as possible. Twisting the wrists as you lift and lower the dumbbells causes a fuller contraction of the biceps and develops the inner biceps and separation between biceps and triceps. You can also do this exercise standing instead of seated, which will allow you to use a little more weight, although the movement will not be as strict.





### **HAMMER CURLS (OPTIONAL)**

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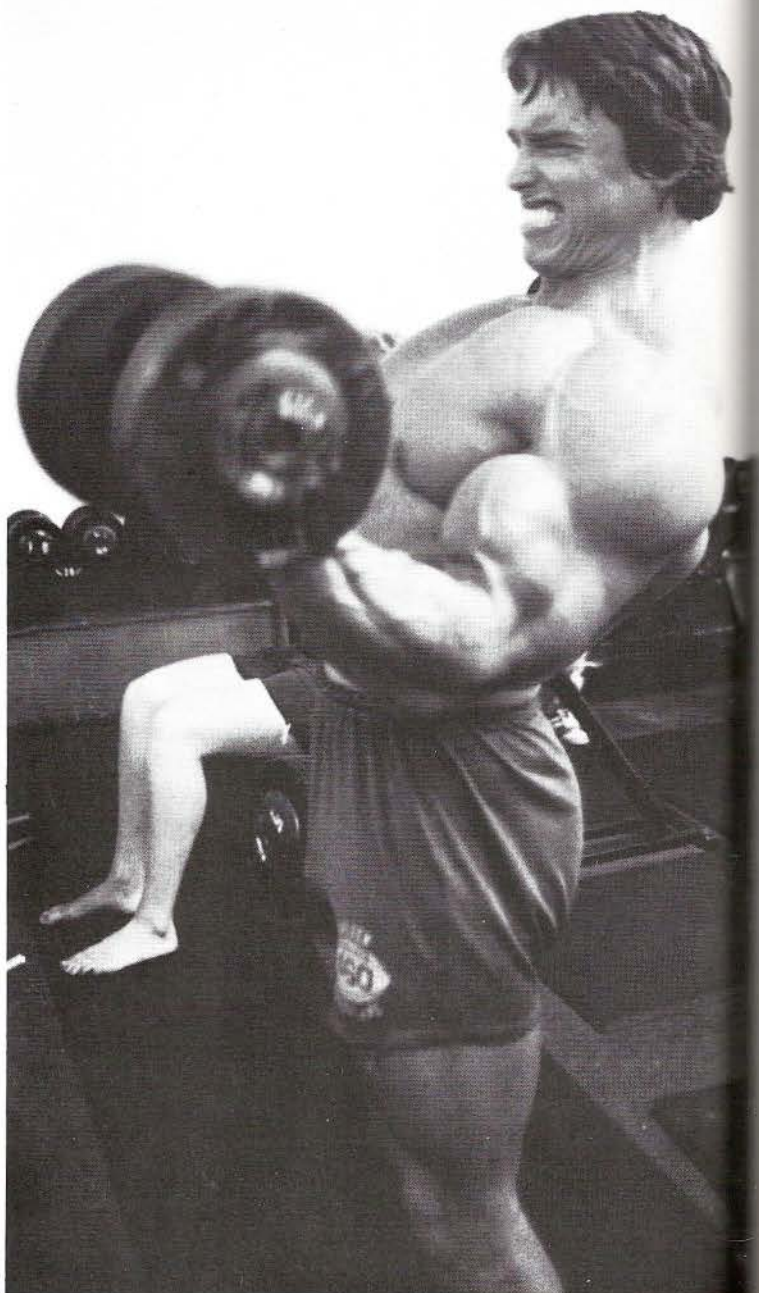
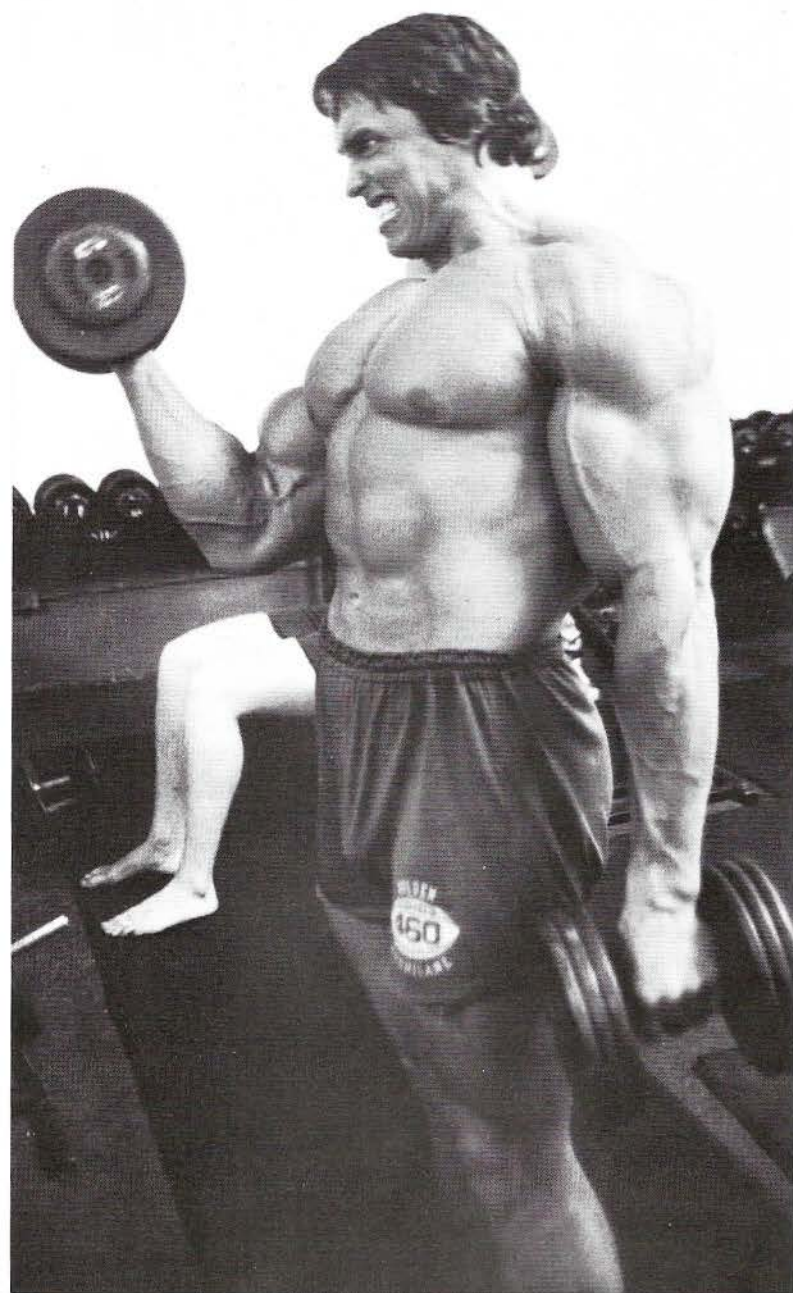
This is done the same way as regular Dumbbell Curls except the palms face inward and stay that way throughout the movement. This way you train the forearms as well as the biceps.

## ALTERNATE DUMBBELL CURLS

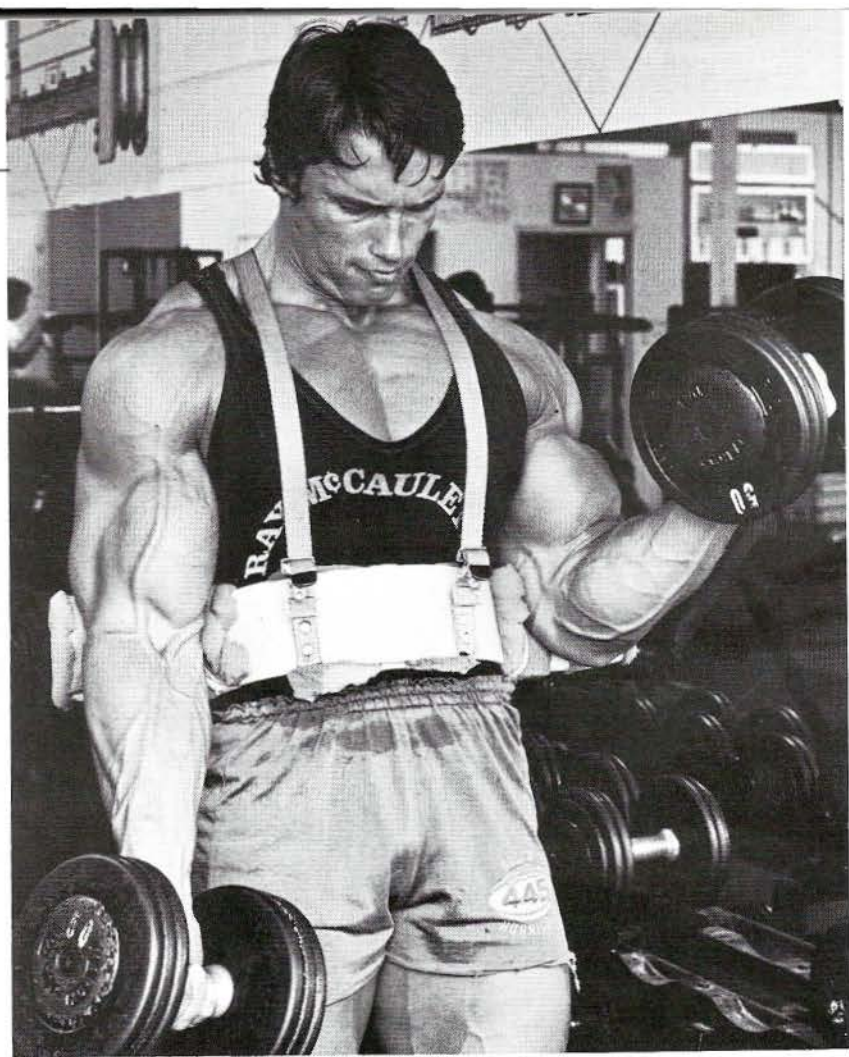
**PURPOSE OF EXERCISE:** To isolate the biceps of each arm.

This is a variation of a Dumbbell Curl in which you curl the dumbbells alternately, first one arm and then the other, to give you that extra bit of isolation, allowing you to concentrate your energy on one arm at a time and to minimize cheating.

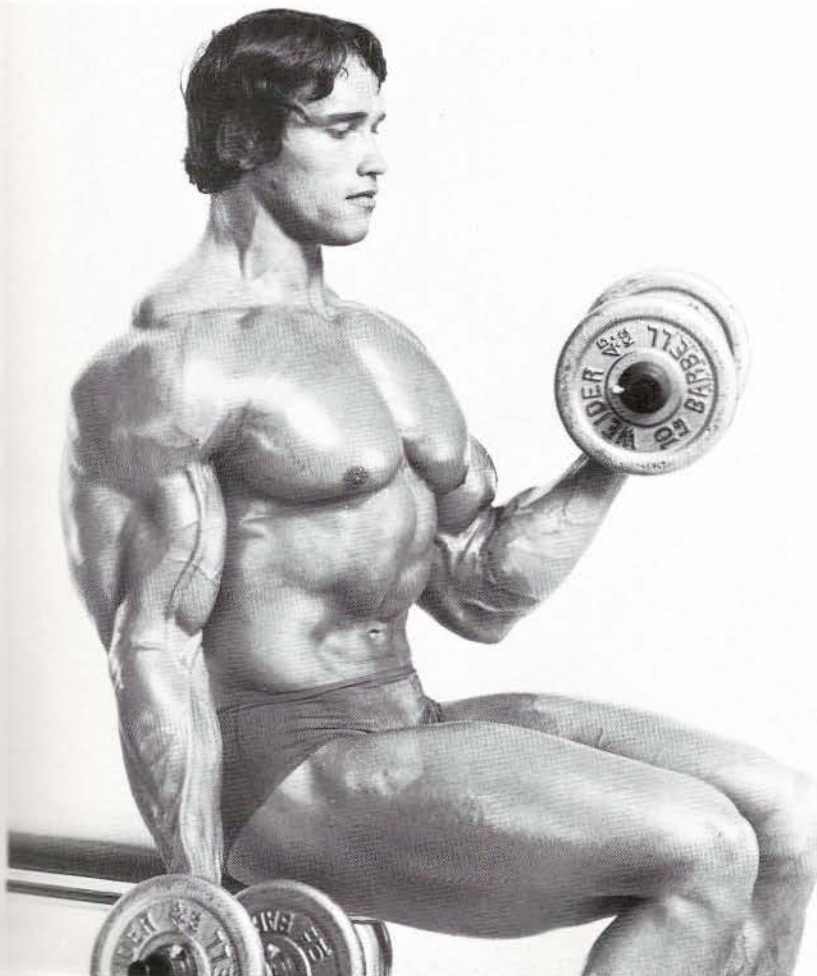
**EXECUTION:** Stand upright, a dumbbell in each hand hanging at arm's length. Curl one weight forward and up, holding your elbow steady at your waist and twisting your wrist slightly, bringing the thumb down and little finger up, to get maximum biceps contraction. Curl the weight as



high as you can, then bring it back down under control through the same arc, simultaneously curling the other weight up so that both dumbbells are in motion and twisting the wrist of the other hand as you bring it up. Continue these alternate Curls until you have done the required repetitions with both arms. Make sure you fully extend and contract the arm to get the fullest possible range of motion.



*Using the Arm Blaster you get the strictness of a Preacher Curl, with the elbows fixed solidly in place, which is especially good for training the lower biceps.*



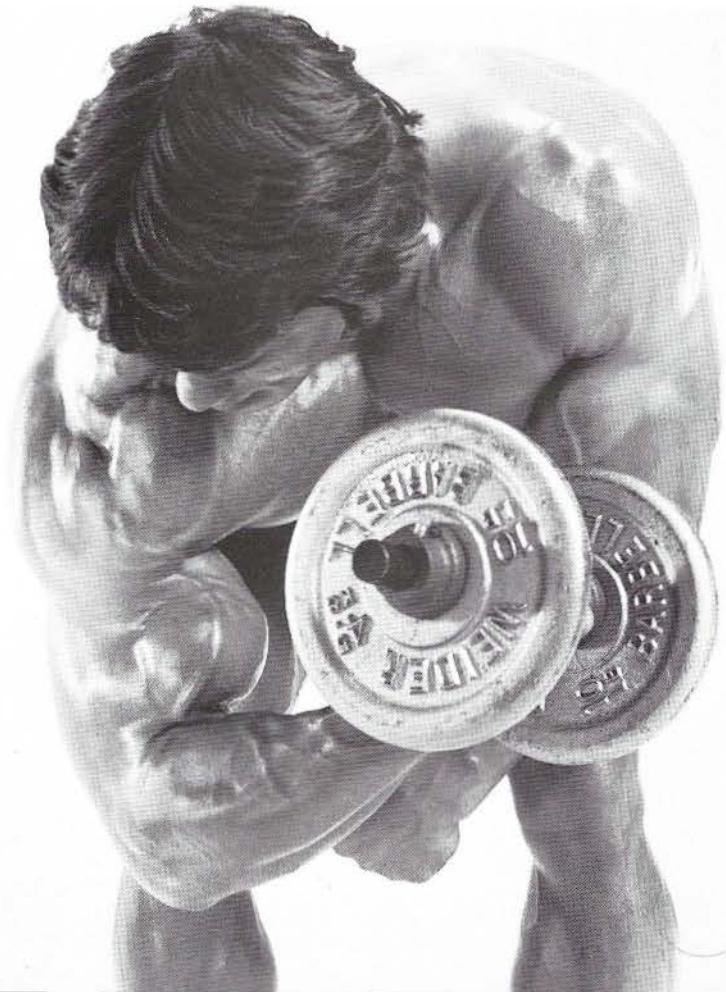
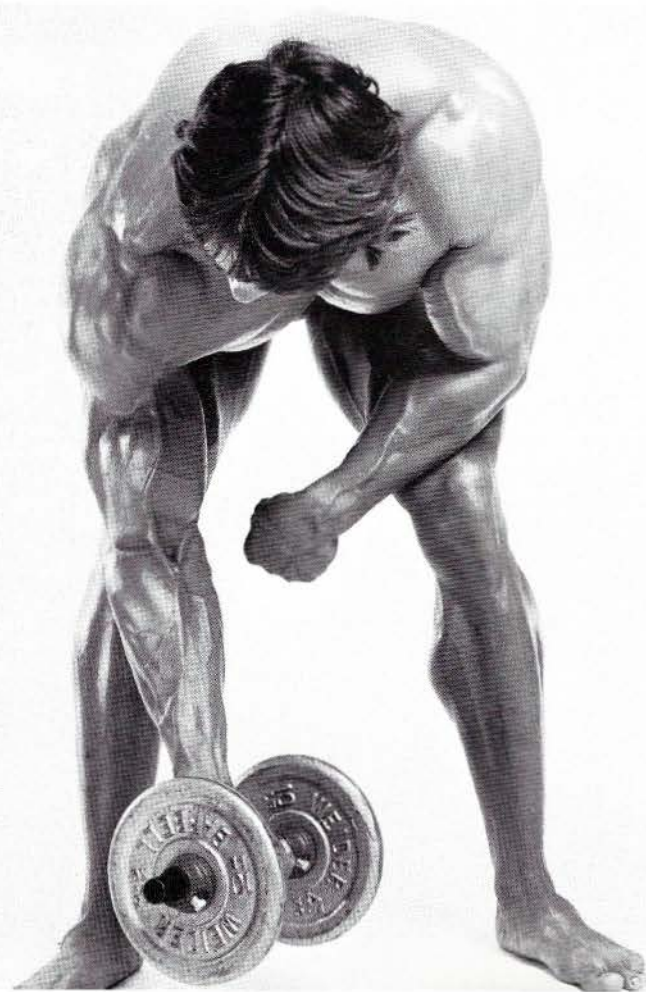
*You can do Alternate Dumbbell Curls in a sitting position as well.*

## CONCENTRATION CURLS

**PURPOSE OF EXERCISE:** To create maximum height in the biceps, especially the outside of the biceps.

I like to do this exercise at the end of my biceps training because it is one of the best means of peaking the muscle. This is a very strict movement, but it is for height, not definition, so use as much weight as you can handle. The name Concentration Curl is significant: You really need to concentrate on the biceps contraction and on being strict to make this exercise effective.

**EXECUTION:** (1) In a standing position, bend over slightly and take a dumbbell in one hand. Rest your free arm on your knee or other stationary object to stabilize yourself. (2) Curl the weight up to the deltoid and without moving the upper arm or the elbow and make certain you don't allow your elbow to rest against your thigh. As you lift, twist the wrist so that the little finger ends up higher than the thumb. Tense the muscle fully at the top of the Curl, then lower the weight slowly, resisting it all the way down to full extension. At the top of the Curl, the biceps are taking the full stress of the weight. Don't curl the weight to the chest—it should be curled to the shoulder.



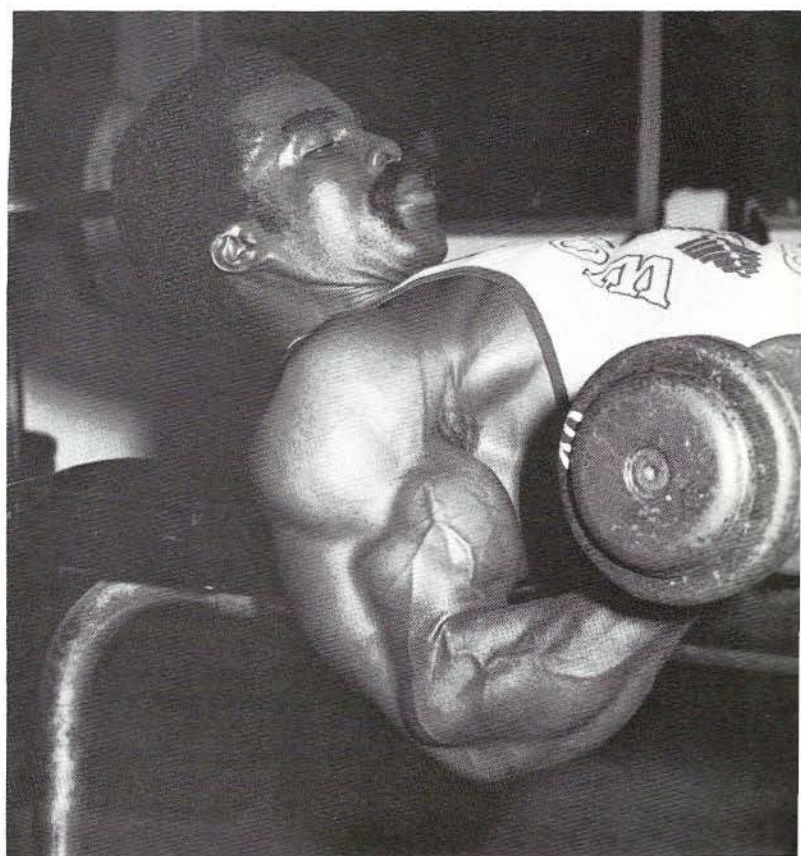
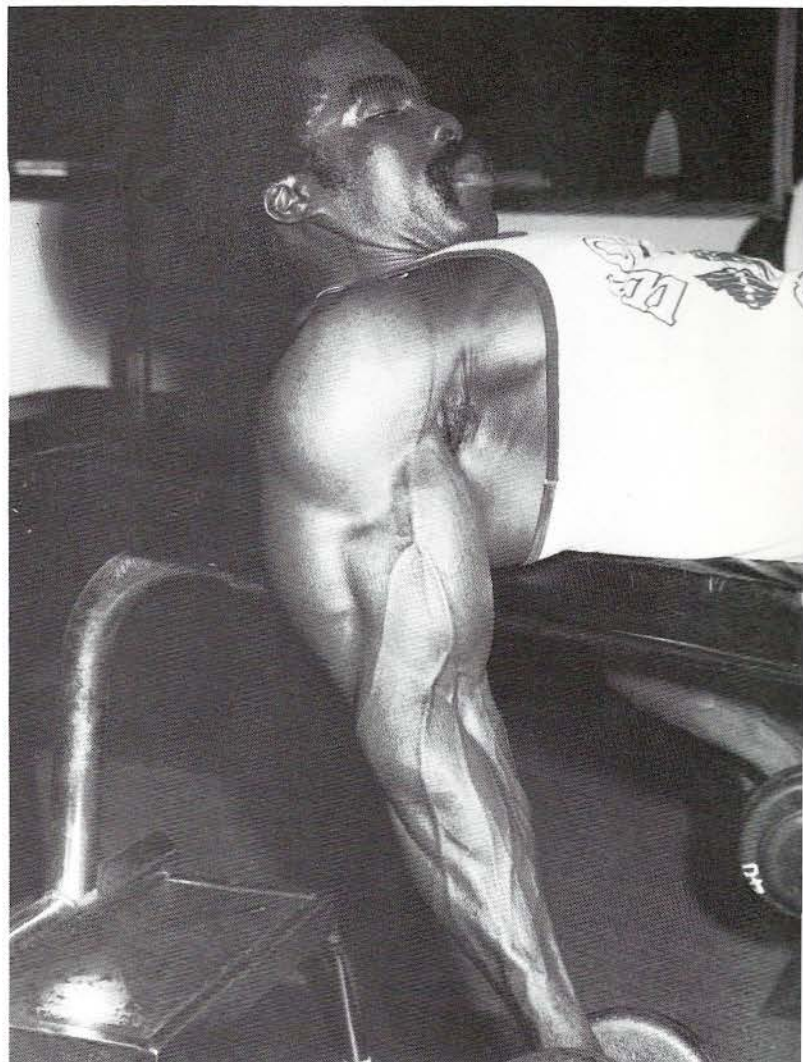


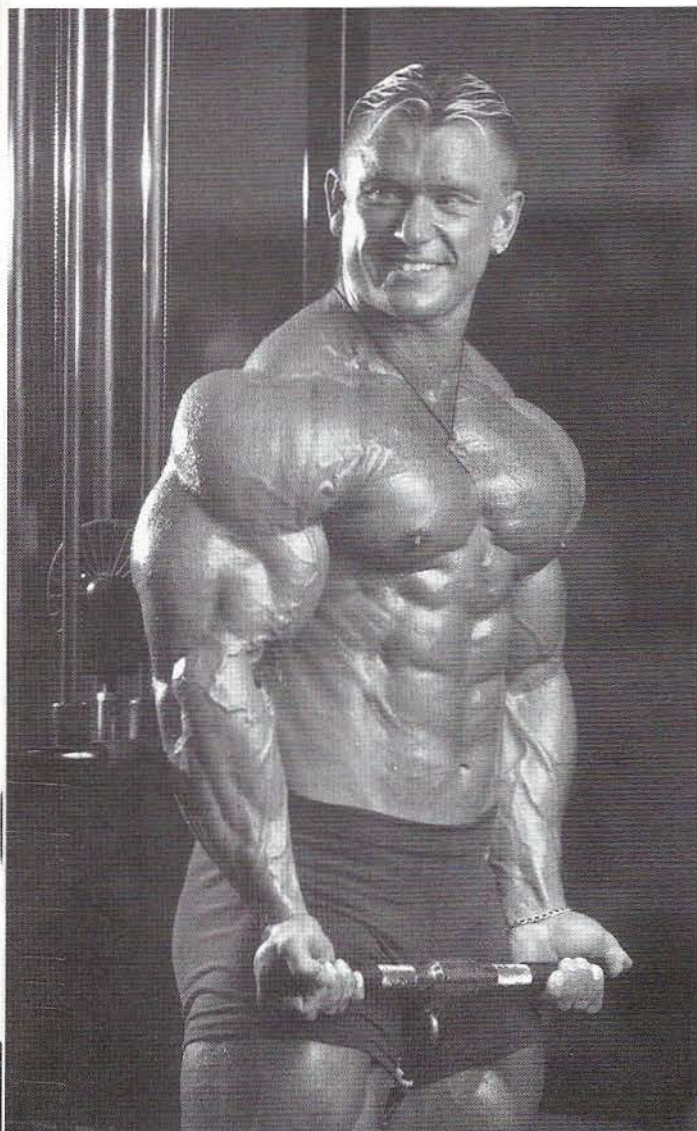
## LYING DUMBBELL CURLS

**PURPOSE OF EXERCISE:** To build the entire biceps throughout a maximal range of motion.

This is an exercise I learned from Reg Park, and it is particularly effective because it gives you a great biceps stretch and helps lengthen the muscle. Also, due to the angle, the biceps must contract fully to offset the pull of gravity.

**EXECUTION:** Use an exercise bench and, if necessary, place it on blocks to raise it higher off the ground. (1) Lie on your back on the bench, a dumbbell in each hand, your knees bent and feet flat on the bench. Let the dumbbells hang down (but not touching the floor) and turn your palms forward. (2) With your elbows steady, curl the weights up toward the shoulders, keeping the movement very strict. Then lower the dumbbells back toward the floor, resisting the weight all the way down.

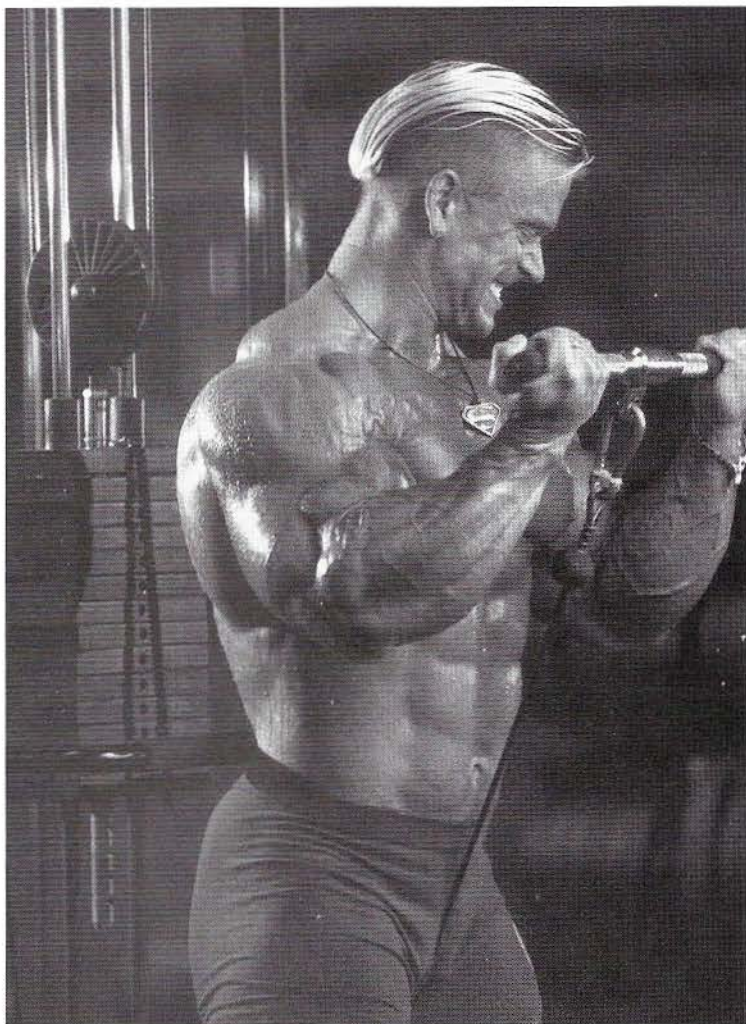




## TWO-HAND CABLE CURLS

**PURPOSE OF EXERCISE:** To develop and shape the biceps, particularly the height of the biceps peak.

**EXECUTION:** Attach a bar to a floor-level cable and pulley. (1) Grasp the bar with an underhand grip, hands about shoulder width apart. Keeping your elbows fixed at your sides, extend your arms out and down until your biceps are fully stretched. (2) Curl the bar upward, not letting your elbows move, to a position just under your chin. Contract your biceps as hard as possible on top, then lower the bar slowly back down until your arms are fully extended, biceps stretched. This is not generally considered a mass exercise, so the key to doing it properly is a slow, smooth, controlled motion.



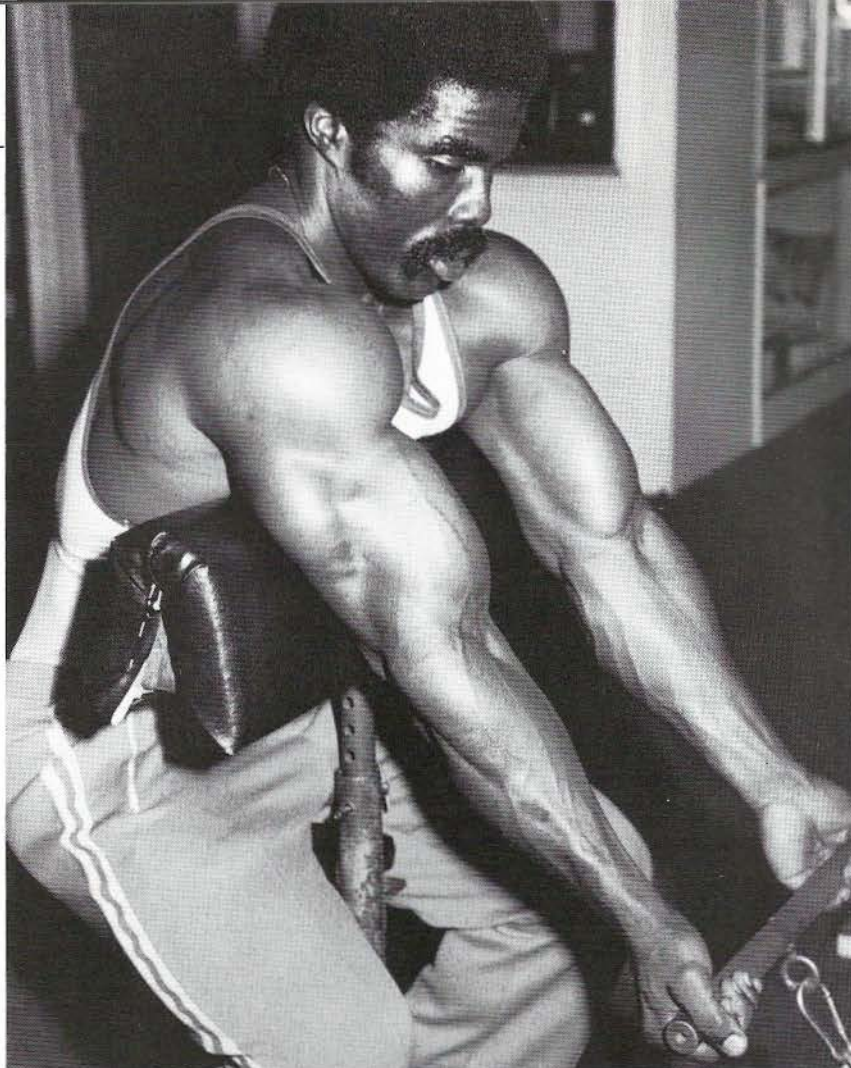
*Lee Priest*

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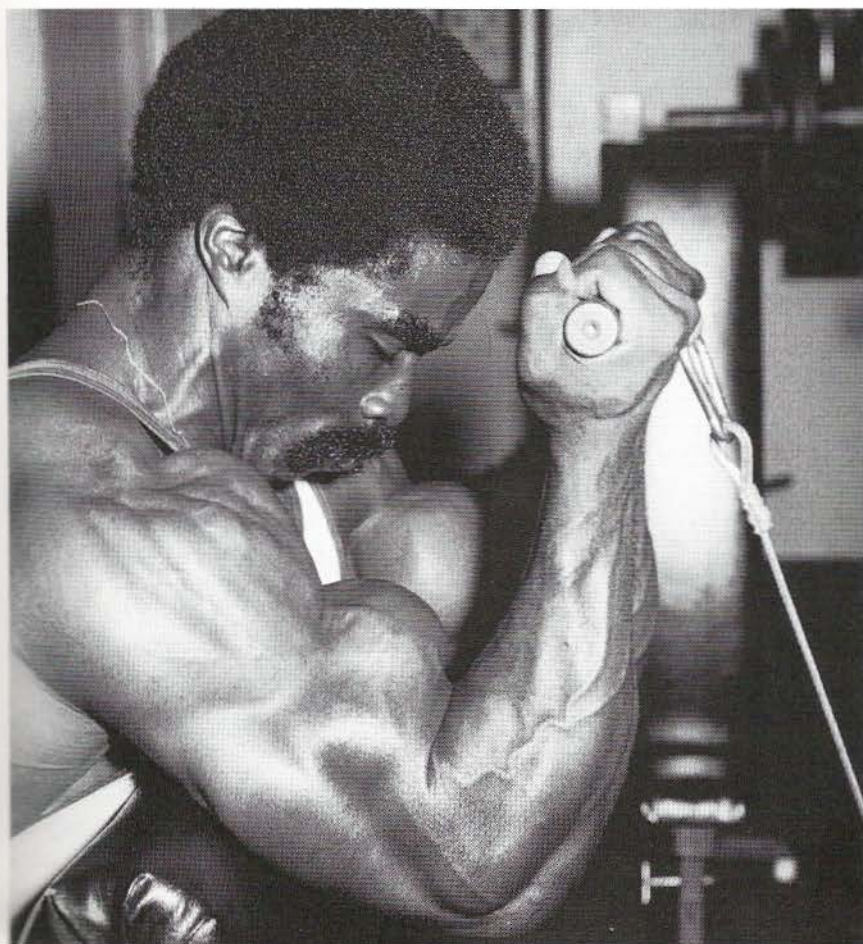
## CABLE CURLS WITH PREACHER BENCH (OPTIONAL)

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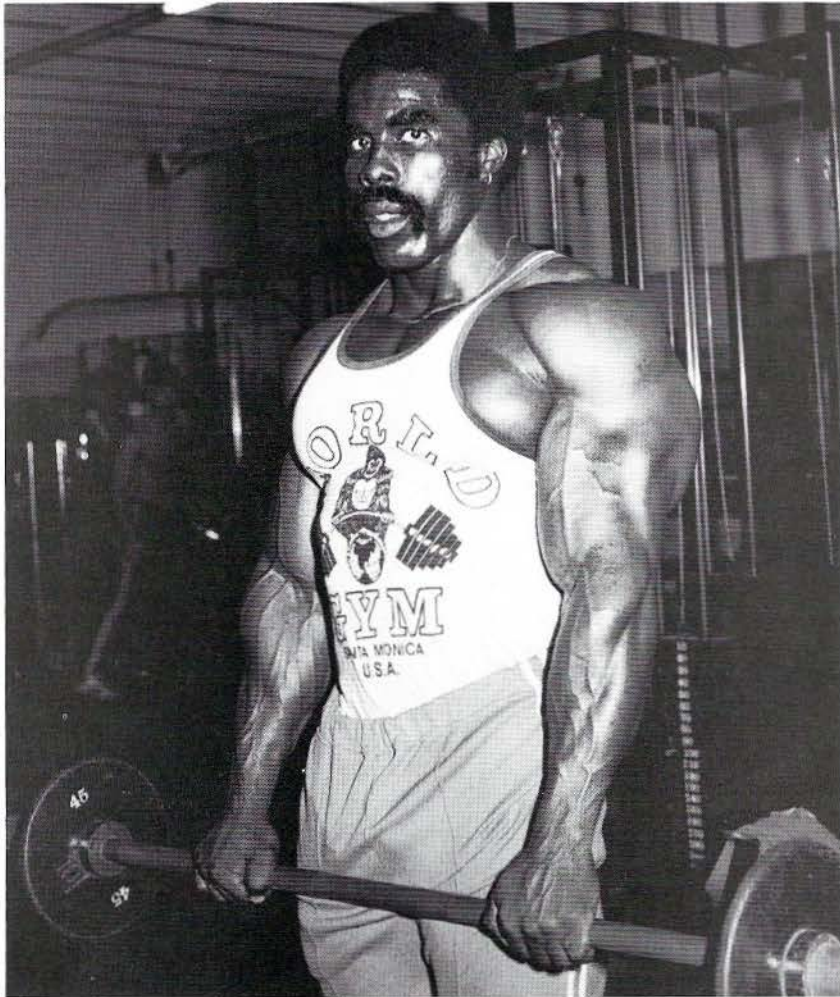
**EXECUTION:** To do this movement with a preacher bench, (1) sit down and place your arms over the bench to hold them steady as you (2) curl the weight up and slowly lower it again, resisting the weight all the way down.



*Preacher Cable Curls combine the strictness of the preacher bench with the strictness that comes from the steady resistance provided by a cable.*



*Doing Preacher Curls with a cable gives the biceps resistance even on the top. (With dumbbells or barbells, the resistance is mostly on the bottom.) Therefore, doing the exercise with a cable helps you to add peak contraction to your workout.*

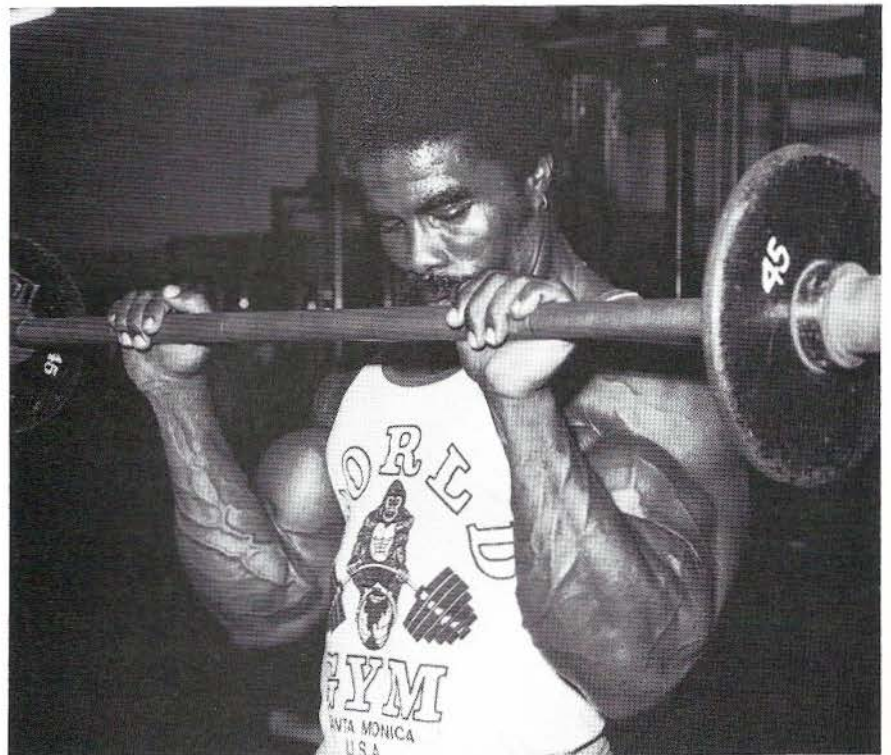


## REVERSE CURLS

**PURPOSE OF EXERCISE:** To develop the biceps.

This exercise is also good for forearm development.

**EXECUTION:** (1) Standing with your feet shoulder-width apart, grasp a barbell with an overhand grip and hold it down in front of you at arm's length. (2) Keeping your elbows steady, curl the weight out and up to a position about even with your chin. Lower the weight through the same arc, resisting all the way down. Gripping the bar this way, you put the biceps in a position of mechanical disadvantage, so you will not be able to curl as much weight. The reverse grip makes the top of the forearm work very hard. Reverse Curls for the biceps rather than the forearms do not begin with any kind of Reverse Wrist Curl. Keep the wrists steady as you curl the weight up. Notice that the thumb is kept on top of the bar.

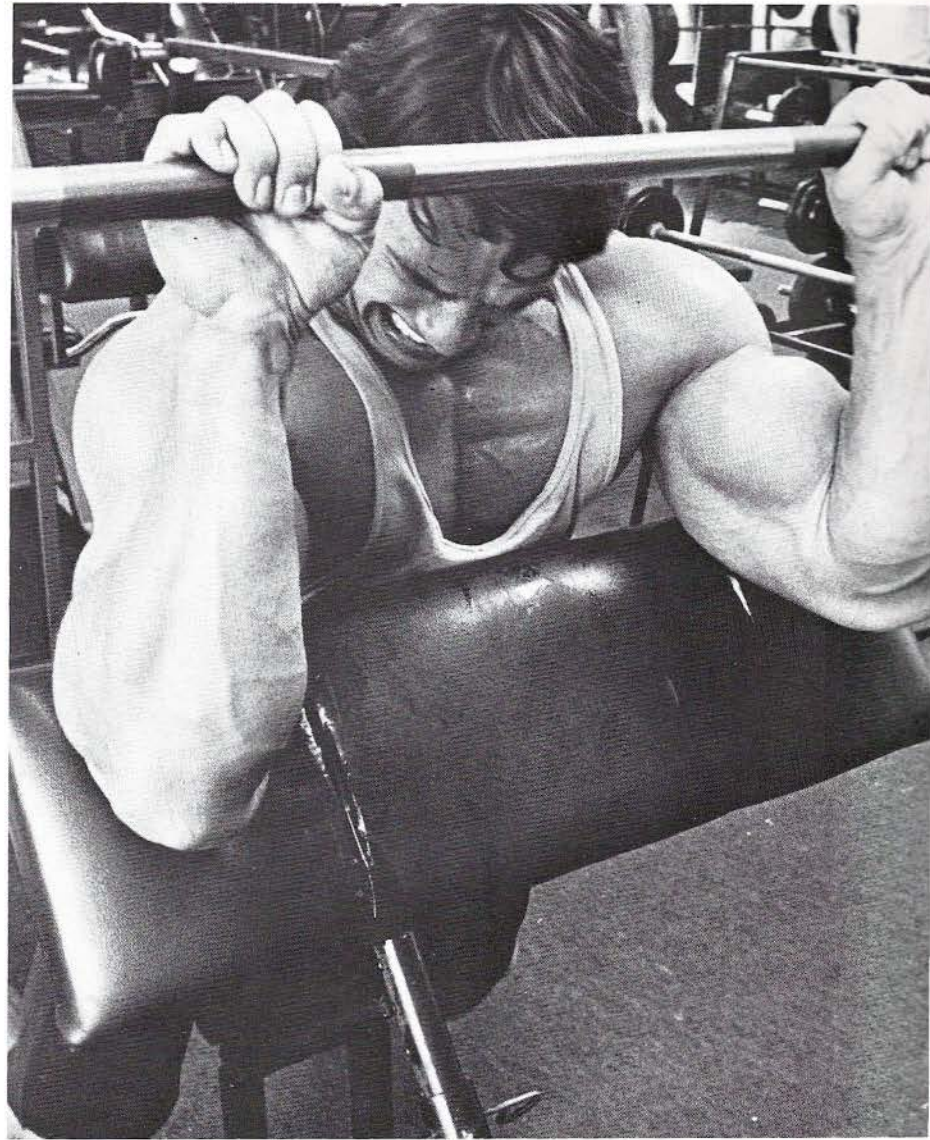


## REVERSE PREACHER BENCH CURLS

**PURPOSE OF EXERCISE:** To develop the biceps and the top of the forearm.

Using a preacher bench, the movement is done very strictly.

**EXECUTION:** (1) Grasp a bar with an overhand grip, hands about shoulder width apart. (2) Lean across a preacher bench and extend your arms fully. Let your arms hang toward the floor, then curl the weight up, with the wrists as well, keeping the elbows firmly anchored. Curl the weight as far as possible, then lower it again, keeping it under control and resisting all the way down. Keep your body steady throughout the movement and avoid rocking back and forth.



## BICEPS MACHINES

A lot of equipment companies make Curl machines designed to allow you to subject your biceps to full-range rotary resistance. One advantage of these machines is that they allow you to do heavy forced negatives, your workout partner pressing down on the weight as you resist during the downward part of the movement. Another is that you can often get a longer range of motion, giving you more stretch and total contraction. However, machines lock you into one narrow movement path, which will not allow for a really full development of the biceps. Use machines as a method of getting more variety in your workouts in addition to, but not instead of, free-weight Curls.



*Flex Wheeler*

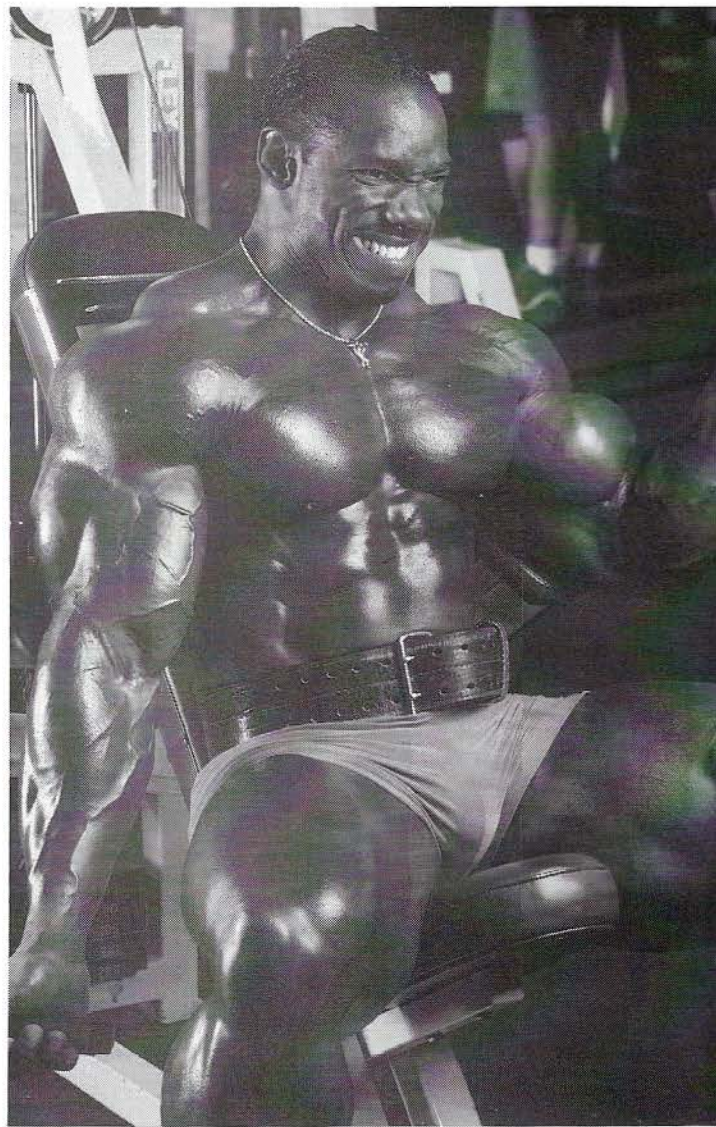
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## MACHINE CURLS

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**PURPOSE OF EXERCISE:** To work the biceps through the longest range of motion possible.

When you do Curls on a machine, the movement becomes extremely strict and you are able to contract against resistance over the longest range of motion possible, from the point of full extension to that of a full peak contraction. Because of this, Machine Curls are a shaping, finishing exercise rather than one designed to build mass.



There are a wide variety of Curl machines found in gyms. With some, the resistance is provided by loading the machine with weight plates, while others use a cable attached to a weight stack. With many machines you grasp a bar and curl both arms simultaneously. With others, like the one pictured here, the two sides of the machine work independently, so you can either curl your arms simultaneously or, as shown here, use the machine to do Alternate Curls.

**EXECUTION:** When doing Curls on any machine, position yourself with your elbows on the pad and grasp the bar or the handles with an underhand grip. (1) For two-handed Curls, contract the biceps and curl both arms as far as possible, feeling a full peak contraction at the top, then extend downward under full control to a point of full extension. (2) For Alternate Curls, contract one arm to a point of peak contraction, extend it downward under full control to a point of full extension, then do the same with the other arm, and continue to alternate the two arms until your set is complete.

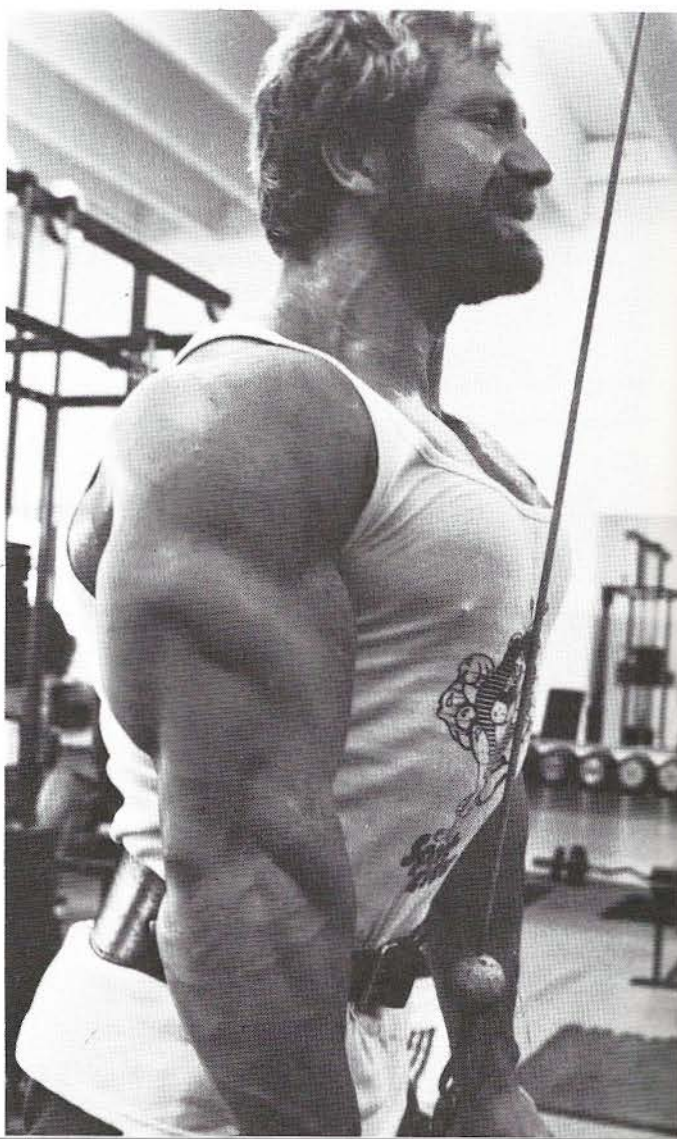
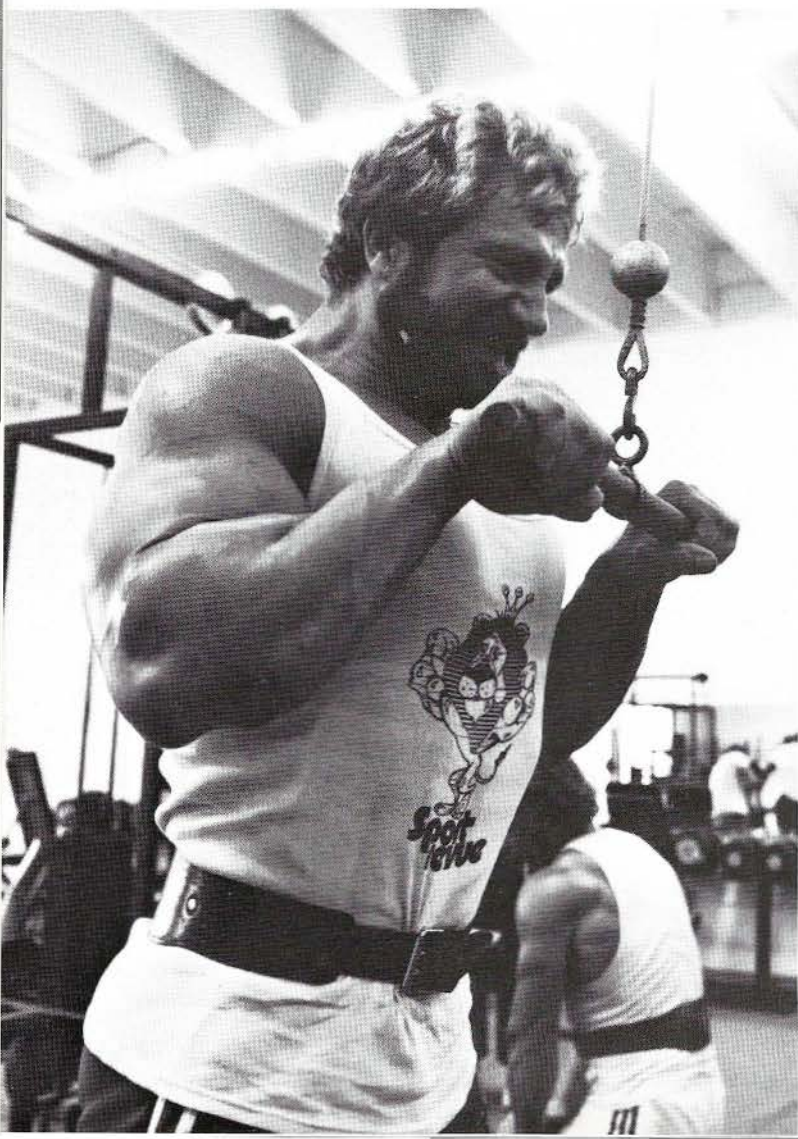
## Arm Exercises—Triceps

### TRICEPS CABLE PRESSDOWNS (OR LAT MACHINE PRESSDOWNS)

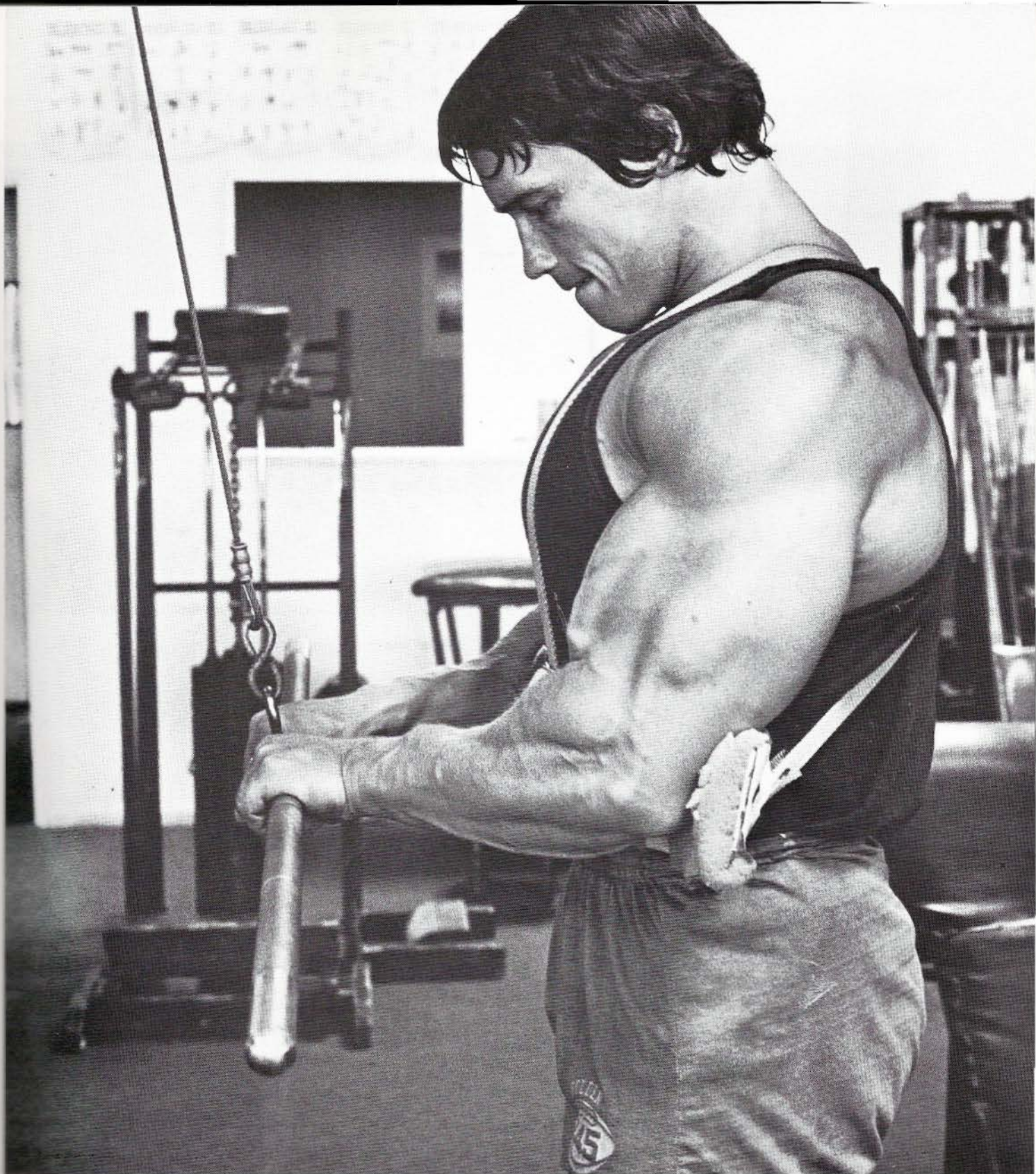
**PURPOSE OF EXERCISE:** To work the triceps through a full range of motion.

**EXECUTION:** (1) Hook a short bar to an overhead cable and pulley, stand close to the bar and grasp it with an overhand grip, hands about 10 inches apart. Keep your elbows locked in close to your body and stationary. Keep your whole body steady—don't lean forward to press down with your body weight. (2) Press the bar down as far as possible, locking out your arms and feeling the triceps contract fully. Release and let the bar come up as far as possible without moving your elbows. For variety, you can vary your grip, the type of bar you use, how close you stand to the bar, or the width between your hands; or you can do a three-quarter movement, going from all the way up to three-quarters of the way down in order to work the lower triceps more directly.

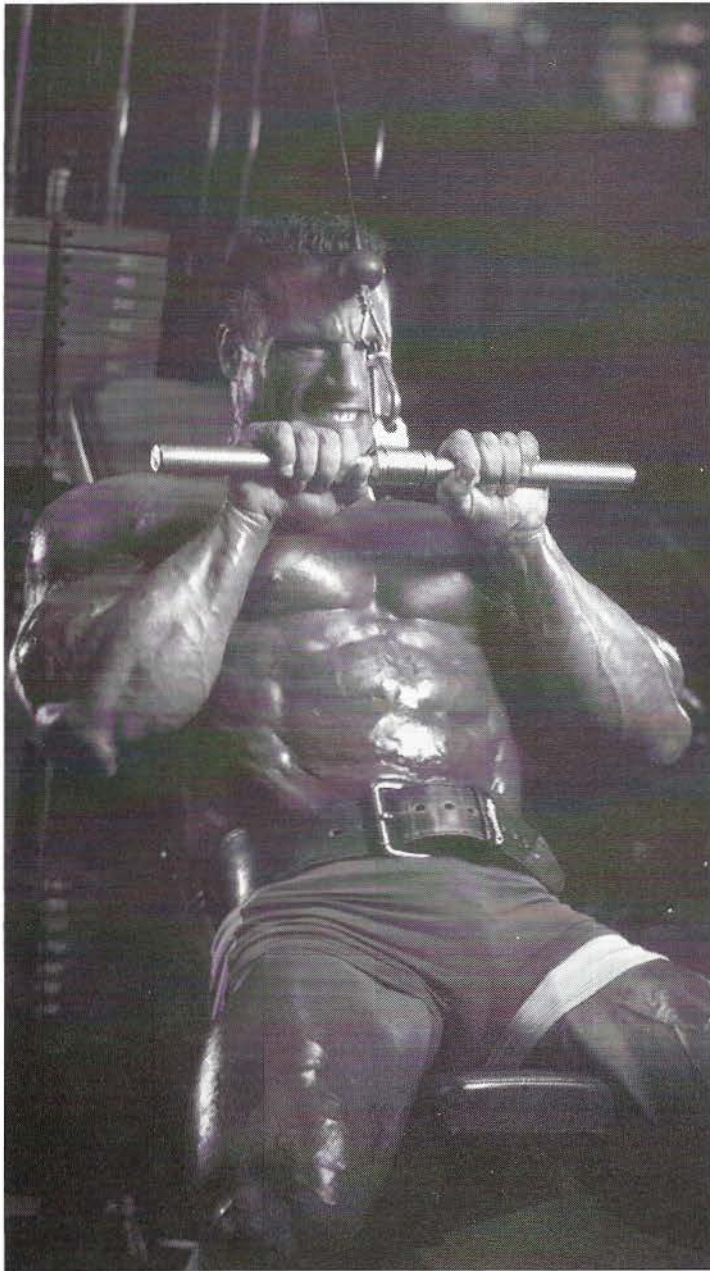
*Jusup Wilkosz*





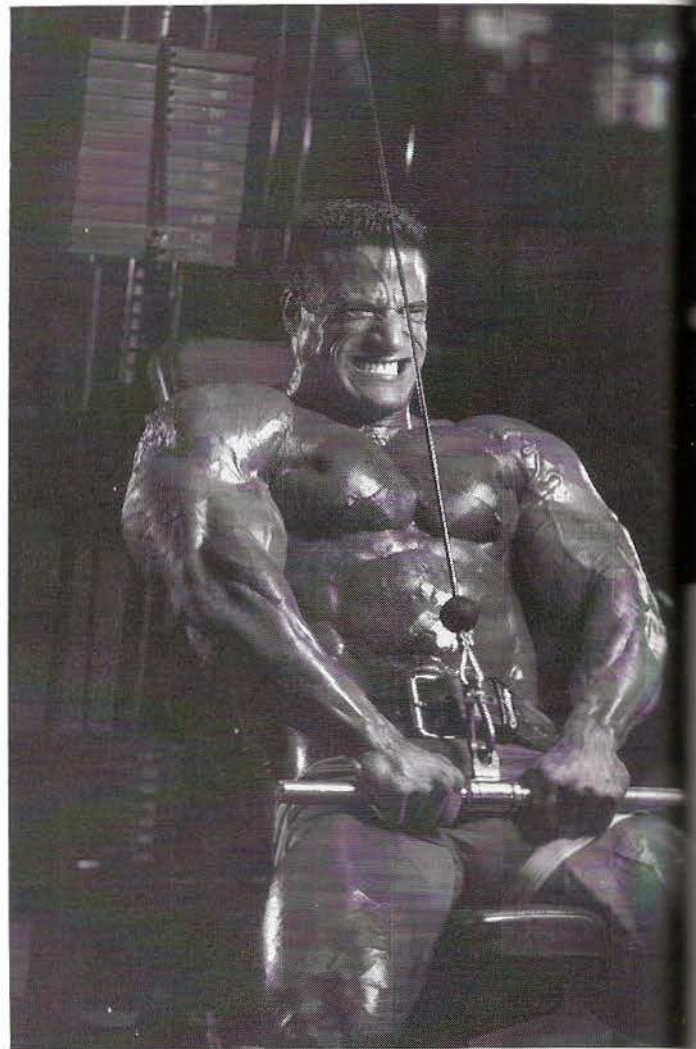


*Arm Blaster Pressdowns . . . I frequently did Pressdowns using an Arm Blaster to keep the elbows from moving and to create a superstrict movement.*



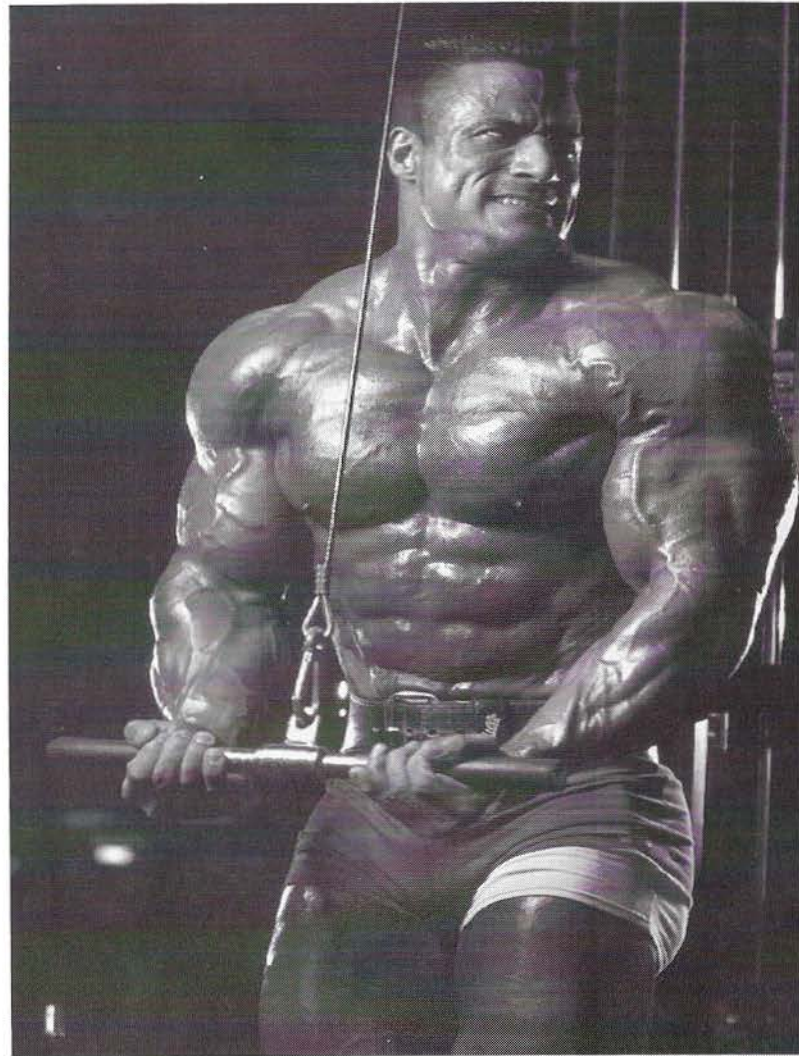
*Mike Matarazzo*

*When doing Pressdowns with an incline board, you force the triceps to work at an unfamiliar angle, and you can't cheat.*





*Changing from an overhand to a reverse grip will change the feel—and muscle recruitment.*

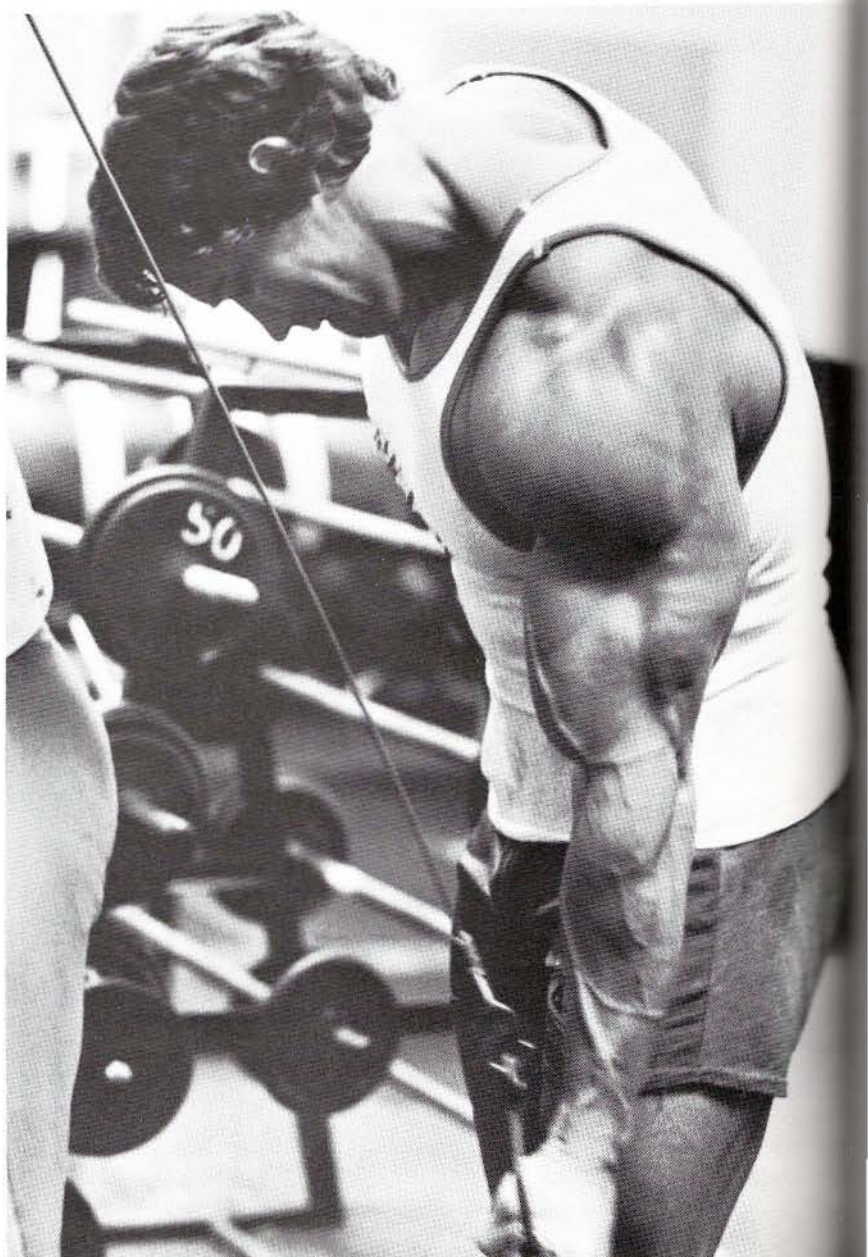


## ONE-ARM CABLE REVERSE PRESSDOWNS

**PURPOSE OF EXERCISE:** To isolate the triceps and develop the horseshoe shape of the muscle.

This exercise is especially good for contest or weak point training because by using a cable you can work each arm separately in isolation.

**EXECUTION:** (1) Using an overhead cable and pulley, take hold of the handle with a reverse grip, palm up. (2) Keeping your elbow fixed and unmoving, straighten your arm until it is locked out and extended straight down. Flex the triceps in this position for extra contraction. Still not moving the elbow, let your hand come up as far as possible until the forearm approaches the biceps, feeling a complete stretch in the triceps. Finish your repetitions, then repeat with the other arm.



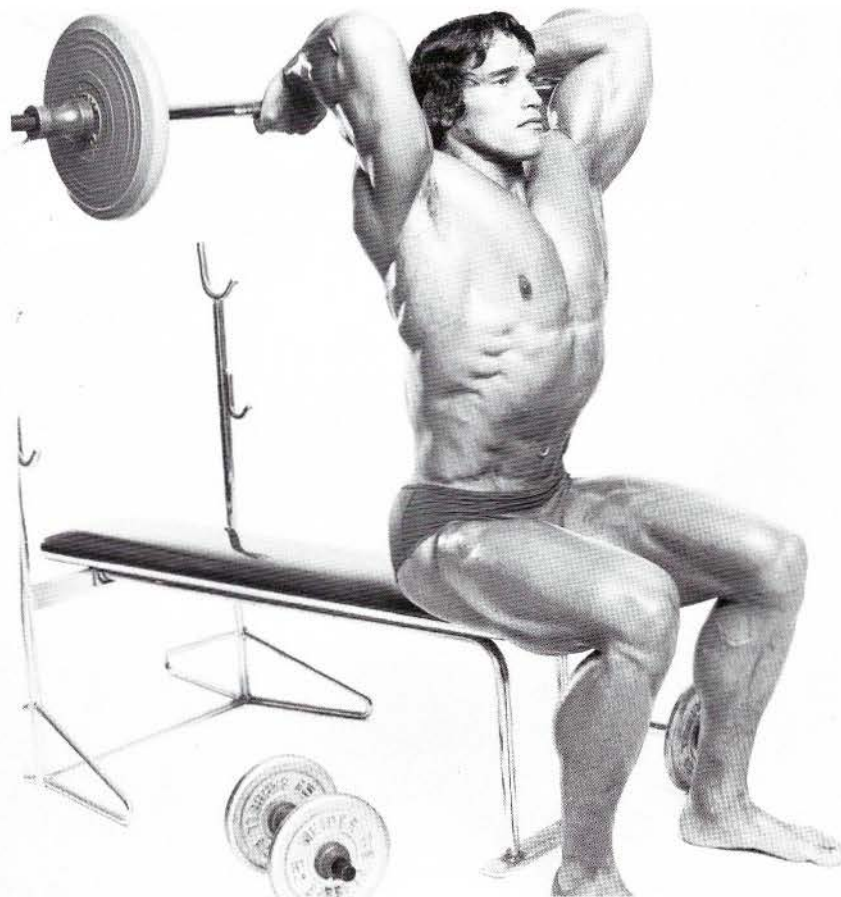
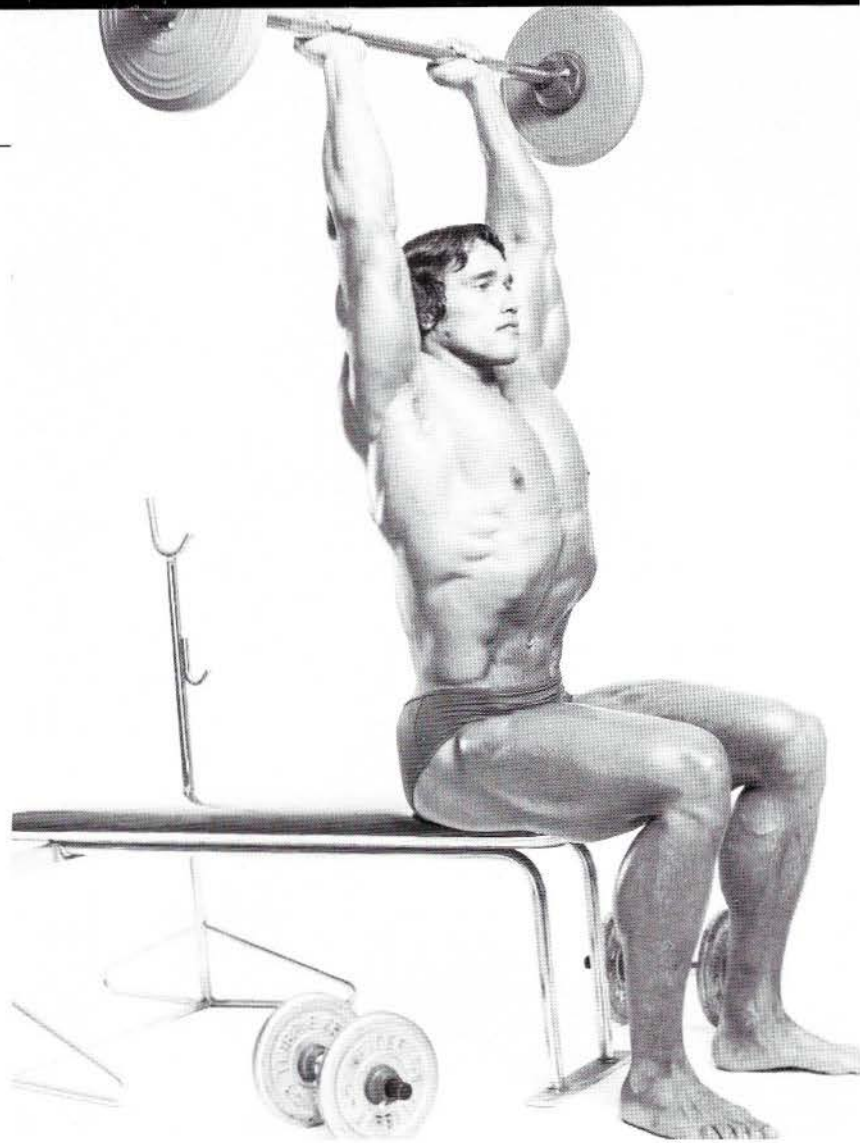
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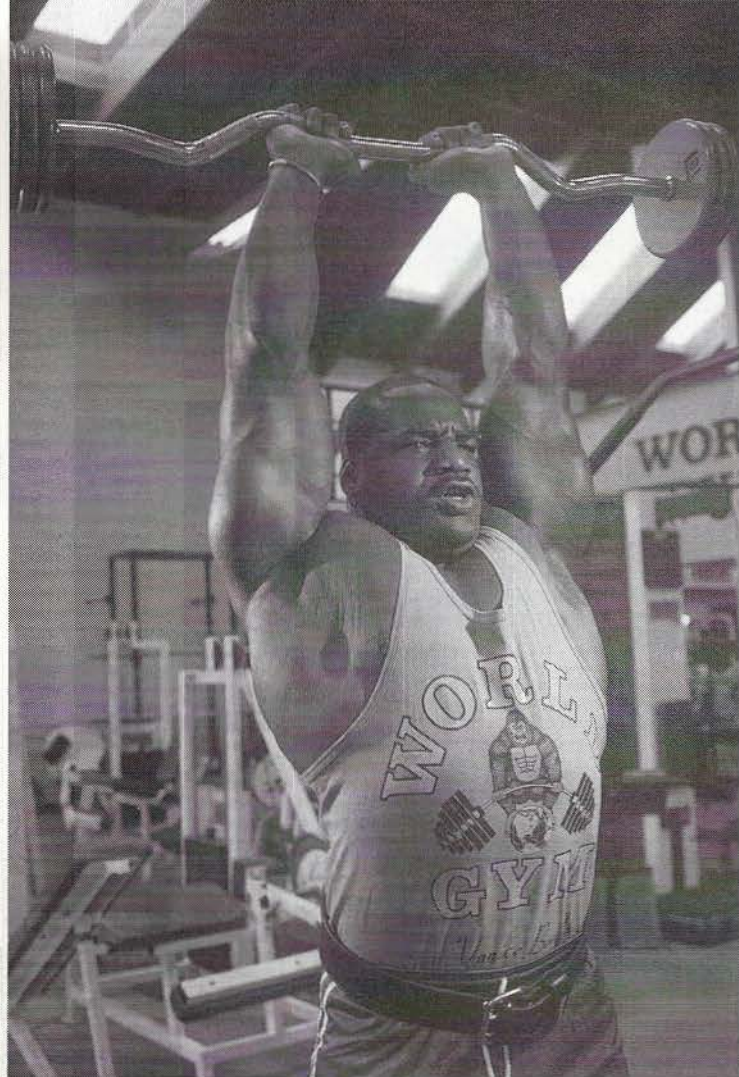
## SEATED TRICEPS PRESSES

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**PURPOSE OF EXERCISE:** To hit all three triceps heads, especially the long head.

**EXECUTION:** Grasp a barbell with an overhand grip, hands close together. (1) Sit on a bench and raise the bar straight up overhead, arms locked out. (2) Keeping your elbows stationary and close to your head, lower the weight down in an arc behind your head until your triceps are as stretched as possible. Only the forearms should move in this exercise. From this position, using only your triceps, press the weight back up overhead to full extension. Lock your arms out and flex your triceps. You might prefer doing this exercise using an E-Z curl bar or on an incline bench.





## STANDING TRICEPS PRESSES

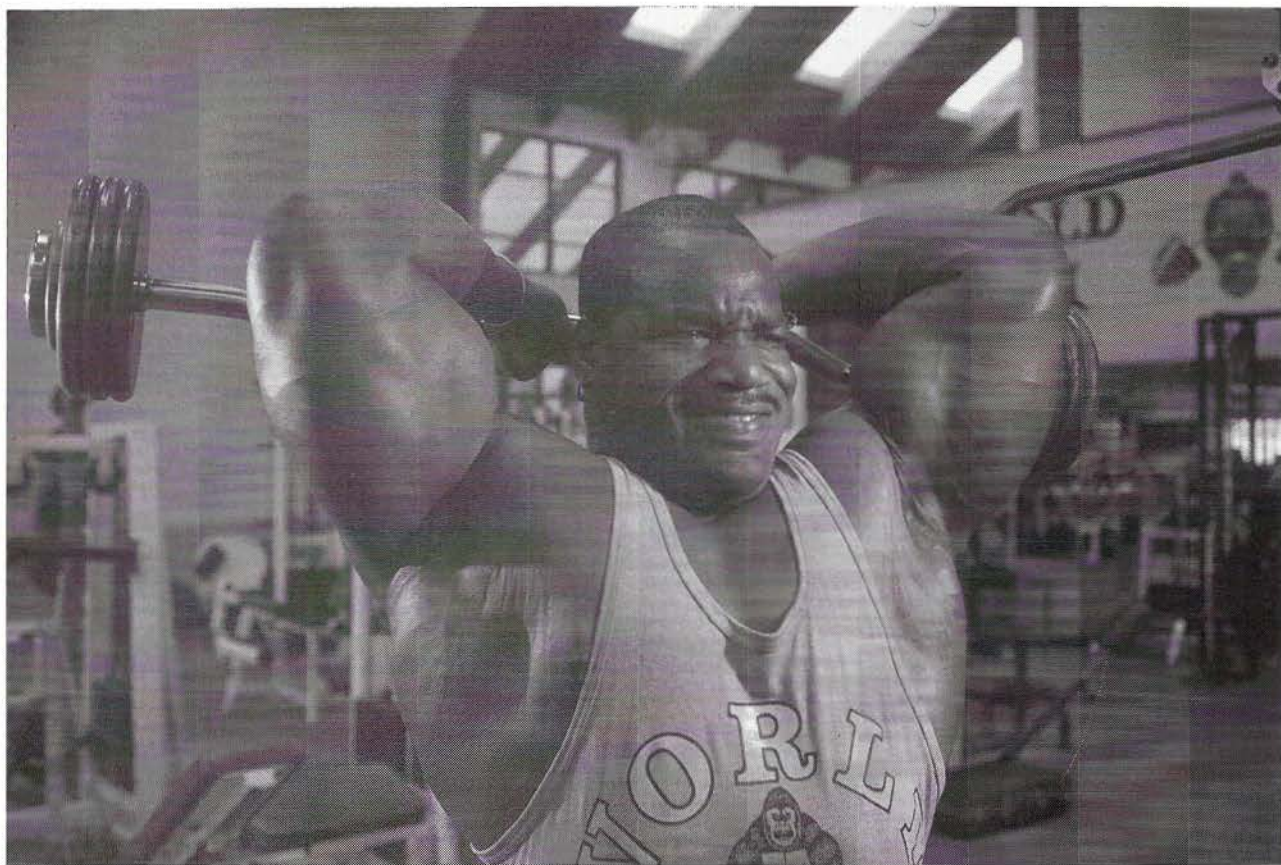
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**PURPOSE OF EXERCISE:** To develop the full sweep of the triceps.

Doing this movement gives your triceps a full look to complement the biceps when doing a double-biceps pose. Performing Triceps Presses standing instead of seated allows you to do a cheating movement and thus use more weight. This exercise can also be done with a cable and rope through a floor-level pulley, which puts greater emphasis on the long head of the triceps.

**EXECUTION:** (1) Grip a straight or E-Z curl bar with an overhand grip, hands about 10 inches apart. Stand upright and hold the bar extended straight overhead. (2) Keeping your elbows stationary and close to your head, lower the weight down behind your head as far as possible, then press it back up to the starting position through a semicircular arc.

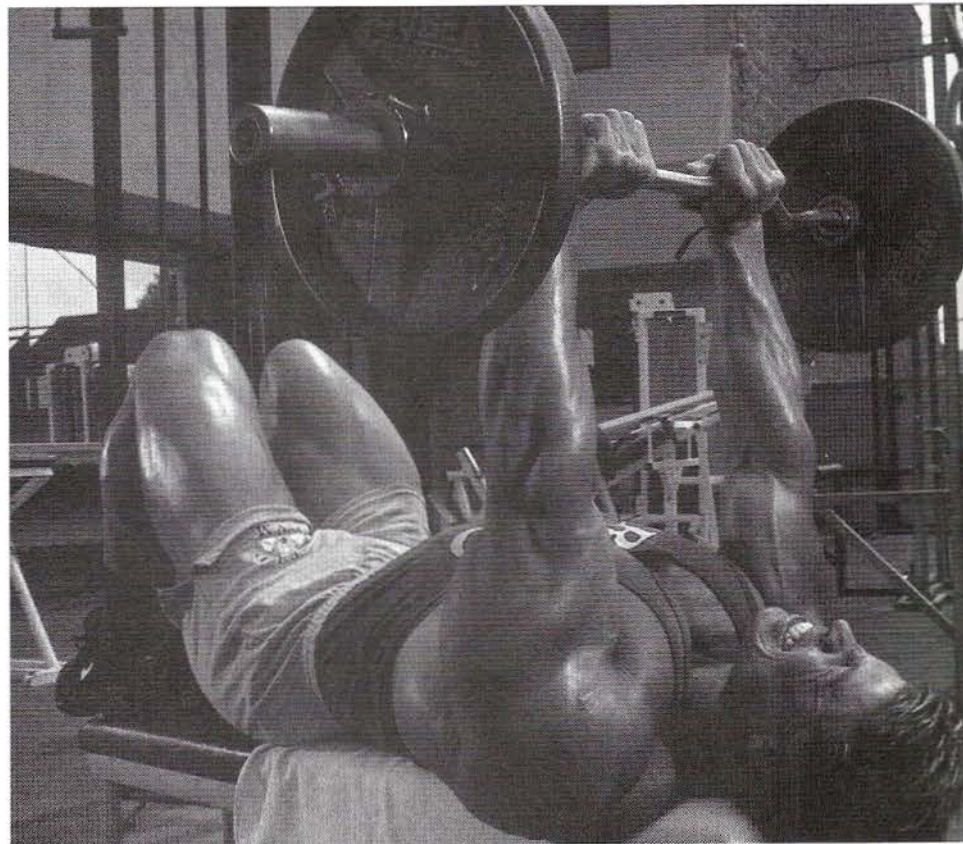
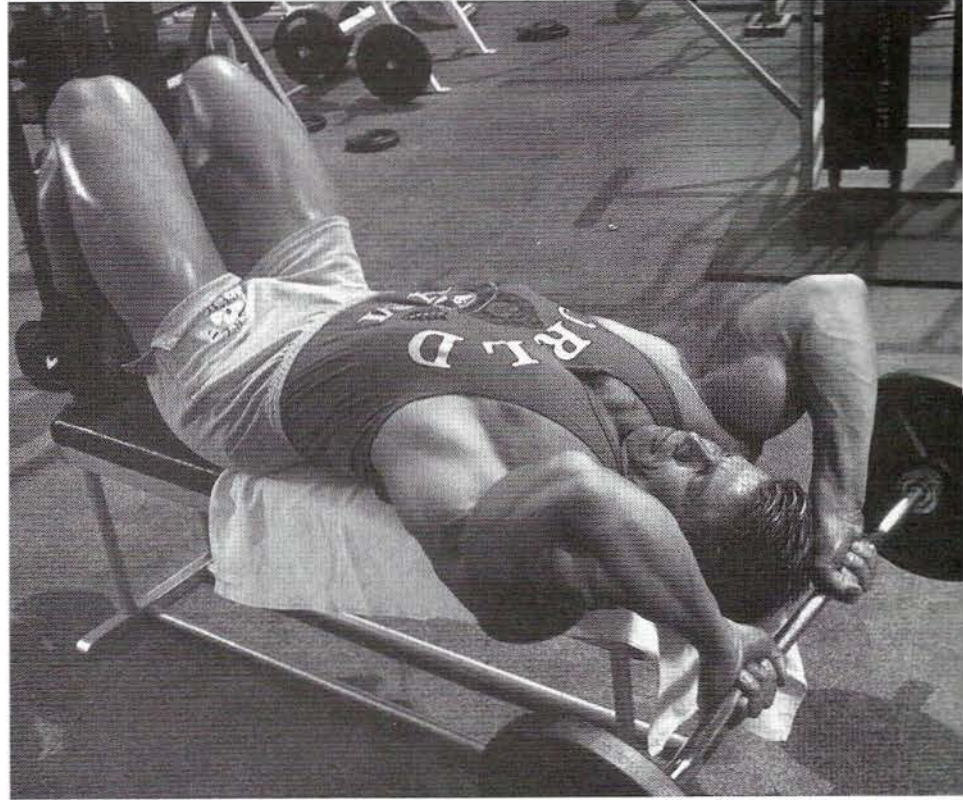
*Chris Cormier*



## LYING TRICEPS EXTENSIONS

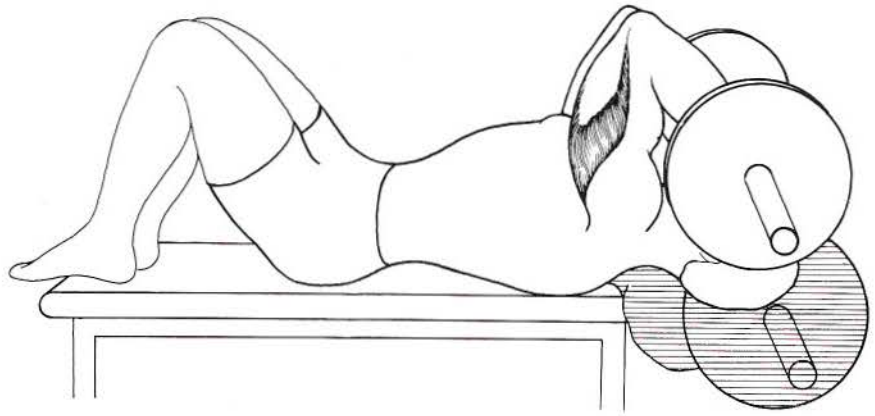
**PURPOSE OF EXERCISE:** To work the triceps all the way from the elbow down to the lats.

**EXECUTION:** (1) Lie along a bench, your head just off the end with knees bent and feet flat on the bench. Take hold of a barbell (preferably an E-Z curl bar) with an overhand grip, hands about 10 inches apart. (2) Press the weight up until your arms are locked out, but not straight up over your face. Instead, the weight should be back behind the top of your head, with your triceps doing the work of holding it there. Keeping your elbows stationary, lower the weight down past your forehead, then press it back up to the starting position, stopping short of the vertical to keep the triceps under constant tension. Keep control of the weight at all times in this movement to avoid banging yourself on the head with the bar. When you can't do another rep, you can still force the triceps to keep working by repping out with some Close-Grip Presses.

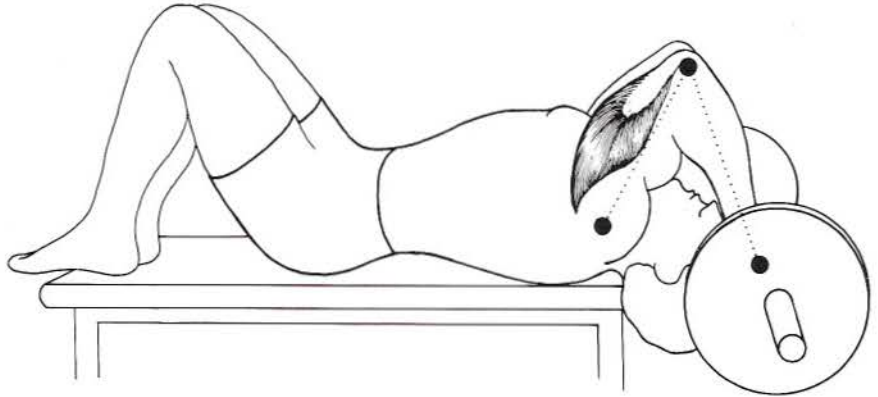


*This photograph shows the arms perpendicular to the body at finish position; for maximum contraction they should be at a forty-five degree angle.  
(Roland Kickinger)*

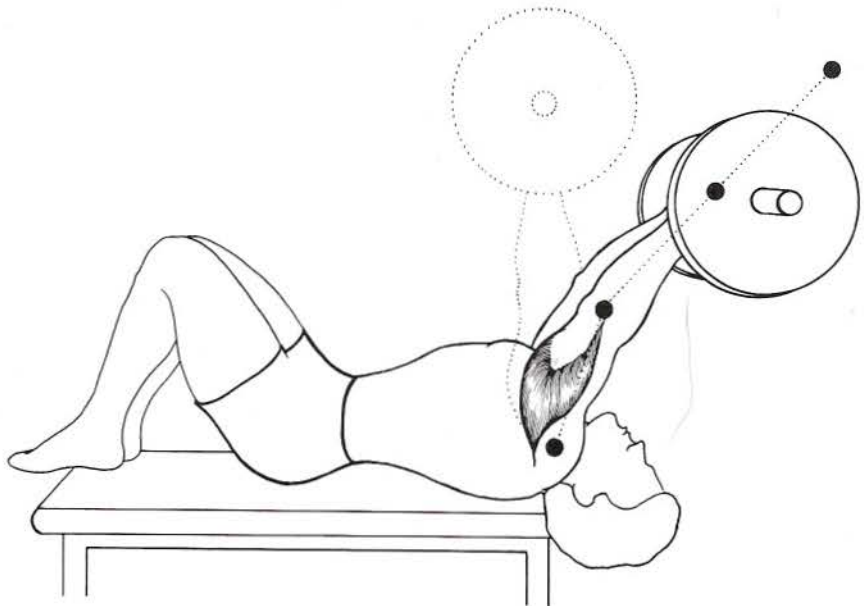
*If you keep your head up as you do a Lying Triceps Extension, you will not be able to lower the bar far enough to stretch the triceps completely.*



*Letting your head drop slightly over the end of the bench gives you room to lower the bar far enough to get full extension of the triceps.*

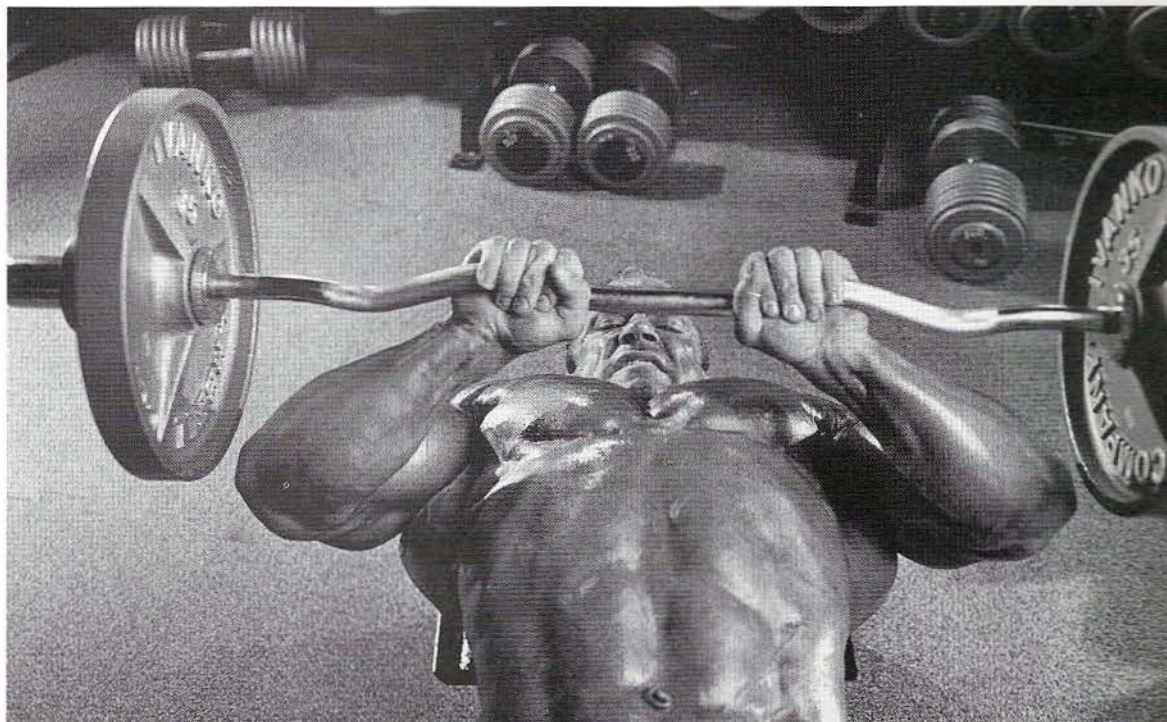


*A common mistake when doing Lying Triceps Extensions is to lift the weight up so that you hold it straight overhead, which means the bones and joints are doing the work rather than the triceps. This illustration shows the right way to do it—positioning yourself so that your arms are still at an angle when you lock out. This angle ensures that the triceps can't rest on top but still have to fight gravity to support the weight.*

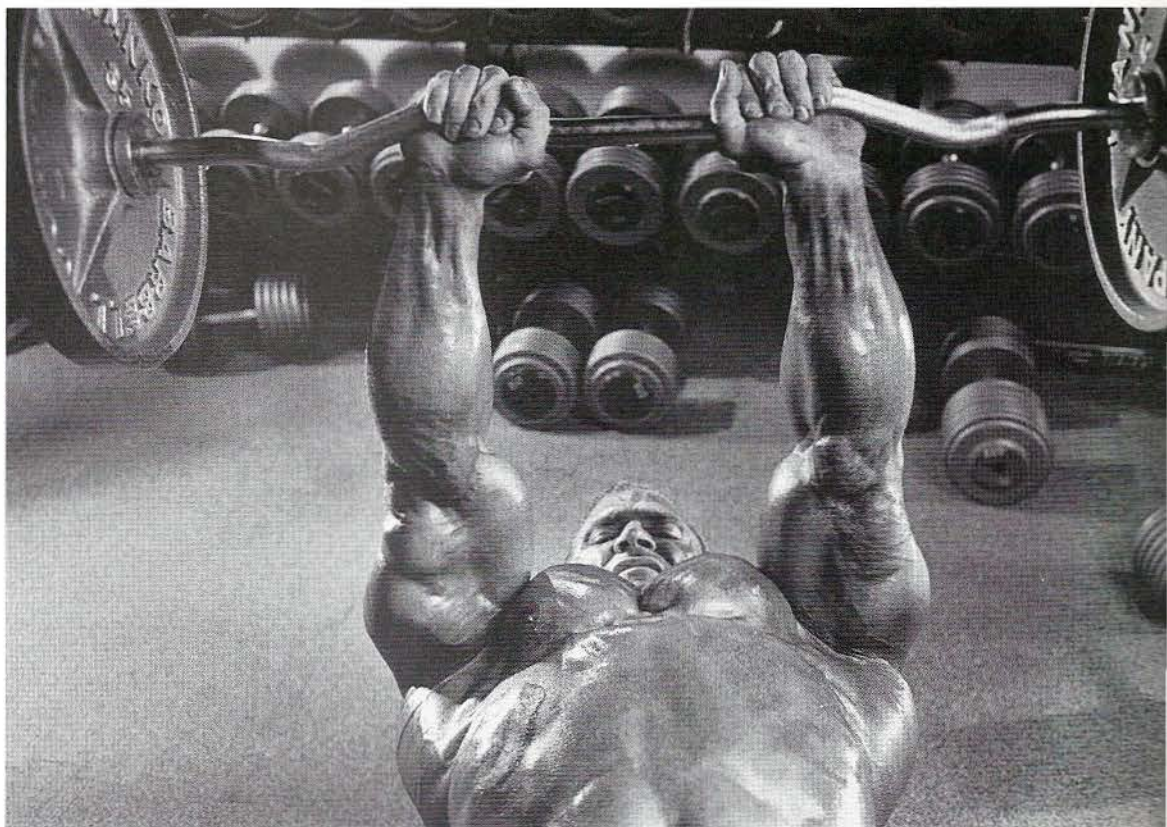




*Close-Grip Presses—  
starting position*



*Close-Grip Presses—  
ending*



*Mike Francois*



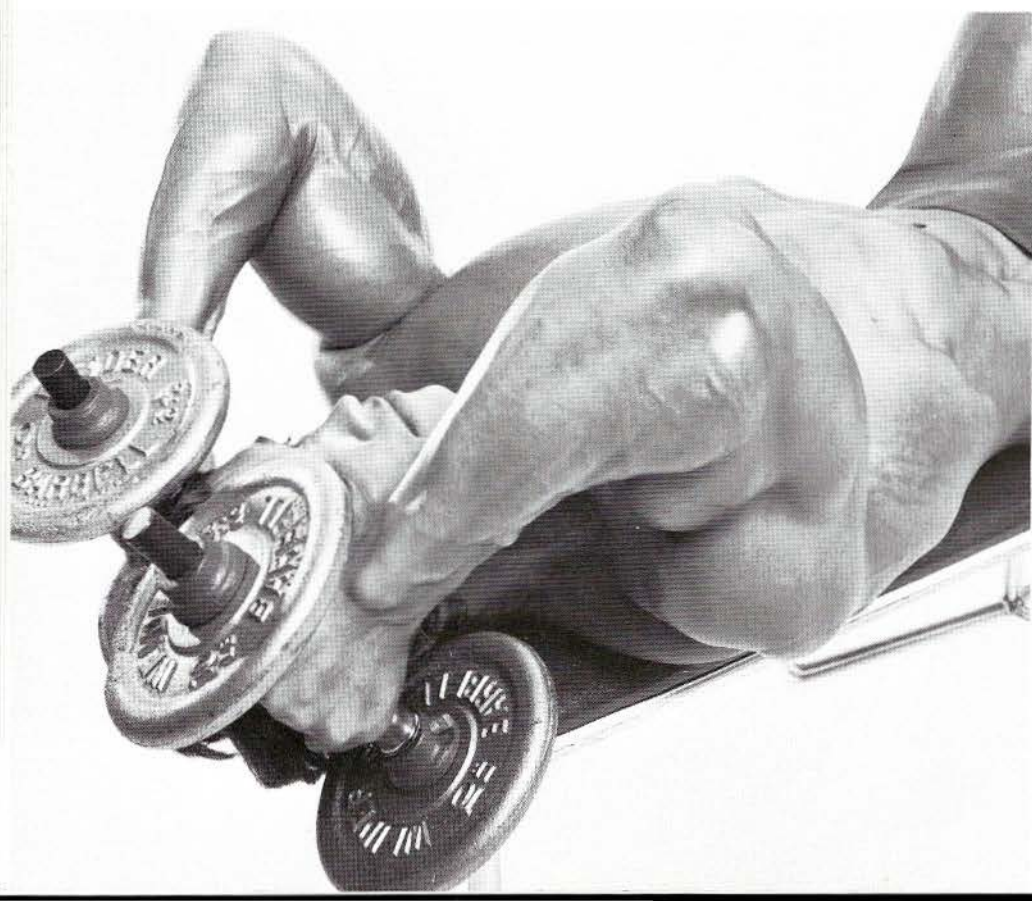
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## LYING DUMBBELL EXTENSIONS

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**PURPOSE OF EXERCISE:** To work the triceps.

**EXECUTION:** (1) Lie on a bench, head even with the end, knees bent, feet flat on the bench. Hold one dumbbell in each hand overhead, arms straight, palms facing each other. (2) Hold your elbows stationary and lower the dumbbells down on either side of your head until your triceps are fully stretched and the weights almost touch your shoulders. Press them back up through a sweeping arc, but lock your elbows out before your arms are pointed straight up overhead and flex your triceps.

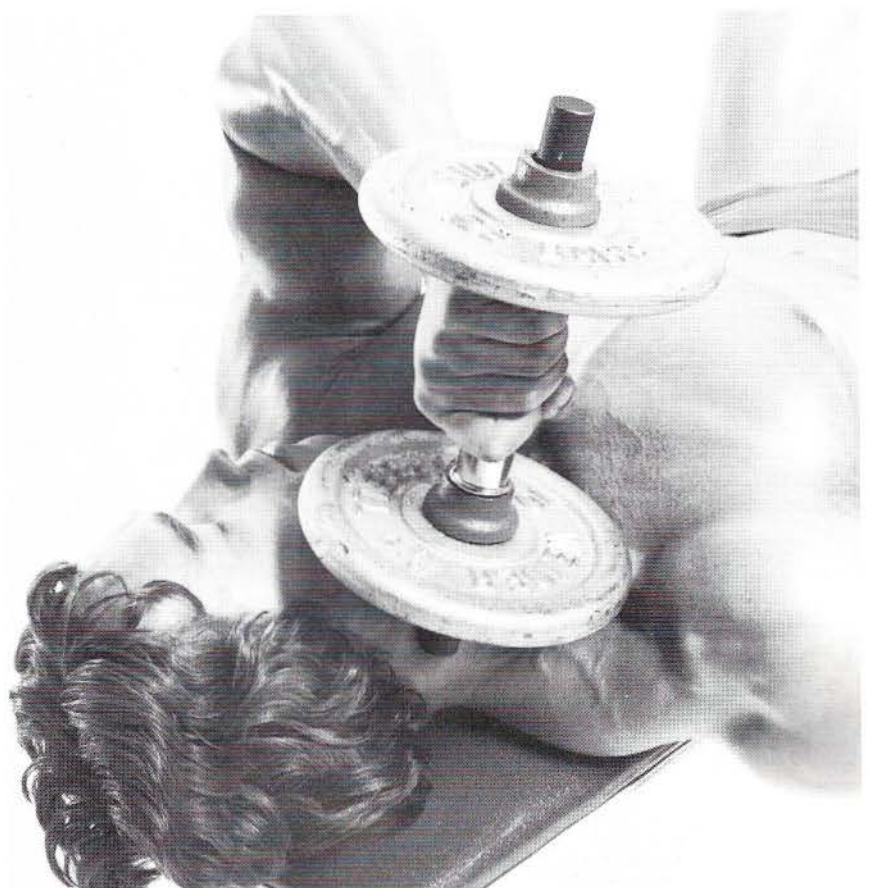




### LYING CROSS FACE TRICEPS EXTENSIONS (OPTIONAL)

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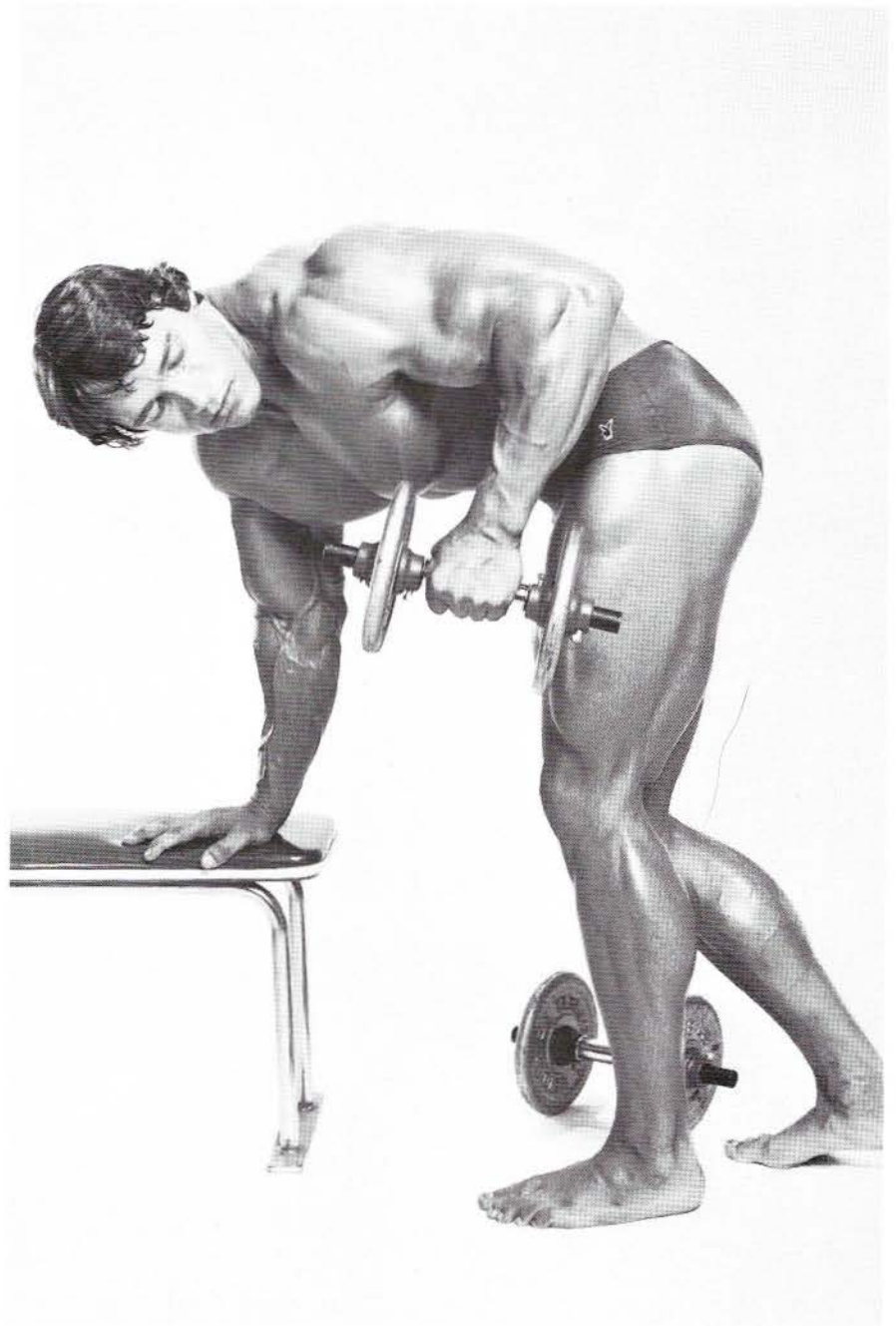
Lying Dumbbell Extensions also can be done with one dumbbell at a time by bringing the dumbbell across your body to the opposite shoulder. When you finish your reps with one arm, repeat with the opposite one. Changing the angle changes the feel in your triceps.



## DUMBBELL KICKBACKS

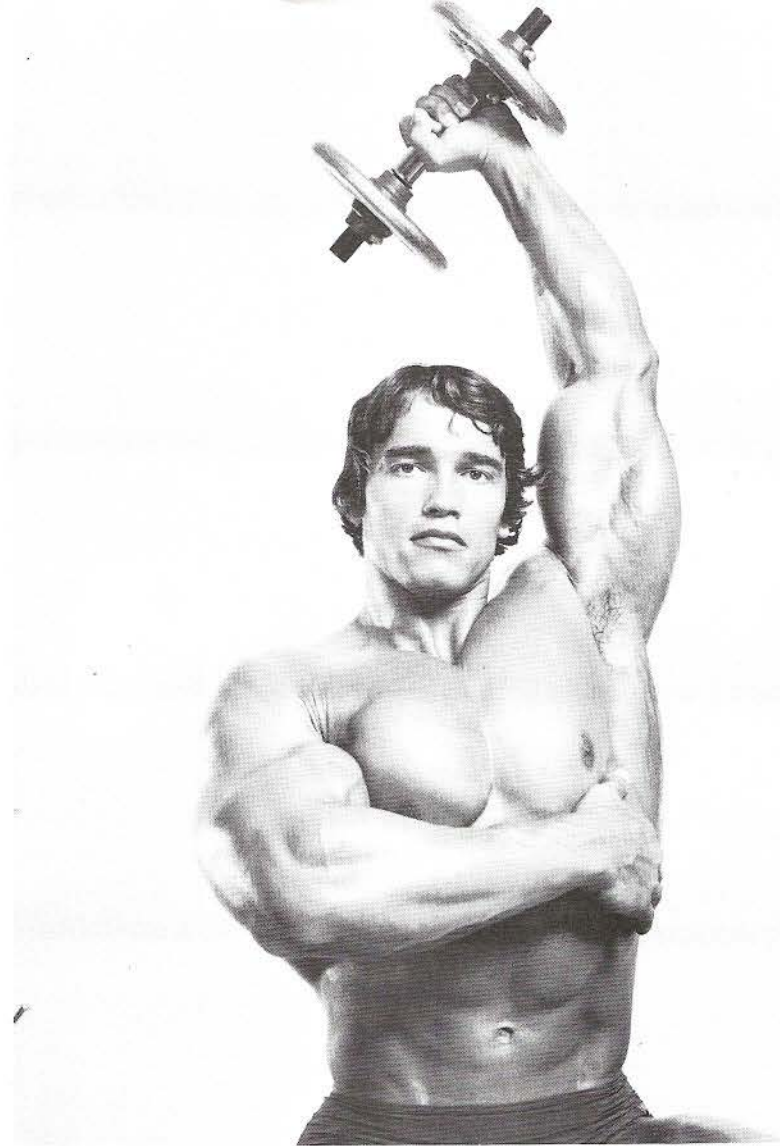
**PURPOSE OF EXERCISE:** To develop the triceps, especially the upper area.

**EXECUTION:** (1) Stand with knees bent, one foot in front of the other, putting one hand on a low bench for balance. Take a dumbbell in the opposite hand, bend your arm and raise your elbow back and up to about shoulder height, elbow close to your side and letting the dumbbell hang



straight down below it. (2) Keeping your elbow stationary, press the weight back until your forearm is about parallel to the floor. Hold here for a moment and give the triceps an extra flex, then slowly come back to the starting position. For added triceps development, twist your hand slightly as you lift the weight, bringing the thumb up, and twist back the other way as you come down. Finish your set, then repeat the movement using the other arm. Make sure that only your forearm moves in this exercise, not the upper arm. This exercise can also be done with cable pulleys.





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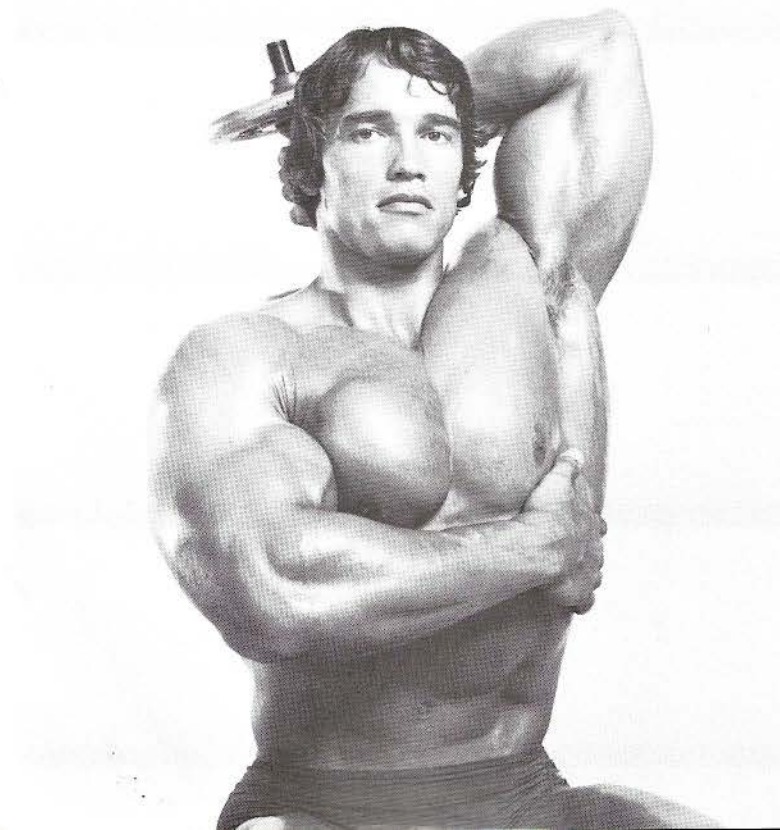
## ONE-ARM TRICEPS EXTENSIONS

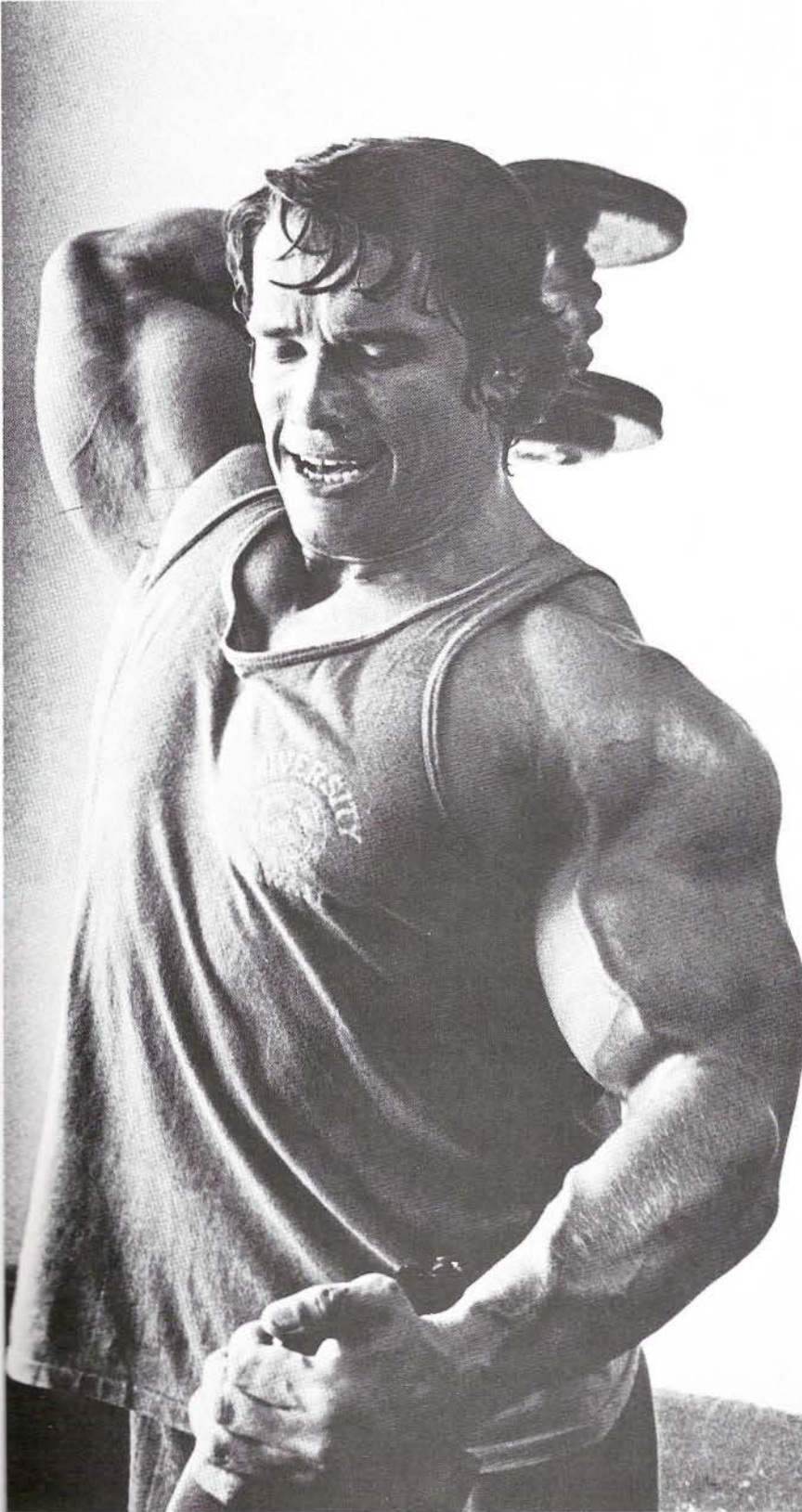
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**PURPOSE OF EXERCISE:** To work the entire triceps and separate the three triceps heads.

**EXECUTION:** (1) Sitting on a bench, take a dumbbell in one hand and hold it extended overhead. (2) Keeping your elbow stationary and close to your head, lower the dumbbell down in an arc behind your head (not behind the shoulder) as far as you can. Feel the triceps stretch to their fullest, then press the weight back up to the starting position. It is essential to do this as strictly as possible. Looking in the mirror helps you check your form. Finish your set, then repeat the movement with the other arm. Be sure to go back and forth from one hand to the other without stopping to rest in between.

**VARIATION:** Various machines allow you to do Triceps Extensions with one arm at a time or both together, and many give the opportunity to work the full range of motion of the triceps under constant resistance. Use these machines for variety in your workout or to allow your training partner to help you with forced reps and forced negatives when you feel like working extra heavy.





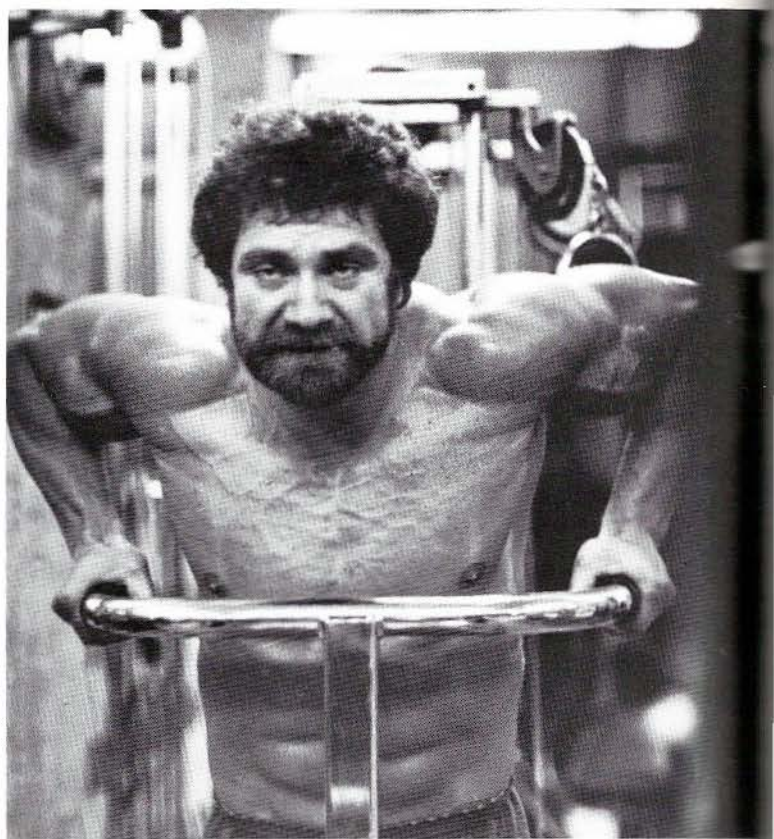
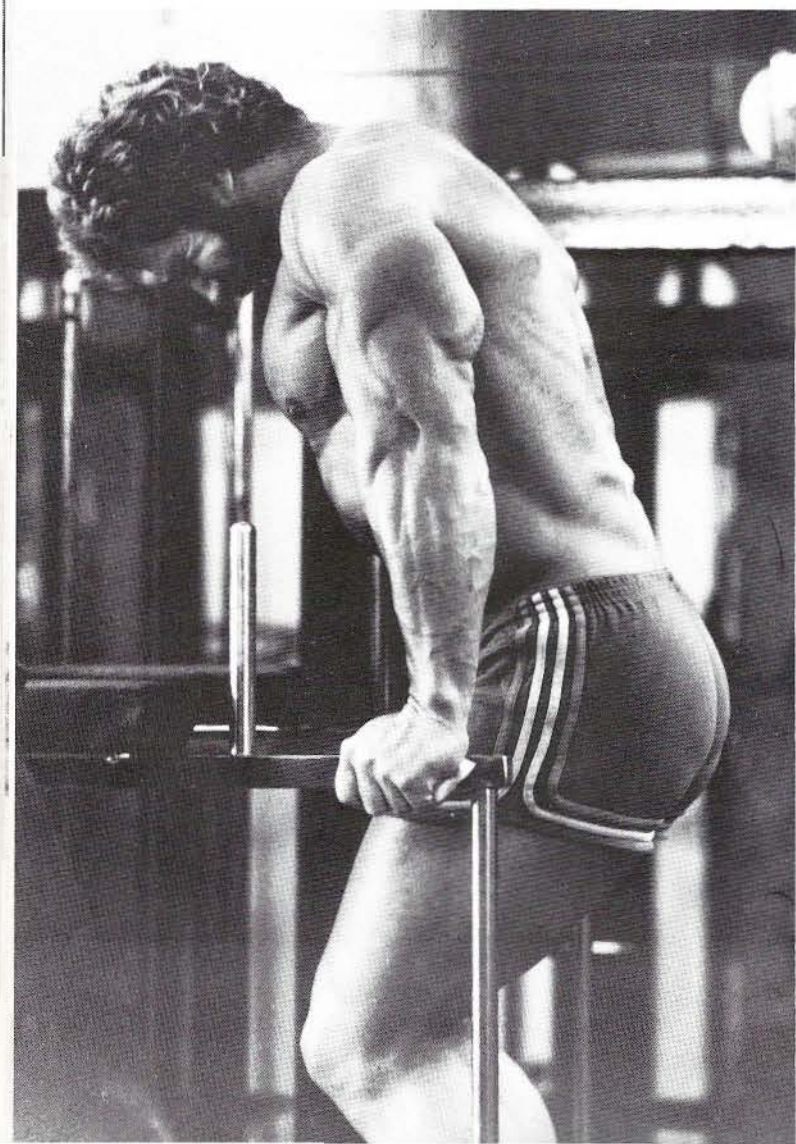
*One-Arm Triceps Extensions can also be done standing up—just balance yourself by holding on to something with your free hand.*

## DIPS

**PURPOSE OF EXERCISE:** To develop the thickness of the triceps, especially around the elbow.

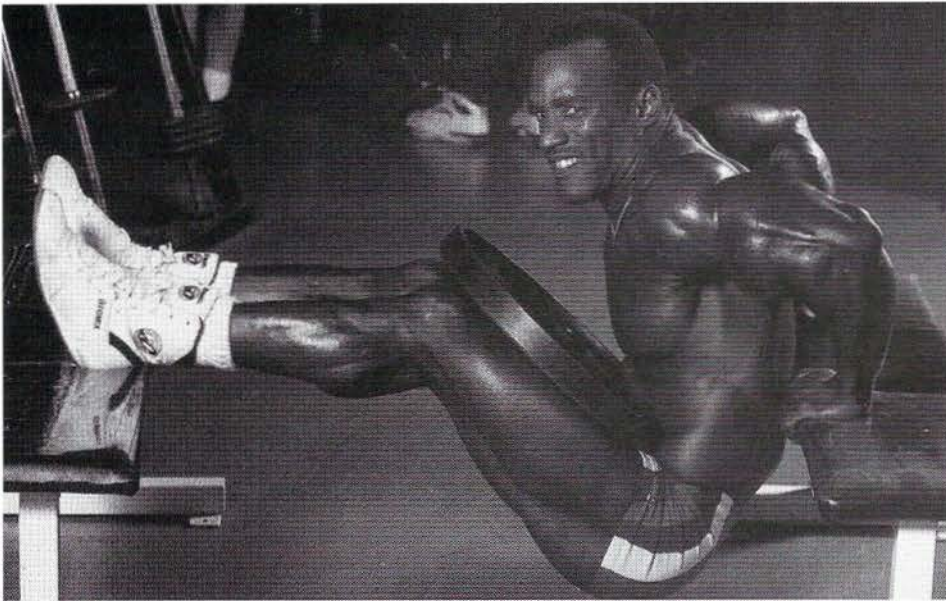
Dips are often thought of as a chest exercise, but they can be done in such a way as to hit the triceps really hard as well.

**EXECUTION:** (1) Taking hold of the parallel bars, raise yourself up and lock out your arms. (2) As you bend your elbows and lower yourself between the bars, try to stay as upright as possible—the more you lean back, the more you work the triceps; the more you bend forward, the more you work the pectorals. From the bottom of the movement, press yourself back up until your arms are locked out, then give an extra flex of the triceps to increase the contraction. You can also increase the effort involved in this exercise by using a weight hooked around your waist and by coming up only about three-quarters of the way rather than locking out the movement and taking the tension off the triceps.

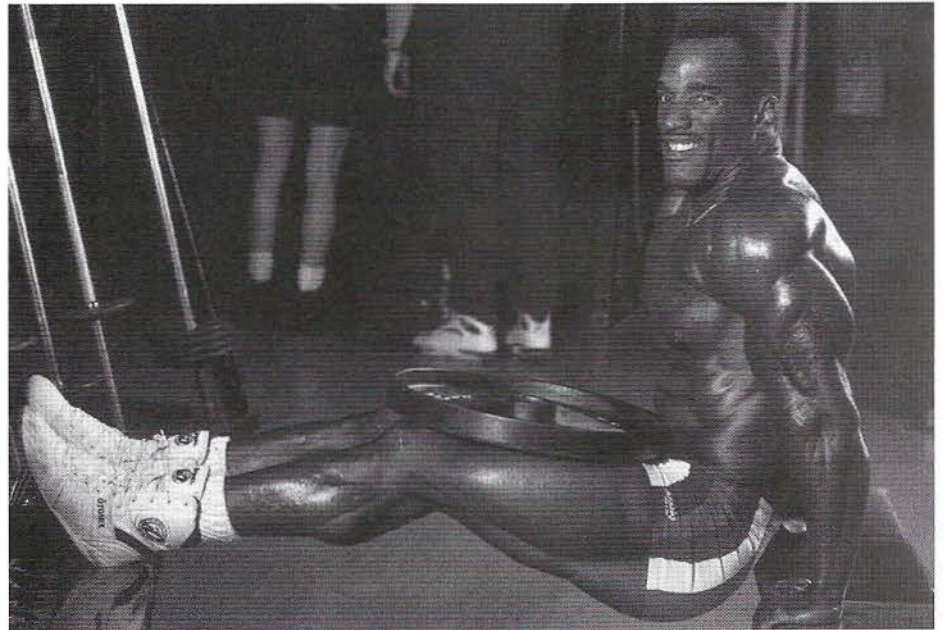


*Jusup Wilkosz*





*Darrem Charles*



## **DIPS BEHIND BACK**

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**PURPOSE OF EXERCISE:** To develop the thickness of the triceps.

This movement is also known as Bench Dips, or Reverse Push-Ups.

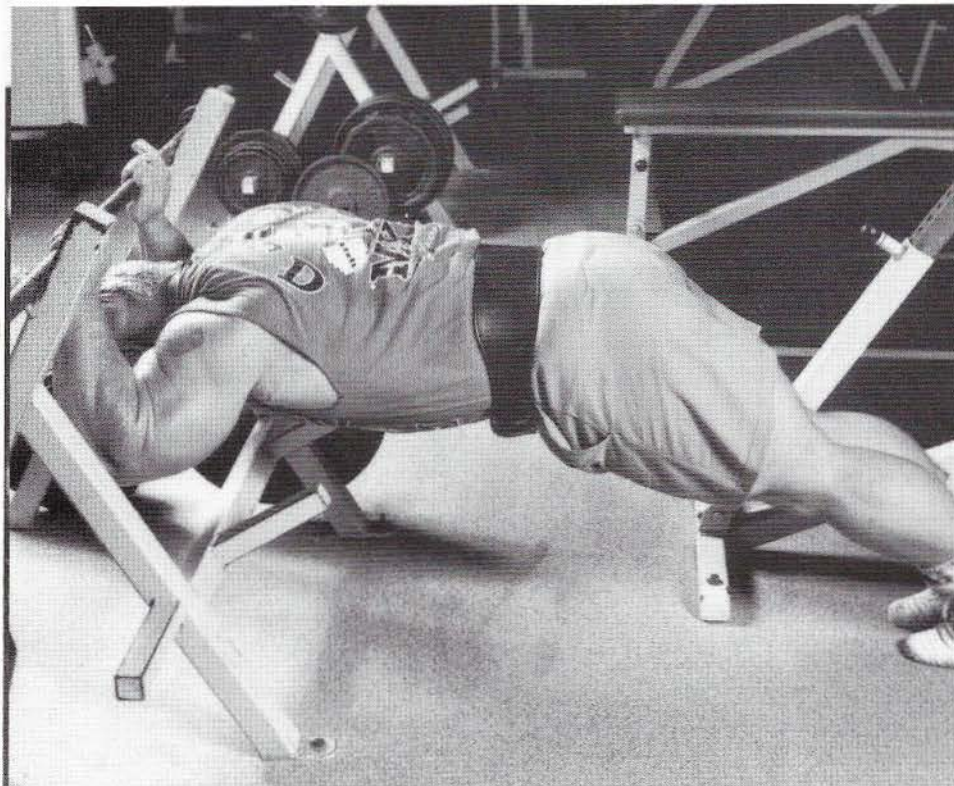
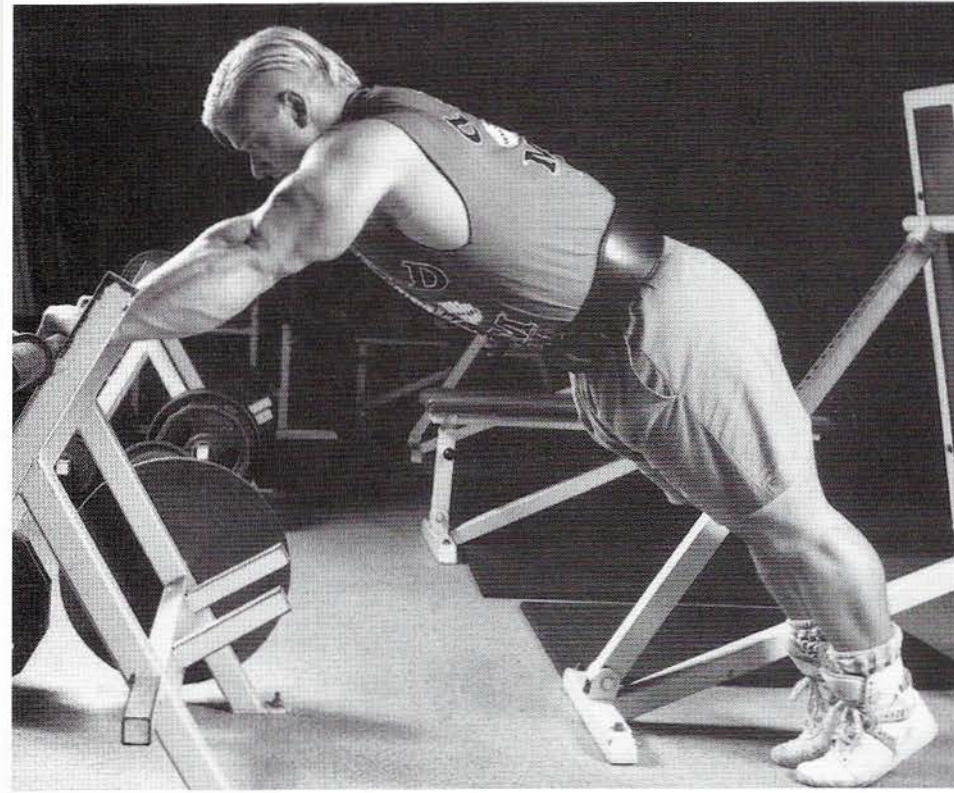
**EXECUTION:** (1) Place a bench or bar behind your back and hold on to the bench at its edge, hands about shoulder width apart. Place your heels on a bar or another bench, preferably at a level higher than the bench you are holding on to. Bending your elbows, lower your body as far as you can toward the floor. (2) Then push back up, locking out your arms to work the upper triceps. To work the lower triceps, stop just short of locking out. If your own body weight is not enough, try doing the movement by having a training partner place a plate on your lap.

## FIXED BAR TRICEPS EXTENSIONS

**PURPOSE OF EXERCISE:** To fully stretch and develop the triceps.

Using this movement, you can completely stretch the triceps more safely than with any other exercise.

**EXECUTION:** (1) Using a fixed horizontal bar positioned at about waist height, grasp the bar with an overhand grip, hands about shoulder width apart. Lock your arms out to support your weight, then move your feet back until you are in a semi-Push-Up position above the bar. (2) Bend your arms and lower your body so that your head comes down below and under the bar as far as possible. When you feel the maximum stretch in your triceps, press forward with your arms and raise yourself back to the starting position, arms locked out.



*Lee Priest*

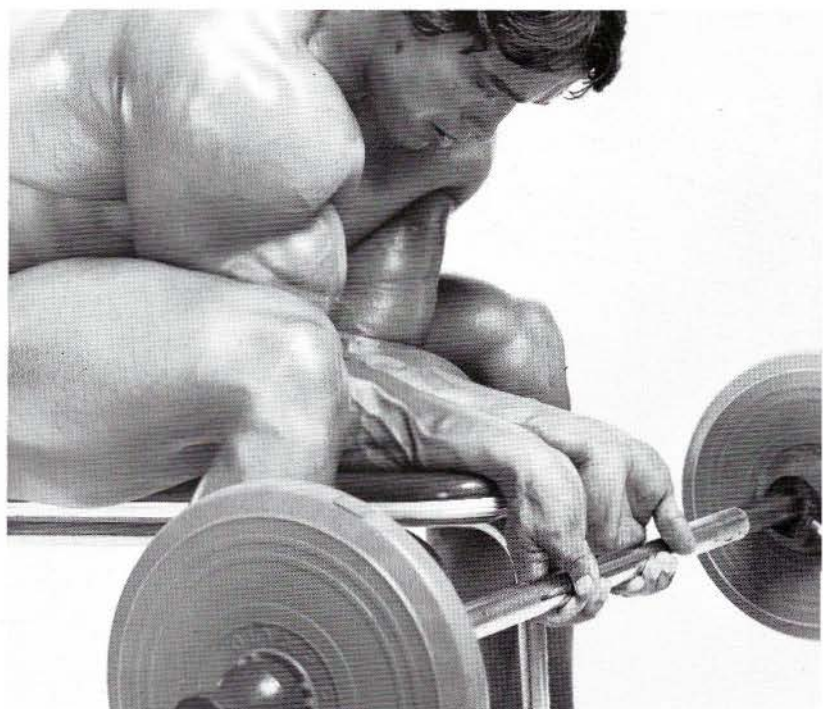
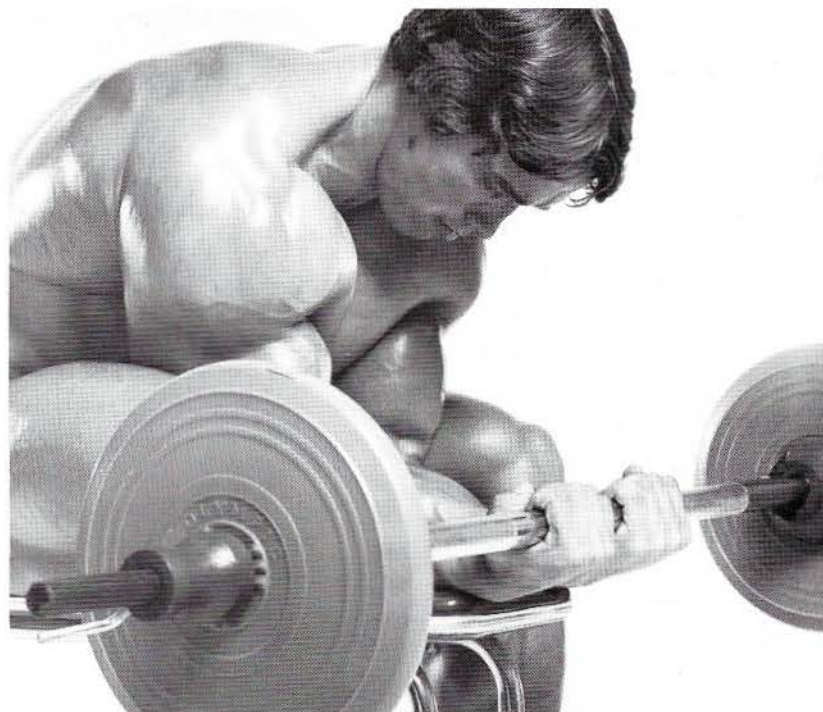
## Arm Exercises—Forearms

### BARBELL WRIST CURLS

**PURPOSE OF EXERCISE:** To develop the inside (flexor muscles) of the forearms.

Heavy Barbell Curls make the forearms work very hard, but Wrist Curls allow you to more fully isolate these muscles.

**EXECUTION:** (1) Take hold of a barbell with an underhand grip, hands close together. Straddle a bench with your forearms resting on the bench but with your wrists and hands hanging over the end, elbows and wrists the same distance apart. Lock your knees in against your elbows to stabilize them. (2) Bend your wrists and lower the weight toward the floor. When you can't lower the bar any farther, carefully open your fingers a little bit and let the weight roll down out of the palms of your hands. Roll the weight back up into your hands, contract the forearms, and lift the weight as high as you can without letting your forearms come up off the bench. Forearms, like calves, need a lot of stimulation to grow, so don't be afraid to make them really burn.

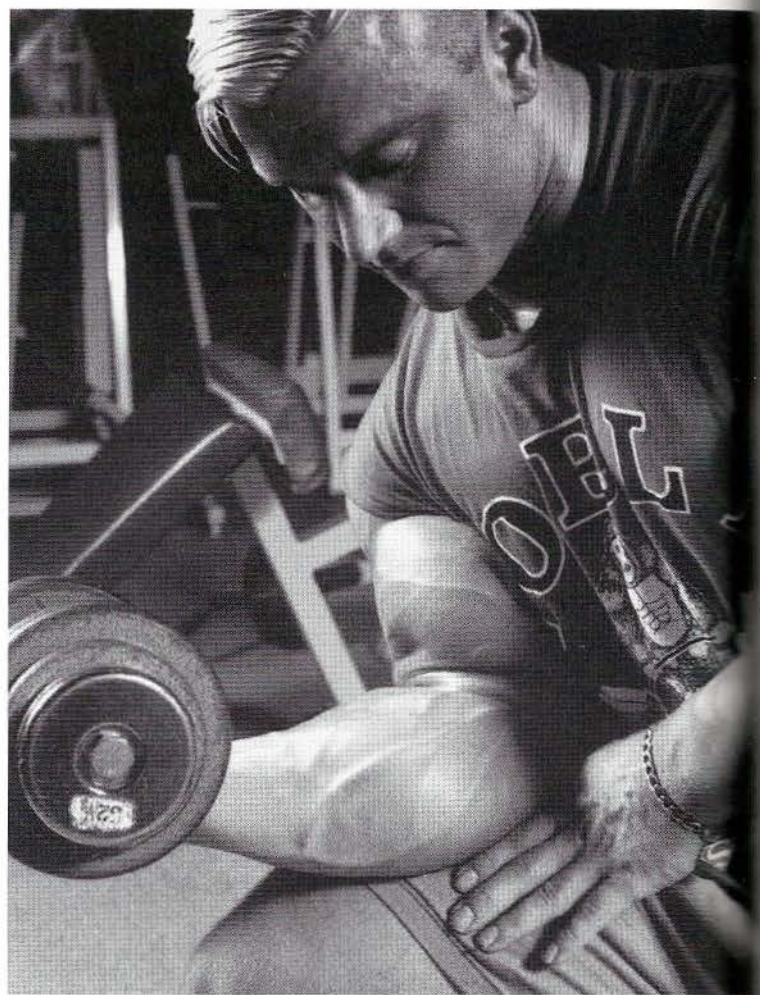


## DUMBBELL ONE-ARM WRIST CURLS

**PURPOSE OF EXERCISE:** To isolate and develop the forearms.

This is a variation of Wrist Curls that allows you to isolate one forearm at a time.

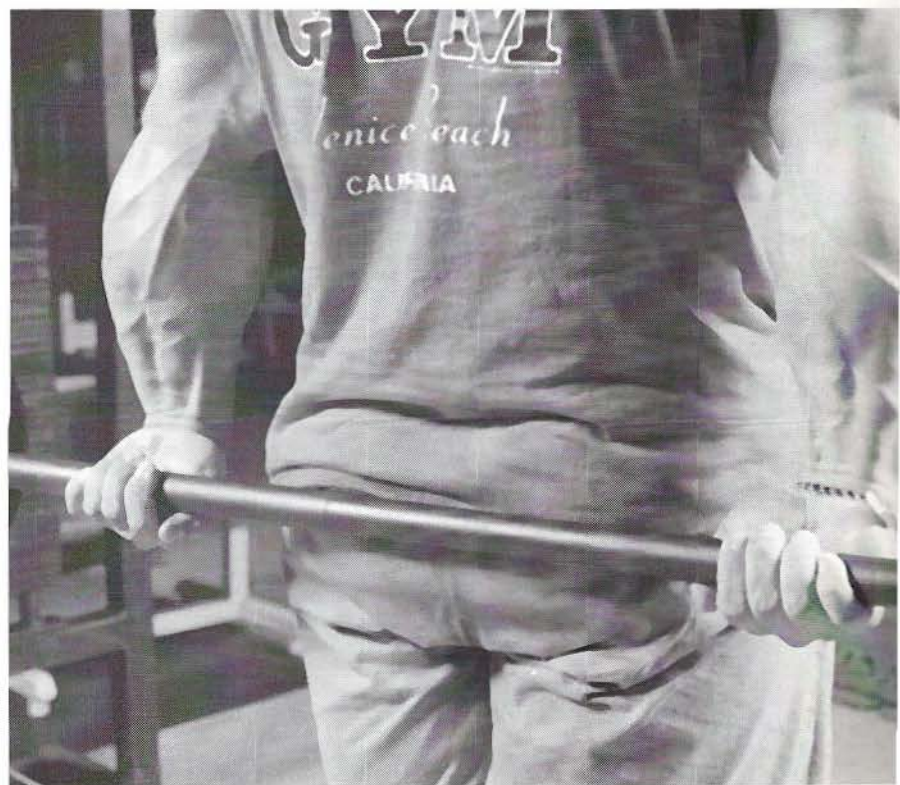
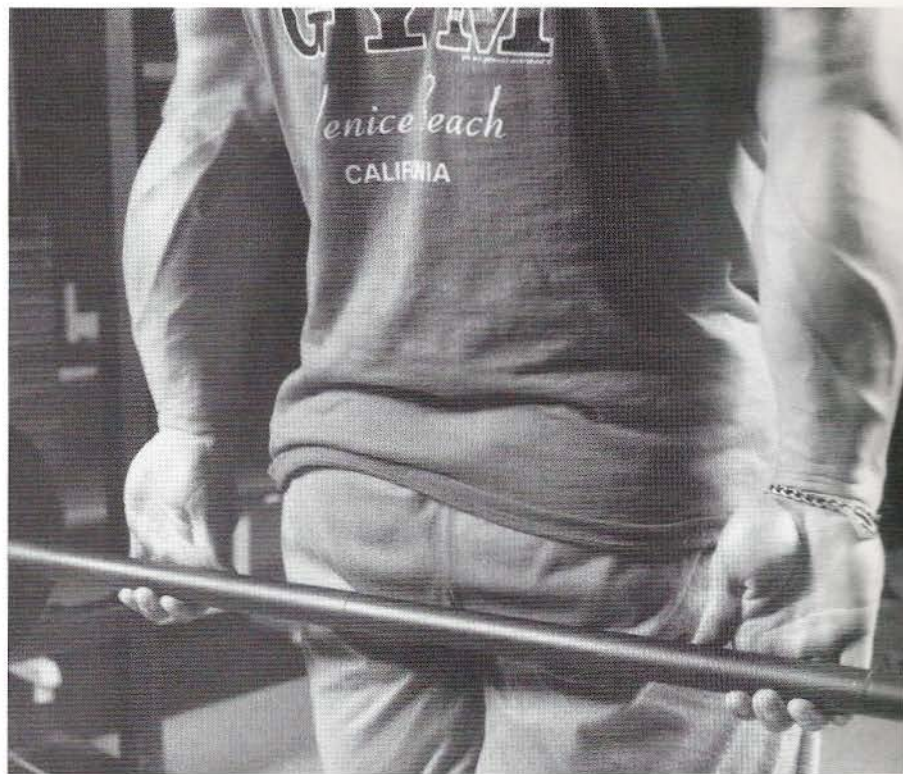
**EXECUTION:** (1) Take hold of a dumbbell and sit on a bench. Lean forward and place your forearm on your thigh so that your wrist and the weight extend out over the knee, with your palm and the inside of your forearm facing upward. Bend forward, reach over with your free hand, and take hold of the elbow of the working arm to stabilize it. Bend your wrist and lower the weight as far as possible toward the floor, opening your fingers slightly to let the dumbbell roll down out of your palm. (2) Close your fingers again and, keeping the effort in your wrist, rather than the biceps, curl the weight up as high as you can. Finish your repetitions, then repeat using the other wrist.

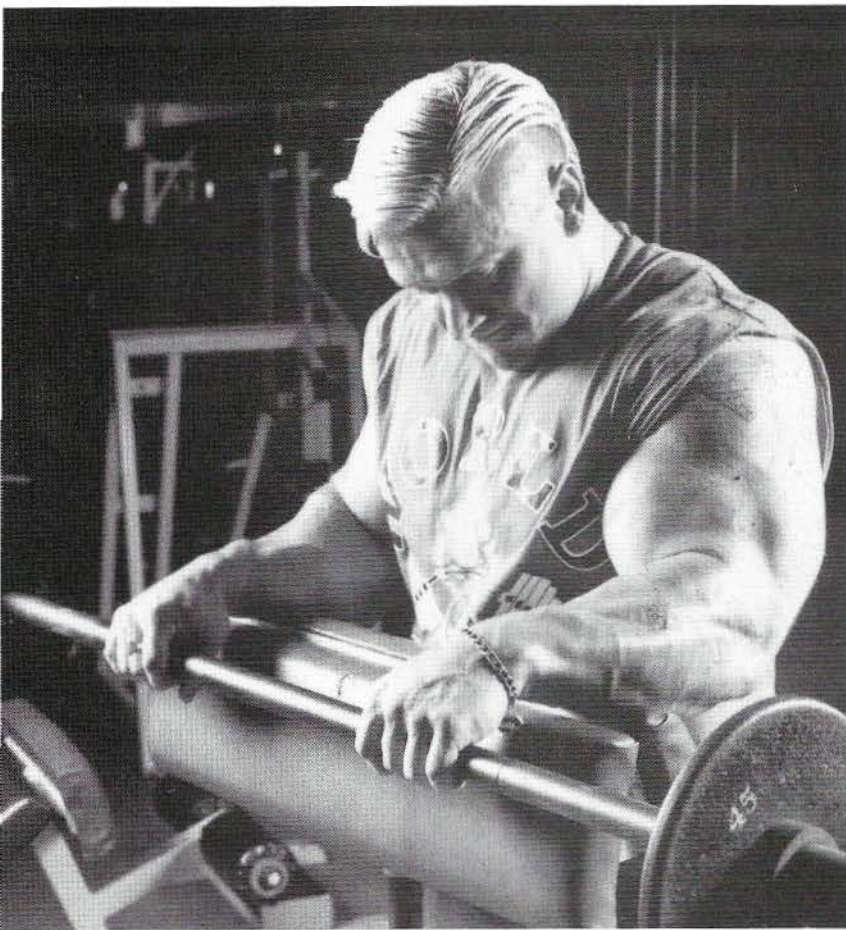


## BEHIND-THE-BACK WRIST CURLS

**PURPOSE OF EXERCISE:** To develop the flexor muscles of the forearm. This is a real power exercise for the forearm flexors, and you can go for the heaviest possible weight.

**EXECUTION:** (1) Back up to a barbell rack and grasp a bar. Lift it off the rack and hold it down at arm's length behind you, hands about shoulder width apart, palms facing toward the rear. (2) Keeping your arms steady, open your fingers and let the bar roll down out of your palms. Close your fingers, roll the bar back up into your hands, and then lift it up and back behind you as far as possible, flexing your forearms. Make sure only the wrist moves in this exercise.





## **REVERSE WRIST CURLS WITH BARBELL**

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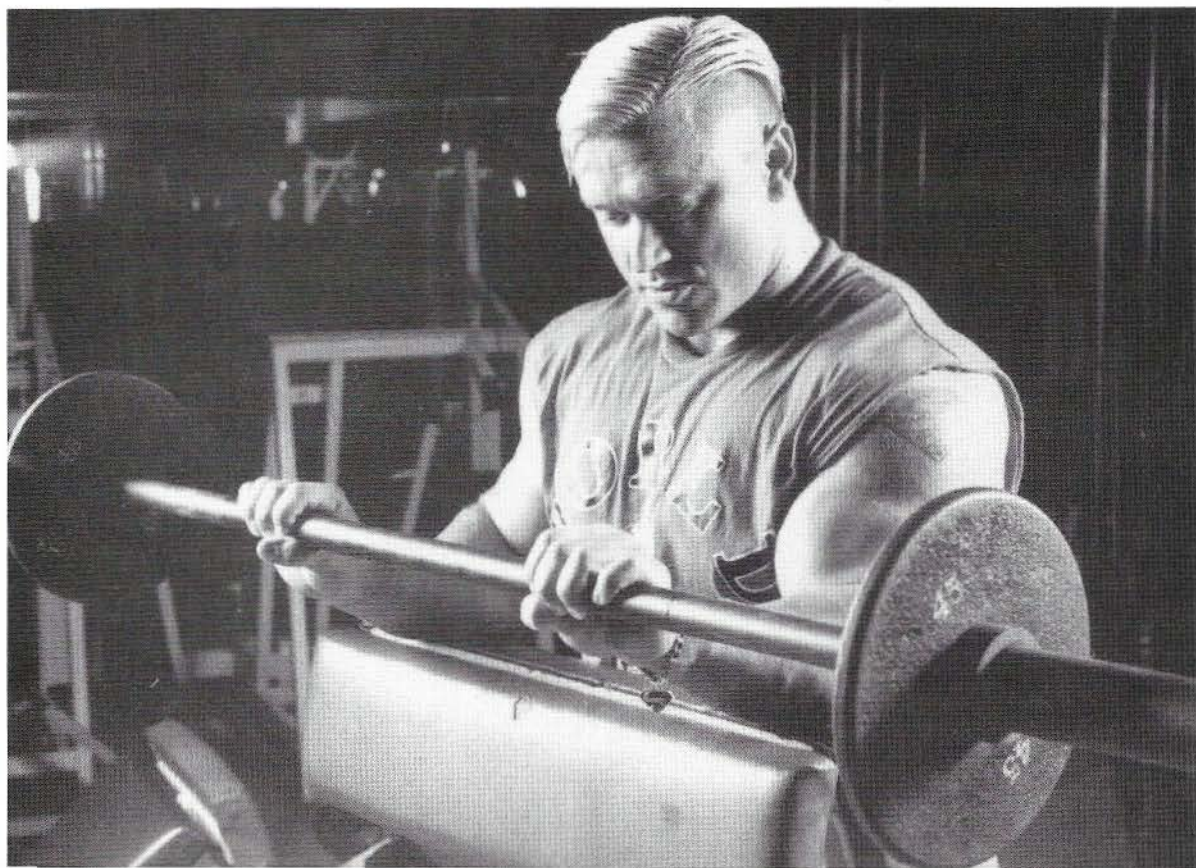
**PURPOSE OF EXERCISE:** To develop the outside (extensor muscles) of the forearms.

**EXECUTION:** (1) Grasp a barbell with an overhand grip, hands about 10 inches apart. Lay your forearms on top of your thighs or across a preacher bench so that they are parallel to the floor and your wrists and hands are free and unsupported. Bend your wrists forward and lower the bar as far as you can. (2) Then bring the wrists back up and lift the bar as far as possible, trying not to let the forearms move during the exercise.

## **REVERSE BARBELL WRIST CURLS WITH PREACHER BENCH (OPTIONAL)**

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This movement can also be done with your forearms on top of your thighs.

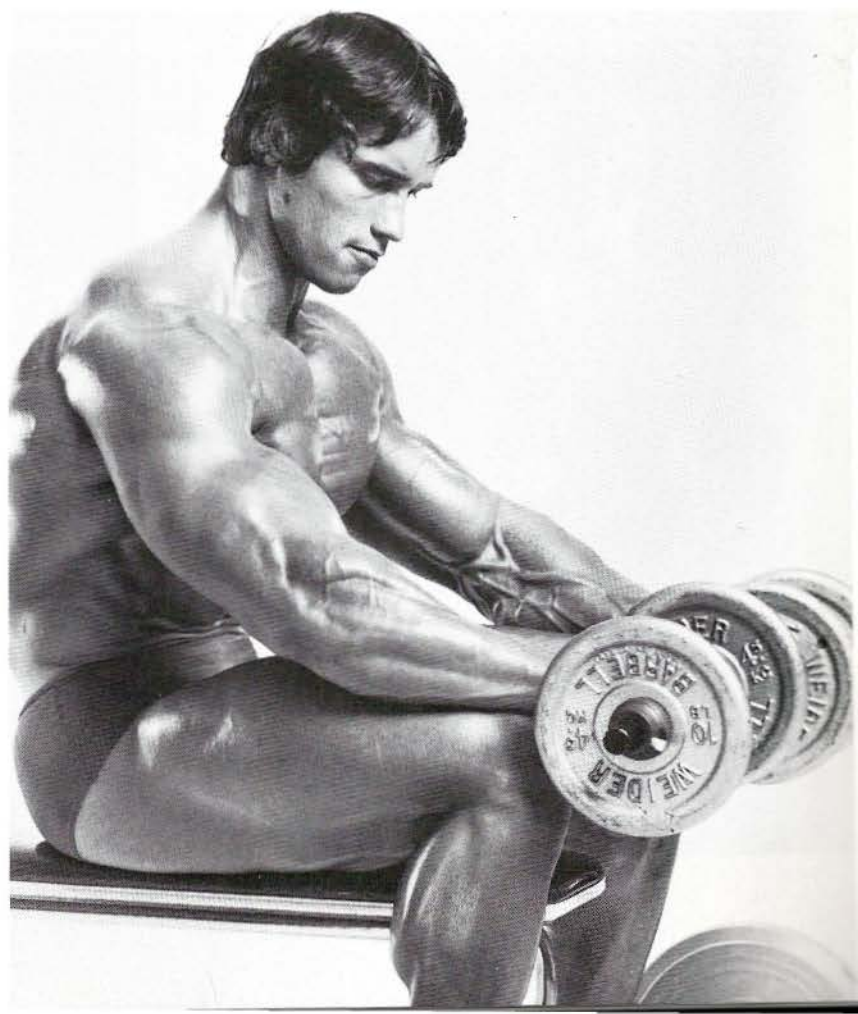
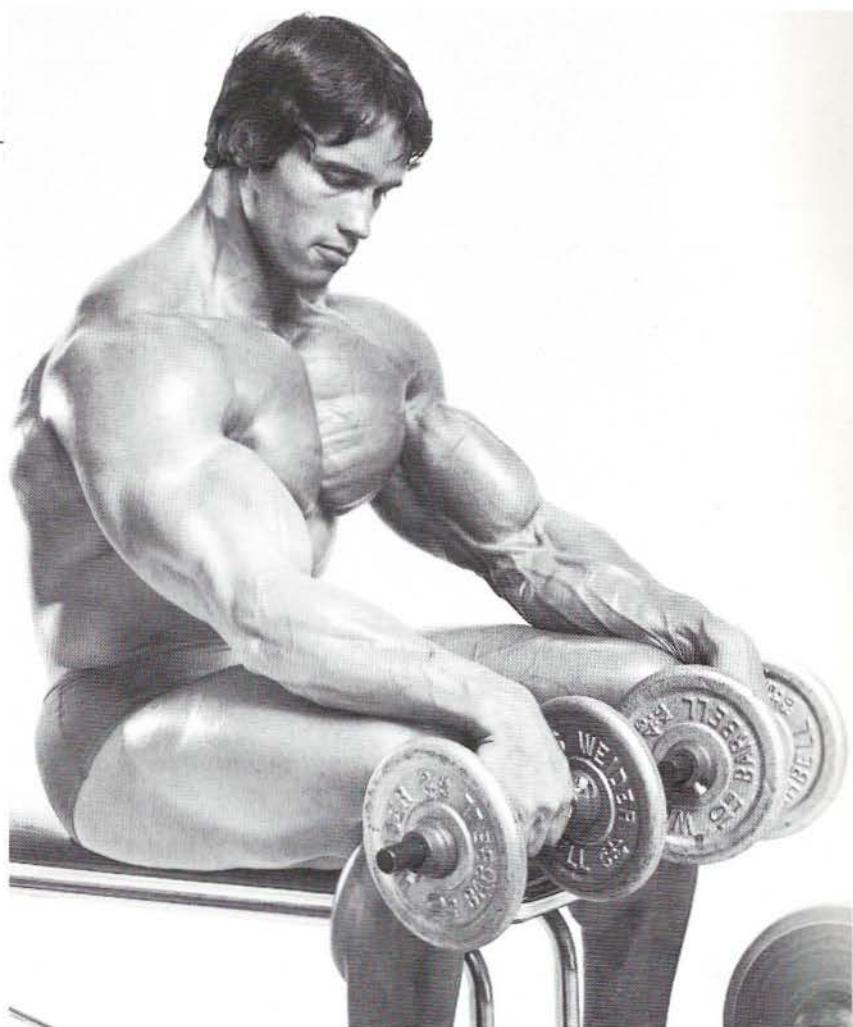


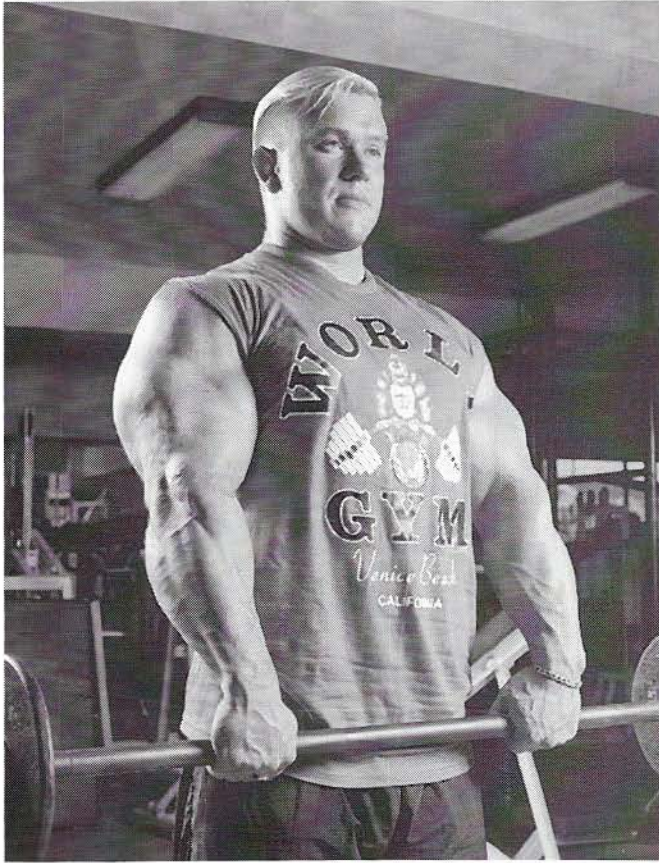
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## REVERSE WRIST CURLS WITH DUMBBELLS

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Reverse Curls work the forearm extensors. Using dumbbells, you ensure that each side of the body will work up to its own capacity, with no help from the other.

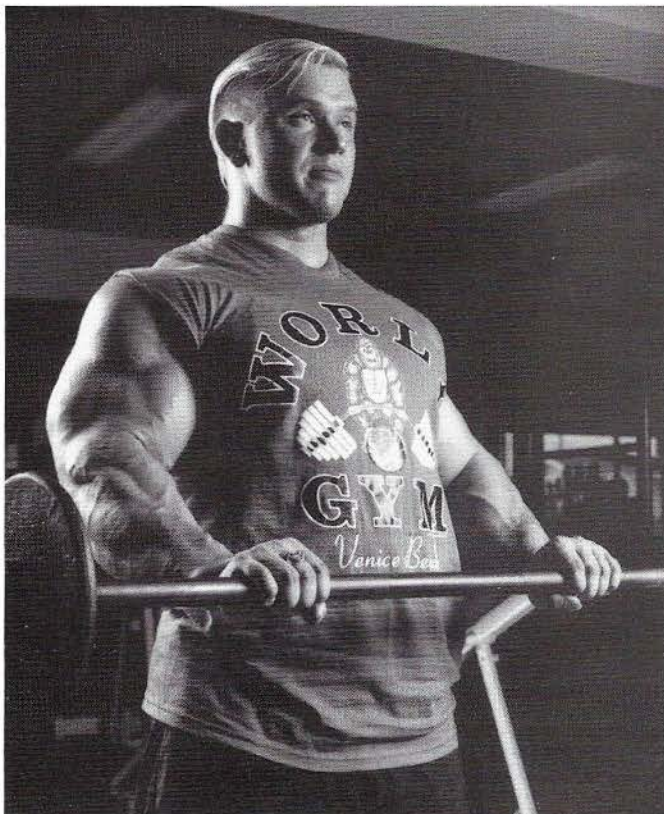




## REVERSE BARBELL CURLS

**PURPOSE OF EXERCISE:** To develop the biceps, the forearm extensors, and the brachio radialis.

**EXECUTION:** (1) Grasp a barbell with an overhand grip, hands about shoulder width apart. Let the bar hang down at arm's length in front of you. (2) Keeping your elbows fixed in position at your sides, curl the bar upward, beginning the movement with a curling motion of the wrist. (3) Bring the bar up to a position just under the chin, contract the biceps as fully as possible on top, then lower the weight slowly back down to the starting position.





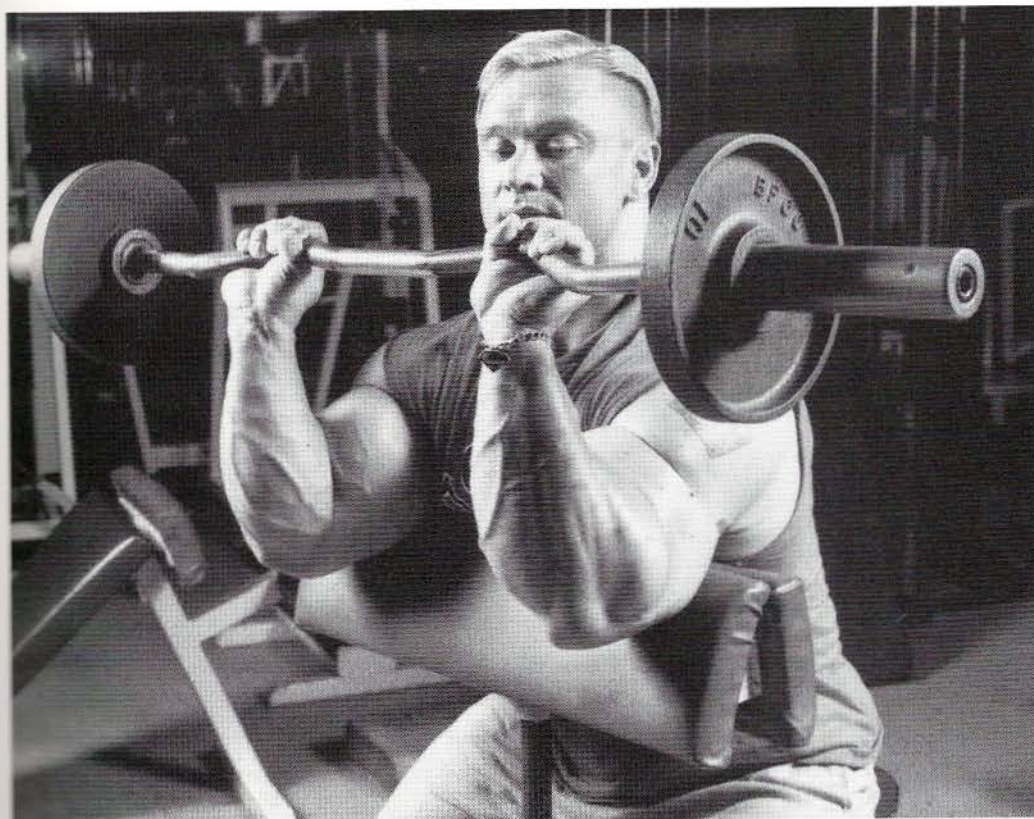
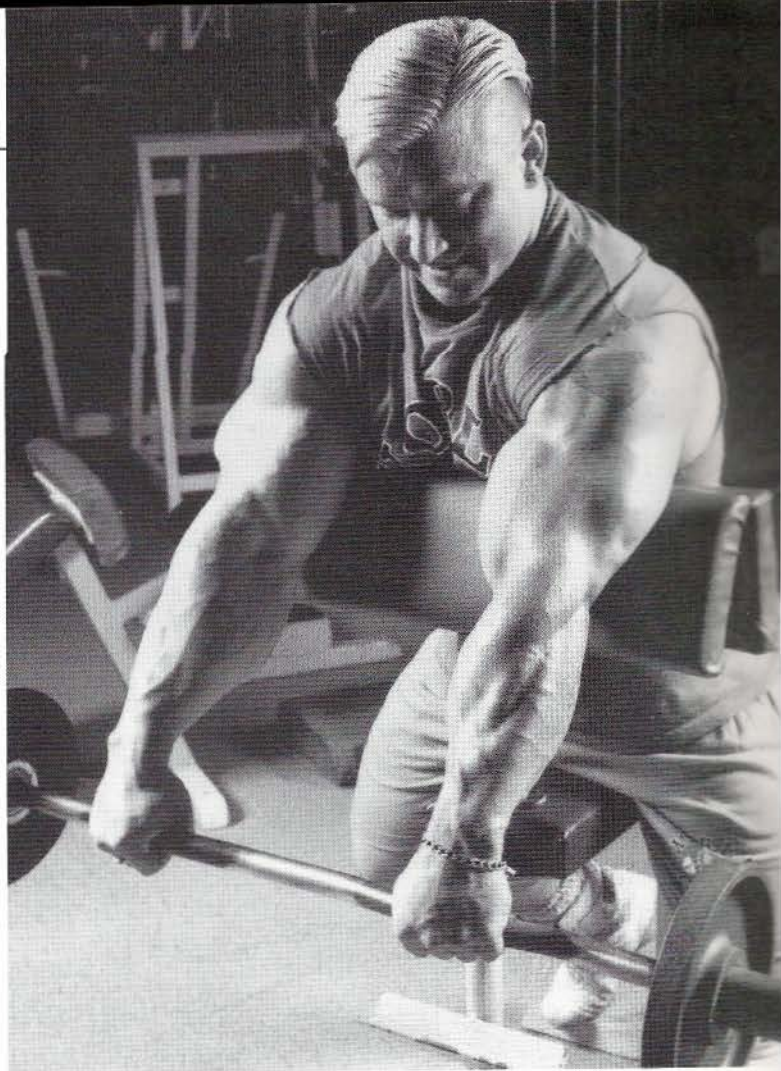
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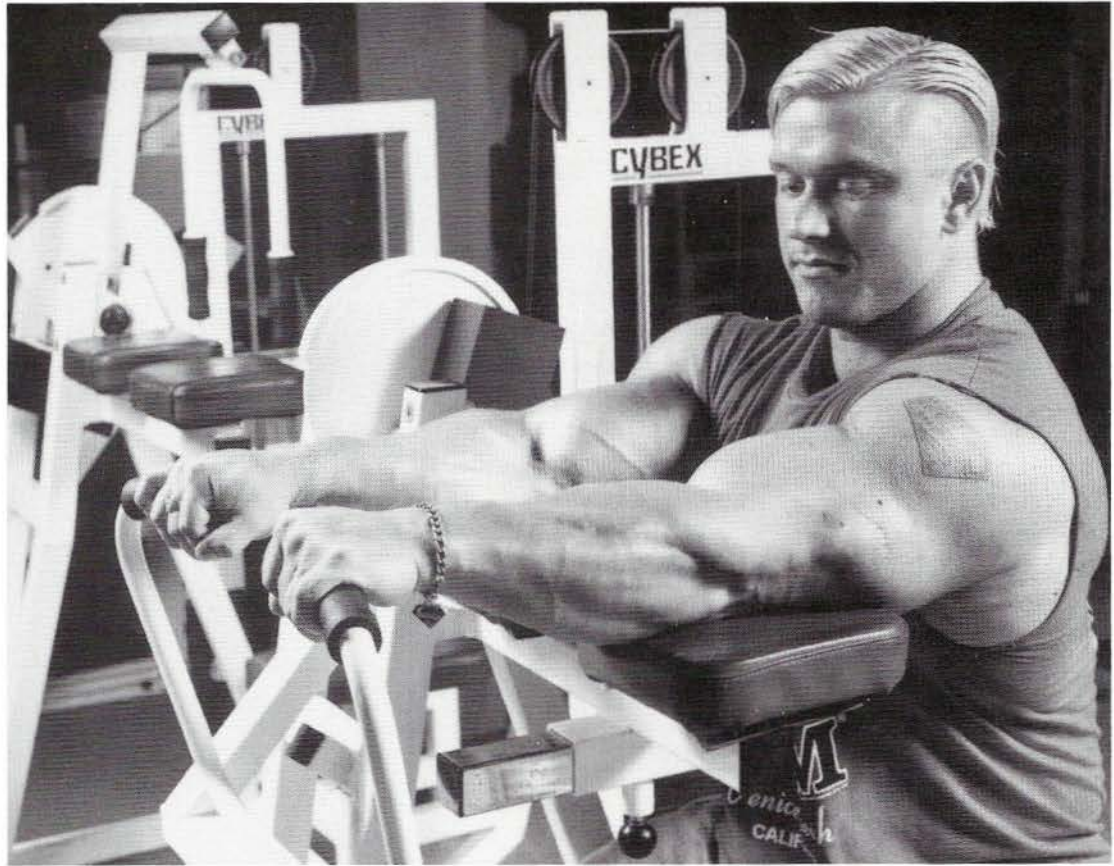
## REVERSE PREACHER BENCH BARBELL CURLS

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**PURPOSE OF EXERCISE:** To develop the biceps and forearm extensors.

**EXECUTION:** (1) Position yourself with your arms extended over a preacher bench. Grasp a barbell with an overhand grip, hands about shoulder width apart. Let the bar hang so that your arms are fully extended. (2) Curl the bar upward, beginning the movement with a curling motion of the wrist, and bring it up as far as possible toward your chin. Your position on the bench should be such that, at the top of the movement, your forearms have not come up completely to a perpendicular angle. From the top of the movement, lower the weight slowly back down to the starting position.





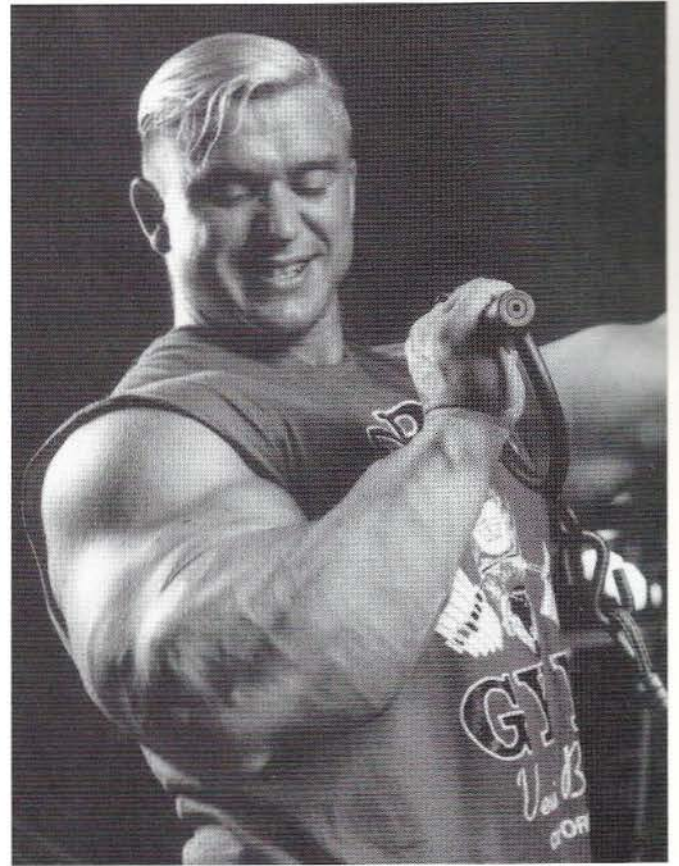
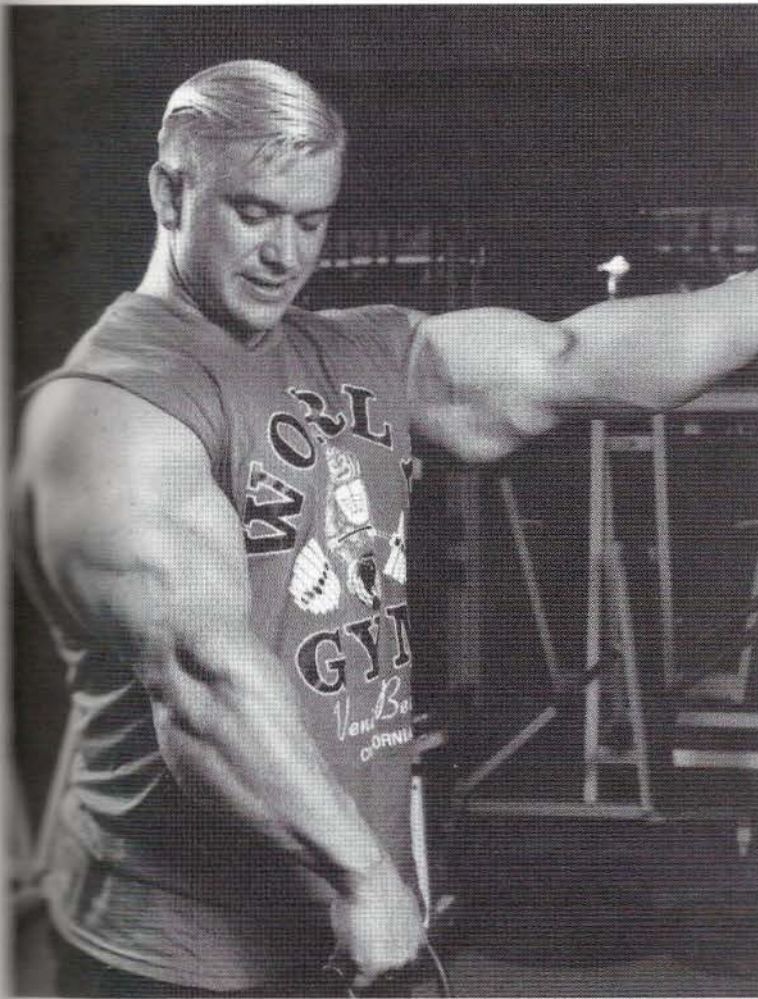
## REVERSE CURLS MACHINE

**PURPOSE OF EXERCISE:** To develop the forearm extensors.

This movement works the forearm muscles all the way to their origin at the elbow. In addition to flexing the wrist, you lift the forearm. Although machines are designed with limited functions, a little thought and imagination will allow you to get the maximum benefit from their use. By reversing your grip on a Curl machine, you can perform very strict Reverse Curls.

**EXECUTION:** (1) Grasp the handle on a Curl machine in an overhand grip. Place your elbows firmly on the pad. (2) Starting at full extension, lift the handle up and toward your head as far as it will go. Lower the weight again slowly and under control until you have returned to a position of full extension.





## ONE-ARM CABLE REVERSE CURLS

**PURPOSE OF EXERCISE:** To isolate and develop the forearm extensors.

Using one arm at a time with cables, you get constant, full-range-of-motion resistance that doesn't vary with position as much as when you use dumbbells. This makes this exercise an excellent specialized one for overcoming weak points in the forearm extensors, especially if one arm is bigger than the other.

**EXECUTION:** (1) Using a floor-level pulley, grasp a handle with one hand, using a palms-down grip. (2) Concentrating on keeping your elbow completely still as a pivot point, curl the back of your hand up as far as possible toward your shoulder. At the top of the movement, lower your hand again, resisting all the way down. Finish your set with one arm, then repeat with the other.

## The Thighs

### THE MUSCLES OF THE UPPER LEG

The **quadriceps** are the muscles at the front of the thigh which act as extensors of the leg. The four muscles involved are the rectus femoris, the vastus intermedius (these two muscles making up the central V-shape delineation of the middle front thigh), the vastus medialis of the inner thigh, and the vastus lateralis of the outer thigh.

**BASIC FUNCTION:** To extend and straighten the leg

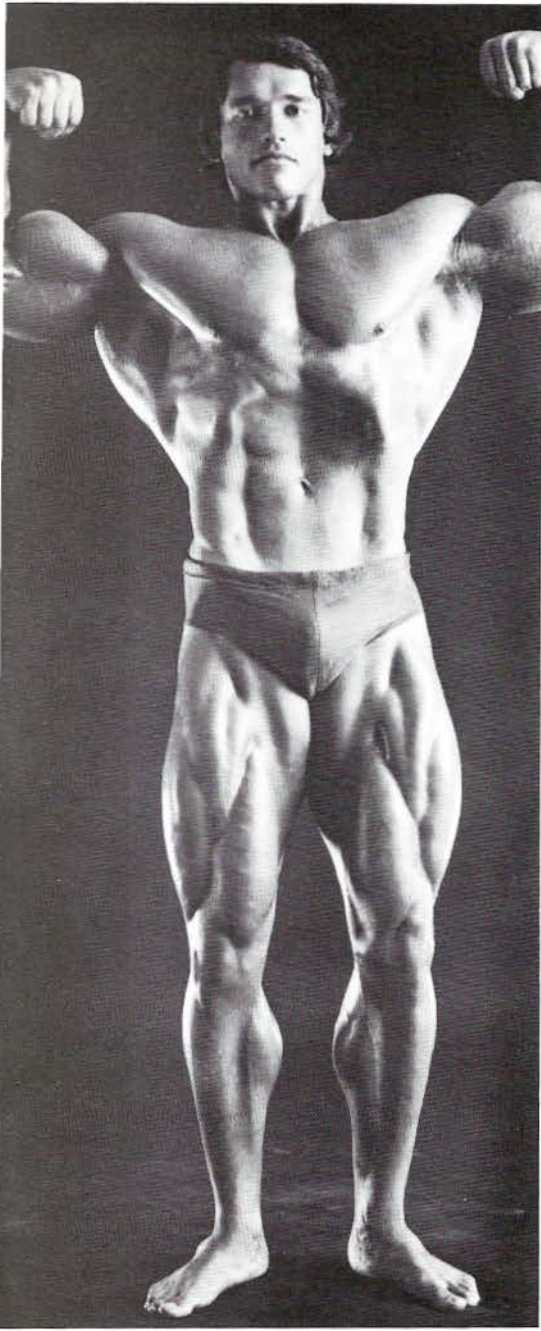
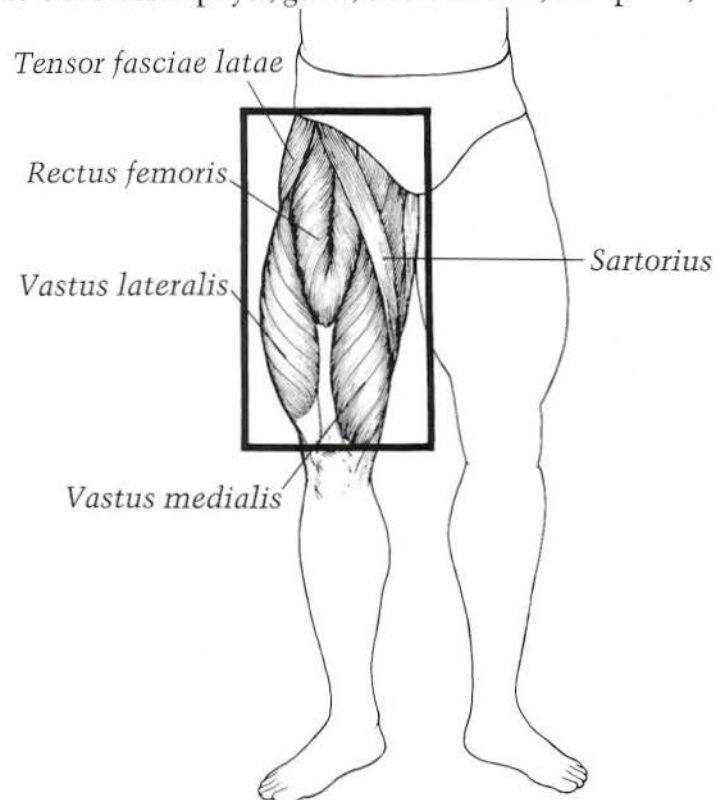
The **biceps femoris** and associated muscles—the thigh flexors at the rear of the leg

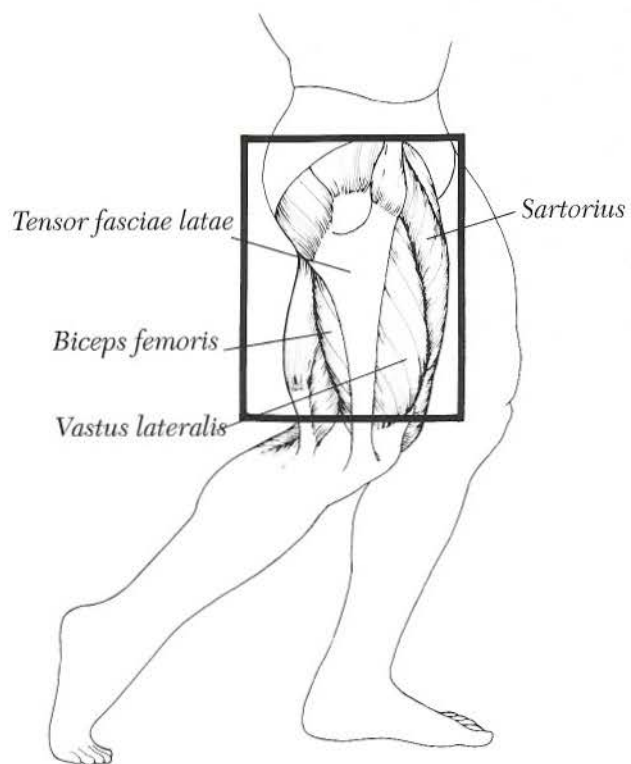
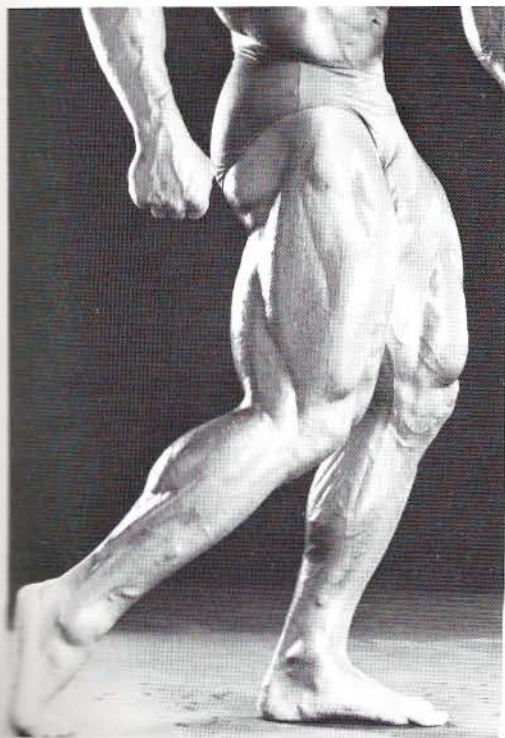
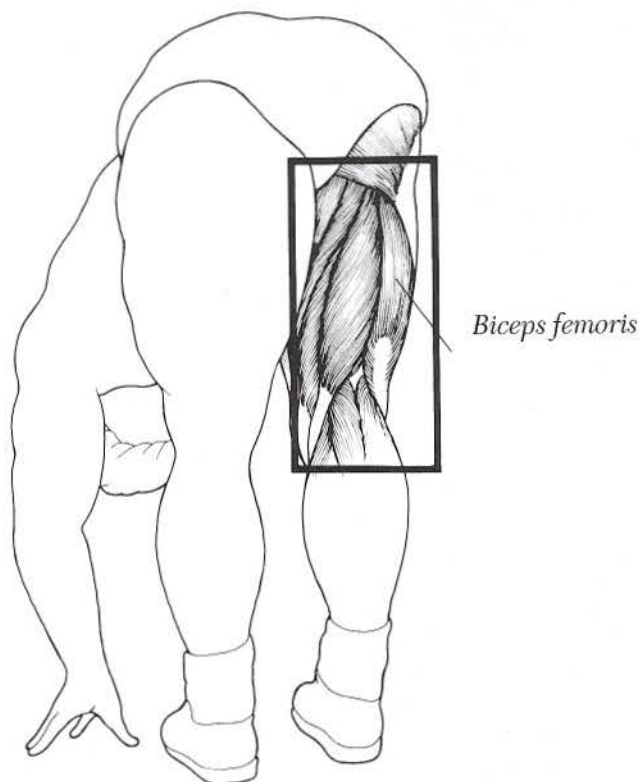
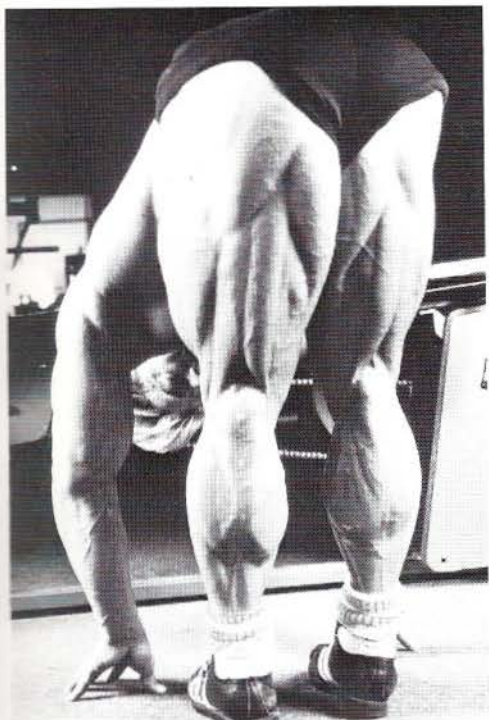
**BASIC FUNCTION:** To curl the leg back

Other important muscles of the upper leg include the tensor fasciae latae, coming down from the hip to the outer thigh; and the sartorius, the longest muscle in the body, which weaves diagonally across the front of the thigh.

### THE IMPORTANCE OF THIGH TRAINING

The muscles of the upper leg are the largest and most powerful in the entire body. There are few movements in sports that do not involve intense leg effort. A baseball player, golfer, discus thrower, shot-putter, and boxer







*Milos Sarcev's leg development is the result of a lot of hard training and use of the Priority Principle.*

all begin their respective movements with a powerful leg drive. In weightlifting, most power moves like Power Cleans, Clean and Press, and Deadlifts involve a lot of leg effort, as do the lifts used in Olympic weightlifting competition.

However, there is no sport in which thigh development is as important as in bodybuilding. While contest judges have the shoulders, chest, arms, back, and abs to occupy their attention above a bodybuilder's waist, when they look at the lower body the single most compelling visual element is the thighs—the quadriceps and the hamstrings. Thighs are the most massive muscle group in the body and proportionately constitute almost half of your physique.

Can you imagine a Sergio Oliva with weak thighs? Or a Nasser El Sonbaty with skinny legs? What is the point of building your arms up to 21 inches or bigger if you display them on top of a physique with thighs that hardly measure any larger?

When I was playing soccer and skiing as a teenager in Austria, the coaches urged us to do exercises like Squats, Lunges, and Calf Raises to strengthen our legs. This early training eventually led to my falling in love with the sport of bodybuilding. We were lucky in those days to have coaches who understood the need for leg strength and how to train for it. Nowadays, whenever I talk to athletic coaches around the world, virtually all of them agree that great leg strength is the foundation of athletic excellence and that weight training is the best way to develop that strength.

But the legs have another quality besides great strength—they are capable of great endurance. Capable of moving up to a ton of weight, the legs are also designed to carry you long distances without tiring. A person in good condition can walk for weeks through rugged terrain and run for 100 miles. No other muscles of the body can deliver this dual quality of great strength and great endurance.

This is why training the legs for bodybuilding is so demanding. It isn't enough just to subject the legs to heavy overload. You have to use heavy weights and sufficient volume of training that you stress the fibers involved and exhaust the endurance capacity of the leg muscles. Doing 5 sets of Barbell Curls for the biceps can be demanding, but doing 5 sets of Heavy Squats with 400 or 500 pounds on your shoulders is more like running a mini-marathon, with that kind of total exhaustion squeezed in 8 or 9 minutes of concentrated effort.

Like many young bodybuilders, I had a tendency to train my upper body harder than my thighs. Luckily, I realized in time how important this muscle group is to a championship physique, and I began to indulge in superhuman Squats and other thigh exercises to build up this muscle mass.

An exception to the tendency of young bodybuilders to overlook leg training was Tom Platz. Tom actually had the *opposite* problem. He got heavily into leg training, then found himself with Olympia-level legs that

outclassed his upper body. Since then, he has made great strides in creating a totally proportioned body, but his unbelievable leg development has set new standards for bodybuilders to strive for.

## THE DEMANDS OF LEG TRAINING

Because upper leg training is so strenuous and demanding, a lot of bodybuilders find their leg development lagging behind simply because they don't put an all-out effort into it. They look in the mirror and are disap-



*When Lee Priest hits a leg shot you can clearly see that the quadriceps is composed of four separate muscles—along with the adductor muscles at the inside of the leg.*

pointed in how their legs look, but they don't realize the kind of total concentration of effort it takes to make those huge muscles respond.

For many years, I did only 5 sets of Squats when I really should have been doing 8 sets. I did not include enough Front Squats and, I now realize, I did not put enough weight on the Leg Press machine.

Once I realized my mistakes and corrected them, my thighs began to grow thick and massive. I accepted the fact that leg workouts simply have to be brutal to be effective. This involves a mental effort almost as much as a physical one. It's easy to be intimidated by 400 or 500 pounds on a Squat bar (or even 200 or 300 when you are a beginner). It is difficult to gear yourself up to loading up the Leg Press machine and grinding out rep after rep, set after set.

Normal workouts are hard enough, but if thighs happen to be a weak point in your physique, you have to be prepared to push yourself even more. That means forcing yourself to break down any inhibition or barrier, blasting your thighs to create total development.

Many bodybuilders have trouble going to total failure in leg training. After all, going to exhaustion with 400 pounds across the back of your neck can be scary. This is why having a training partner to spot you is especially important for leg training. When you have forced out all the reps you can for your Squats, stand there holding the weight for a moment, then try for one more rep. Push your body to its limit. But make sure somebody is standing by to spot you when you do this. Also, when doing Leg Presses try to push yourself to this same degree, forcing the legs to exhaustion just the way you would any other body part.

If you want to build gigantic thighs and shapely glutes, you must always ask yourself this question: Is it true that I really cannot do another rep? In my experience, whenever I challenged anyone this way, he usually could force out one more.

However, as important as hard and heavy training is for thigh and glute development, don't make the mistake of confusing sheer effort with effective effort. As in any bodybuilding training, you have to use the correct technique if you want the maximum results. Besides going for maximum intensity in all of your thigh exercises, pay close attention to how the movement is supposed to be executed and try to master the technique involved. That way, your efforts will not be wasted and your thigh development will never lag behind.

Of course, your own physical proportions may dictate variations in your training. Certain bodybuilders with short legs, like Casey Viator, Mike Mentzer, and Franco Columbu, find Squats easy and rewarding. Their physical proportions give a mechanical and leverage advantage that makes it easier to execute Squats properly using very heavy weight. A taller bodybuilder like myself usually finds that the lower back becomes much more involved in this exercise than would be true for a shorter man. But I always did a lot of work on my lower back, so it was strong enough



to enable me to squat with very heavy weight in spite of my proportions. In fact, I have often thought that Squats were my best lower back exercise. Doing Front Squats—a movement in which you must keep your back straight—in addition to regular Squats, is the best way of getting the most out of your leg workouts when you have proportions like mine.

Incidentally, by trial and error I found that I was able to stay in a much better groove doing Squats by putting a low block under my heels. You can try this yourself to see if this improves your balance and the feel of the exercise. Just be careful not to use too high a block, which throws you too far onto your toes and tends to make you fall forward. Another variation that can prove useful is doing Squats on a Smith machine, where the bar slides along a fixed track and you don't have to worry about the weight sliding off your shoulders.

My ultimate model for leg development has to be Tom Platz. Tom not only worked as hard as any bodybuilder in the gym—to the point where he didn't believe he had really done anything until the pain started—but he also executed all of the exercises to perfection. You see bodybuilders all the time doing Squats by sticking out their rear ends, bending over too far, spreading their legs way out to the side—but not Tom. His form was perfect, his efforts all-out intense, and his mental concentration complete. So it is obviously more than just genes that produced his fantastic leg development.

## BUILDING THE QUADRICEPS

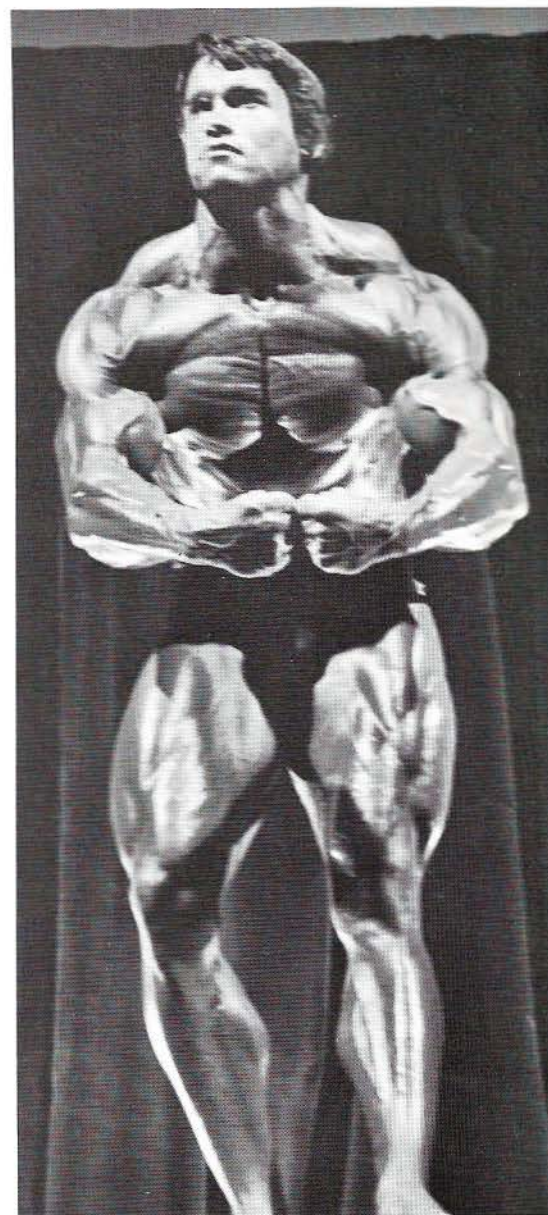
For great thighs you need mass, shape, and separation between each of the important quadriceps muscles: the rectus femoris, vastus intermedius, vastus medialis, and vastus lateralis. You need to develop the overall mass of your thighs to bring them up to where they are proportionate with your upper body. Great size comes about only by lifting heavy weight, especially with exercises like Squats and Leg Presses.

But modern bodybuilders need more than just size to win contests. They need to develop legs that show as much quality as quantity:

1. Full development and shape of each of the separate muscles of the quadriceps; a full and satisfying sweep of muscle on the outside of the thigh from hip to knee; the central V-shaped delineation of the middle front thigh; fullness and thickness where the quadriceps insert into the knee; and a fully developed and defined leg biceps.

2. Clear and evident definition in the thigh area, with striations and cross striations standing out as if revealed in an anatomy chart.

3. Full, rounded development of the thigh as seen from the side, almost as if you were looking at a pair of parentheses ( ), with a distinct separation between the front of the thigh and the leg biceps.



*The thighs are the most massive muscle group in the body. There are a number of exercises that produce thigh shape and separation, but for building mass there is no substitute for heavy Squats.*

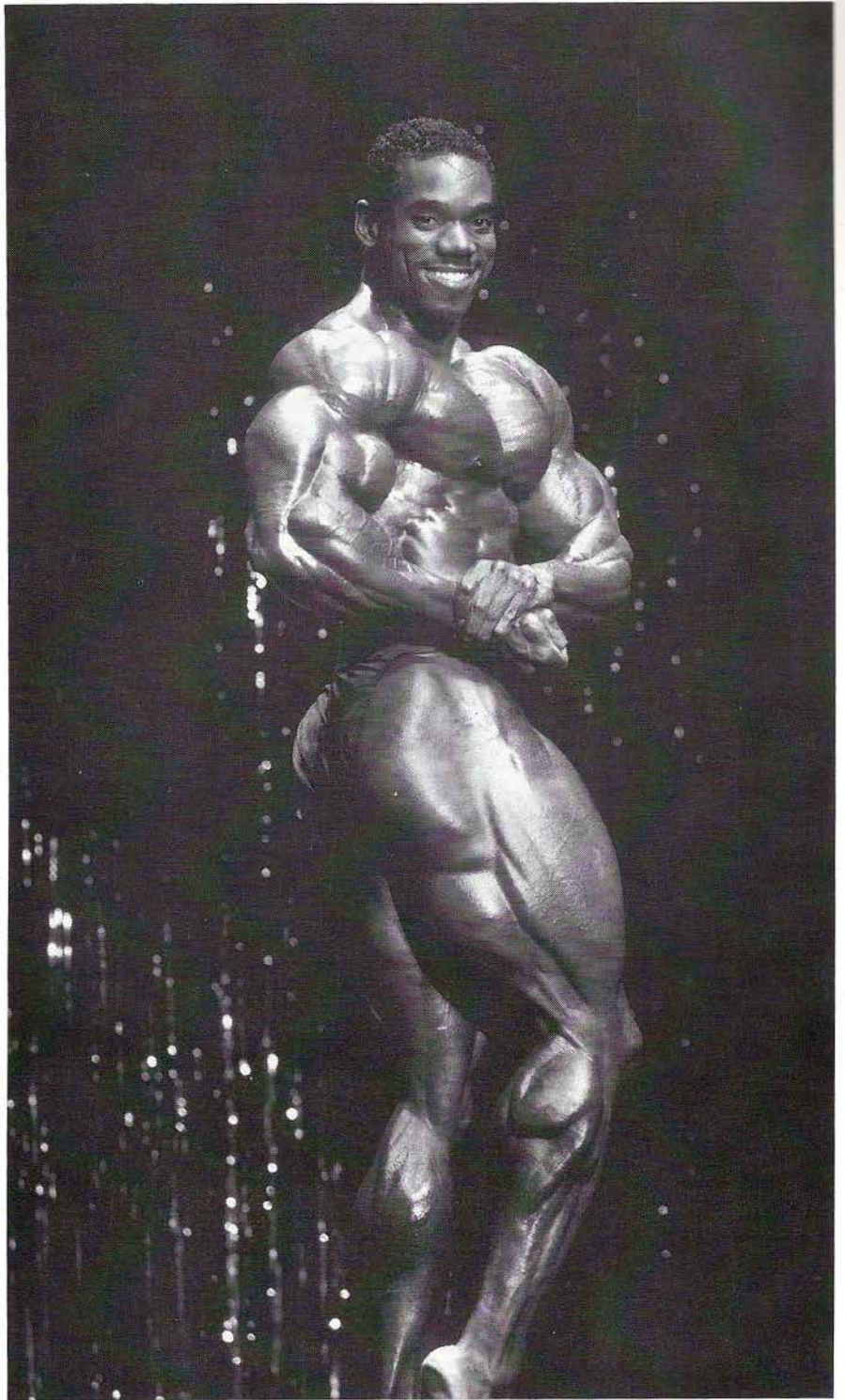
*Nobody has achieved more fullness and thickness of the quadriceps than Tom Platz, especially in the lower area where the thigh muscles insert into the knee.*

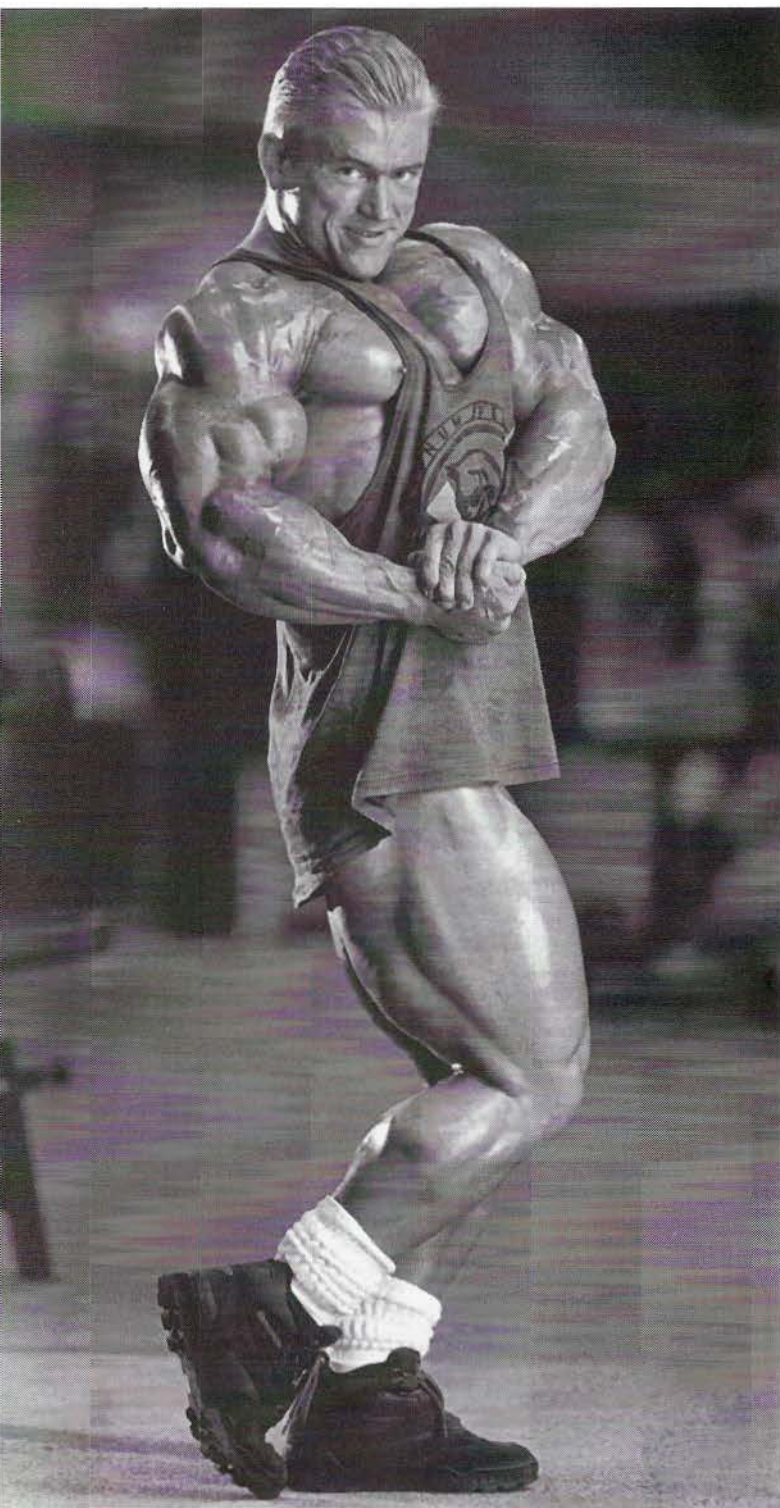


*Successful bodybuilders know that you have to flex all your muscles when you hit a pose onstage. In this pose, although Kevin Levrone is showing off the muscularity of his upper body, he has made sure to pose and flex his legs as well.*

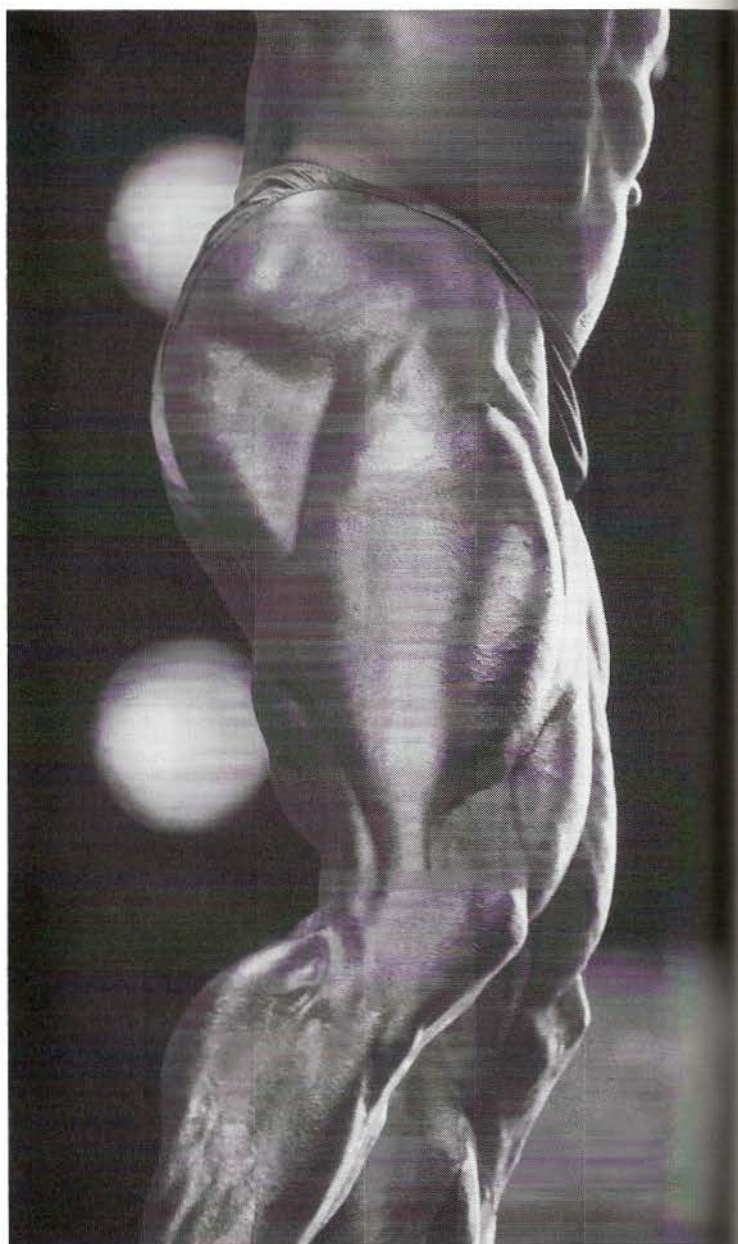


*Bodybuilders try to develop a split between the thigh and the leg biceps—the split on Flex Wheeler's leg is so prominent that it looks as if it were achieved by the slash of a sword!*





*Lee Priest is a great fan of the legendary Tom Platz and has done his best to create a development of the upper leg that, like his idol, is so massive it doesn't look as if it quite belongs on a human being.*



*Another bodybuilder whose quads are both massive and highly detailed is Flex Wheeler.*

The basic mass-building exercise for quadriceps and gluteals is Squats—an exercise you will find in every program from Beginning to Competition and one which every great bodybuilder has learned to rely on. Squats have a complicated mechanical effect on the body.

As you begin the Squat, the thighs bear most of the effort; the farther down you go, the more the stress is transferred to the hamstrings; at the bottom of the movement, the buttocks take up a larger proportion of the strain. However, as I explained earlier, Squats may be more or less effective depending on an individual's particular proportions. Sometimes exercises like Front Squats are also needed to more directly work the quadriceps and lessen the involvement of the lower back muscles.

Heavy Leg Presses also contribute to building massive thighs and glutes. Leg Extensions, which isolate the quadriceps themselves, are not considered a mass-building movement.

Good muscle separation and definition obviously cannot be achieved unless you diet to severely reduce your body fat. But it takes more than just diet—you also need to work your thighs with exercises like Leg Extensions, Lunges, and Leg Curls. Including Hack Squats in your workouts also helps give you ultimate hardness and definition. (Incidentally, Squats and Lunges actually work the hamstrings to some degree, too—along with the exercises described in the next section.)

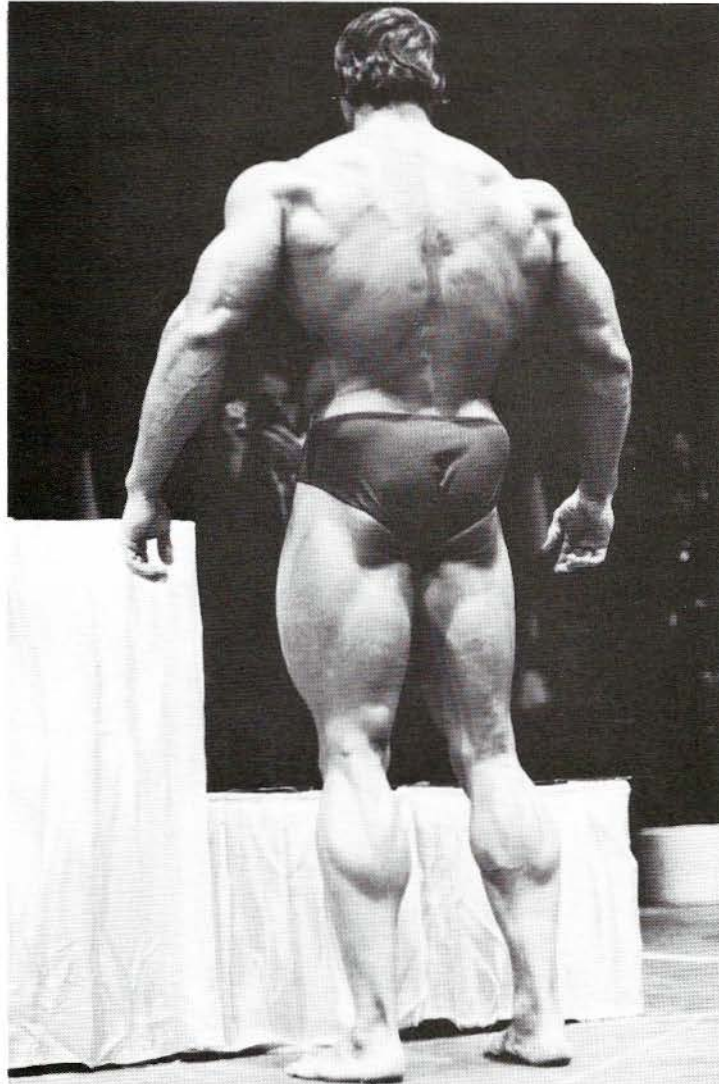
## THE HAMSTRINGS

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Even though many bodybuilders a few years ago had well-developed upper legs in both the front and the back, there wasn't all that much emphasis put on the leg biceps in competition. Now they have become enormously important thanks to bodybuilders like Tom Platz, Sergio Oliva, and Robby Robinson, who are great examples of how much this area can be developed.

Like triceps, the leg biceps play a major part in a wide variety of poses. When you do a side chest or triceps shot, the sweep of the leg biceps is very evident. In any back shot, powerful and defined rear delts, traps, and lats will not compensate for underdeveloped leg biceps. Seen from the back, development of the distinct heads of the leg biceps, along with ripped and developed calves, is needed to create a balance to muscularity of the back, shoulders, and arms displayed in poses like a rear double-biceps or rear lat spread. Also, we are seeing more and more examples of striated and even cross-striated leg biceps, something that almost didn't exist ten or fifteen years ago. And, just as in auto racing or virtually any other sport, as soon as somebody achieves something new, everybody else dives in and pursues the same achievement. So, fabulously muscular, striated, and vascular leg biceps are likely to be the norm rather than the exception in the future.

*Shown here at the 1974 Mr. Olympia, even though I am standing relaxed, I am consciously keeping my hamstrings tight and flexed. I was very glad that I had made an extra effort that year to really work this area hard.*



The more developed the leg biceps are, the more your legs are going to meet in the middle and touch each other, even though your legs are held some distance apart. A properly developed leg biceps leaves a distinct line separating the back of the leg from the front of the thigh when seen from the side, and is a sure indication of a bodybuilder who has really succeeded in achieving quality leg training.

The primary exercises for developing the hamstrings are Leg Curls. These can be done lying down (usually using both legs at the same time) or standing (getting extra isolation using one leg at a time). But this muscle also comes into play in Squats and Lunges, especially as you work through the lower half of the range of motion.

To get a full stretch in the leg biceps, I recommend doing Straight-Leg Deadlifts and Good Mornings, exercises that are primarily for the lower back, but which also help develop the back of the thighs and glutes.

Don't forget that leg biceps also respond extremely well to various

Shocking Principles like the Stripping Method, partial and forced reps, and supersetting. The more you can shock this important muscle, the more development you can expect to see.

## **BEGINNING AND ADVANCED PROGRAMS**

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In the Beginning Program, I have included just basic exercises designed to work each important area of the leg: Squats, Lunges, and Leg Curls. The first two exercises work well in combination to build up the size and strength of the frontal thighs and glutes, and the last is the most direct way of developing the back of the thighs.

But don't make the mistake of believing that these exercises are merely for beginners simply because they are included in the Beginning Program. No matter how advanced you become, these exercises are still vital to building and maintaining great thighs. Except for very specialized training in which you are working only on certain weak points, you will always need to rely on these basic movements.

In Advanced Training you need to do Squats in different ways. Front Squats, for example, force you to keep your back straight, which works the muscles differently. In Hack Squats you go all the way down, which works the lower thighs and helps separate the quadriceps from the leg biceps. The various kinds of Squats attack the leg from different directions; exercises for leg biceps, such as Straight-Leg Deadlifts, allow you to continue to escalate the intensity of effort you impose on these muscles.

Because leg training is so demanding, conditioning is an important factor. In the beginning, you will find the few leg exercises included to be difficult enough. But after a while, when you have become stronger and more conditioned, the total efforts of the Advanced and Competition Programs, as difficult as they are, will be well within your increased capabilities.

## **COMPETITION PROGRAM**

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Once you begin to train for competition, you have to be conscious of many more aspects of leg development—full muscle shape, greater striations, cross striations, complete muscle separation, the mass of the thighs developed in proportion to the rest of the body. To achieve this you need to demand even more from your leg training, making already difficult workouts almost impossible by using every one of the Shocking Principles you can.

Supersetting leg training, for example, can really deplete you. The thighs are the biggest muscles in the body and when you start doing two or more sets without resting you can easily drive yourself to total exhaustion unless you are in great condition. You can superset within the same muscle—Squats and Leg Extensions, for example—or back to front with

Lunges and Leg Curls. But all of this intensity is for a purpose: to do everything possible to develop every part of the thigh.

At this level, you need to be extremely honest with yourself, looking at your thighs and accurately assessing where your development is merely adequate, outstanding, or simply unsatisfactory. The key to winning is to detect weak points early on and begin to correct them as soon as possible rather than waiting until it may be too late.

The Competition Program is designed to teach you total control over your own development. You will need to understand your own body structure more completely, and to fully comprehend which movements are designed to emphasize the various areas of the legs—the upper or lower thighs, the inside or outside, the insertion, origin, or thickness of the leg biceps. You will need to learn to feel precisely where Squats, Front Squats, Leg Presses, and Hack Squats are having their effect, and how to alter your program to include a greater proportion of those exercises that work best for you. Knowing all this enables you to achieve the comprehensive development that it takes to win titles.

Remember, all the exercises detailed in these programs are important. Even if you vary the program, it is not a good idea to leave out the fundamental exercises entirely. Squats may build mass and Leg Extensions create shape and definition, but the combination of these two movements, plus the other important exercises, is what gives you total quality development.

The Competition Program is not so much a matter of doing more or different exercises as of increasing the “time intensity” of the training with a lot of supersets. For competition, it is extremely important that the thighs be super-defined, with tremendous muscle separation. I have found that the way to achieve that look is by doing a lot of supersets: Leg Extensions and Squats, Front Squats and Leg Curls, Hack Squats and Leg Curls. Using these methods, which will intensify the burn so greatly that your desire for success will be tested on each and every set, is the best way to achieve your goals.

I wouldn't use the Stripping Method in thigh training all the time, but it really works well when you are preparing for competition. Years ago when I was looking for extra thigh definition, I experimented on a sliding Hack Squat machine—I put on enough weight to allow me to just do 6 reps, took a little off, and did 6 more. Eventually I did 5 sets this way for a total of 30 reps, which gave me a tremendous burn in the quadriceps muscles. I also found this method worked great with Leg Extensions.

Since legs have a tremendous capacity for endurance, continuing your set with the Stripping Method helps you totally exhaust all the muscle fiber available. Some machines are very useful when you train this way because you can strip off weight quickly by just changing the pin, and can continue working your legs to total failure without fear of being unable to control the weight at the end. You can do the same thing with Squats by



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pulling plates off the bar, although you may find this the most grueling exercise you have ever done.

The biggest progress I made in thigh training was in 1971 when, in addition to sheer size, what I needed most was deeper definition and separation. So I began leg training with a superset of Leg Extensions followed by Squats. I hit the Leg Extensions hard, so I was very weak and tired when I got to the Squats. My thighs felt dead, and I found that I could hardly move 315 pounds. But I kept trying and soon was able to do Heavy Squats immediately after Leg Extensions, and my thighs responded tremendously to this new shock. Another superset that worked well for me was Front Squats immediately followed by Leg Curls.

For emphasizing the thigh muscles above the knee I've always relied on Hack Squats, especially for competition training. Hack Squats produce maximum hardness, definition, and separation. I discovered the merits of this exercise through Steve Reeves, who found it really beneficial when getting his legs into competition shape.

Tom Platz had a method of exhausting the endurance capacity of the legs as well as blasting the muscles. When he was doing Leg Extensions, for example, he would do as many full reps as he could. Then, as he began to tire and couldn't do full-range movements anymore, he continued the set, moving the weight just as far as he could—three-quarter reps, half reps, quarter reps. Finally, he ended up lying back on the machine, totally spent, but you could see his legs still contracting, moving the weight only inches at a time. He didn't stop until his quadriceps were so literally exhausted that he couldn't move the weight even a fraction of an inch. This was how he used partial reps, a method in which Tom cut down on the range of motion rather than lightening up on the weight.

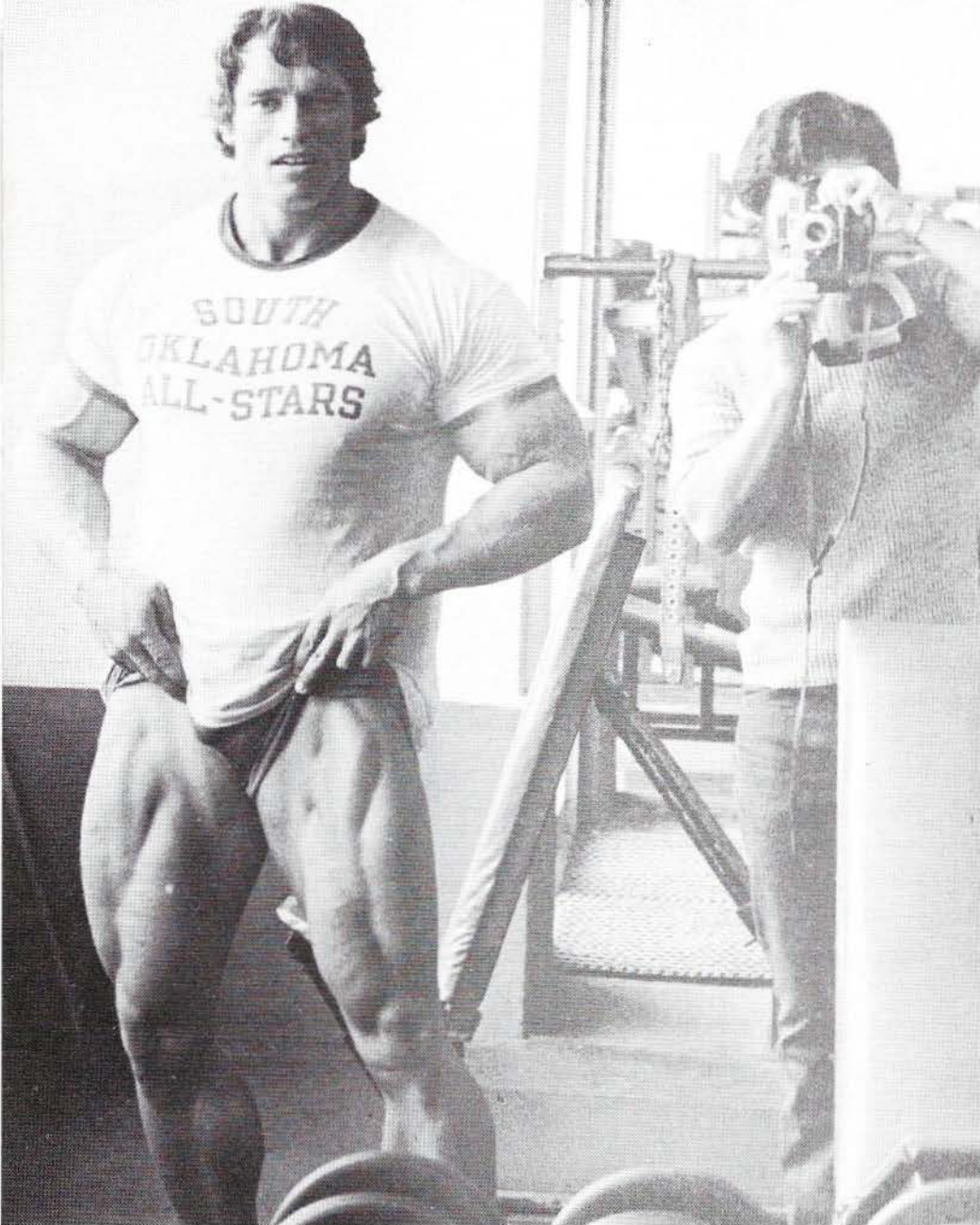
Platz demanded more of his legs, which is why he got so much more than other people. For example, he would do as many as 35 reps of Squats with 315 on the bar, another 25 reps after less than 60 seconds' rest, several sets of total-exhaustion Leg Extensions and Leg Curls, Hack Squats and Leg Presses, brutal calf work—and then go out and ride his bicycle for 20 miles to finish off his leg workout.

These are just some of the methods the champions have used to develop their thighs. Developing really top-quality legs is a matter of hard work, good knowledge of technique, and application of all the Shocking Principles to create the maximum level of training intensity—for example, forced negatives with Leg Extension, Leg Curls, Hack Squats, or Machine Squats, all of which are done on machines, allowing the techniques to be done in safety; or Staggered Sets with an exercise like Squats, doing 8, 10, or even more sets over the course of a workout; or pre-fatiguing the quadriceps with Leg Extensions and immediately trying to do Squats with your thigh muscles screaming in pain. Pushing the legs to their ultimate development requires a mixture of courage, technique, and imagination.

The one basic need shared by all bodybuilders is, of course, simply the



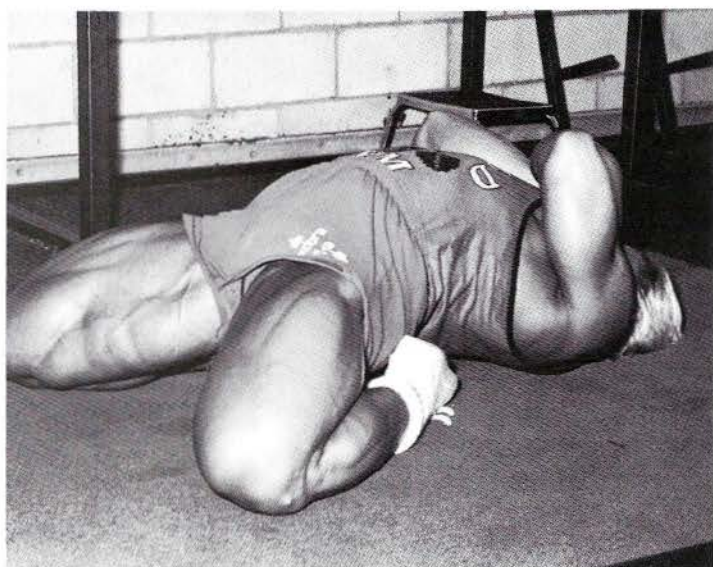
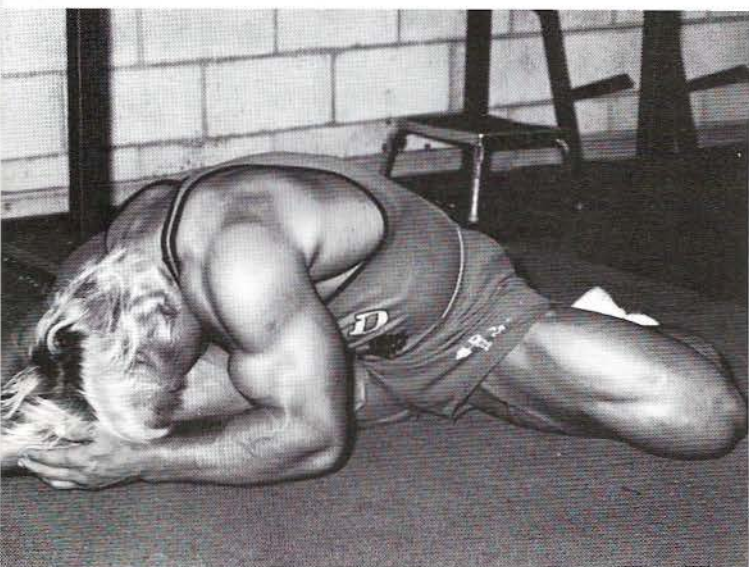
*To build big muscles, you need to train with heavy weight. At one point, simply to put an extra inch on my thighs, I concentrated on doing Squats with 500 pounds for reps.*



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*I was perfectly happy this day to flex for photographer John Balik's camera, but I always welcome any excuse to flex during a workout. After every set, I like to stand in front of the mirror and tense the muscles I'm training. Flexing them as hard as I can brings out maximum definition, especially in the thighs.*

*Muscle-bound? Look at Tom Platz's incredible flexibility.*



development of mass in the upper leg. I remember when I had pretty good overall development, but simply lacked size. To build up the mass I needed, I included a lot of very Heavy Squats in my leg routine, especially Half Squats. Half Squats let you use an enormous amount of weight, really make the legs work intensely, but with no real danger of injury to the knees. Whenever you are trying to build mass, you need to train according to basic power principles—fewer reps and sets, more rest between sets, but with increased poundage, Full Squats, Half Squats, and Front Squats done with a barbell or on a machine are the principal power exercises. You can also do Leg Presses on a machine as a power exercise by using very heavy weight.

## FLEXING AND STRETCHING

Whenever you see body builders cramping up from fatigue in a contest, it is usually the leg muscles that go first. These are huge, strong muscles and it takes a lot of practice to develop the kind of endurance needed to pose the legs for hour after hour.

Hard posing practice and flexing the legs constantly during your workout help create maximum muscle separation and the cross striations that modern bodybuilders are now achieving. However, the more you contract these large muscles, the more they tend to shorten up, so it is equally important to lengthen them again with stretching movements. Virtually all the top champions use a lot of stretching in order to develop their fantastic legs. Again, using Tom Platz as an example, he would spend 15 minutes stretching before doing a leg workout, and then stretch again after he finished.

But you can also stretch during a workout by including the right exercises—for example, doing Straight-Leg Deadlifts or Good Mornings to stretch the leg biceps right after you do your Leg Curls, being sure to go all the way down when doing Squats and Hack Squats, and bringing your knees all the way to your chest when doing Leg Presses.

## WEAK POINT TRAINING

Because the leg muscles are so large and complex, almost any bodybuilder is going to discover some weak points at some stage in his career. It is necessary to analyze what the problem is and to understand what exercises and techniques can be used to correct it.

In general, I recommend training legs according to the Priority Principle. Leg training is so demanding that, if you want to get the most out of it, you had better train them when you are fresh and strong. It is also important to have a good workout partner to push you to your limits and to be there when you need spotting.

For specific problem areas I recommend the following leg exercises:



*When I first began competing, my legs were considered a weak point, but a lot of hard work, training my thighs according to the Priority Principle and every Shock Principle I could learn or invent, made the difference, so by the early 1970s my thigh development was no longer a problem.*

**LOWER THIGH DEVELOPMENT**

Since the lower thigh works hardest when the knee is fully bent, I recommend the following exercises with a three-quarter movement in which you go all the way down but come up only about three-quarters of the way.

Squats, Hack Squats, and Leg Presses

Leg Extensions, concentrating on letting the legs go all the way back and stretching out the thigh to the point where the lower thigh is working the hardest

**OUTER THIGH DEVELOPMENT**

Front Squats

Hack Squats

Any Squat or Leg Press with toes pointed straight and the feet close together

Abductor machines and movements

**INNER THIGH DEVELOPMENT**

Lots of Lunges—a very valuable inside thigh exercise

Straight-Leg Deadlifts

Any Squat or Press movement with the toes turned outward with a relatively wide foot stance

Adductor machines and movements

**FRONT SWEEP OF THIGHS**

Hack Squats with a block under the heels to further stress the quadriceps

Sissy Squats

In developing the thighs, it is helpful to vary your foot position when doing various thigh movements:



**FOR OVERALL DEVELOPMENT**

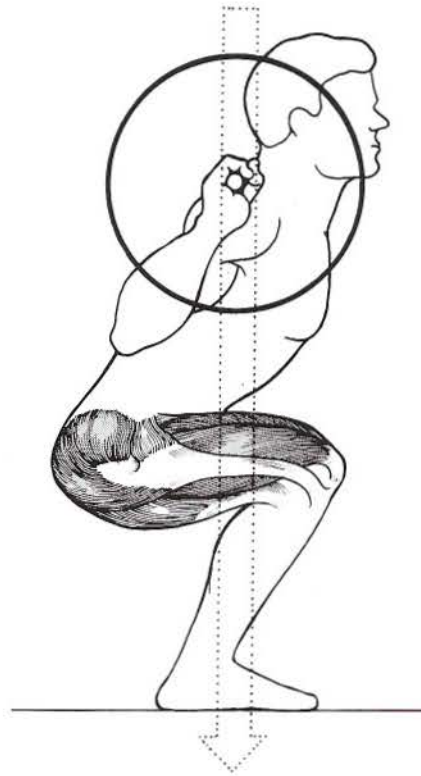
Feet shoulder-width apart  
Toes pointed slightly out

**FOR OUTER THIGH (VASTUS LATERALIS) EMPHASIS**

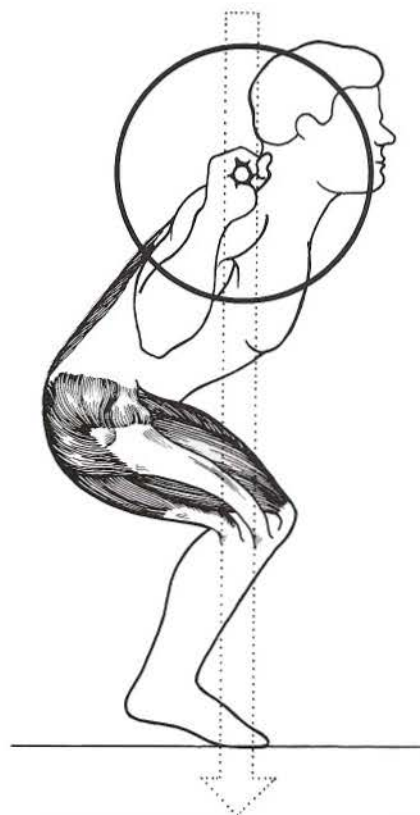
Feet close together  
Toes pointed straight ahead

**FOR INNER THIGH (ADDUCTORS) AND FRONT THIGH (VASTUS MEDIALIS) EMPHASIS**

Feet relatively wide apart  
Toes pointed out at a wide angle



*To get the most out of Squats, the bar should remain directly over your feet. As you bend your knees coming down, make sure your head is up and your back straight. This takes the lower back out of the movement and puts the stress on the leg and glute muscles where it belongs.*



*Allowing your head to lean forward, as shown here, puts additional stress on the lower back and less on the thighs, where you really want it. Bodybuilders with long legs tend to have this problem more than those with short legs.*

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## Leg Exercises

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### SQUATS

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**PURPOSE OF EXERCISE:** To build mass and strength in the legs, especially the thighs. Full Squats are one of the traditional mass-building exercises for the entire lower body but are primarily for developing all four heads of the quadriceps.

**EXECUTION:** (1) With the barbell on a rack, step under it so that it rests across the back of your shoulders, hold on to the bar to balance it, raise up to lift it off the rack, and step away. The movement can be done with your feet flat on the floor or your heels resting on a low block for support. (2) Keeping your head up and back straight, bend your knees and lower yourself until your thighs are just lower than parallel to the floor. From this point, push yourself back up to the starting position.

It is important to go below parallel in this movement, especially when you are just learning the exercise, so that you develop strength along the entire range of motion. If you don't go low enough in the beginning, you could injure yourself later when using heavier weight. Foot position to some extent determines which area of the thighs you work the most while doing Squats: A wider stance works the inside of the thighs to a greater degree, while a narrower stance tends to work the outside more; toes turned out hits the inside of the thighs. The basic stance for greatest power is usually feet shoulder-width apart, with toes turned just slightly out.



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## HEAVY SQUATS

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Your Squat technique will vary a lot depending on your physical proportions. Because of my height, whenever I do Heavy Squats I am forced to bend forward quite far, bringing my lower back very strongly into the exercise. Ideally, you should do Squats with your back as straight as possible. Bodybuilders like Franco Columbu and Tom Platz can do this easily with the rear end and bar in about the same line when coming down with the weight, instead of the way I do it, bar way forward and rear end stuck out toward the back. I always include a lot of Front Squats in my routine in order to make certain I emphasize the quadriceps.



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## HALF SQUATS

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**PURPOSE OF EXERCISE:** To develop extra mass and power in the thighs.

**EXECUTION:** This exercise is done the same way as regular Squats except you go only halfway down, which will enable you to use more weight.

*Tom Platz*



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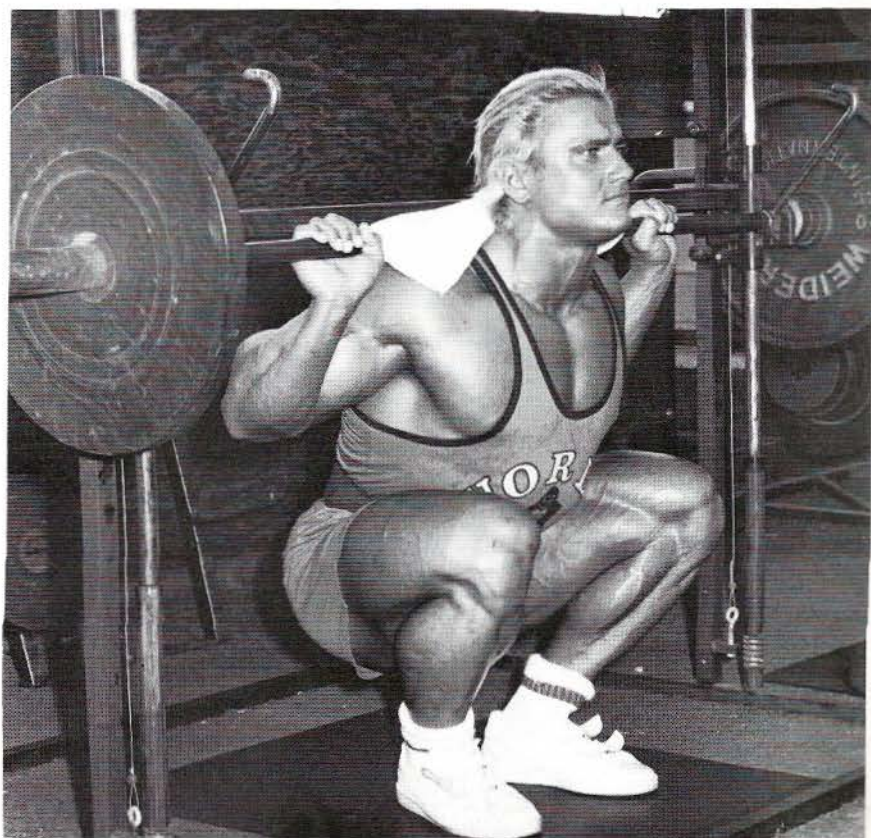
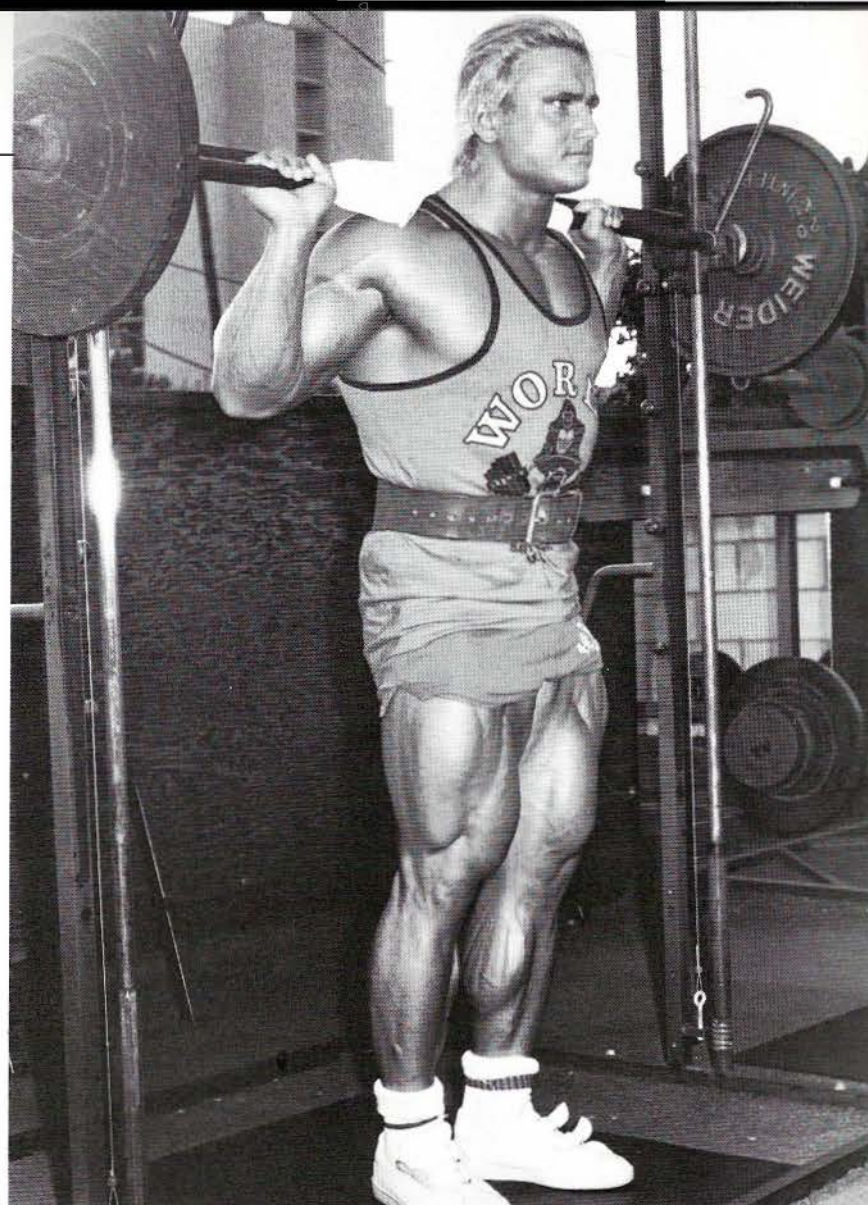
## MACHINE SQUATS

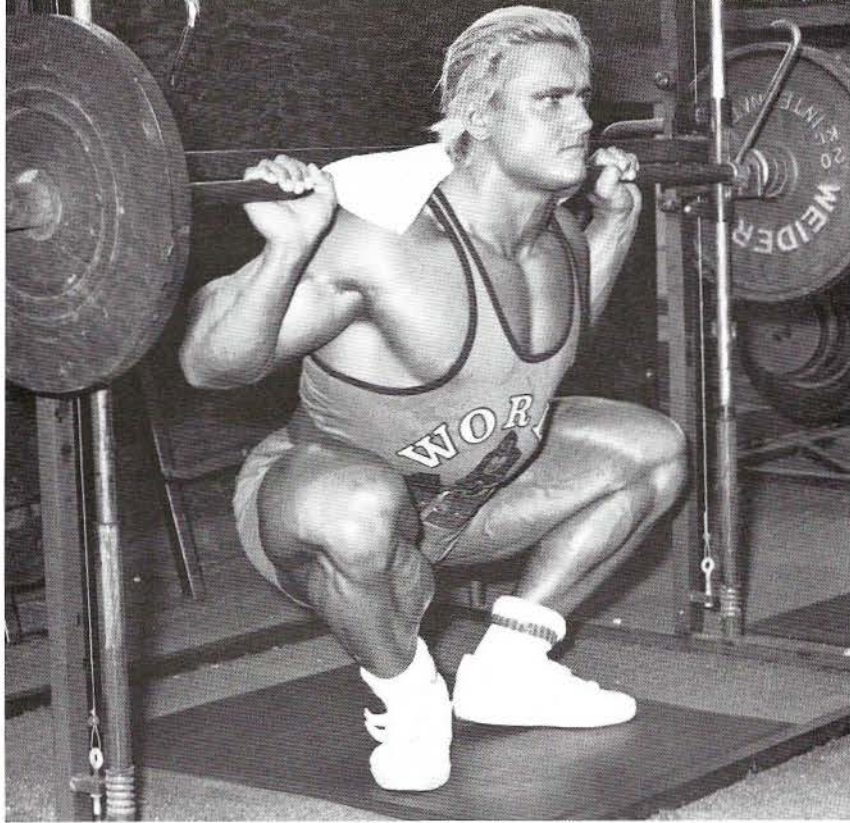
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**PURPOSE OF EXERCISE:** To develop the quadriceps. When you do Squats on a machine, you can work the thighs intensely while putting less strain on other areas such as the knees and lower back. There are a number of machines designed to approximate the Squat movement. They use a variety of techniques to create resistance, including weights, friction, and even air compression. Personally, I have always preferred doing Machine Squats on a Smith machine.

**EXECUTION:** (1) Place your shoulders under the bar and come up to a standing position. Position your feet to obtain the desired effects from the exercise (see page 495). (2) Bend your knees and squat down until your thighs are lower than parallel, then press back up to the starting position.

Turning your toes out helps develop the inside of the thighs. Balancing a barbell in this position could be difficult, but the machine makes it easy. Standing with your feet moved forward helps isolate the quadriceps, especially the lower area near the knee, and minimizes strain to the lower back since you don't need to bend forward at all.

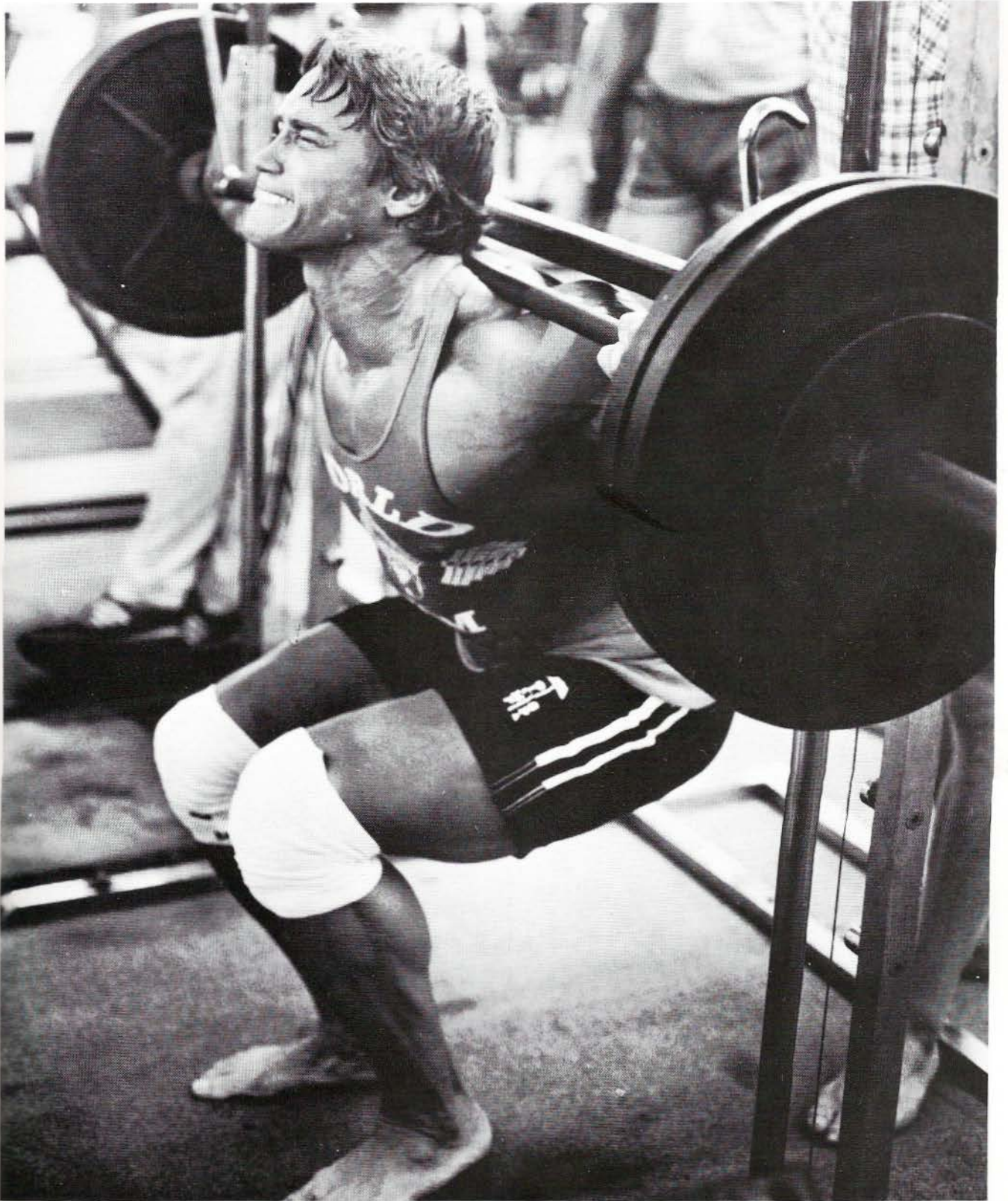




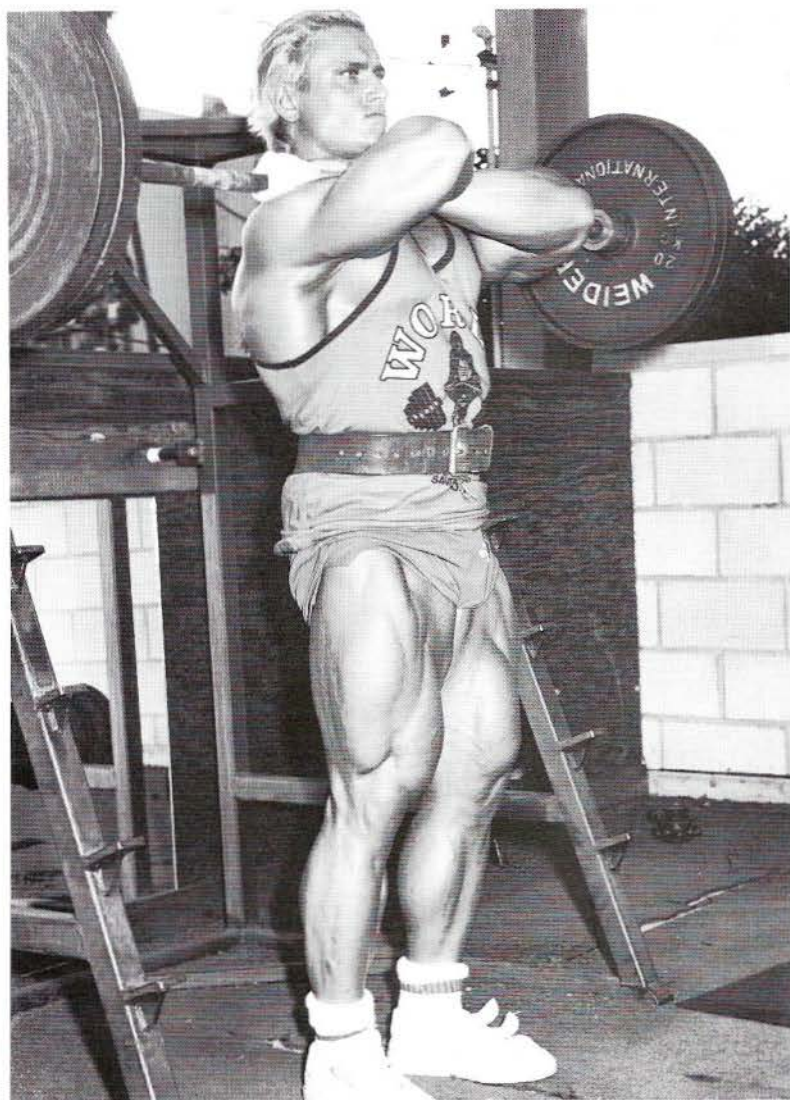
*Machine Squat—  
toes out*



*Machine Squat—feet  
forward*



*Wrapping the knees when you do Heavy Squats raises the hydrostatic pressure within the joint and helps to prevent joint or ligament injury.*



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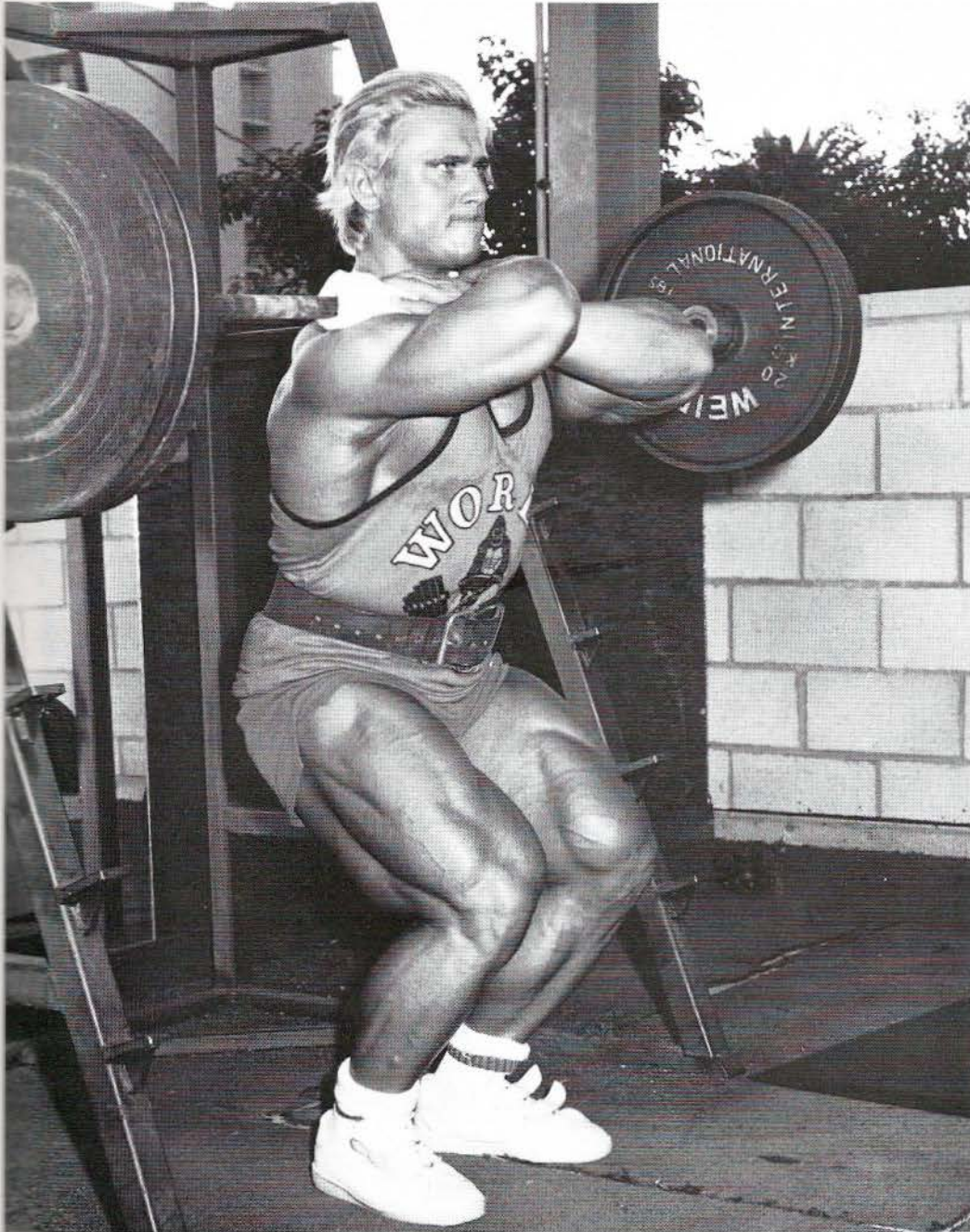
## FRONT SQUATS

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**PURPOSE OF EXERCISE:** To work the legs, with special emphasis on the thighs. Front Squats develop the outside sweep of the quadriceps.

**EXECUTION:** (1) Step up to the rack, bring your arms up under the bar, keeping the elbows high, cross your arms and grasp the bar with your hands to control it. Then lift the weight off the rack. Step back and separate your feet for balance (I find this exercise easier to do if I rest my heels on a low block to improve balance). (2) Bend your knees and, keeping your head up and your back straight, lower yourself until your thighs are below parallel to the floor. Push yourself back up to the starting position. Do this exercise slowly and strictly, making sure you keep your back straight. If possible, do all Squats in front of a mirror so you can check that you are keeping your back straight.



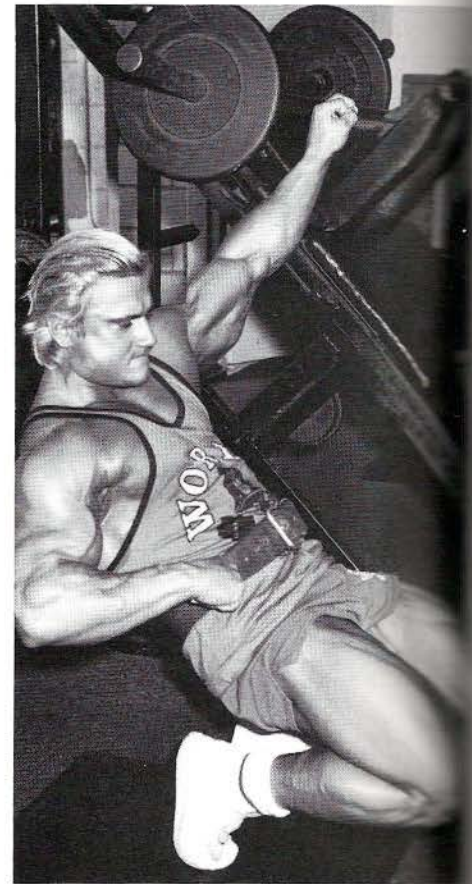
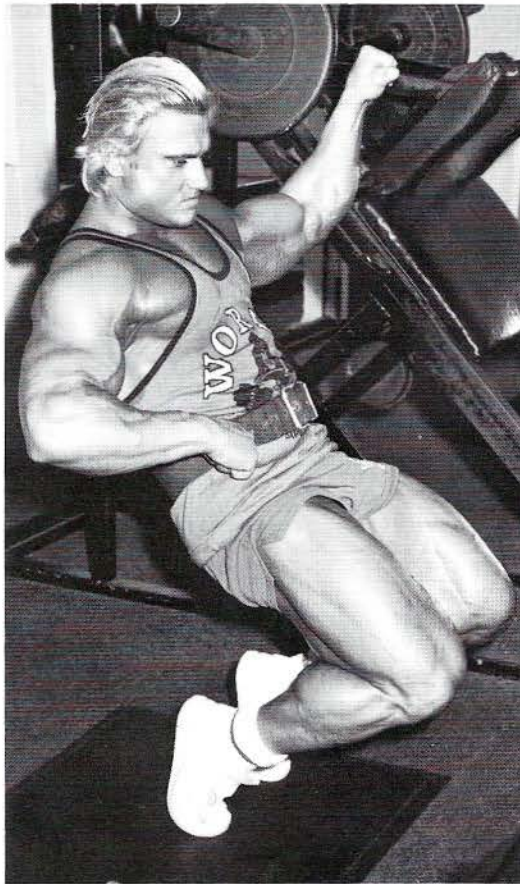


*Front Half Squats are done in the same manner as Front Squats except you go only halfway down.*

## SISSY SQUATS

**PURPOSE OF EXERCISE:** To isolate the lower quadriceps. Although this movement is called a Squat it is very close to a Leg Extension in the way it affects the legs. You will feel a lot of stress right down to where the quadriceps insert into the knee.

**EXECUTION:** (1) Stand upright, feet a few inches apart, holding on to a bench or something else for support. (2) Bend your knees, raise up on your toes, and slowly lower yourself toward the floor, letting your pelvis and knees go forward while your head and shoulders tilt backward. (3) Continue down as low as possible, until your buttocks practically touch your heels. Stretch the thigh muscles and hold for a moment, then straighten your legs and come back up into a standing position. Flex your thigh muscles hard at the top of the movement for maximum cuts and development.



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## LEG PRESSES

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**PURPOSE OF EXERCISE:** To build the mass of the thighs. If Squats have a disadvantage, it's the pressure they put on the lower back. Doing Leg Presses is a way around this that allows you to work the legs with very heavy weight.

**EXECUTION:** (1) Using a Leg Press machine, position yourself under the machine and place your feet together against the crosspiece. Bend your knees and lower the weight as far as possible, bringing your knees toward your shoulders. (2) Press the weight back up again until your legs are fully extended. Don't get in the habit of pushing on your knees to help your legs press upward, or of crossing your arms across your chest and limiting your range of motion.



*Kevin Levrone*

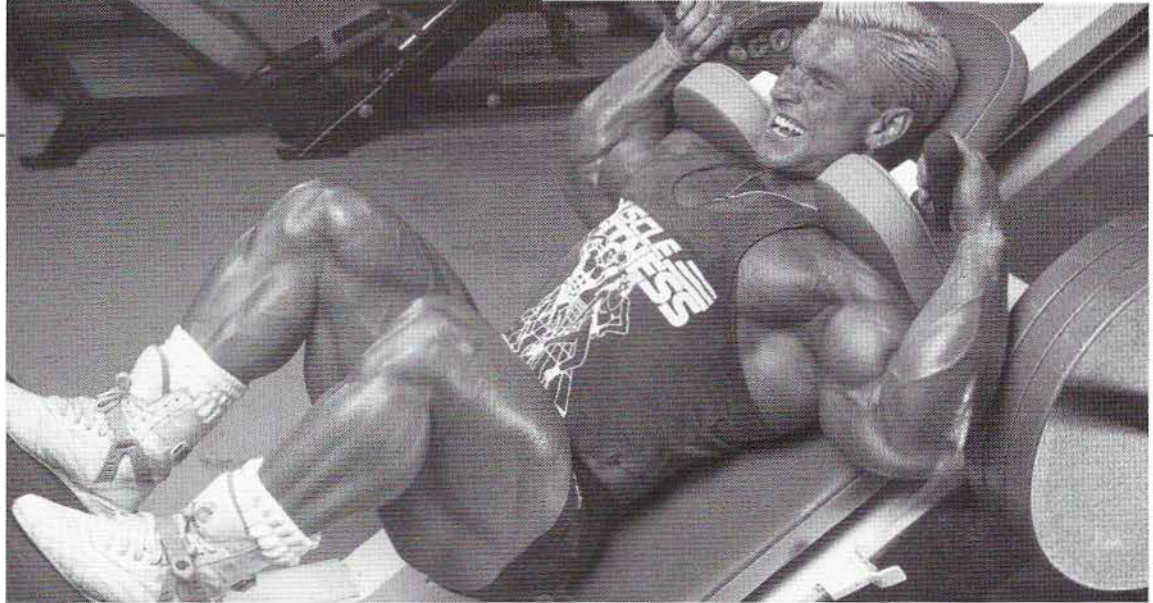
## LEG PRESS VARIATIONS

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There are a number of other machines on which you can do the Leg Press movement. Some of these move along an angled track, others along a horizontal. No matter which type of machine is used, the exercise should be done in a similar manner, with the knees coming back as closely as possible to the shoulders.



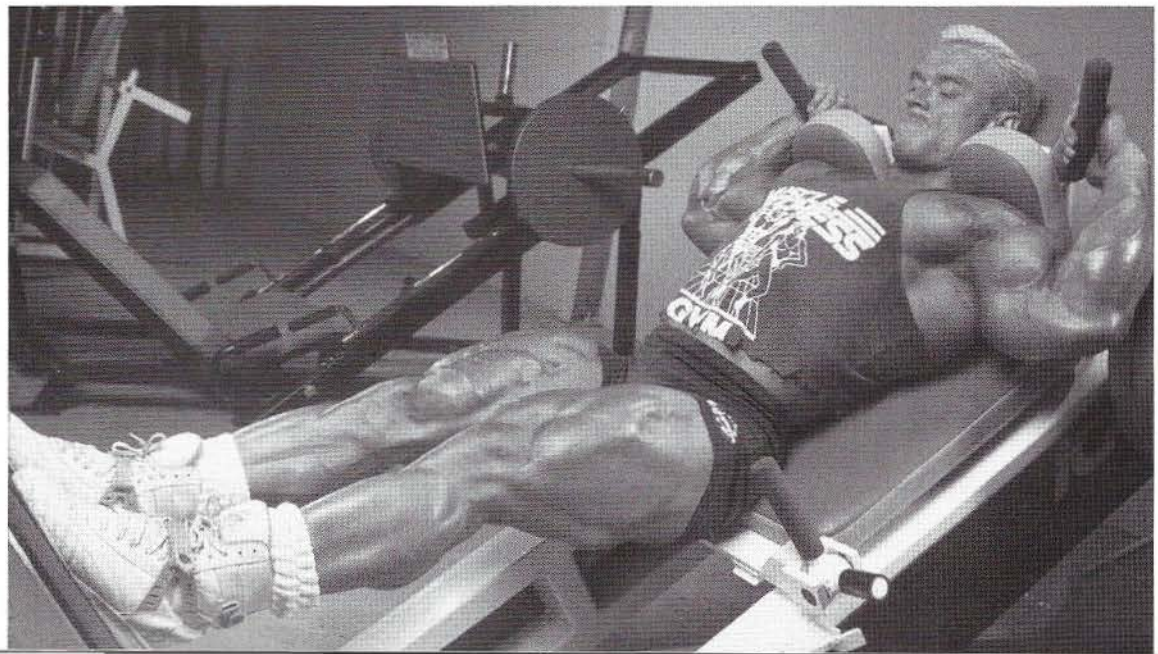
*Tom Platz does the Incline Leg Press—  
toes-apart position.*



## HACK SQUATS

**PURPOSE OF EXERCISE:** To develop the lower area of the thigh. Hack Squats are a good movement for working the lower range of the pressing motion.

**EXECUTION:** (1) Depending on the design of the machine you use, either hook your shoulders under the padded bars or take hold of the handles. Your feet should be together, toes pointed slightly out. (2) Press downward with your legs and lift the mechanism, stopping when your legs are fully extended. This keeps constant tension on the legs. Bend your knees and lower yourself all the way down. Your legs should end up bent at a much more acute angle than when you do Squats. In all your repetitions, keep working this lower range of motion by going all the way down. (3) For some of your last repetitions, lower yourself in the normal way, but as you press back up, arch your back and bring your hips away from the machine without locking your legs out. This will emphasize the separation between the leg biceps and the quadriceps, which makes the thighs look huge when you do a side chest shot.



*Lee Priest*



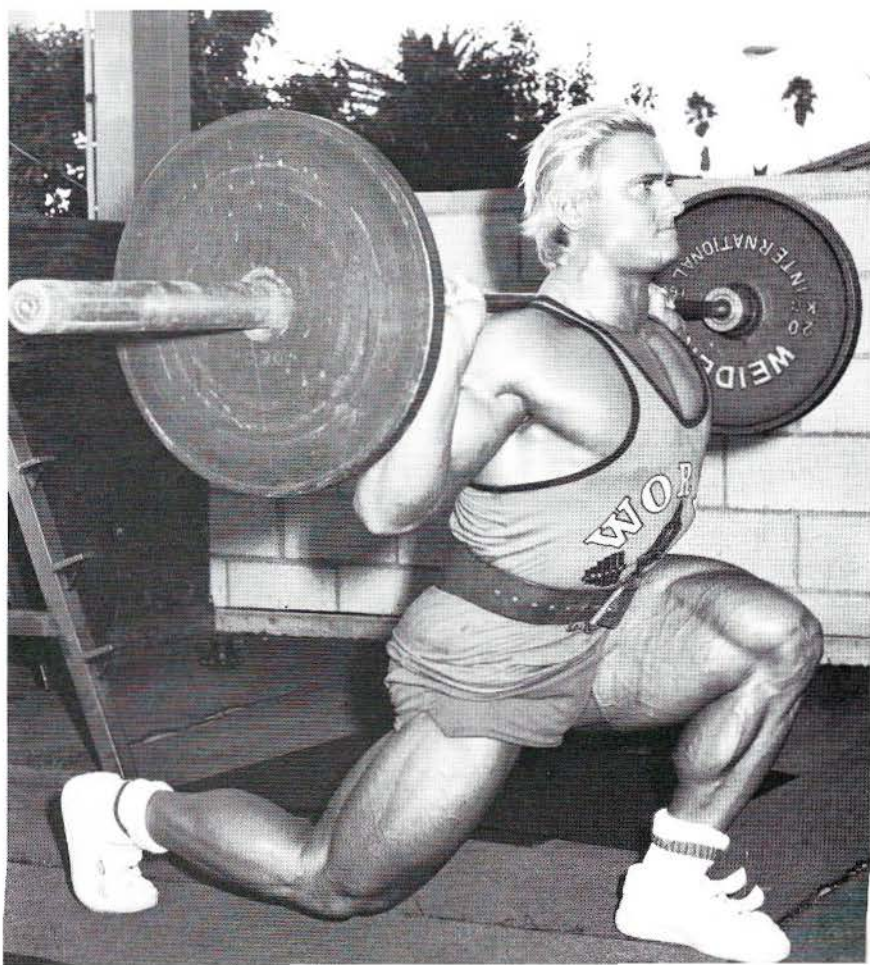
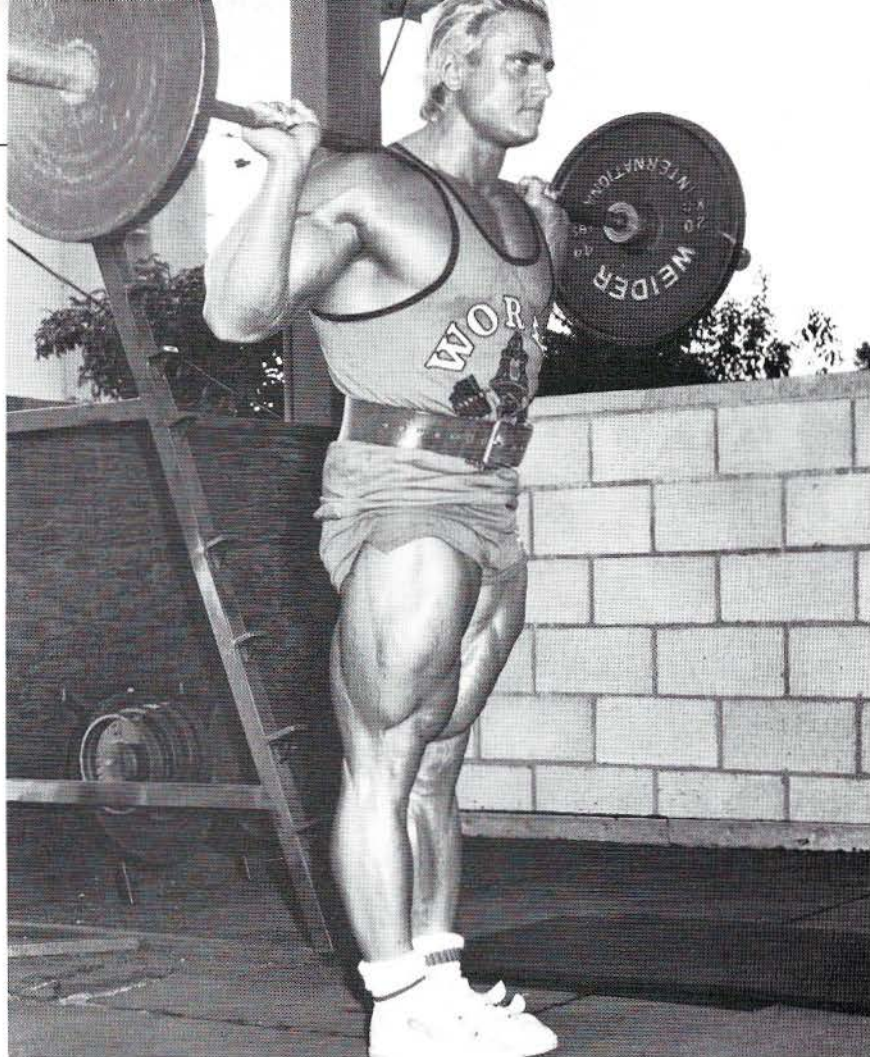
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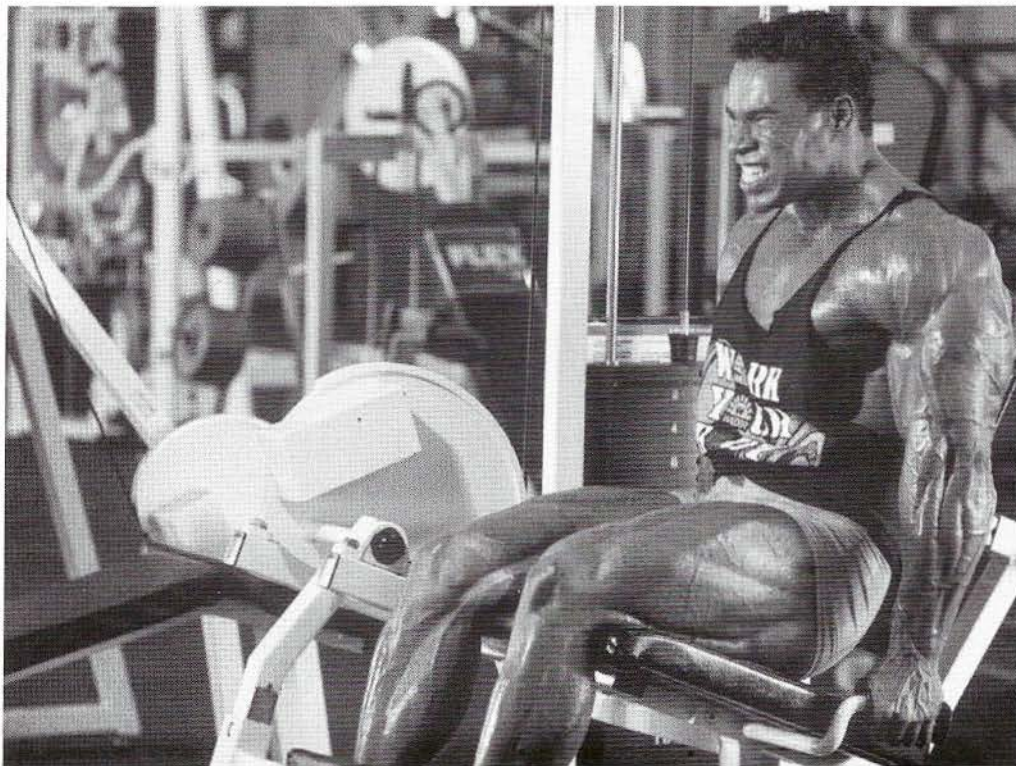
## LUNGES

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**PURPOSE OF EXERCISE:** To develop the front of the thighs and glutes.

**EXECUTION:** (1) Holding a barbell across the back of your shoulders, stand upright with your feet together. (2) Keeping your head up, back straight, and chest thrust out, take a step forward, bend your knees, and bring your trailing knee almost to the floor. The step should be long enough so that the trailing leg is almost straight. Push yourself back up to the starting position with one strong and decisive movement, bringing your feet together, then step forward with the other foot and repeat the movement. You can do all your repetitions with one leg, then switch and repeat with the other, or you can alternate legs throughout the set.

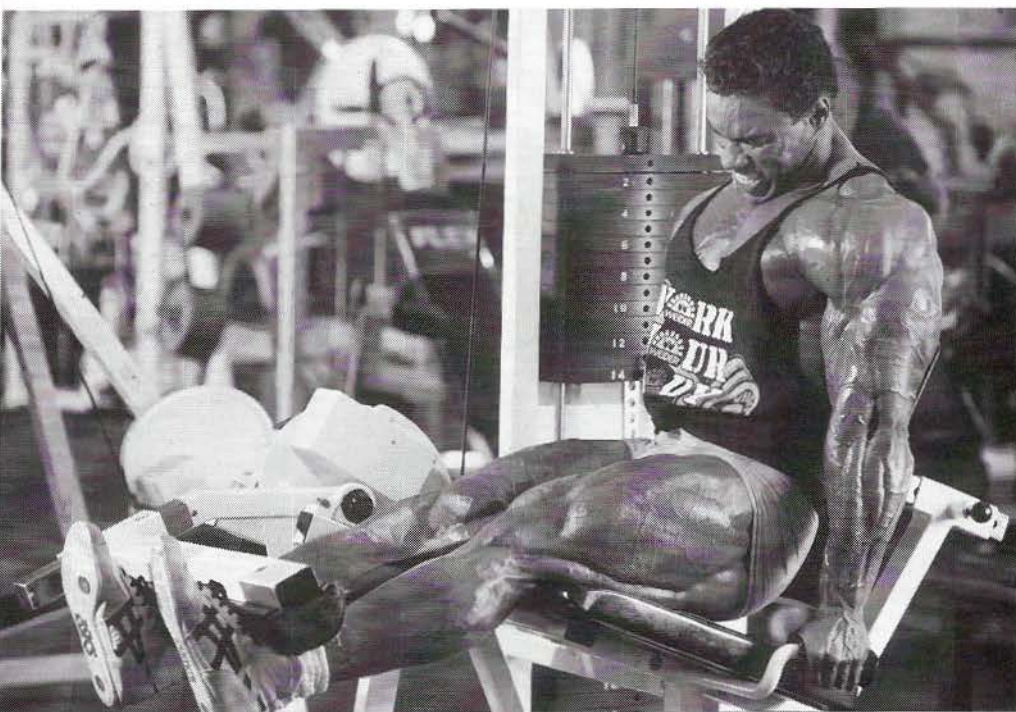




## LEG EXTENSIONS

**PURPOSE OF EXERCISE:** To define and shape the front of the thigh. Leg Extensions are great for getting really deep definition in the thighs without losing size, and especially for developing the area around the knees.

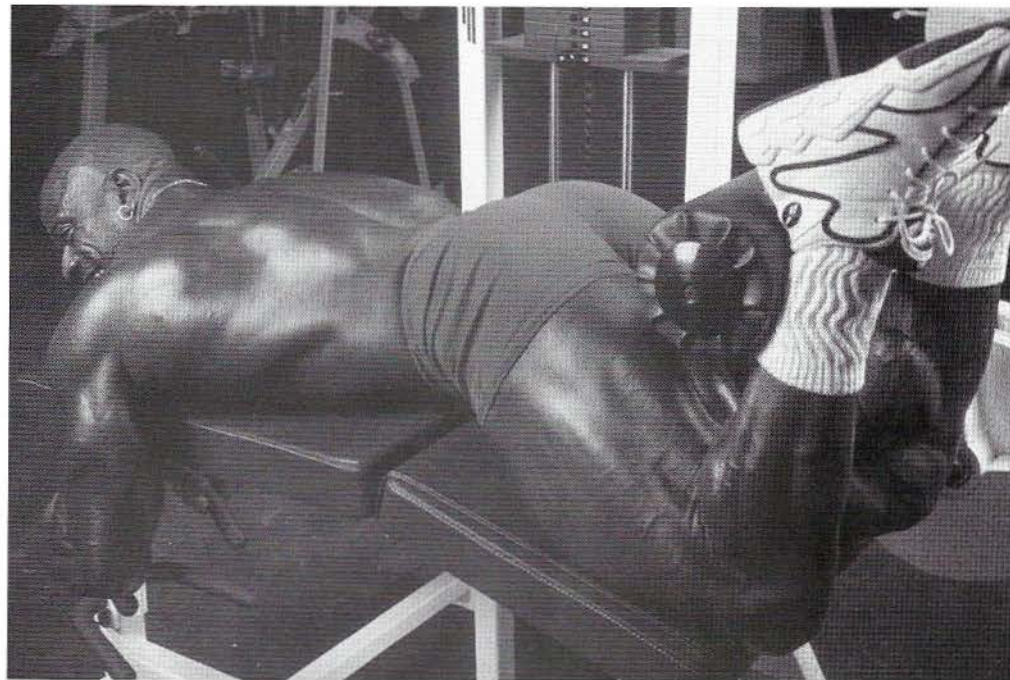
**EXECUTION:** (1) Using one of the various Leg Extension machines, sit in the seat and hook your feet under the padded bar. (2) Extend your legs out to the maximum, making sure you remain sitting flat on the machine (don't let yourself lift off and cheat up the weight). Extend your legs as far as possible until they are locked out to achieve maximum contraction of the quadriceps, then lower the weight slowly until your feet are no farther back than the knees and the thighs are fully stretched out. To make sure you always extend your legs fully enough, have your training partner hold out a hand on a level where your feet will kick it at the top of the extension.



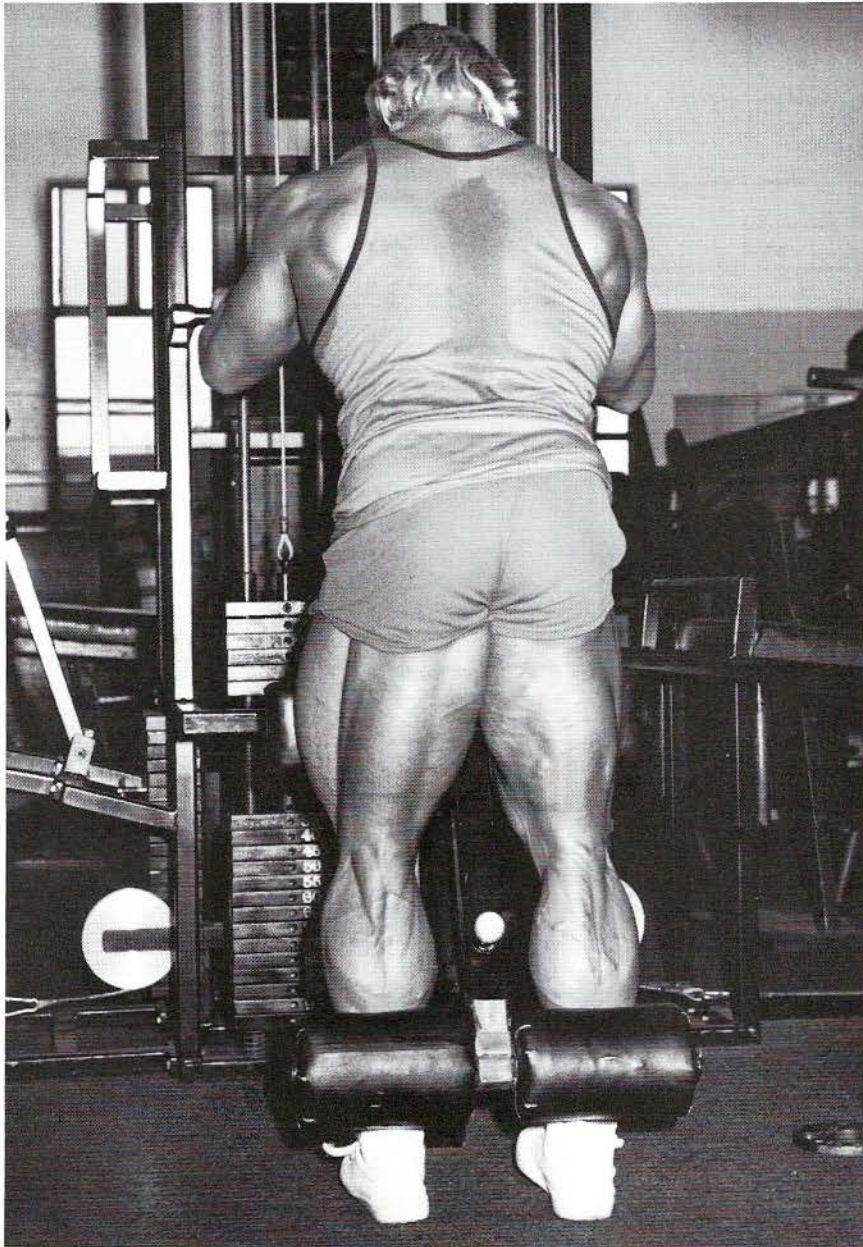
## LEG CURLS

**PURPOSE OF EXERCISE:** To develop the hamstrings (rear of thigh).

**EXECUTION:** (1) Lie facedown on a Leg Curl machine and hook your heels under the lever mechanism. Your legs should be stretched out straight. (2) Keeping flat on the bench, curl your legs up as far as possible, until the leg biceps are fully contracted. Release and lower the weight slowly back to the starting position. Hold on to the handles or the bench itself to keep yourself from lifting up off the bench. This exercise should be done strictly and through the fullest range of motion possible. I have found that supporting myself on my elbows helps keep the lower part of my body more firmly on the bench.



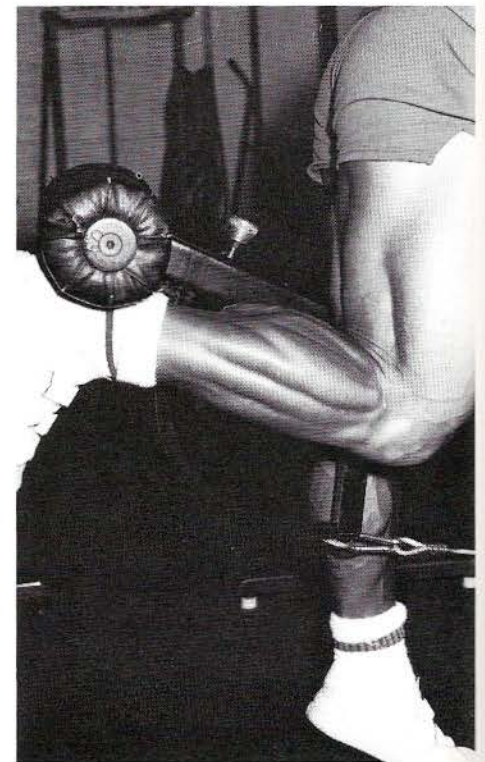
*Willie Stallings*



## STANDING LEG CURLS

**PURPOSE OF EXERCISE:** To develop the leg biceps. Using a Standing Curl machine, you can train one leg at a time and further isolate the leg biceps.

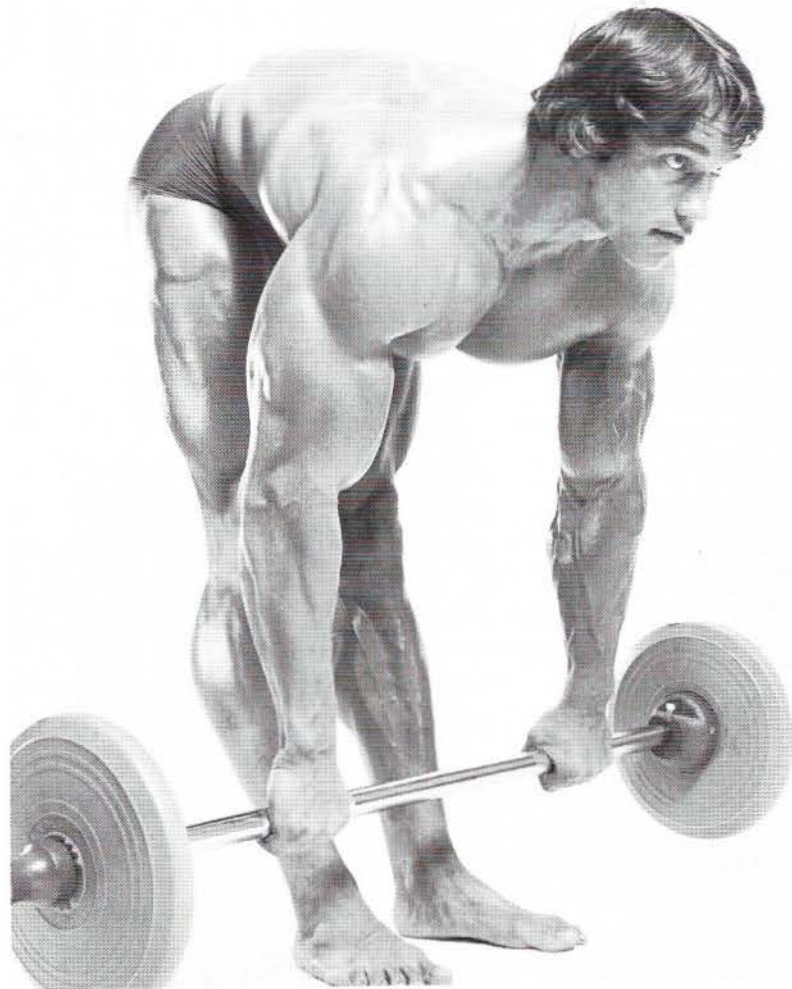
**EXECUTION:** (1) Stand against the machine and hook one leg behind the lever mechanism. (2) Hold yourself steady and curl the leg up as high as possible. Release and lower the weight back to the starting position. Do your set with one leg, then repeat the exercise using the other leg. Be certain to keep the movement slow and strict.



## STRAIGHT-LEG DEADLIFTS

**PURPOSE OF EXERCISE:** To work the hamstrings. Also works glutes and lower back.

**EXECUTION:** (1) Take hold of a barbell as for Deadlifts and come up to a standing position. (2) Keep your legs nearly locked and bend forward from the waist, your back straight, until your torso is about parallel to the floor, the bar hanging at arm's length below you. Straighten up again, pull your shoulders back, and arch your spine to get the spinal erectors of the lower back to contract completely. Without your legs to help you as in regular Deadlifts, you will use much less weight doing this exercise. If you use Olympic weights, it is best to stand on a block or a bench so that you can lower the weight to the maximum extent without the large end plates touching the floor as long as your back doesn't begin to round.





## The Calves

### THE MUSCLES OF THE CALF

The **soleus**, which is the larger and deeper of the two calf muscles and originates from both the fibula and the tibia

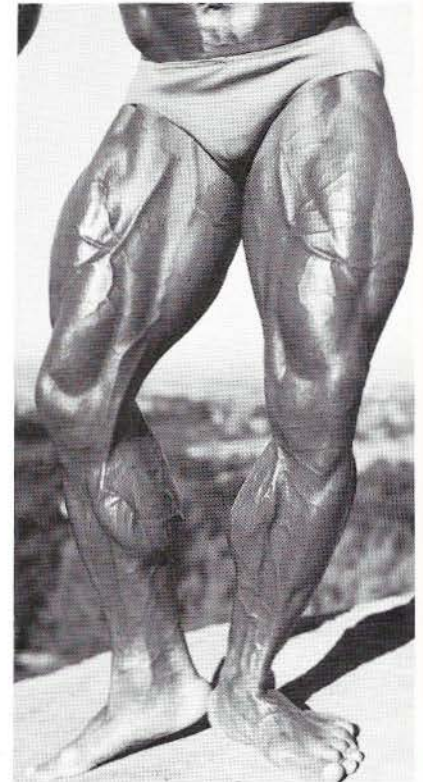
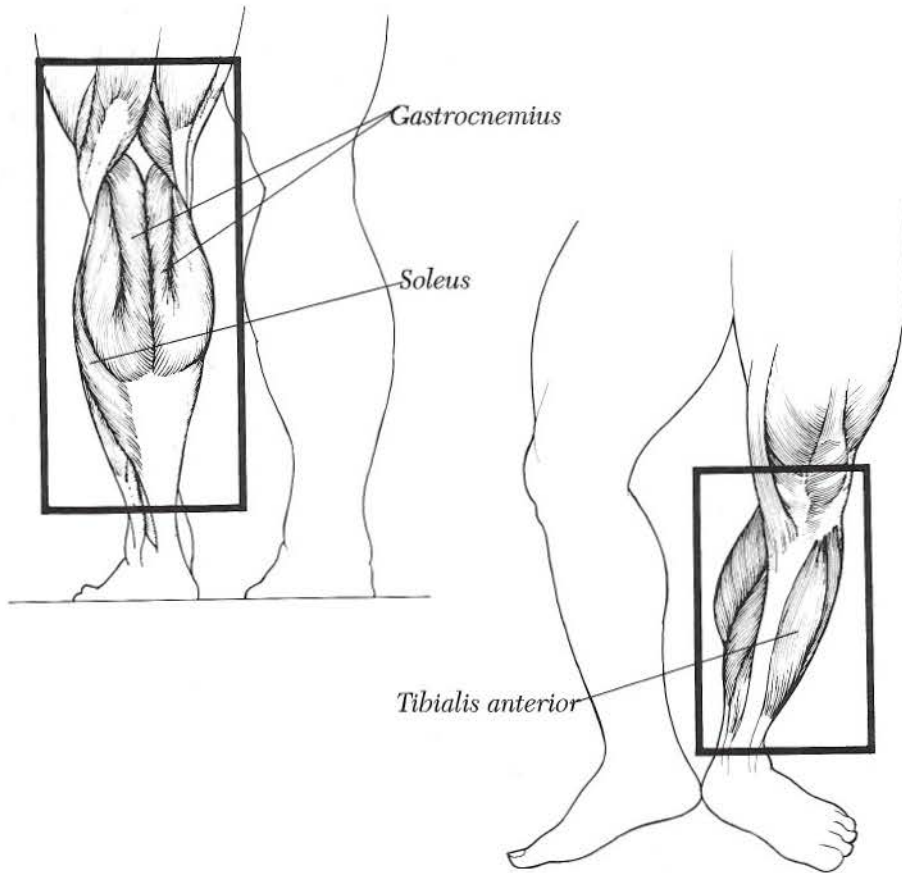
**BASIC FUNCTION:** To flex the foot

The **gastrocnemius**, which has two heads, one originating from the lateral aspect and the other from the medial of the lower femur. Both heads join to overlay the soleus and join with it to insert into the Achilles tendon, which inserts into the heel bone.

**BASIC FUNCTION:** To flex the foot

The **tibialis anterior**, which runs up the front of the lower leg alongside the shinbone

**BASIC FUNCTION:** To flex the foot





*Check out Kevin Levrone, Dorian Yates, Shawn Ray, and Chris Cormier in the 1995 Mr. Olympia. As great as their backs, shoulders, traps, and arms are, if nothing happened when they flexed their calves, the entire effect would be ruined.*

## **TRAINING THE CALVES**

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Calves, like the deltoids and abdominals, are a very aesthetic body part. A good pair of calves look good on the beach or tennis court as well as on-stage. But more than that, outstanding calf development has historically been associated with the ideal male physique. Huge deltoids, washboard abs, and powerful calves were the qualities the Greek sculptors fashioned in their classical images of warriors and athletes.

Ideally, your calf development should about equal the development of your biceps. If your calves are smaller than your arms, then you need to give them extra attention. (One exception to this is Chris Dickerson, the only bodybuilder whose calves have always been naturally larger than his arms.)



*Reg Park*

Calves are considered the most difficult muscle group in the body to develop. But calves respond to training just like any other muscle—you just have to be aware that they need to be trained at many different angles and with extremely heavy weight.

Think about what happens when you walk and run: You turn your foot and ankle first one way, then the other; you push off, stop suddenly, turn and change direction, you climb upward, walk downhill. And with each different movement you make, the calf muscles bear your weight, raising you up on your toes, lowering you down onto your heels, helping you twist your feet in different directions.

Until I trained with Reg Park, I had trouble getting my calves as big as I wanted them. I was doing Calf Raises with 500 or 600 pounds, but he was using 1,000! He pointed out to me that each of my calves individually was comfortable supporting my 250 pounds of body weight, so 500 pounds of resistance was actually a “normal” amount for them to deal with. So by training with the weight I was using, I was hardly making any impression on my calves at all!

The primary mass builder for calves is Standing Calf Raises, and here extra weight is really important. This exercise, along with Donkey Calf Raises, works both the gastrocnemius and soleus muscles of the calf. Seated Calf Raises better target the soleus.

Many bodybuilders do their calf training as an afterthought. Before or after their regular workout they give them 10 minutes or so, far less than they would for any other body part. And then they complain when their calves do not respond.

I believe in treating the calves just like every other body part. Since the calves are designed for constant work and rapid recuperation, I train them 30 to 45 minutes a day. I also use a wide variety of exercises; not just some sets of Standing and Seated Calf Raises, but enough movements to work every area of the calf muscles—upper and lower, inside and outside.

The calves are tough and used to a lot of hard work, so the best way to make them grow is to constantly shock them, using every high-intensity training principle possible. For example, when doing Donkey Calf Raises, I frequently started off with three 220-pound bodybuilders sitting on my back. I would continue the set until I could not do another rep, then have one of them slide off so that I could continue until my calves were screaming in agony. Finally, I would finish off the set using only my own body weight and feeling as if my calves were going to explode.

Another shock method involves doing partial reps. About one out of four of my calf workouts involved doing half and quarter movements with extremely heavy weights, which put an enormous demand on the calf muscles. Actually, you can use virtually all of the Shocking Principles described in this book to develop your calves—Staggered Sets, Rest/Pause,



forced reps, 21s, supersets, running the rack, and so on. The more you shock the calves, the more you subject them to unexpected stimulation, the more calf development you will see as a result.

A young bodybuilder once came over to me while I was doing Standing Calf Raises and told me how much he admired my calf development. "You can have calves just as good," I told him, "if you are willing to pay the price." He looked puzzled and asked me what I meant. "Calves like this will cost you five hundred hours," I said. "Anything less and you won't get the results."

If you analyze that 500-hour figure you get: 500 hours equals more than 660 forty-five minute calf workouts; 660 divided by 4 workouts a week equals about 165 weeks, or over three years! So, unless you are genetically gifted like a Chris Dickerson and were born with magnificent calves, building them up takes a minimum of three years of brutal training.

Even with that effort, calves may not turn out to be your best body part. But I doubt there are many bodybuilders with enough physical talent to build up the rest of their bodies who will not find their calves responding well to the regimen I prescribe.

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## STRETCHING THE CALVES

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To get a full contraction of a muscle, first you have to get a full extension. With the calves this means going all the way down when you do full-range movements, lowering your heels as far as possible before coming up all the way onto your toes to get a contraction.

Tom Platz carries this to the ultimate by having a partner sit on the end of a Seated Calf Raise machine to force his heels lower and lower and stretch his calves to the extreme (something other bodybuilders ought to approach with great caution if they try to copy him). What Tom is doing is using a principle that I discovered for myself many years ago: The longer the range of movement and the fuller the extension and contraction of muscle, the more it will develop. This is especially valuable in calf training, since our normal use of the calf when we walk and run involves mostly the mid-range function.

I like to use a block for Standing Calf Raises just high enough so that my heels touch the floor at the bottom of the movement. This way I know I have lowered my heels enough to get maximum stretch from my calf muscles.

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## BEGINNING PROGRAM

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When you begin to train calves, you will probably not be able to use the amount of weight I have been talking about. The untrained calf muscle is very disproportionate in its “strength curve.” Your calf muscles have carried your body weight throughout your whole life, but you rarely require them to function at the extreme ends of their range of motion—at full extension or full contraction.

Therefore, when you start doing Calf Raises you will probably find you are enormously strong in the mid-range, but very weak at the extremes. So what you have to do the first few months of training is bring up the strength of your calves at full contraction and full extension so that you acquire some balance throughout the strength curve. At this point, you can begin to pile on the weight and develop the entire range of motion of the muscles.

Still, you will find that the mid-range is disproportionately strong—due to mechanical and leverage factors—and this is why I recommend doing partial- as well as full-range movements right from the beginning. In this way, you can use enormous amounts of weight to fully stress the muscle at its strongest angles.

To get you started, I have limited the calf training in the Beginning Program to 4 sets, 15 reps each of Standing Calf Raises 3 times a week. Concentrate on these to begin with and learn to do them correctly:

1. Get a full range of motion, full stretch at the bottom, up on your toes for a full contraction at the top.
2. Use a block high enough so that your heels can drop all the way down.
3. Use a strict movement, keeping your knees straight enough so that you are lifting the weight only with the calves, not by pressing with your legs.
4. Use a “normal” foot position—that is, with your feet pointed straight ahead, so that your entire calf is worked proportionately.
5. Do not rush through your calf training to get to something else, or simply tack on some sets for calves at the end of your workout—work your calves with as much energy and concentration as any other body part.

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## ADVANCED AND COMPETITION PROGRAMS

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For Advanced and Competition Training, I recommend working calves 6 times a week. I have heard theories that this amount of frequency repre-

sents “overtraining,” but when I look at the bodybuilders who have the best calves, I usually find they are the ones who train them more frequently.

In *Advanced Training*, I have included both Donkey Calf Raises and Seated Calf Raises along with the mass-building Standing Calf Raises. The Seated Raises are designed to work the soleus muscle, extending your calf lower toward your ankle, and the Donkey Raises allow you to do strict repetitions against resistance centered at the hips rather than the shoulders.

Donkey Calf Raises create a kind of deep development unlike any other calf exercise. You feel different after Donkeys—not just a pump but the feeling that you have worked the muscle right down to the bone. Another thing I like about this exercise is that the bent-over position increases the amount of stretch you can get, which gives you the longest possible range of motion.

Once you advance to the Competition Program, there will be two new exercises to learn: Front Calf Raises to develop the tibialis anterior, and One-Leg Calf Raises to further isolate the calf muscles of each leg. But beyond the exercises themselves, you’ll begin to work on shaping the entire area of the calves by varying the position of your toes during the exercises.

As I said earlier, most bodybuilders whose calves refuse to grow are simply not training them hard enough or with enough weight. By the time you reach the level of Competition Training, the program will include anywhere from 9 to 15 sets of calf training, and if you do this much work correctly, with the right amount of intensity and the proper amount of weight, your calves will simply be forced to develop and grow. But there is something else you can do to help ensure this response from your calf muscles: Learn to vary your program to continually surprise and stimulate the calves.

In the late 1960s and early 1970s, I began changing my calf training around constantly. I would come into the gym one day and do Donkey Calf Raises, 5 sets of 10; Standing Calf Raises, 5 sets of 10; Seated Calf Raises, 5 sets of 10; Calf Raises on a pressing machine, 5 sets of 10; One-Leg Calf Raises, 5 sets of 10 to bring up my weaker left calf (which measured only 19½ inches, while the other was 20 inches cold). The next training day I might begin with Seated Calf Raises and then do Standing or Donkey Raises afterward, the idea being to force the calves to work in unfamiliar and unexpected ways as often as possible. Sometimes I would do 20 repetitions instead of 10, or do more sets of an exercise than just 5—maybe 40 sets total for calves one day with only 10 sets of full-range movements and the rest partial-range exercises.

In addition, I would employ every one of the Shocking Principles I could, from the Stripping Method to forced reps. I would always stretch after every single exercise, keeping the muscles working all the time and forcing them to work through the longest possible range of motion.

Doing Calf Raises with as much as 1,000 pounds might seem like an

unobtainable goal if you are up to lifting only 450 pounds. But the way to reach that goal, like most other things, is by stages, a little at a time. Try increasing weight at the rate of 50 pounds per month. This gives your tendons and ligaments time to adapt and grown stronger along with your calf muscles.

Another good idea is to choose a weight that is 50 or 100 pounds higher than you can comfortably use in your regular sets and, at the end of your calf workout, try to do just 3 or 4 reps with the increased resistance. This accustoms other parts of your body—like the back, legs, and Achilles tendon—to deal with that amount of weight; but it also trains your mind to cope with the extra weight so that you will not be intimidated by it when you are ready to move up in poundage again.

Sometimes, when you are training calves for the special requirements of competition, you may find that using slightly lighter weight is actually a good idea. Working lighter, with perhaps a few additional sets, and paying extra attention to contracting the muscles through the fullest range of motion can help finish off and fully shape the calves. Ken Waller, who at one time probably had the biggest calves in the world, likes to use heavy weights for Standing Calf Raises, but feels he got much better development by using lighter weights (300 pounds) for Seated Calf Raises. This, of course, is not the way to build calf size in the first place, but it does show how an individual can learn to use what is best for him once he gets up to this level of development.

Advanced Training involves hitting the calves from every angle—toes-in and toes-out foot position as well as the normal standing and seated movements—to develop both the soleus and gastrocnemius, and not neglecting the tibialis anterior at the front of the lower leg.

Give your body every advantage by being careful with technique and wearing shoes that give you strong support. Give your mind every advantage by learning to psych yourself up and increase your motivation—by hanging a photo of a great set of calves on the calf machine, for example.

Another training technique I liked to use in calf training was super-sets. For example, I would begin with a set of Seated Calf Raises, then go immediately to the Leg Press machine and do another set of Calf Raises, both movements working the lower area of the calves. I also occasionally did Staggered Sets—perhaps a set of Chins for the back then a set of Standing Calf Raises. A few back exercises later I would again do another set for calves. So by the time I was finished with the overall workout, I had already done about 8 sets for calves and I could finish off my calf training with a big head start. This is great when you find yourself getting tired of calf training and not giving it all the effort you should.

## WEAK POINT TRAINING

You might find your calves are growing, but not proportionately; certain areas are lagging behind. The answer in calf training is the same as with any other body part—you choose specific exercises to help correct the imbalance:

### LOWER CALVES

Do additional sets of Seated Calf Raises to develop the soleus muscle of the lower calf—that V look in which the muscle descends down to the Achilles tendon.

Bend the knees slightly when doing Standing Calf Raises to bring the lower calves into the movement. This works especially well if you do partial movements at the extreme bottom of the range of motion—your heels almost touching the floor.

### UPPER CALVES

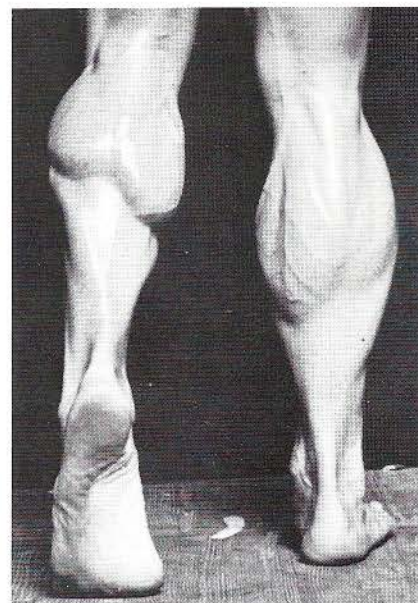
Standing Calf Raises with special emphasis on the top part of the range of motion, especially when you hold yourself in a full contracted position at the top of the movement

### EMPHASIS ON THE INSIDE OF THE CALVES

Do sets of every one of the calf exercises with toes turned outward.

### EMPHASIS ON THE OUTSIDE OF THE CALVES

Calf Raises with toes turned inward



*Ken Waller's calves are superior to many other top bodybuilders' because he has such good lower calf development. The gastrocnemius, which underlies the more defined soleus muscle, is full and pronounced all the way down to the ankle.*



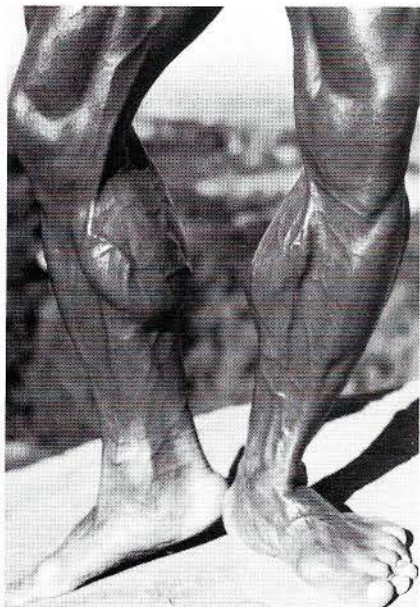
*For calves like mine you have to be willing to pay the price: at least 500 hours of intense, concentrated, and sometimes painful calf training.*

### ONE CALF TOO SMALL

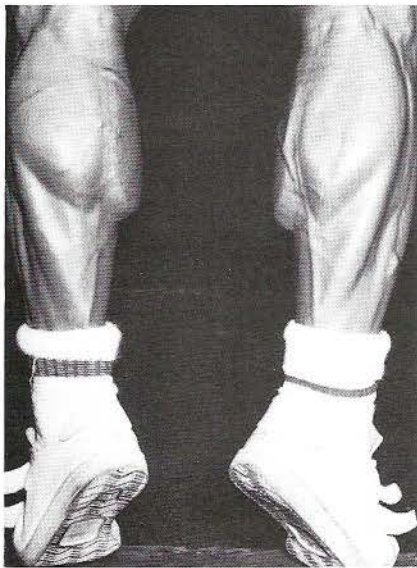
Add on two extra sets of One-Leg Calf Raises for the smaller calf. Your two sets could be Standing Calf Raises on one leg while holding a dumbbell in your hand, and to bring up the lower calf, Seated Calf Raises performed one-legged. In fact, most calf exercises can be adapted to a one-leg movement. Just be sure to use enough weight to really stimulate the muscle you want to bring up.

### FRONT OF THE CALVES

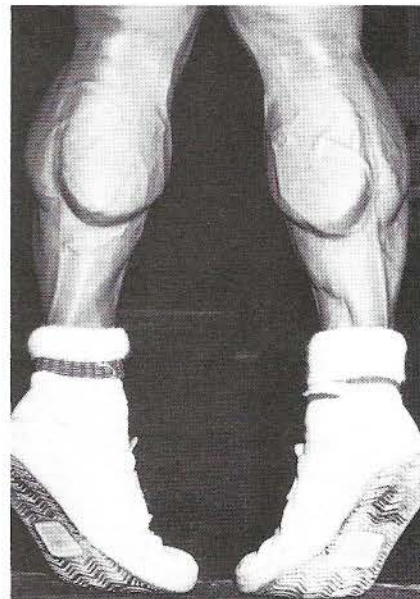
Developing the tibialis anterior creates a split that makes your calves look extra wide from the front. Doing Front Calf Raises can make the calves look an inch bigger. This exercise helps to separate the outside from the inside and creates a wide look that sheer calf size alone cannot accomplish. Therefore, this muscle needs the same attention that the others get—a full 4 sets of intense training and plenty of stretching.



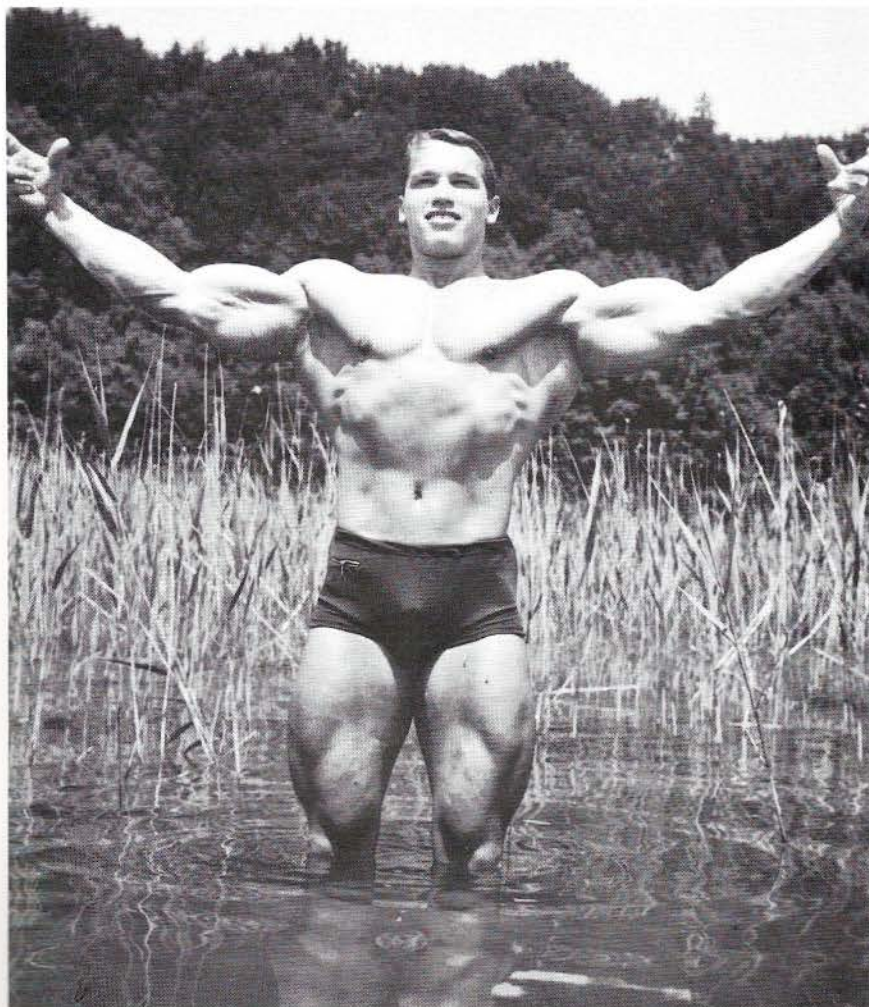
*Chris Dickerson's calves are so remarkable that they look big even when viewed from the front.*



*The toes-out position helps to develop the inside of the calf muscles.*



*The toes-in position is used to add emphasis to the outside of the calf muscles.*



*In the beginning my calves were a real weak point, so I did most of my early posing shots with my calves in the water!*

One reason that bodybuilders with weak calves tend not to develop them is that they can cover them up in the gym by wearing long pants, so they can forget about them. I used to do this myself, but once I realized my mistake I began to make really fantastic progress in calf training.

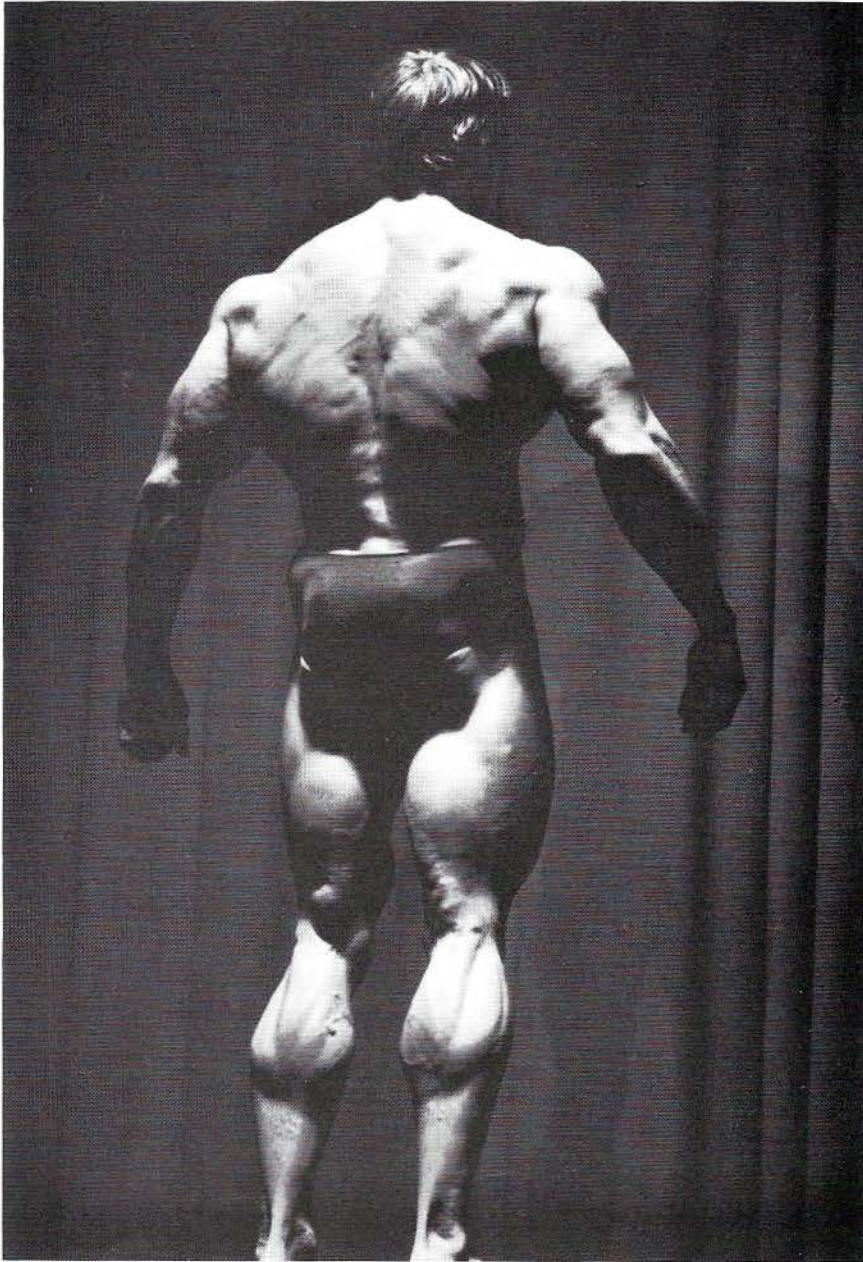
When I was young and growing fast, getting up to 230 and then 240 pounds, I was very proud of my flaring back and powerful arms. So I loved to train wearing a tank top or no shirt at all. I would see the reflection of my muscles in the mirror and this would inspire me to train even harder so as to build greater and greater mass and quality. But one day it occurred to me that I wasn't treating the calves as seriously as the other muscles. So I made up my mind to rectify this situation.

The first thing I did was to cut off the bottoms of my training pants. Now my calves were exposed for me and everyone else to see. If they were underdeveloped—and they were—there was no hiding the fact. And the only way I could change the situation was to train my calves so hard and so intensely that the back of my legs would come to resemble huge boulders.

At first, this was embarrassing. The other bodybuilders in the gym could see my weakness and they constantly made comments. But the plan eventually paid off. No longer able to ignore my calves, I was determined to build them into one of my best body parts. Psychologically, it was a brutal way to accomplish this, but it worked, and that is what I really cared about. Within one year my calves grew tremendously, and the comments I got in the gym were complimentary rather than critical.

If calves are your problem, use the Priority Principle to really attack them. Put calf training first in your workout, when your psychological and physical energy is at the highest. Another thing you can do is work on your calves even when you aren't in the gym. For example, when you are walking, make an effort to go all the way up onto your toes to make the calves work through a longer range of motion. If you are on a beach, do the same thing in the sand. After a half hour of walking in the sand, digging in with your toes, you will feel a fantastic burn in your calf muscles.





*This photo is a great example of how effective using the Priority Principle and zeroing in on your weak points can be. When I stepped onstage at a competition two years after I first began trying so hard to bring up my calves, and I turned my back to the audience, my calves were so huge that I got an ovation even before I flexed them.*

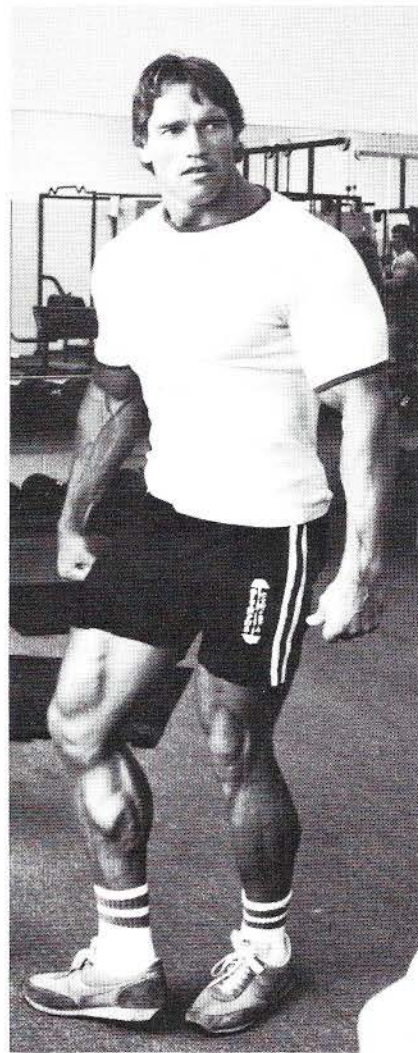
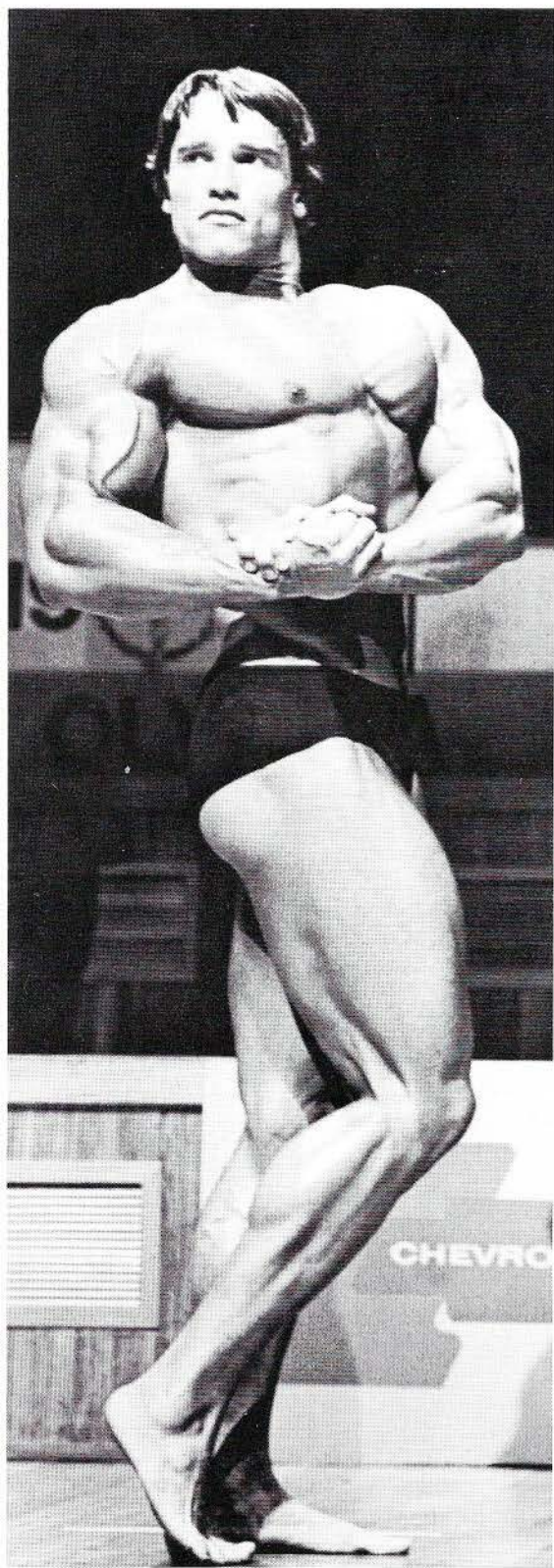
## POSING THE CALVES

In every pose you do onstage, you need to flex the calves. Bodybuilders usually learn to pose from the ground up—set the feet, flex the calves and legs, then the upper body. But most bodybuilders don't spend time learning to flex and pose the calves by themselves. The ability to do this comes in handy when you are standing relaxed in round one and you want to hit your calves, fanning them out to impress the judges.

To learn to do this, I recommend posing and flexing the calves be-

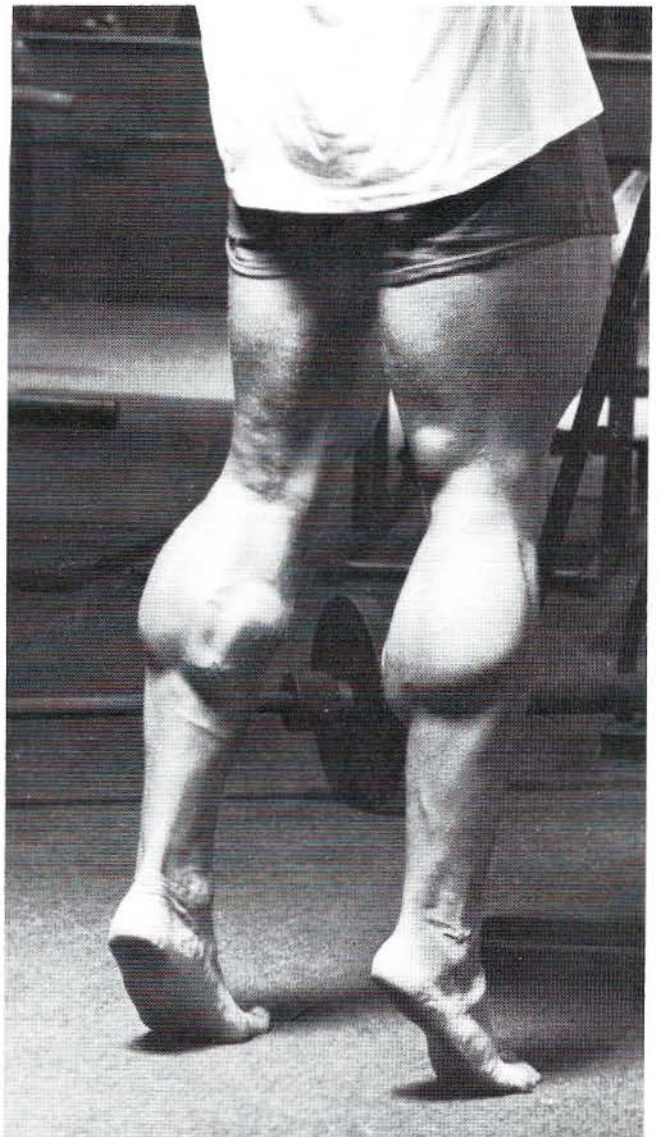
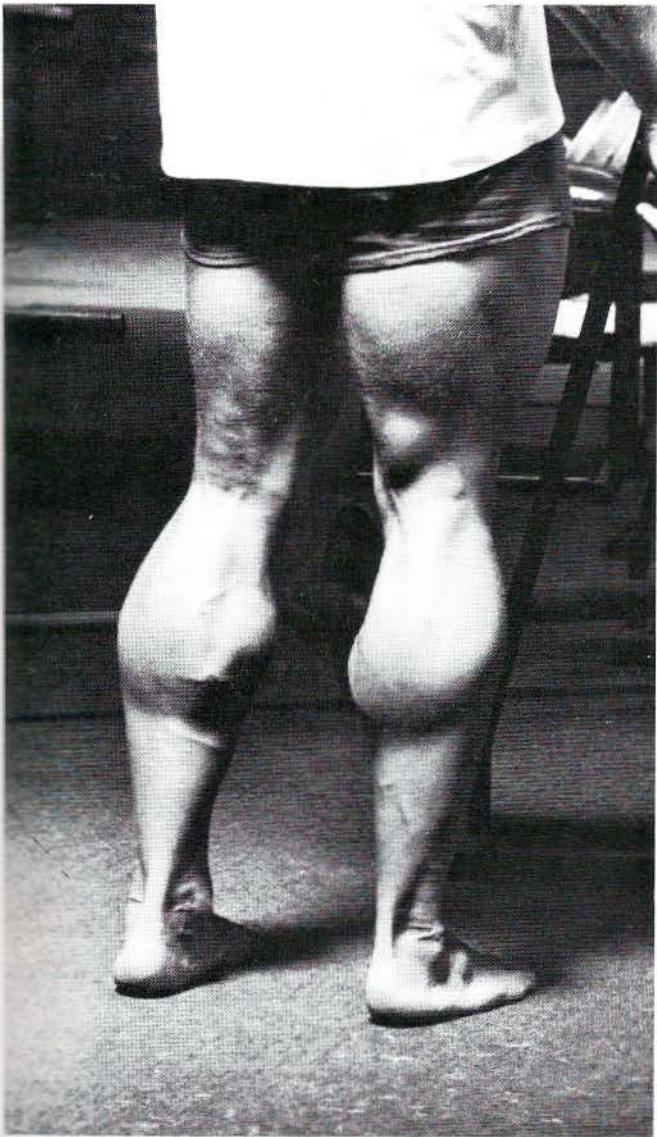
*Even when you are doing side poses, calf development plays an important part. When you are doing a side chest shot, for instance, and concentrating on your upper body, a good judge will also take your calves into consideration.*

*You can create a stronger visual impression if you can keep your calves flexed while "standing relaxed" in the first round of competition. But you must practice flexing or you will lack the endurance to stand this way for more than a few minutes. I've seen a lot of competitors develop leg cramps because they failed to work hard enough at this.*



tween each set of calf training, developing the connection between the mind and muscle so that you gain absolute control over how the calf looks. This also makes the muscle harder and more developed, since the flexing is itself a kind of isometric exercise.

Remember, you will want to be able to show off your calf muscles in poses in which your feet are flat on the floor as well as when you are up on your toes, so you should practice flexing in order to get the kind of muscle control you need to accomplish this. While leaning against a machine or a wall, go up on your toes as far as possible, to get maximum contraction of the calf muscle.



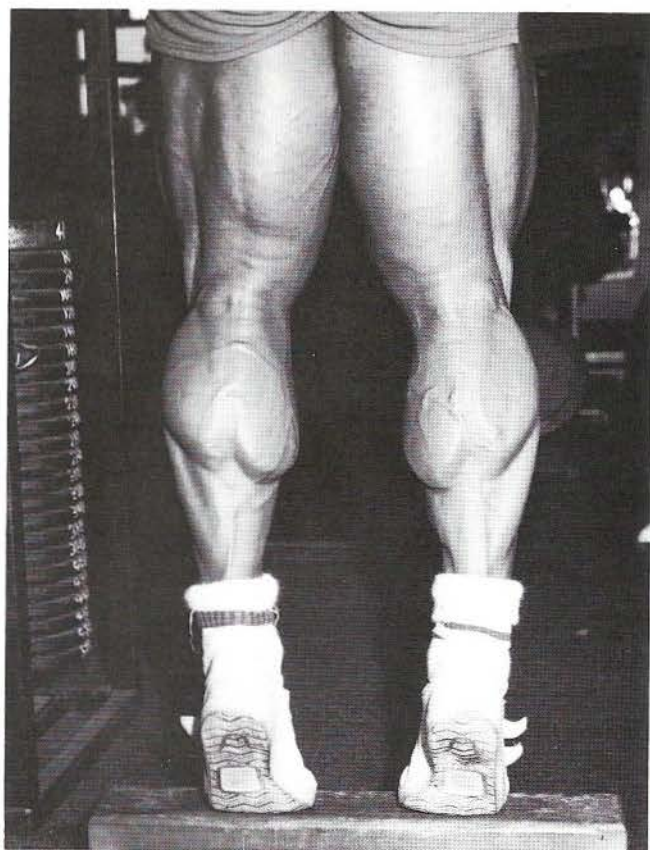
## Calf Exercises

### STANDING CALF RAISES

**PURPOSE OF EXERCISE:** To develop the overall mass of the calves.

**EXECUTION:** (1) Stand with your toes on the block of a standing Calf Raise machine, your heels extended out into space. Hook your shoulders under the pads and straighten your legs, lifting the weight clear of the support. Lower your heels as far as possible toward the floor, keeping your knees slightly bent throughout the movement in order to work the lower area of the calves as well as the upper, and feeling the calf muscles stretch to the maximum. I like a block that is high enough so that I get a full stretch when I lower my heels. (2) From the bottom of the movement, come up on your toes as far as possible. The weight should be heavy enough to exercise the calves, but not so heavy that you cannot come all the way up for most of your repetitions.

When you are too tired to do complete repetitions, finish off the set with a series of partial movements to increase the intensity of the exercise.



*Here's what happened one time when I couldn't load up enough weight on the Standing Calf Raise, though I wouldn't recommend it for you.*

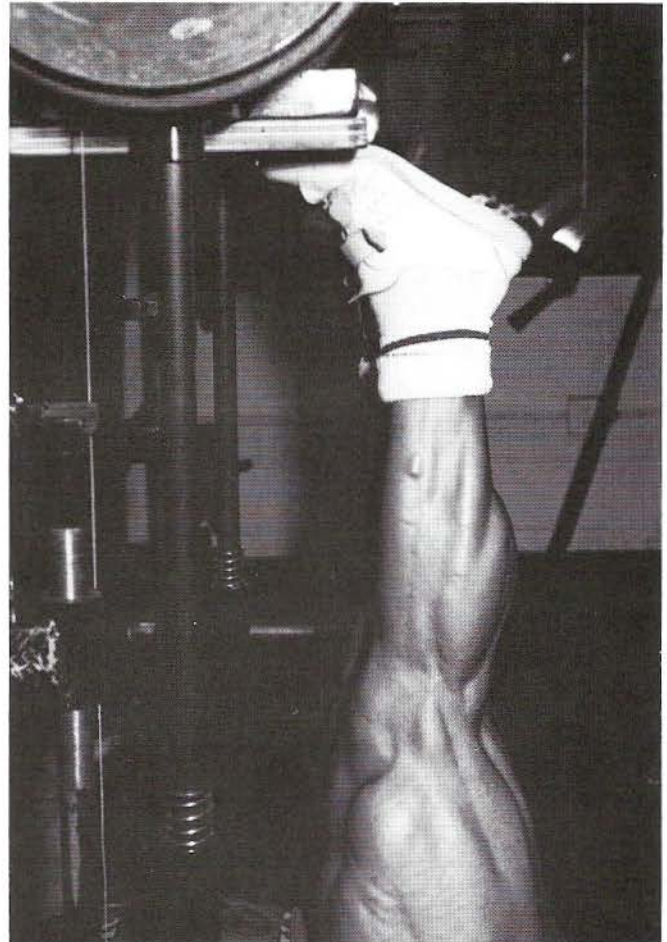
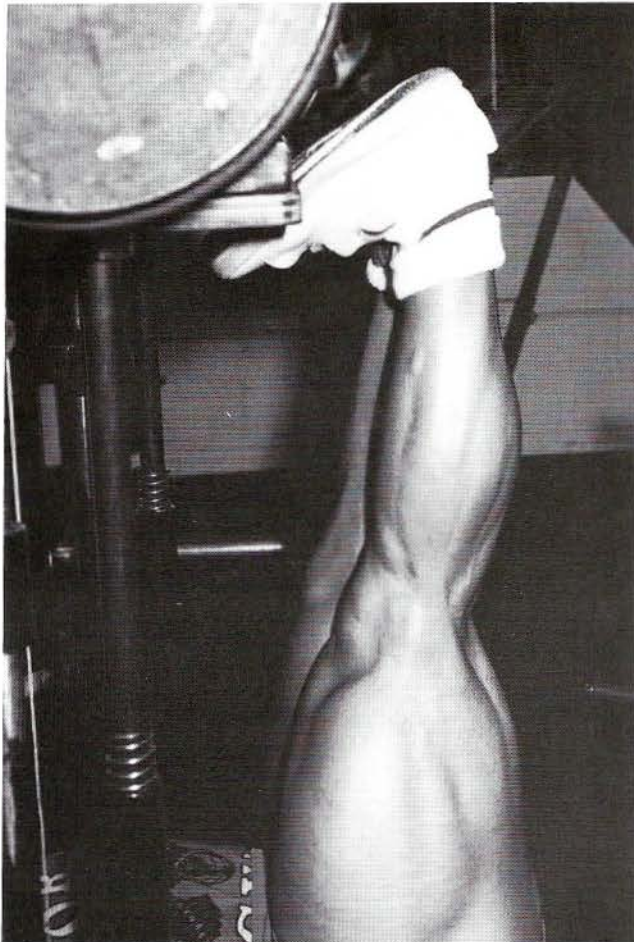


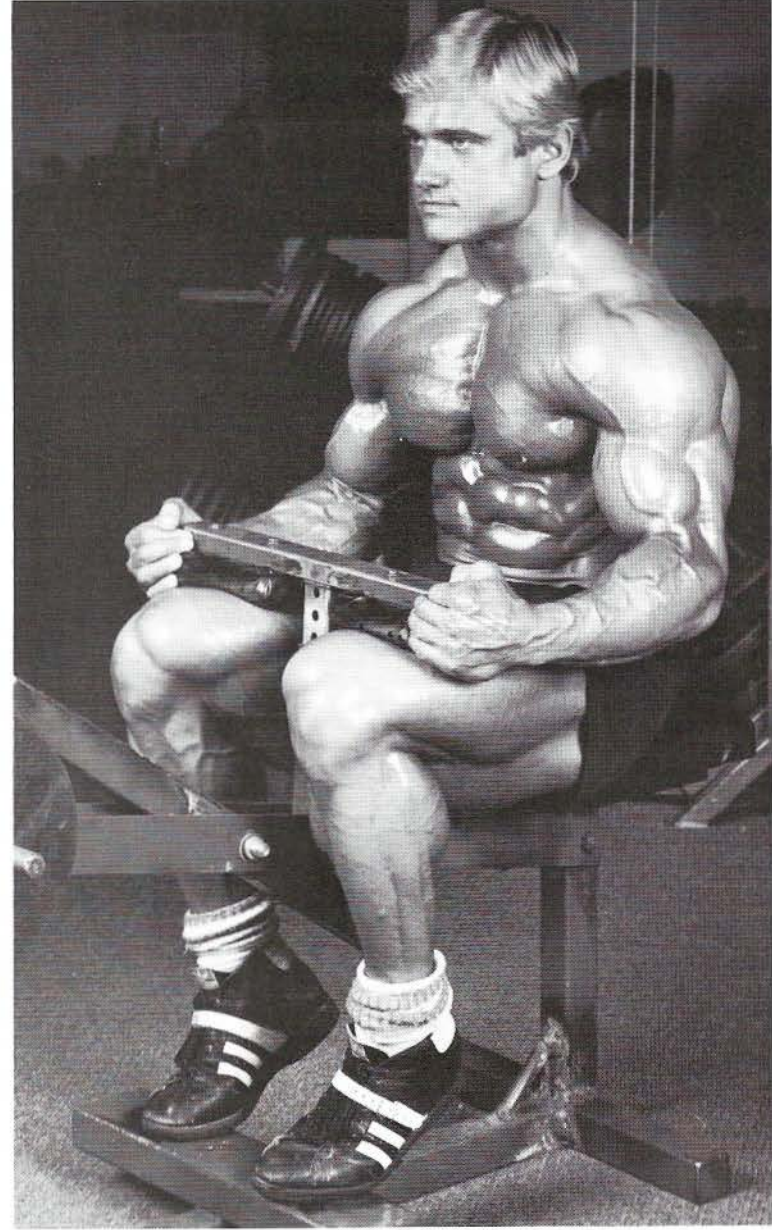
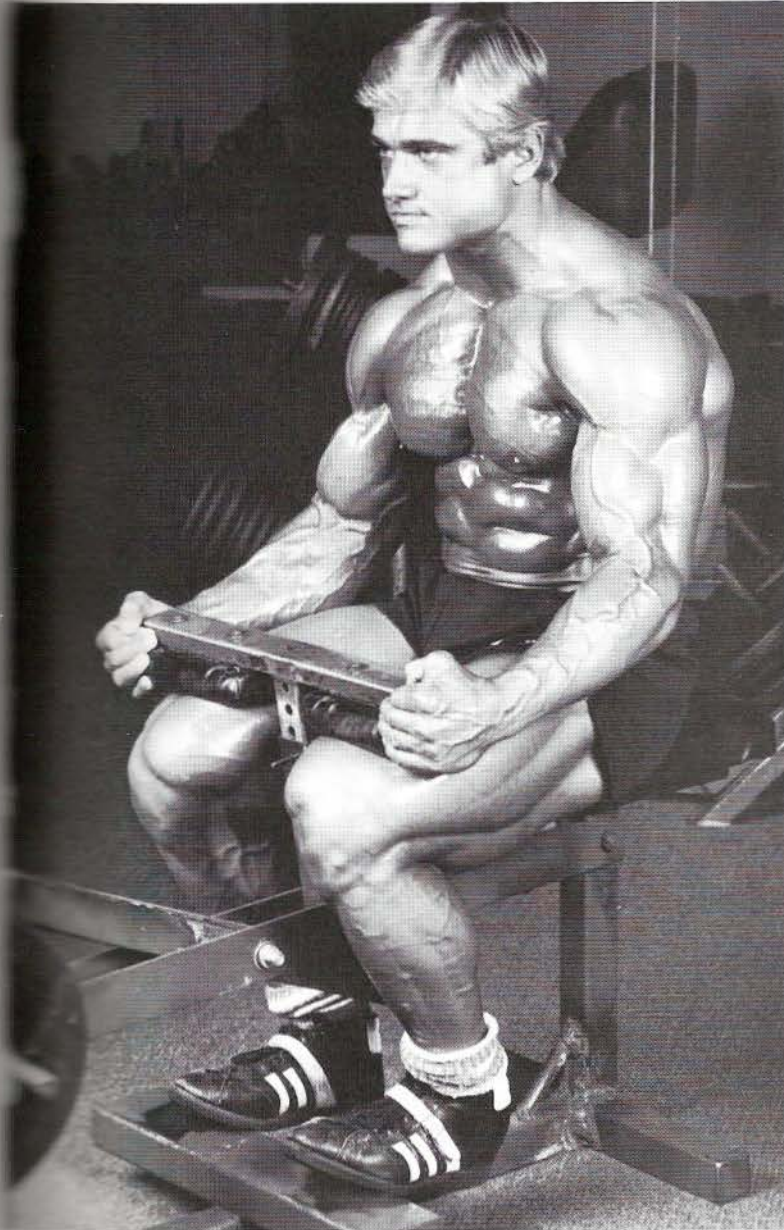
*The normal position, with toes straight ahead, is best for overall calf development.*

## CALF RAISES ON LEG PRESS MACHINE

PURPOSE OF EXERCISE: To develop the calves.

EXECUTION: (1) Using one of the various types of Leg Press machines (I prefer the Vertical Leg Press for Calf Raises), position yourself as if to do a Leg Press, but push against the foot pads only with your toes, leaving your heels unsupported. Straighten your legs and press the weight up until your knees are almost locked out. With your knees just slightly bent, keep your heels pressed upward but let your toes come back toward you, feeling the fullest possible stretch in the calf muscles. (2) When you can't stretch any farther, press the weight upward with your toes as far as you possibly can to fully contract your calf muscles. You can't cheat at all when you do Calf Raises on a machine. Lying with your back braced against the pad, you can totally isolate the calves to give them a really intense workout. Make sure the safety bars are in place in case your toes slip.



*Tom Platz*

## SEATED CALF RAISES

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**PURPOSE OF EXERCISE:** To develop the lower and outer areas of the calves.

**EXECUTION:** (1) Sit on the machine and place your toes on the bottom crosspiece, hooking your knees under the crossbar. Slowly lower your heels as far toward the ground as possible, (2) then press back up on your toes until your calves are fully contracted. Try not to rock back and forth too much, but keep the calves working with a steady, rhythmic motion.



## DONKEY CALF RAISES

**PURPOSE OF EXERCISE:** To develop the thickness of the back of the calves.

Donkey Calf Raises are one of my favorite exercises, and really make your calves look huge when viewed from the side.

**EXECUTION:** (1) Place your toes on a block, bend forward from the waist, and lean on a bench or a table for support or use a Donkey Calf machine. Your toes should be directly below your hips. Have a training partner add resistance by seating himself across your hips, as far back as possible to keep pressure off the lower back. (2) With your toes pointed straight ahead, lower your heels as far as possible, then come back up on your toes until your calves are fully contracted. If you try to cheat on this movement you end up bouncing your training partner around, so have him call this to your attention if it happens.

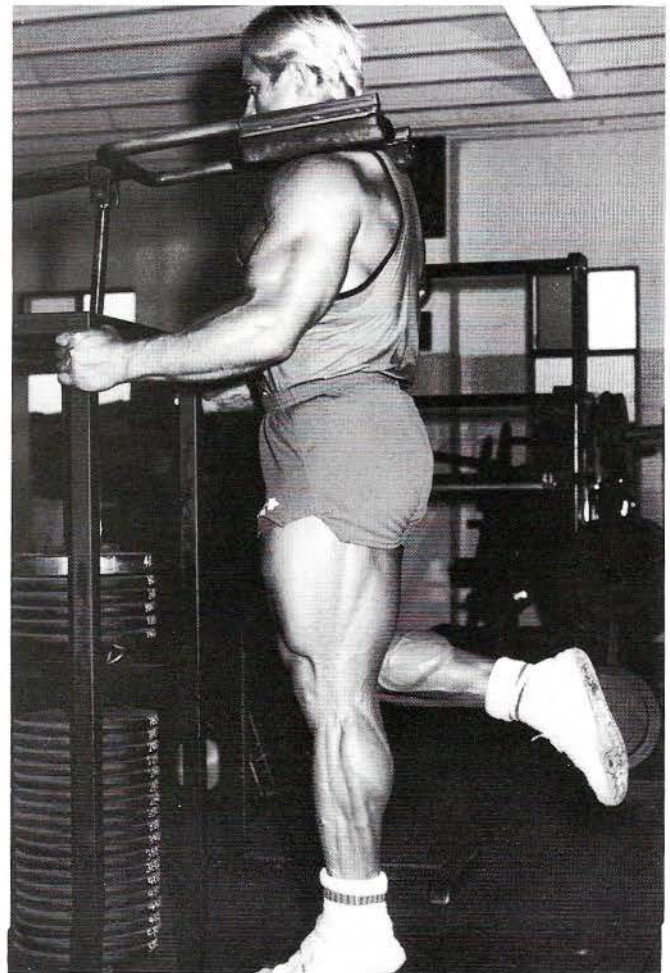
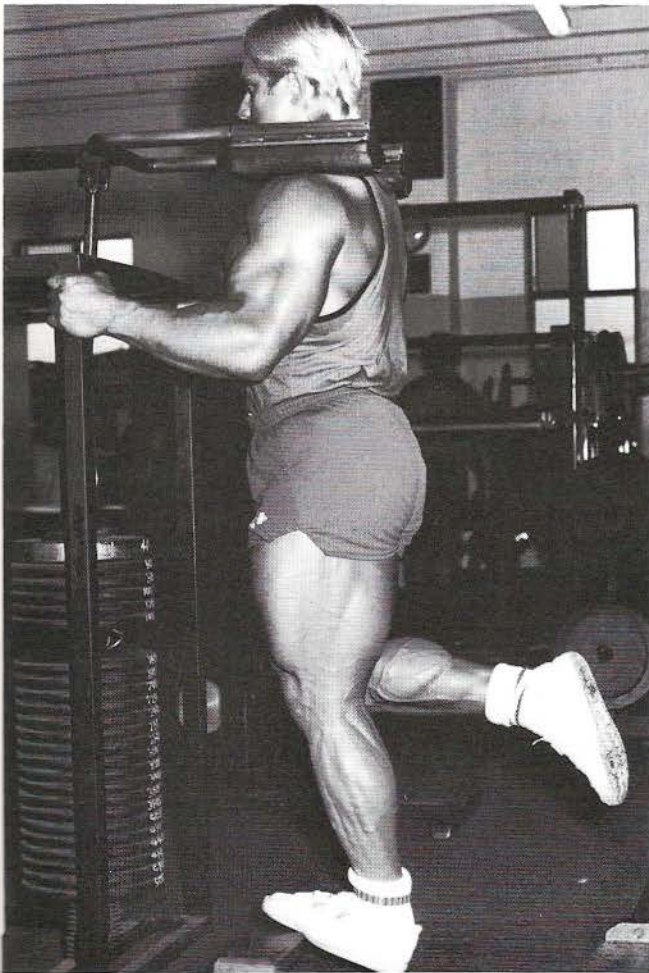
You can use a variation of the Stripping Method doing Donkey Calf Raises. I would frequently start with as many as three men on my back. As I got tired, I would do a few sets with just two guys, then finish off with just one. Talk about getting a burn!

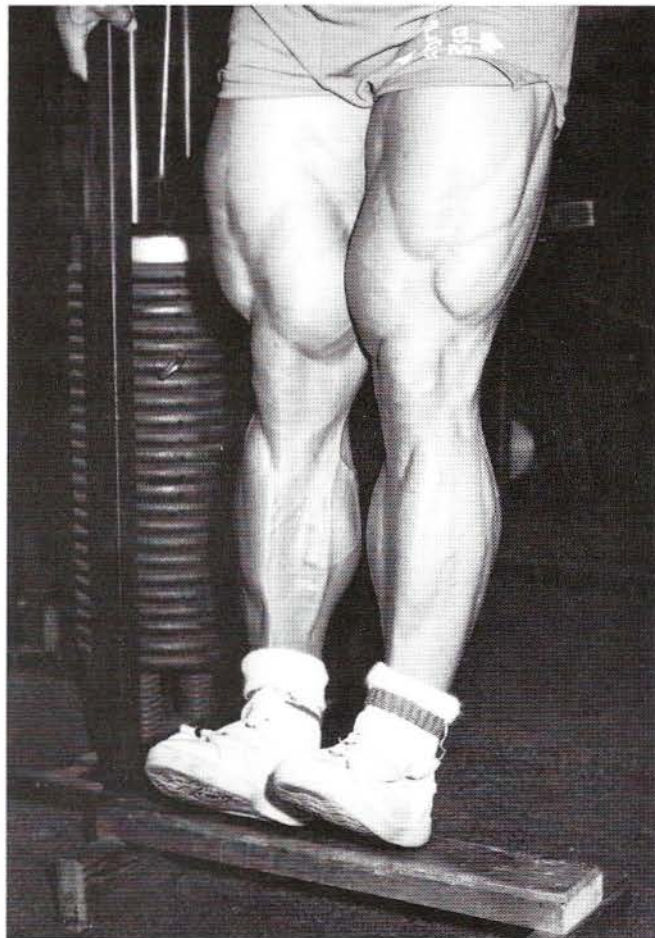
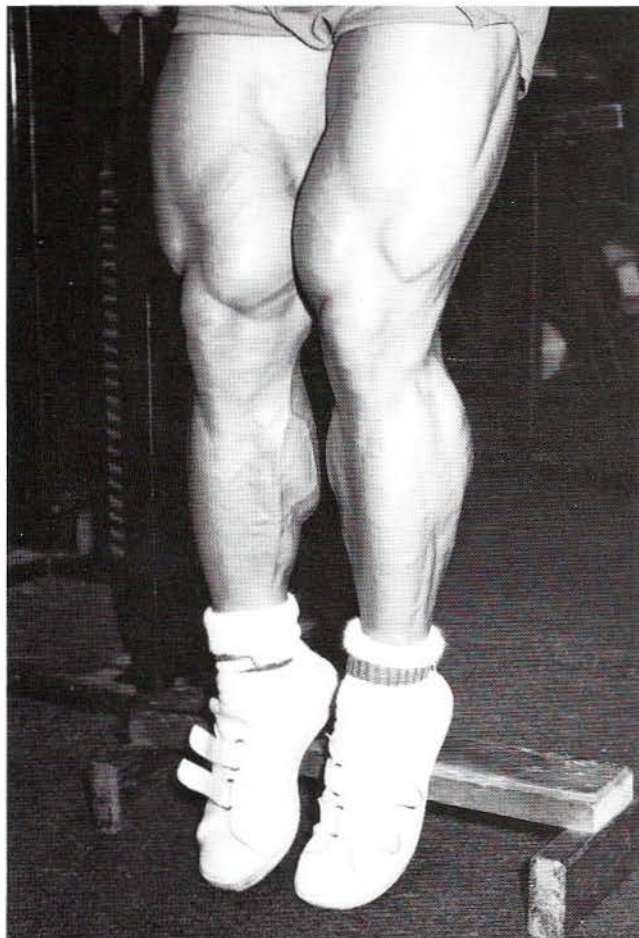


## ONE-LEG CALF RAISES

**PURPOSE OF EXERCISE:** To isolate each set of calf muscles. Doing Calf Raises one leg at a time is essential when one calf is larger than the other and you need to bring up the size of the smaller one.

**EXECUTION:** (1) Stand with the toes of one leg on a block and the other leg suspended in midair behind you. Lower your heel as far as you can, (2) then come back up on your toes. Finish your set, then repeat with the other leg. If one of your calves is smaller or weaker than the other, give it some extra sets to help achieve the necessary symmetry. One-Leg Calf Raises can also be done on a Leg Press machine.





## REVERSE CALF RAISES

**PURPOSE OF EXERCISE:** To develop the front of the lower leg. Many bodybuilders with good calves forget about developing the muscles at the front of the lower leg, primarily the tibialis anterior, which separates the inside calf from the outside calf and makes the leg seem much bigger.

**EXECUTION:** (1) Stand with your heels on a block, lower your toes as far as you can, (2) then lift them up, feeling the muscles at the front of the lower leg contract as fully as possible. Do about 20 or 30 repetitions with your own body weight. As a variation, you can hook your toes under a light weight to provide extra resistance.

# The Abdomen

## THE MUSCLES OF THE ABDOMEN

The **rectus abdominis**, a long muscle extending along the length of the ventral aspect of the abdomen. It originates in the area of the pubis and inserts into the cartilage of the fifth, sixth, and seventh ribs.

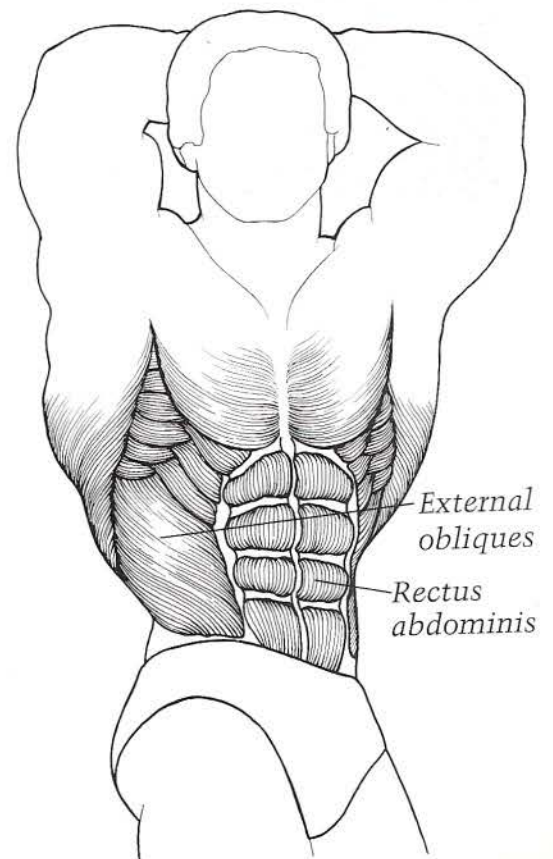
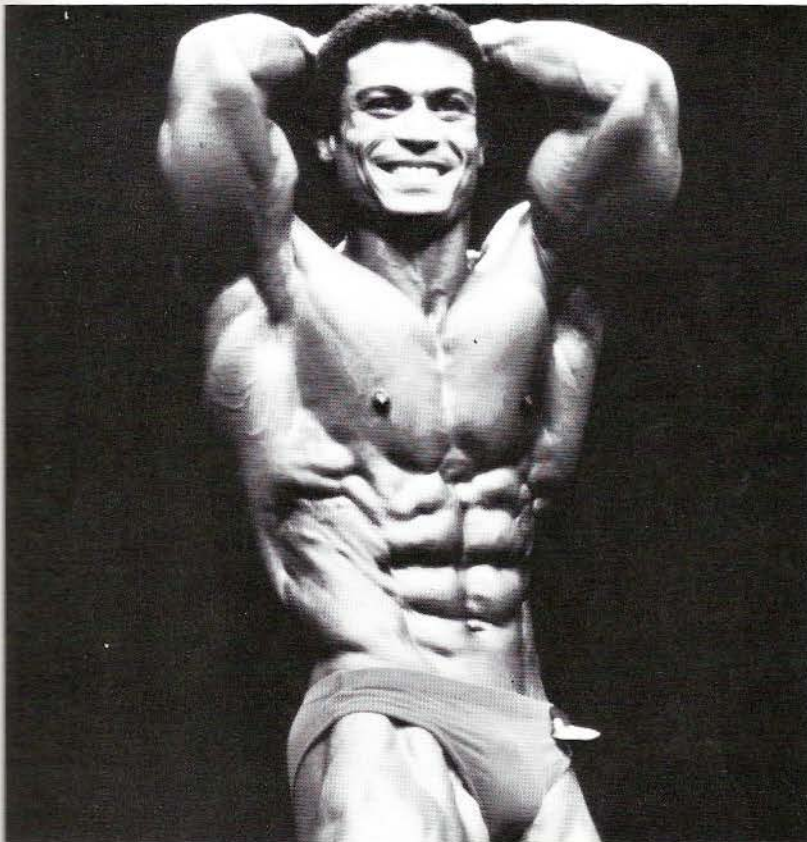
**BASIC FUNCTION:** To flex the spinal column and to draw the sternum toward the pelvis

The **external obliques** (obliquus externus abdominis), muscles at each side of the torso attached to the lower eight ribs and inserting at the side of the pelvis

**BASIC FUNCTION:** To flex and rotate the spinal column

The **intercostals**, two thin planes of muscular and tendon fibers occupying the spaces between the ribs

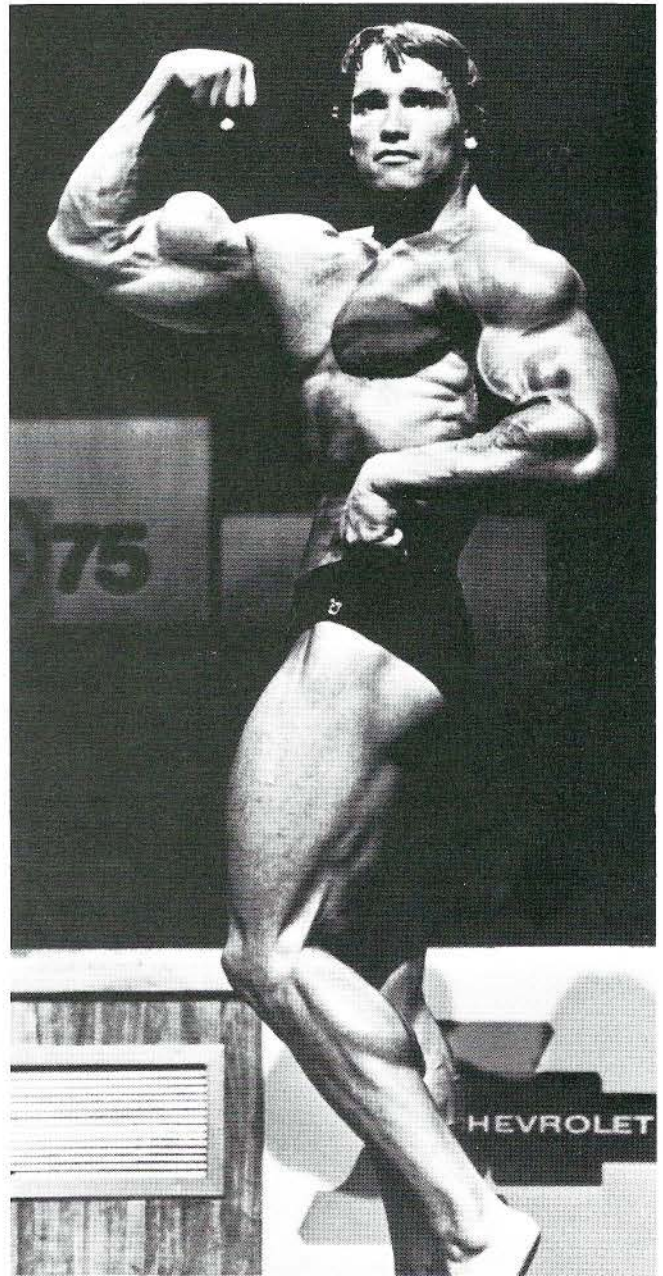
**BASIC FUNCTION:** To lift the ribs and draw them together



*Mohamed Makkawy*



*Mike Francois, Flex Wheeler, and Chris Cormier demonstrate the IFBB mandatory abdominal pose: hands behind the head, abs flexed, and one leg extended.*



*Well-defined abdominals are important, but so is having a small waist, which makes poses like this twist biceps shot so much more effective.*

## TRAINING THE ABDOMINALS

Strong abdominals are essential to maximizing performance in almost all sports. In bodybuilding, the abdominals play an extremely important role when it comes to the visible impression your physique makes on an observer. The abs are, in fact, the *visual* center of the body. If you superimpose an X on the body with the terminal points being the shoulders and the feet, the two lines cross at the abdominals, and this is where the eyes are inevitably drawn. Men carry a disproportionate number of fat cells in the abdominal area compared to women (who can often be relatively fat and still have abs showing), so well-defined abs are one sign of being in top condition—lean, hard, and strong.

A bodybuilder is likely to score points in a contest if he has wide shoulders and flaring lats that taper down to a firm, narrow waist. A small waist

*In a posedown, when you can hit any shot you want, it makes sense not to try to hit the same pose as other competitors who have advantages as a result of superior development of certain body parts or greater mass. (Nasser El Sonbaty, Vince Taylor, Milos Sarcev, and John Sherman)*



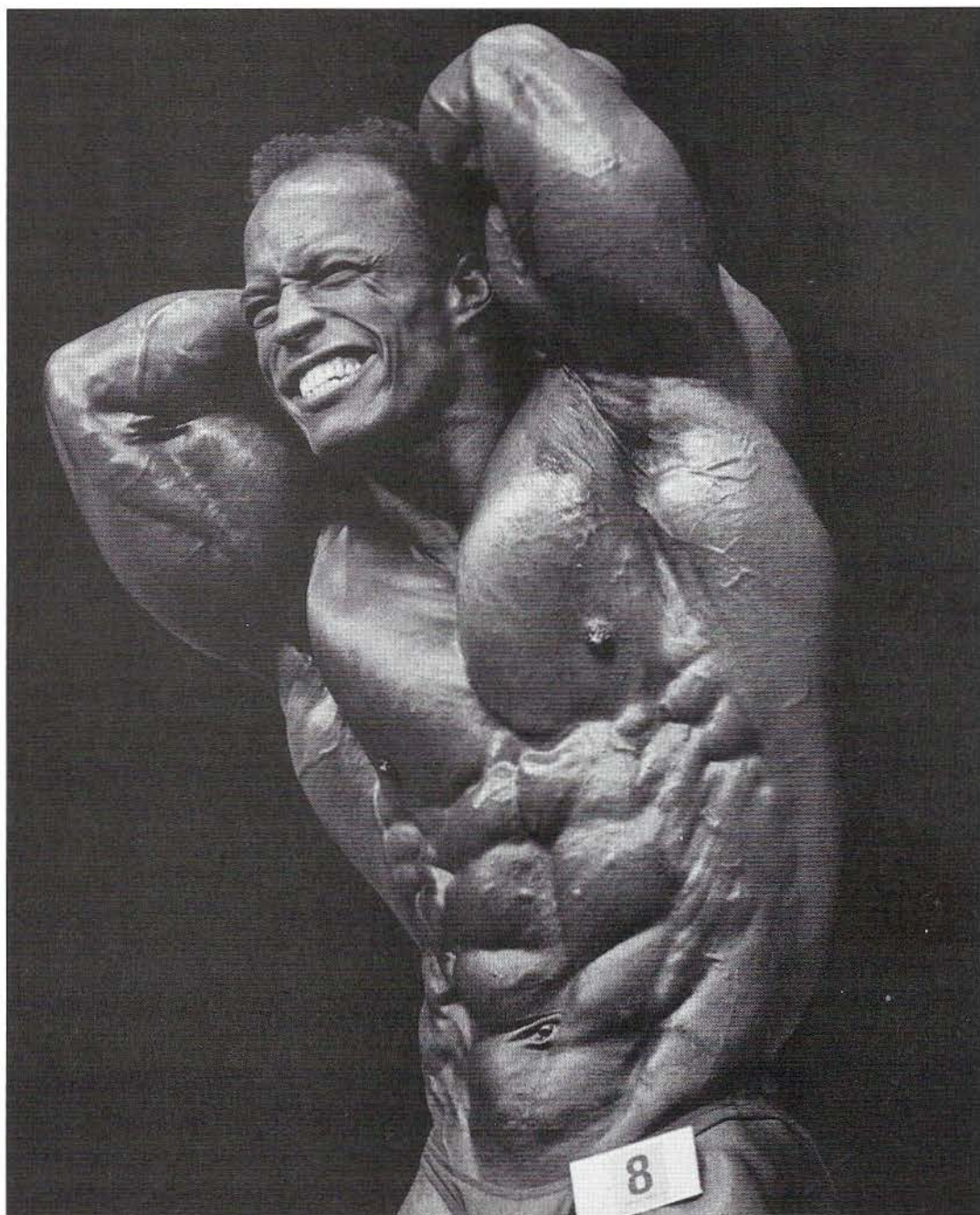
tends to make both your chest and your thighs appear larger, more impressive, and more aesthetic.

The traditional V-shaped torso is as important as sheer mass when it comes to creating a quality, championship physique. I have often seen contests in which good bodybuilders came in a few pounds overweight in order to appear bigger but found the extra weight they were carrying at the waist spoiled the visual effect. When I got into bodybuilding, there were a few bodybuilders who made up for lack of overall size by the outstanding development of their abs—competitors like Pierre Vandenstein and Vince Gironda, for example. But in modern bodybuilding *every* would-be champion, no matter his body type, has to have well-developed abs in order to be competitive, from the really massive bodybuilders (Dorian Yates, Nasser El Sonbaty, Paul Dillett) to mid-size (Flex Wheeler) to smaller (Shawn Ray) to short (Lee Priest).

If my waist had been small and hard, and with defined abs and obliques, when I came to compete in the United States in 1968, I might not have finished second to Frank Zane. But along the same lines, if Frank had gone to the 1982 Olympia in London in the kind of shape he achieved in 1979 when he beat Mike Mentzer for that title, he might well have defeated Chris Dickerson instead of having to settle for second. Frank had actually gained mass for this competition, but in doing so appeared on-

*The posedown at the 1980 Mr. Olympia contest demonstrates very clearly that top bodybuilders have to have great abs to stay in competition. As the biggest man, it was essential for me to have abs that would stand up to the likes of Mike Mentzer, Frank Zane, and Chris Dickerson.*



*Shawn Ray*

stage without the washboard abs that make him at his best so tremendously impressive. Lack of abdominal development, or failure to display the abs properly, can be very costly in competition. Boyer Coe had great success in competition in the 1960s and 1970s, but he was one of the few top bodybuilders who couldn't boast of a well-developed "six-pack." Boyer's lack of ab development was genetic and not due to incorrect or lax training. But the sport has become so competitive that there is no longer any such thing as a champion bodybuilder without excellent abs at almost any level of competition.



*When Bill Pearl won his first contests in the early 1950s, outstanding abdominal development was not considered essential. However, by the time he had won his NABBA Mr. Universe titles, even though his body weight had actually increased, Pearl's abdominals were fantastic.*

Nowadays, the bigger men in the sport often have problems because their abdominals have become *too massive*, and they get too thick in the middle and at the sides of their torso. Often this happens as the result of doing very heavy exercises like Squats, for example, that call for a lot of involvement on the part of the abdominals and the obliques as stabilizers. Because of this, you almost never see these bodybuilders using weights to train their abs or their obliques. But the fact that you put so much stress on the muscles of the waist whenever you train heavy means that no bodybuilder—even the smaller ones—needs to train abs using any kind of extra resistance (though many will just before a contest). Of course, there are some abdominal exercises that involve more effort because more of your body weight is involved and we'll discuss those in detail.

## SPOT REDUCTION

Since most of the top bodybuilders today, regardless of stature, are massively developed for their body size, the most important goal of abdominal training has become *definition*. This involves two things—training and developing the abdominals and reducing body fat sufficiently to reveal the musculature underneath.

When I got into bodybuilding most competitors believed in something called spot reduction, and there are a lot of people who still think this is possible. Spot reduction refers to training a specific muscle in order to burn off fat in that particular area. According to this idea, to develop abdominal definition, you do a lot of ab training, lots of high reps, and burn away the fat that is obscuring the development of the abdominal muscles.

Unfortunately, this doesn't work. When the body is in caloric deficit and begins metabolizing fat for energy, it doesn't go to an area where the muscles are doing a lot of work in order to get additional energy resources. The body has a genetically programmed pattern by which it determines from what adipose cells to access stored fat energy. Exercise does burn calories, of course, but the abdominals are such relatively small muscles that no matter how much ab training you do you won't metabolize nearly the energy you would by simply going for a walk for the same amount of time.

But this is not to say that training a given area like the abs doesn't increase definition. As I said, the abdominals get a hard workout when you do heavy exercises, but what they don't get is *quality training*—that is, isolation, full-range-of-movement exercises. Movements that do this bring out the full shape and separation of the abdominals instead of just making them bigger. So although training the abs like this doesn't do a lot to reduce the fat around the waistline, it does create very well defined muscles that are revealed once you are able to reduce your body fat sufficiently by means of diet and aerobic exercise.



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## AB-SPECIFIC EXERCISES

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When the abdominal muscles contract, a very simple thing happens: They pull the rib cage and the pelvis toward each other in a short, “crunching” motion. No matter what kind of abdominal exercise you do, if it is *really* a primary ab movement this is what happens. In the past, before the physiology of abdominal training was well understood, bodybuilders used to do a lot of “conventional” abdominal exercises such as Sit-Ups and Leg Raises. Unfortunately, those are not primary abdominal exercises but instead work the iliopsoas muscles—the hip flexors. The hip flexors arise from the lower back, go across the top of the pelvis, and attach to the upper thigh. When you raise your leg, you use the hip flexors. When you hook your feet under a support and lift your torso up in a conventional Sit-Up, you are also using the iliopsoas muscles.

Try this experiment: Stand up, hold on to something for support, and lift one leg up in front of you while putting one hand on your abdominals. You’ll feel a pull at the top of the thigh but it will also be obvious that the abdominals are not involved in lifting the leg. The abdominals attach to the pelvis, not the leg, so they have nothing to do with raising the leg up in the air.

The same thing is true of a Sit-Up or Slant-Board Sit-Up. This exercise is really the reverse of a Leg Raise. Instead of keeping the torso steady and lifting the leg, you are keeping the legs steady and lifting the torso—and the same muscles are being used, the hip flexors. When you do any of these exercises, the primary role of the abdominals is as *stabilizers*. They keep the torso locked and steady. But this is directly opposite of what you want to achieve in your ab-specific training because the role of the abs, as I have pointed out, is simply to *draw the rib cage and pelvis together*—to crunch them together in a very short movement which involves the back curling forward. The back doesn’t bend much doing a Sit-Up, while it curls a lot doing a Crunch. That is the secret to full-range, quality isolation training of the abdominals.

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## ALL KINDS OF CRUNCHES

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All ab-specific exercises are some kind of crunch. You can crunch your rib cage down toward your pelvis (the Crunch), your pelvis up toward your rib cage (Reverse Crunch), and the rib cage and pelvis toward each other (Leg Tucks). You can do Reverse Crunches on a flat bench, a decline bench, or hanging from a bar. But in all of these cases, the same fundamentals of exercise physiology hold true: The abs are contracting full range (through their limited range of motion), the pelvis and rib cage are coming together, and the spine is rounding forward during the movement.

## OBLIQUE EXERCISES

The obliques, located at the side of the torso, are primarily stabilizers. There aren't a lot of movements you do in the gym or in daily life that call for a lot of bending from side to side. Therefore, the obliques (like the stabilizer muscles of the lower back) tire fairly quickly from a lot of full-range repetitions and are relatively slow to recover.

There was a time when bodybuilders did a lot of oblique exercises, some of them using substantial amounts of weight. You rarely see successful bodybuilders doing those exercises today because the obliques, like any other muscle, get bigger when you train them with weight, and massive obliques tend to make the waist thicker and take away from the aesthetics of an outstanding V taper.

Of course, the obliques get an isometric workout whenever you do heavy training such as Squats or Shoulder Presses, but since they are only acting as stabilizers and not working through a full range of motion these exercises usually don't cause them to grow to the degree that you'd get from doing Side Bends, for example, holding on to heavy dumbbells. So bodybuilders who train obliques at all tend to stick to nonresistance movements, such as Twists or Side Bends, using no weight, which tighten the muscles without causing them to become too big.

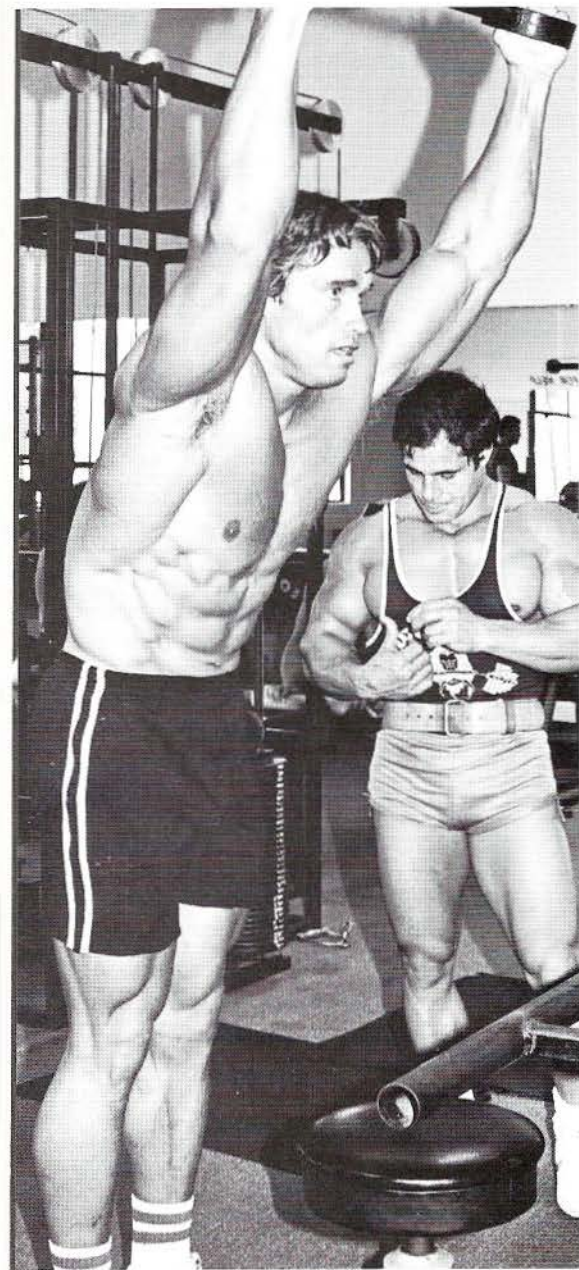
## SERRATUS AND INTERCOSTALS

These muscles, located at the side of the upper torso, are crowd pleasers as the abdominals are. When you do a pose such as the Arms Overhead Abdominals and Thighs, and work the torso side to side to show definition in this area, it can really add to the impression you make on the judges.

Again, these muscles are worked with a kind of crunching movement, only this involves squeezing the shoulder and elbow down and in, and bending the torso to the side. Try this and you'll see how easy it is to feel the muscles flexing in this area. These are also muscles that become developed as a result of your overall training program, but you can do specific definition training for serratus and intercostals by adding a twist to various Crunches as you perform them.

## BEGINNING PROGRAM

Many bodybuilders who are just starting out get excited about training the chest and arms and tend to ignore the abdominals. Then, later, when they begin to think about competition, they find they have to go on extreme abdominal programs in order to try to catch up in this area. So I recommend



*This photograph was taken just a week before the 1980 Mr. Olympia contest; you can see how prominent and well defined my abdominal muscles were.*

training abs right from the beginning, just as you do other body parts. This way, they will develop along with the rest of the body and you will never be forced to play catch-up.

I recommend training abs in every workout. In the Beginning Program, I recommend alternating each day between 5 sets of Crunches and 5 sets of Reverse Crunches. Both exercises work the abdominals as a whole, but the Crunches tend to work the upper abdominals to a greater degree, while the Reverse Crunches put a greater amount of stress on the lower area.

Another practice I recommend for beginners is to start immediately working on your stomach “vacuum”—simply blow out all your breath, suck in your stomach as far as possible, then try to hold this for 15 or 20 seconds.

Holding in your stomach and tensing your abs as you go about your daily business is also a good way of firming and strengthening them and making yourself more conscious of how to control this important area of the body. You should begin to notice right away whether your abs are likely to be a weak point in your physique so that you can take appropriate action when you move on to Advanced Training.

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## ADVANCED PROGRAM

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Once you have started to develop your abdominals, you can begin to train each of the particular areas that contribute to a firm and well-defined waist. This involves doing more sets and a wider variety of exercises like Twisting Crunches, Leg Tucks, and different kinds of Reverse Crunches, as well as Twists.

In Level II, I recommend beginning your workout with a warm-up session of Roman Chairs, one of my favorite crunching movements. For obliques, in addition to twisting movements, you will find exercises like Side Bends and Twists.

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## COMPETITION PROGRAM

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When you are getting ready for competition, your aim should be to sculpt and define your total abdominal area rather than to build more size and strength. To intensify your workout, begin with 10 minutes of Roman Chairs. I always got good results starting out with Roman Chairs, as did many of my contemporaries such as Franco Columbu, Zabo Koszewski, and Ken Waller. Roman Chairs help get you warmed up and are a continuous-tension exercise that keeps the abdominals working for the entire period.

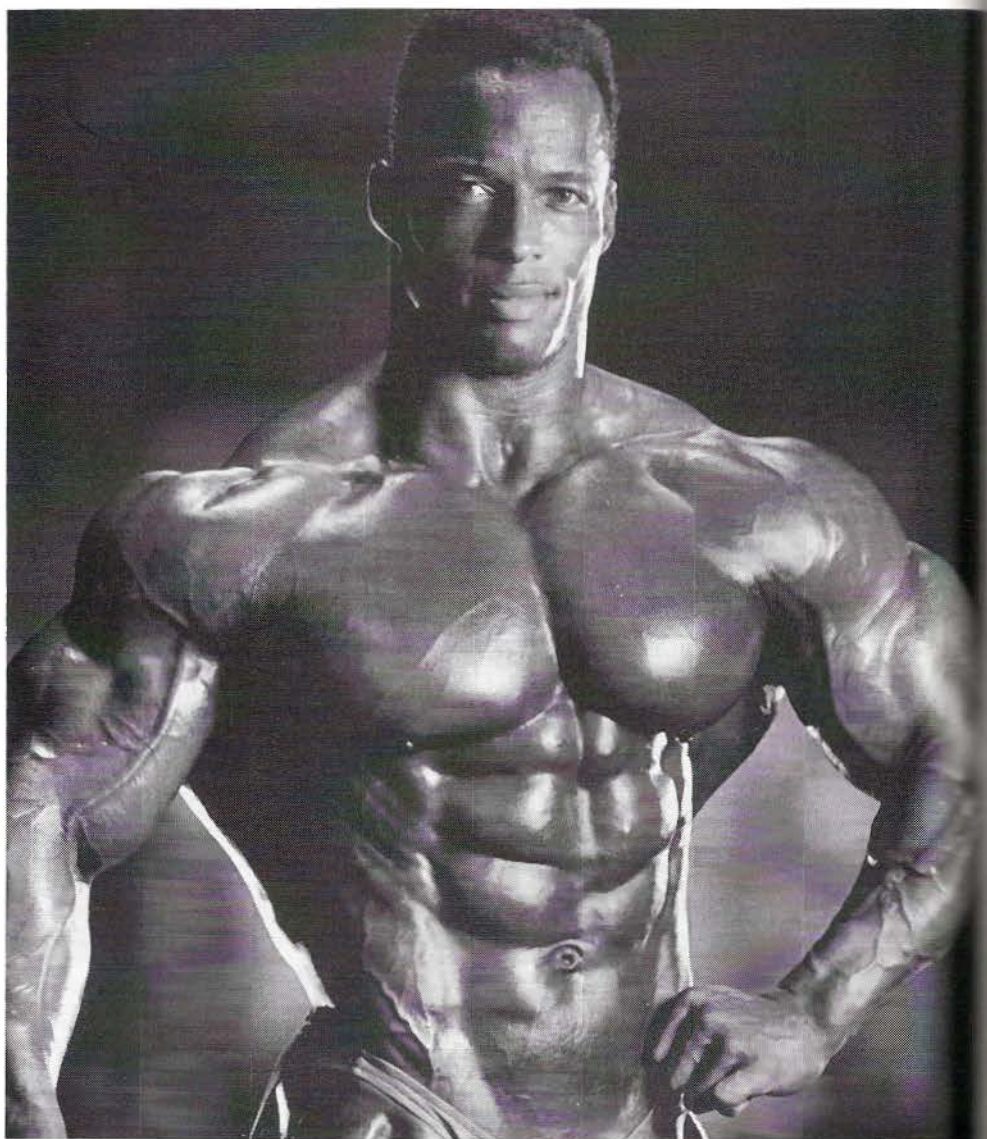


*Serge Nubret*

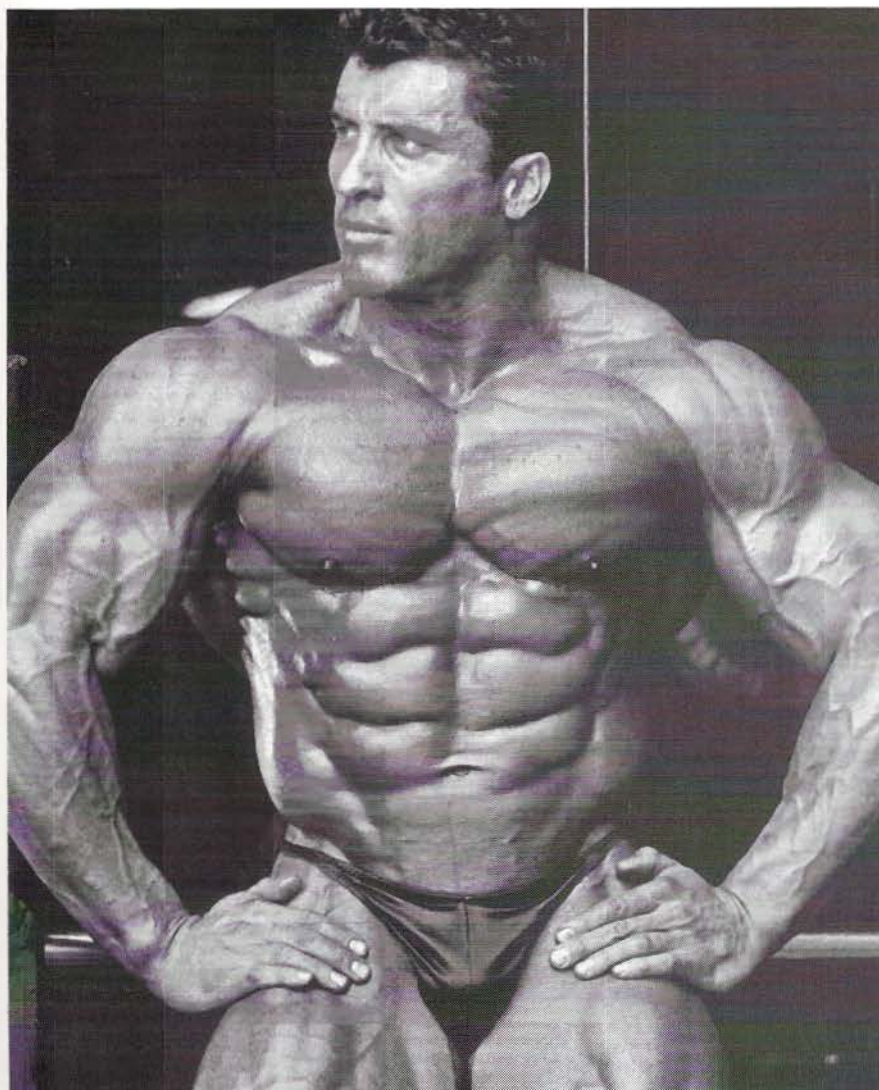
The end product of Competition Training is total quality, and each of these exercises is designed to develop and shape a particular area of your waistline. To develop abdominals that will really impress the contest judges, you have to do exercises for the upper and lower abs, the obliques, serratus and intercostals, as well as develop the lower back doing Hyper-extensions and other exercises for this area from the back training program. You should demand enormous effort from these areas in order to totally blast them into submission. Keep going, never stop for a second, and you will get the results you need.

### **WEAK POINT TRAINING**

It is just as possible to have a weak point in your abdominals as in any other body part. To help you overcome this, I have included in the abdominal training program exercises designed to work all the specific areas with which you will be concerned. Although most abdominal exercises tend to work several areas of the torso at the same time, certain movements are



*Shawn Ray*



*Milos Sarcev*

*When you have really outstanding abdominal development, your abs look defined whether you are standing relaxed, semi-flexed, or are hitting an all-out abdominal pose, as Serge Nubret, Shawn Ray, Milos Sarcev, and I demonstrate.*



best for each specific area, such as upper or lower abs, obliques or serratus and intercostals. However, be aware that the lack of visual development of the abs is frequently caused by one of two things:

- not enough dieting, so there is a layer of fat over the abs
- not enough isolation, full-range-of-motion, quality training

You don't train abs for quality by contracting them against heavy resistance, by doing hip-flexor rather than abdominal exercises, or with fast, short choppy movements. The best abdominal training involves slow, controlled, full-range-of-motion exercises, and holding at the point of full contraction to achieve a full peak contraction.



## Abdominal Exercises

### ROMAN CHAIRS

**PURPOSE OF EXERCISE:** Emphasizes upper abs.

**EXECUTION:** (1) Sit on the Roman Chair bench, hook your feet under the support, and fold your arms in front of you. (2) Keeping your stomach tucked in, lower yourself back to approximately a 70-degree angle, but not all the way back so your torso is parallel to the floor. Raise and curl your torso forward as far as possible, feeling the abdominals crunch together in a full contraction.

I like to rest the front of the Roman Chair bench on a block of some sort to create an incline and increase the intensity of the exercise. You can introduce variable resistance into this exercise by starting out with the front of the bench raised and then, when you are getting tired, lower it to the floor and continue with your set.

## CRUNCHES

**PURPOSE OF EXERCISE:** Emphasizes upper abs.

**EXECUTION:** (1) Lie on your back on the floor, your legs across a bench in front of you. You can put your hands behind your neck or keep them in front of you, whichever you prefer. (2) Curl your shoulders and trunk upward toward your knees, rounding your back. Don't try to lift your entire back up off the floor, just roll forward and crunch your rib cage toward your pelvis. At the top of the movement, deliberately give an extra squeeze of the abs to achieve total contraction, then release and lower your shoulders back to the starting position. This is not a movement you do quickly. Do each rep deliberately and under control.

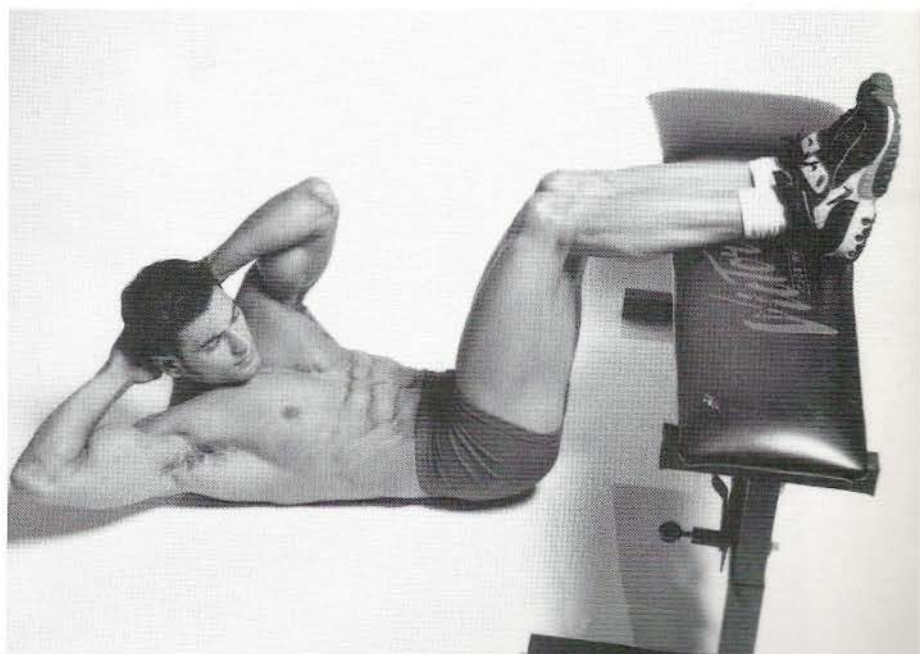
You can vary the angle of stress on your abdominals by raising your foot position. Instead of putting your legs across a bench, try lying on the floor and placing the soles of your feet against a wall at whatever height feels most comfortable.



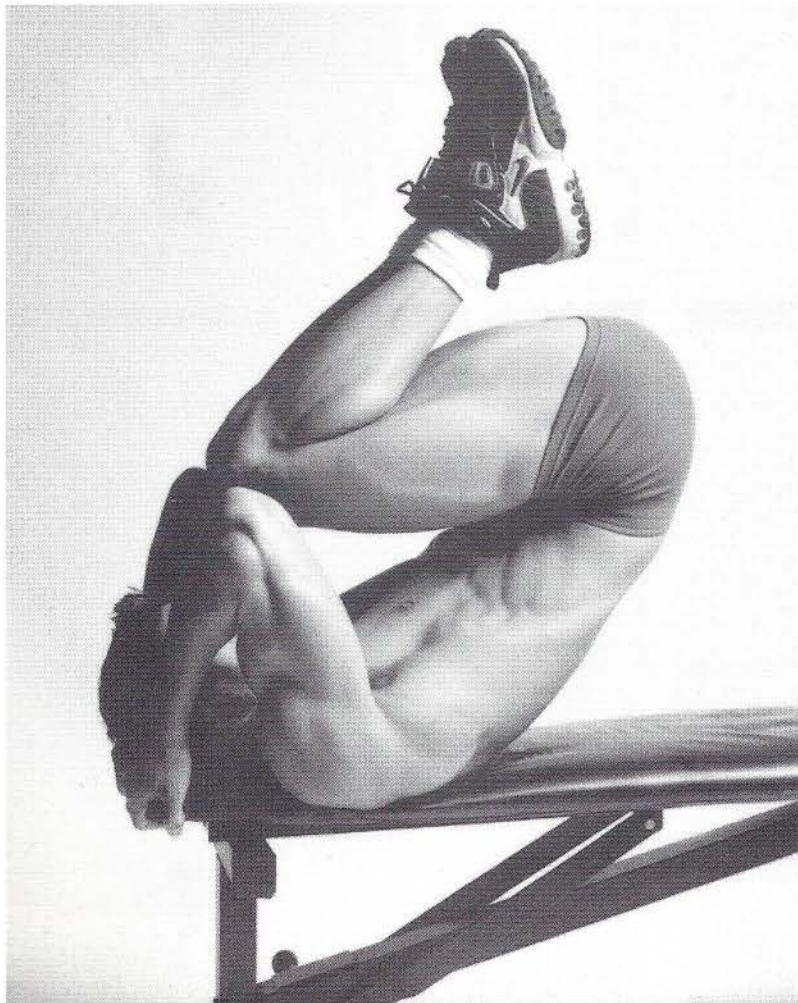
## TWISTING CRUNCHES

**PURPOSE OF EXERCISE:** For upper abs and obliques.

**EXECUTION:** (1) Lie on your back on the floor, your legs across a bench in front of you. (2) You can put your hands behind your neck and curl your trunk up toward your knees, rounding your back. As you do this, twist your torso so that your right elbow comes across toward your left knee. Release and lower your torso back to the starting position. Repeat, this time twisting in the opposite direction, bringing your left elbow toward your right knee. Continue to alternate, twisting in one direction and then the other throughout your set.



*T. J. Hoban*



## REVERSE CRUNCHES

**PURPOSE OF EXERCISE:** Emphasizes lower abs.

**EXECUTION:** This exercise is best done lying on a Bench Press bench that has a rack at one end. (1) Lie on your back on the bench and reach up behind you to hold the rack for support. Bend your knees and bring them up as far toward your face as you can without lifting your pelvis off the bench. (2) From this starting position, bring your knees up as close to your face as you can, rounding your back, with the glutes coming up off the bench and crunching up toward the rib cage. Hold for a moment at the top and deliberately squeeze the ab muscles for full contraction. Slowly lower your knees until your rear end comes to rest on the bench again. (Don't lower your legs any farther than this. You aren't doing Leg Raises.) Again, do this movement deliberately and under control rather than doing a lot of quick reps.

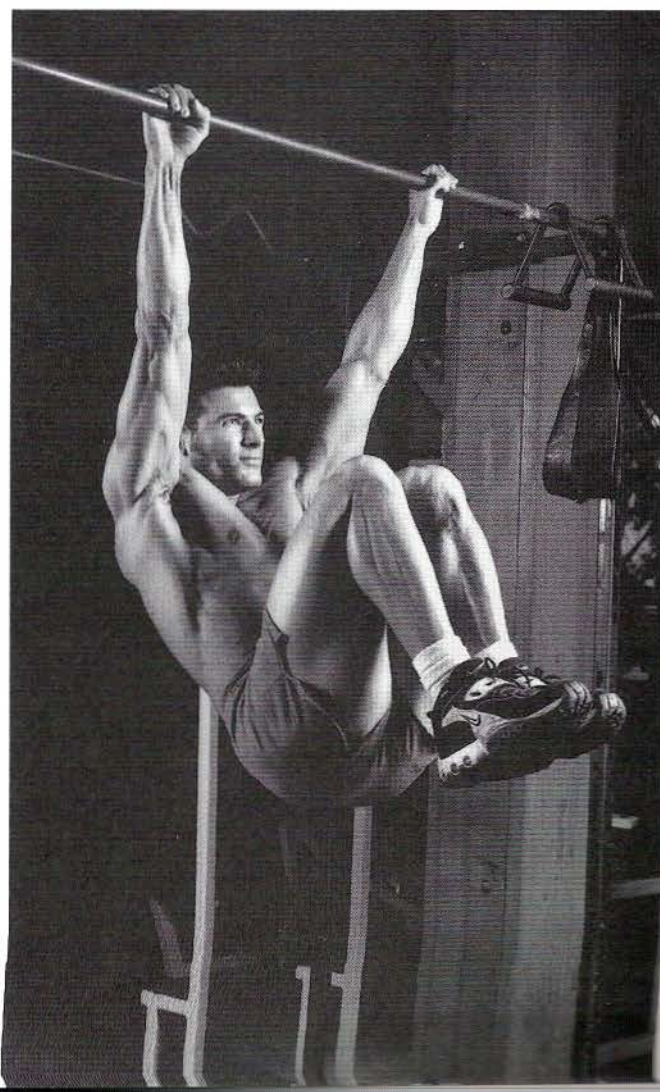
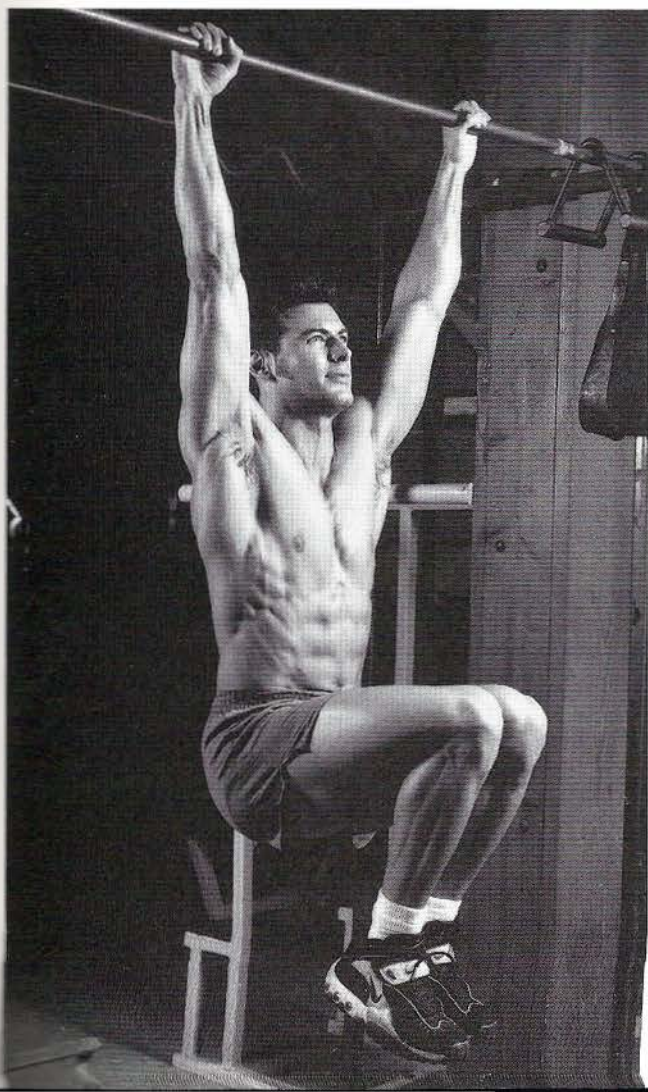


## HANGING REVERSE CRUNCHES

**PURPOSE OF EXERCISE:** Emphasizes lower abs.

**EXECUTION:** This is another version of Reverse Crunches, only you do it hanging by your hands from a bar or resting on your forearms on a Hanging Leg Raise bench instead of lying on a bench. (1) Get into the hanging position and bring your knees up to the level of your abdomen. (2) From this starting position, raise your knees up as far as possible toward your head, rounding your back and rolling yourself upward into a ball. At the top of the movement, hold and crunch the ab muscles together for full contraction, then lower your knees to the starting position with the knees pulled up. Again, don't lower your legs beyond this starting point.

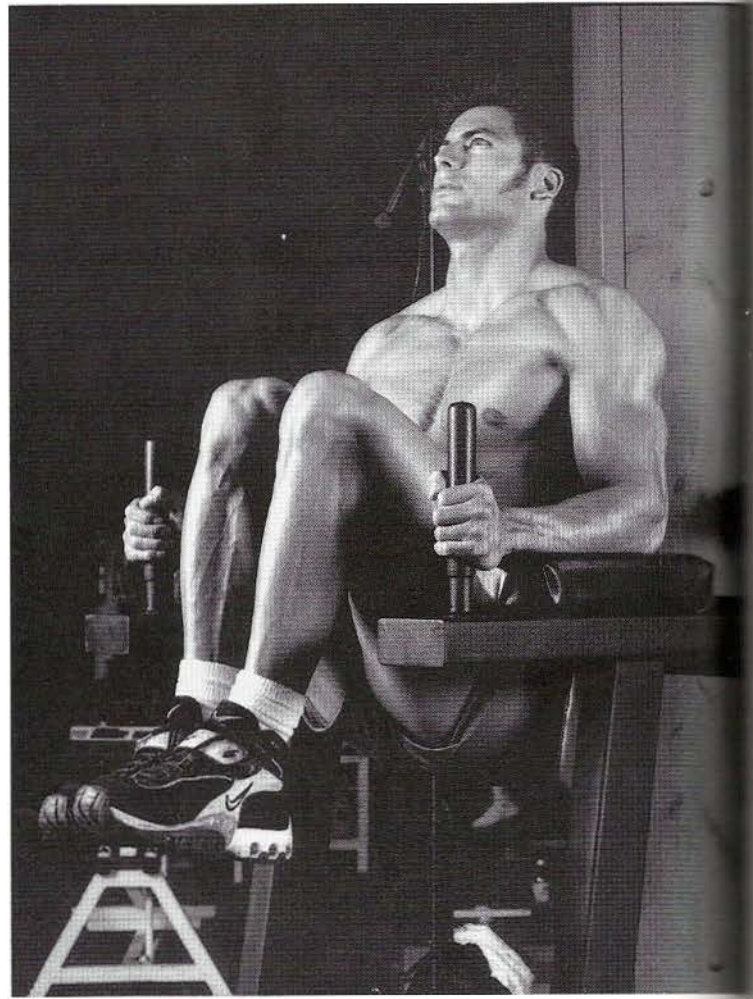
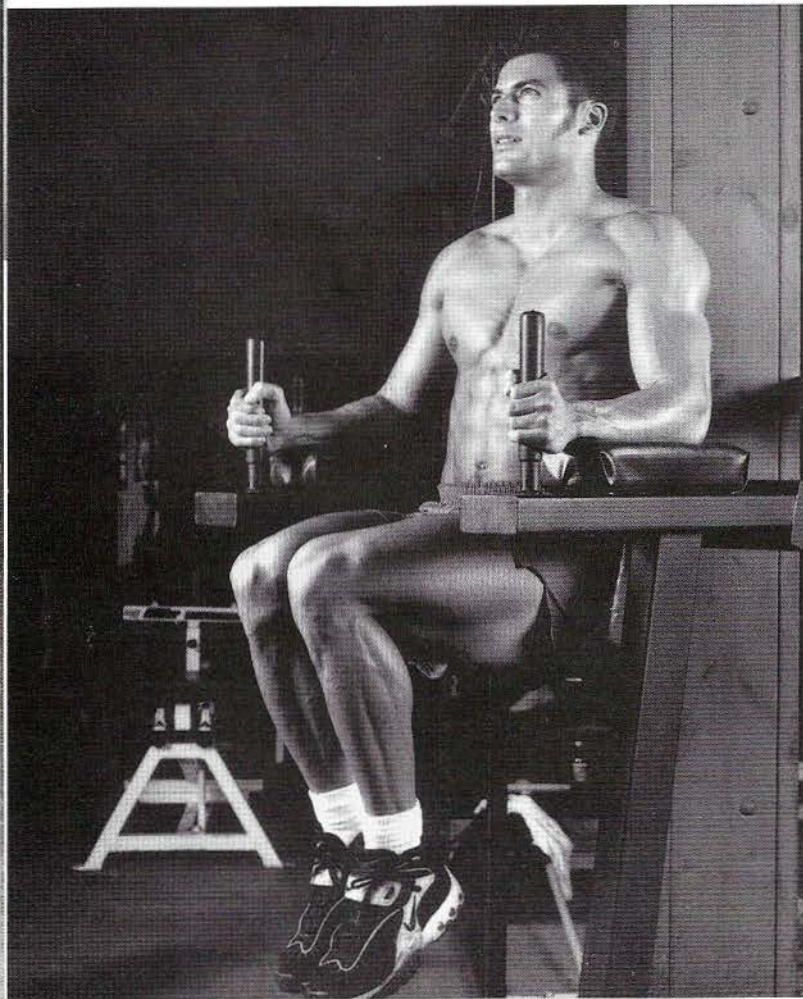
A lot of people and most bodybuilders (because of the mass of their legs) can't really do Hanging Reverse Crunches. An easier variation is to lie head upward on a slantboard. This gives you more resistance than Reverse Crunches on a flat bench, but you can dial in the amount of resistance you want by the angle at which you set the slantboard.



## VERTICAL BENCH CRUNCHES

PURPOSE OF EXERCISE: Emphasizes lower abs.

EXECUTION: This is a variation of Hanging Reverse Crunches. (1) Instead of hanging from a bar, position yourself on a vertical bench that allows you to support yourself on your elbows and forearms and bring your knees up to the level of your abdomen. (2) From this starting position, raise your knees up as far as possible toward your head, rounding your back and rolling yourself upward into a ball. At the top of the movement, hold and crunch the ab muscles together for full contraction, then lower your knees to the starting position with the knees pulled up. Again, don't lower your legs beyond this starting point.



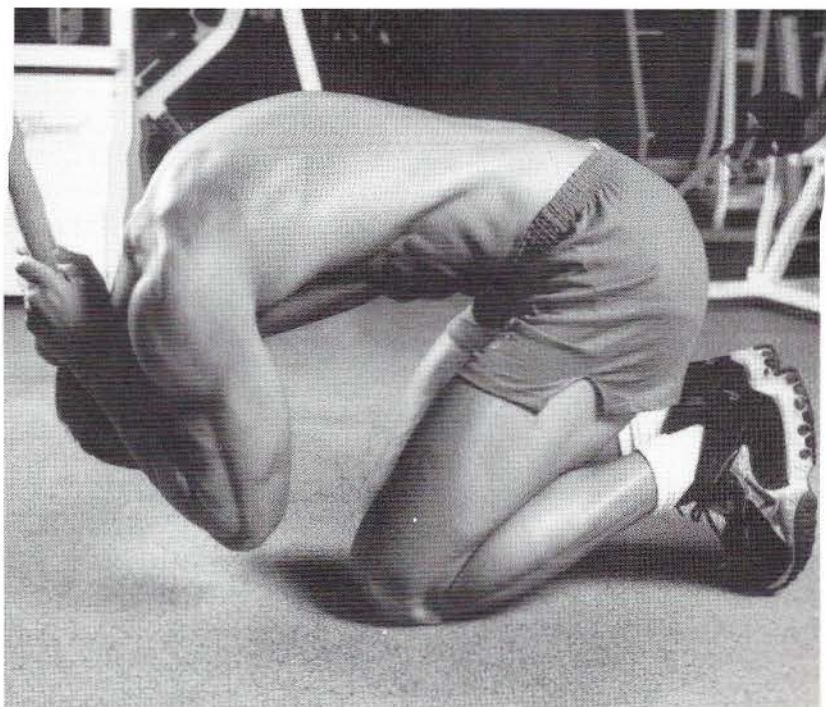
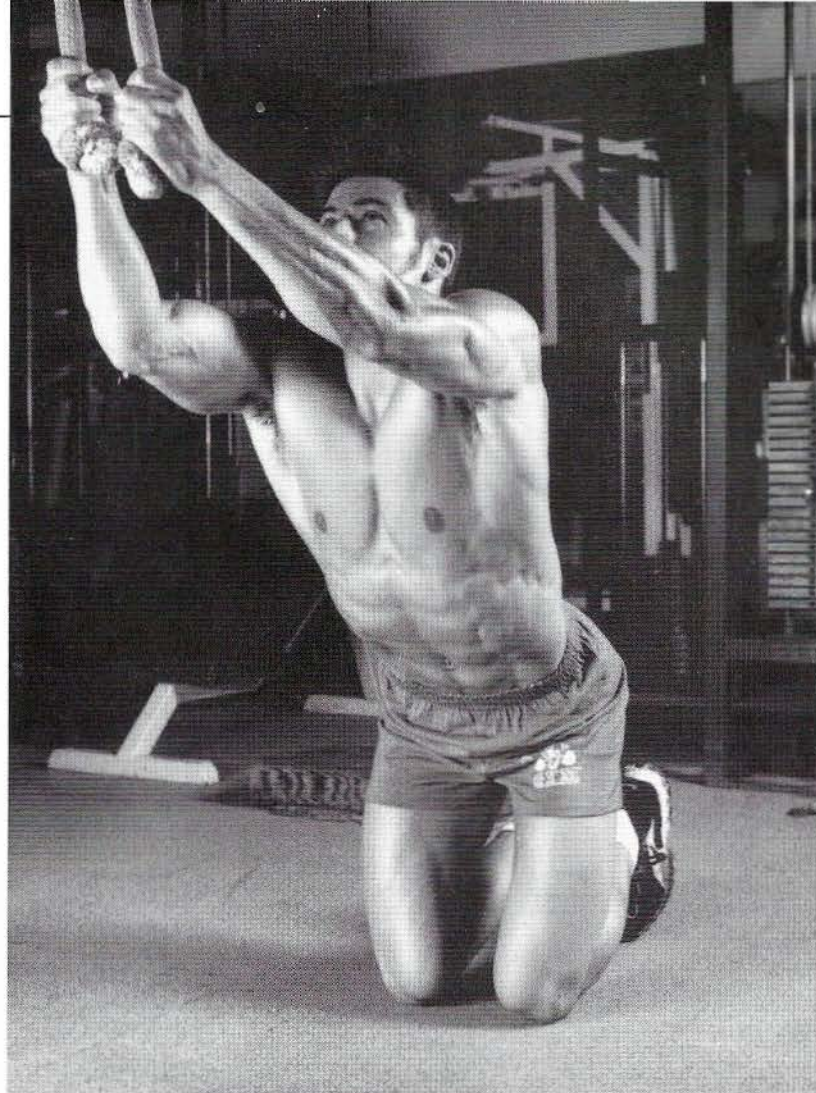
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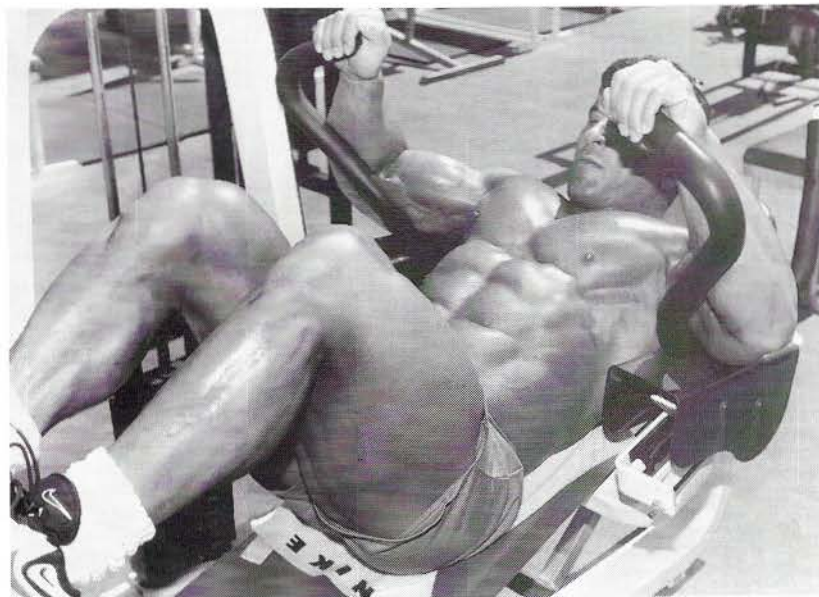
## CABLE CRUNCHES

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**PURPOSE OF EXERCISE:** For upper and lower abs.

**EXECUTION:** This is an exercise you used to see much more in the “old days” than you do today, but it’s an effective one. (1) Attach a rope to an overhead pulley. Kneel down and grasp the rope with both hands. (2) Holding the rope in front of your forehead, bend and curl downward, rounding your back, bringing your head to your knees and feeling the abdominals crunch together. Hold the peak contraction at the bottom, then release and come back up to the starting position. Make sure the effort involved is made with the abs. Don’t pull down with the arms.





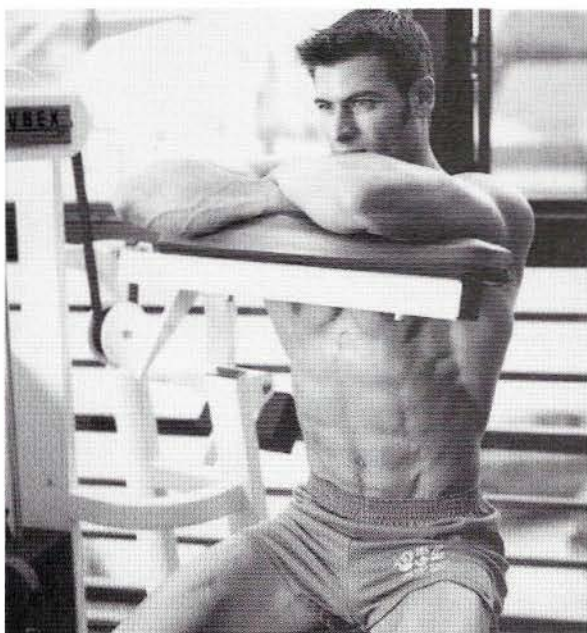
## MACHINE CRUNCHES

**PURPOSE OF EXERCISE:** For upper and lower abs.

**EXECUTION:** A great many bodybuilders feel that machines are unnecessary when it comes to ab training. But others swear by some of the ab training equipment currently available. Charles Glass, for example, often has his clients use a Nautilus Crunch machine. In all cases, however, concentrate on feeling the rib cage and the pelvis squeeze together as the abdominals contract. If you can't achieve this feeling, the piece of equipment you are using may not be suited to your individual needs.



*Milos Sarcev*



## SEATED LEG TUCKS

**PURPOSE OF EXERCISE:** For upper and lower abs.

**EXECUTION:** In all ab exercises the rib cage contracts toward the pelvis or the pelvis toward the rib cage—in this exercise, both of these things happen.

(1) Sit crosswise on a bench, holding on to the sides for support. Raise your legs slightly and bend your knees and lean backward at about a 45-degree angle.

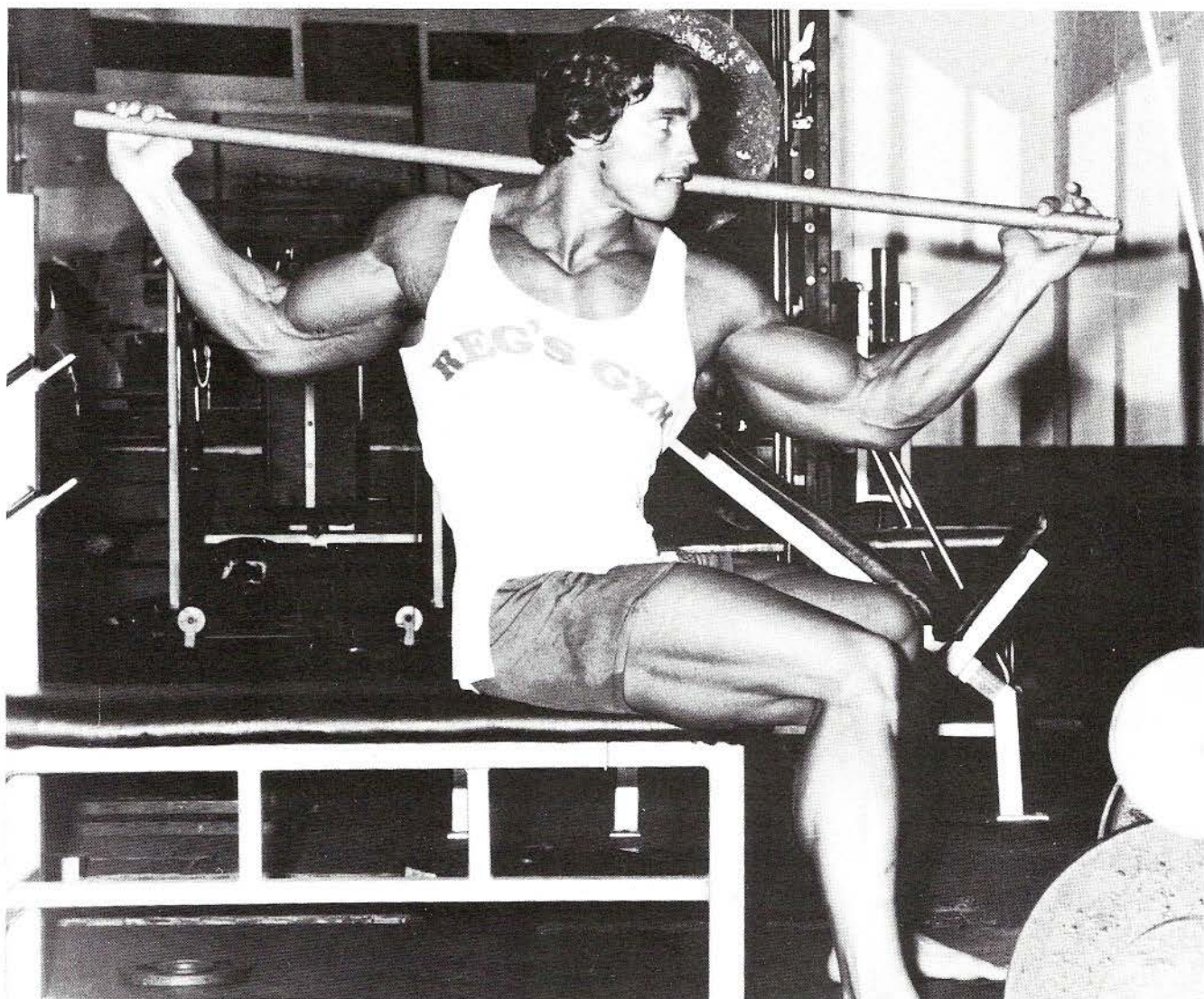
(2) Using a scissors movement (this exercise is sometimes called Scissors Crunches), curl your upper body toward your pelvis, rounding your back, and simultaneously lift your knees up toward your head. Feel the crunch as your rib cage and pelvis squeeze together. From this position, lower your torso and knees back to the starting position.

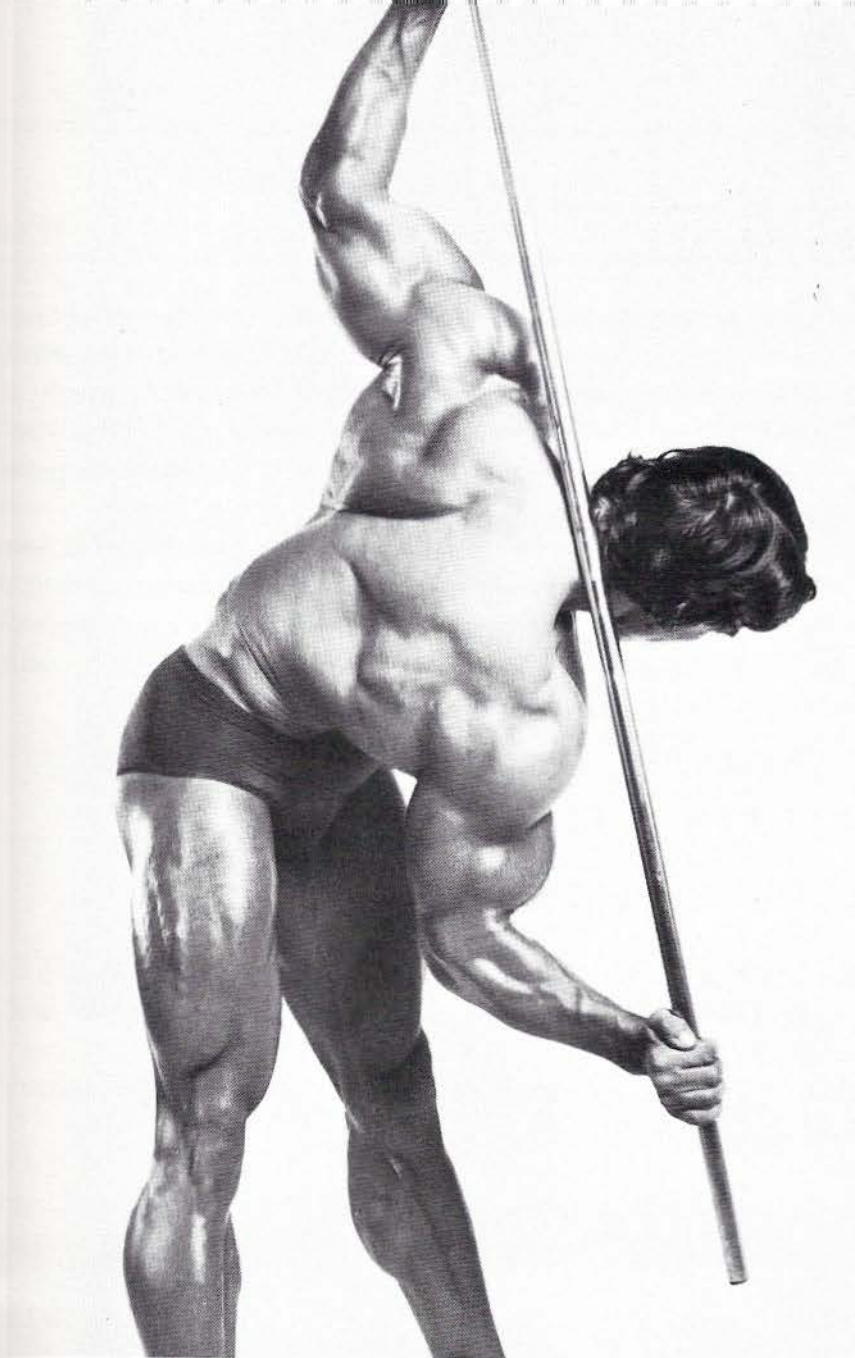


## SEATED TWISTS

**PURPOSE OF EXERCISE:** To tighten the obliques.

**EXECUTION:** (1) Sit on the end of a bench, feet flat on the floor and comfortably apart. Place a broom handle or light bar across the back of your shoulders and hold it. (2) Keeping your head stationary, and making sure your pelvis doesn't shift on the bench, deliberately turn your upper body and shoulders in one direction as far as you can. Hold at the extreme rotated position, then turn your torso and shoulders back in the other direction as far as you can, keeping the movement fully under control rather than swinging. Because this exercise contracts the oblique muscles but uses no additional resistance, it keeps them tight but doesn't add any extra bulk that might thicken your waist.





## **BENT-OVER TWISTS**

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**PURPOSE OF EXERCISE:** To tighten the obliques.

**EXECUTION:** (1) Standing with your feet apart, place a broom handle or light bar across the back of your shoulders, hold it, and bend forward from the waist as far as is comfortable. (2) Keeping your head stationary, and blocking your pelvis from rotating, deliberately turn your upper body and shoulders in one direction as far as you can. Hold at the extreme rotated position, then turn your torso and shoulders back in the other direction as far as you can, keeping the movement fully under control rather than swinging.

## LEG RAISES

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Leg Raises are a traditional abdominal exercise that has fallen out of favor with exercise physiologists. The reason is that the abdominals don't attach to the legs, so raising and lowering your legs works them only indirectly, as stabilizers. The muscles that raise and lower the legs are the iliopsoas muscles (hip flexors) that run from the lower back across the top of the pelvis and attach to the upper leg.

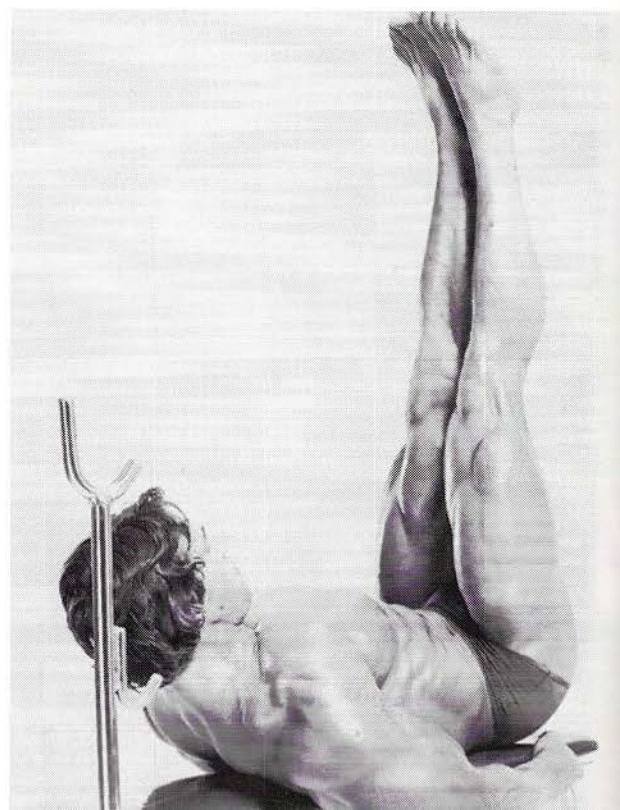
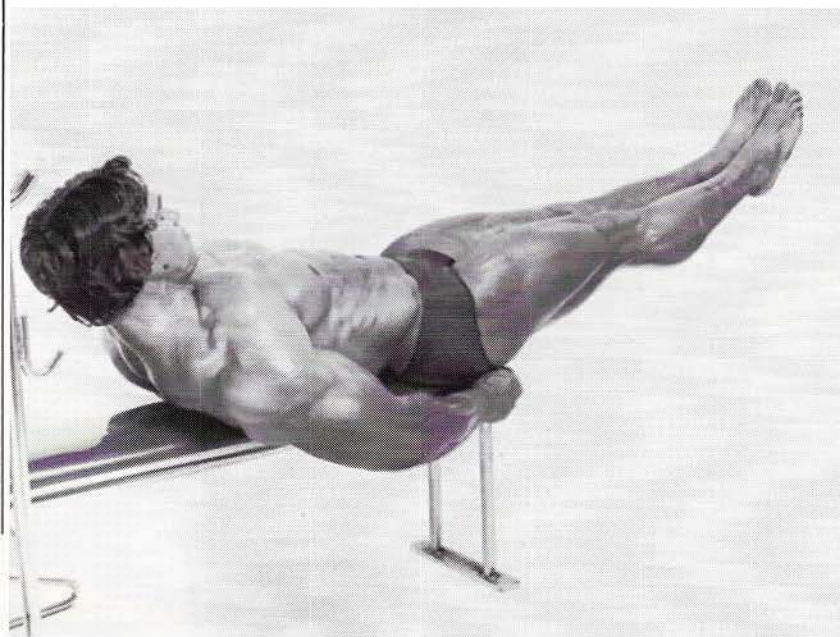
Nonetheless, I have gotten good results doing Leg Raises, as have many other champions, so I feel this encyclopedia would be incomplete if they were not included. I am a big believer in science and exercise physiology, but when it comes to bodybuilding the bottom line is always what works for you, regardless of what the "experts" might think.

## FLAT BENCH LEG RAISES

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**PURPOSE OF EXERCISE:** Emphasizes lower abs.

**EXECUTION:** (1) Lie on your back on a flat bench, your rear end just at the end of the bench, put your hands under your glutes for support, and extend your legs out straight. (2) Keeping your legs straight, raise them as high as you can, pause, then lower them until they are slightly below the level of the bench.





## BENT-KNEE FLAT BENCH LEG RAISES

PURPOSE OF EXERCISE: Emphasizes lower abs

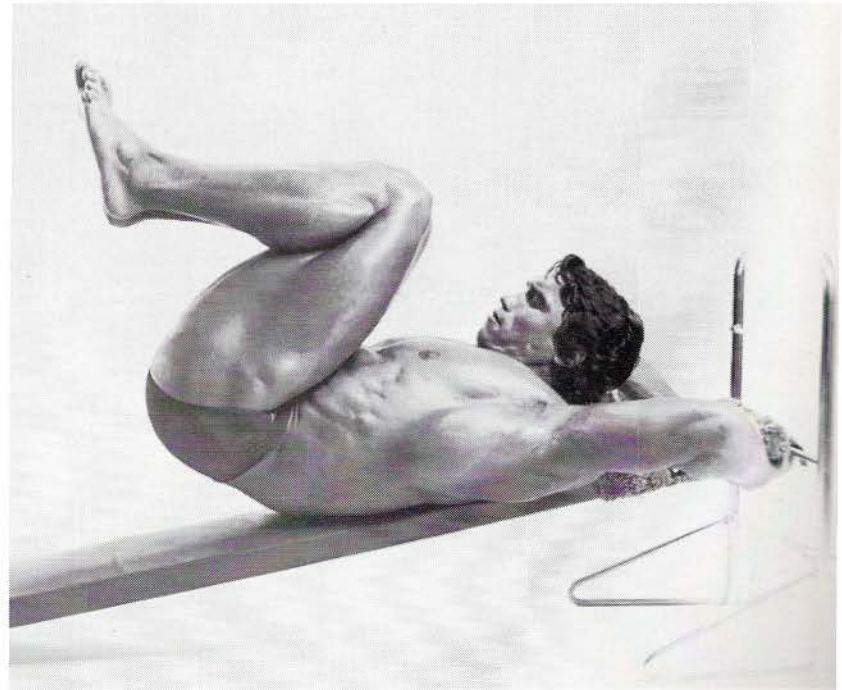
EXECUTION: Lie on a bench in the same position as with Flat Bench Leg Raises. Bend your knees, then raise your legs as far as possible, pause at the top, then lower your legs again, keeping them bent throughout the entire range of motion.

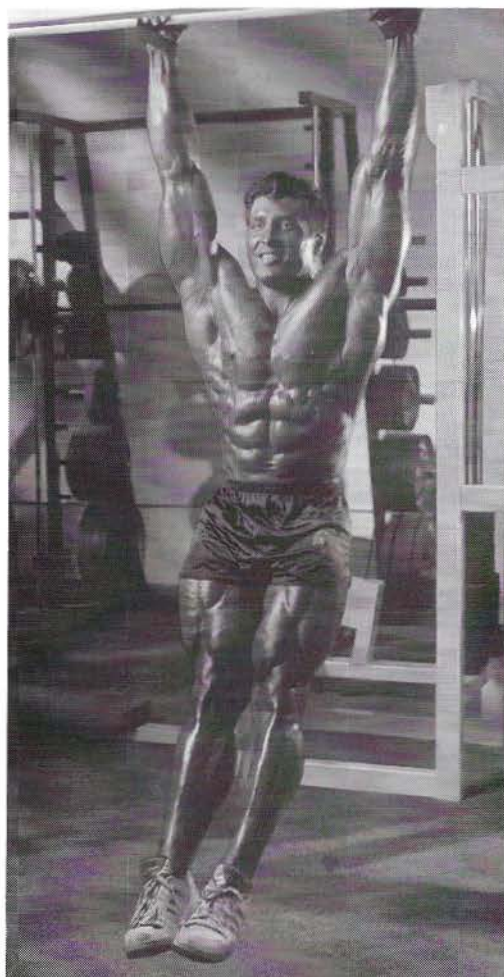


## BENT-KNEE INCLINE BOARD LEG RAISES

PURPOSE OF EXERCISE: Emphasizes lower abs.

EXECUTION: (1) Lie on your back on an incline board, head higher than your feet. Reach back and take hold of the top of the board or some other support. (2) With your *knees bent*, raise your legs as high as you can, then lower them slowly, stopping just as your rear end touches the board. Exhale as you lift and inhale as you lower your legs. Bending your knees makes the movement a little easier and helps to increase your range of motion.



*B. J. Quinn*

### **BENT-KNEE VERTICAL BENCH LEG RAISES**

PURPOSE OF EXERCISE: Emphasizes lower abs.

EXECUTION: (1) Support yourself on your arms on a vertical bench. (2) Holding your upper body steady, bend your knees and raise them up as high as you can, flexing your abs through the full range of the motion. Keeping your legs bent, lower them again to the starting position.

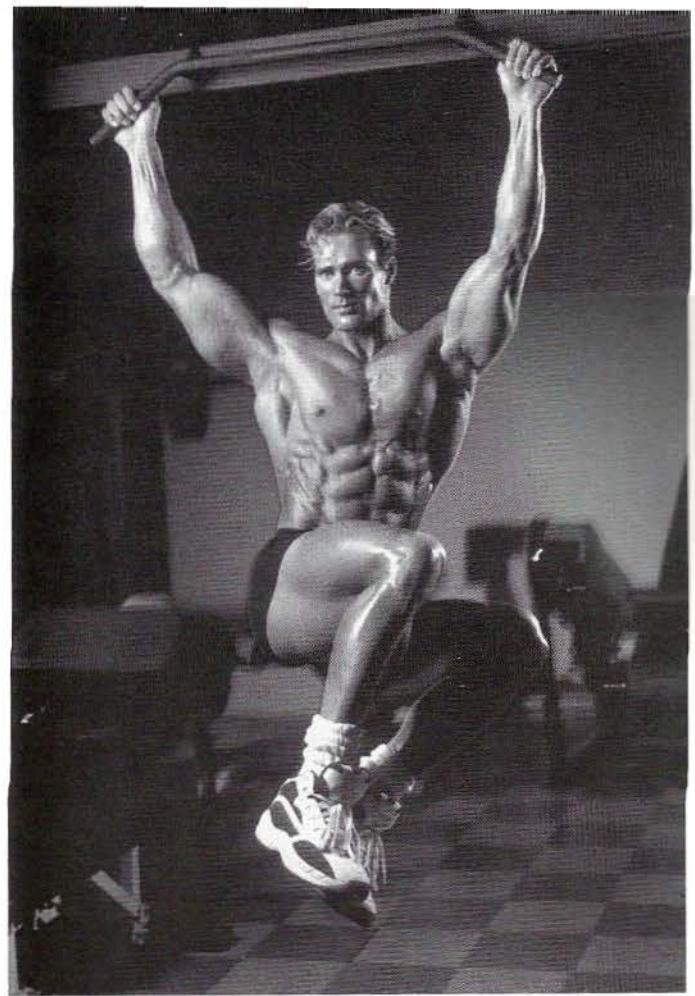
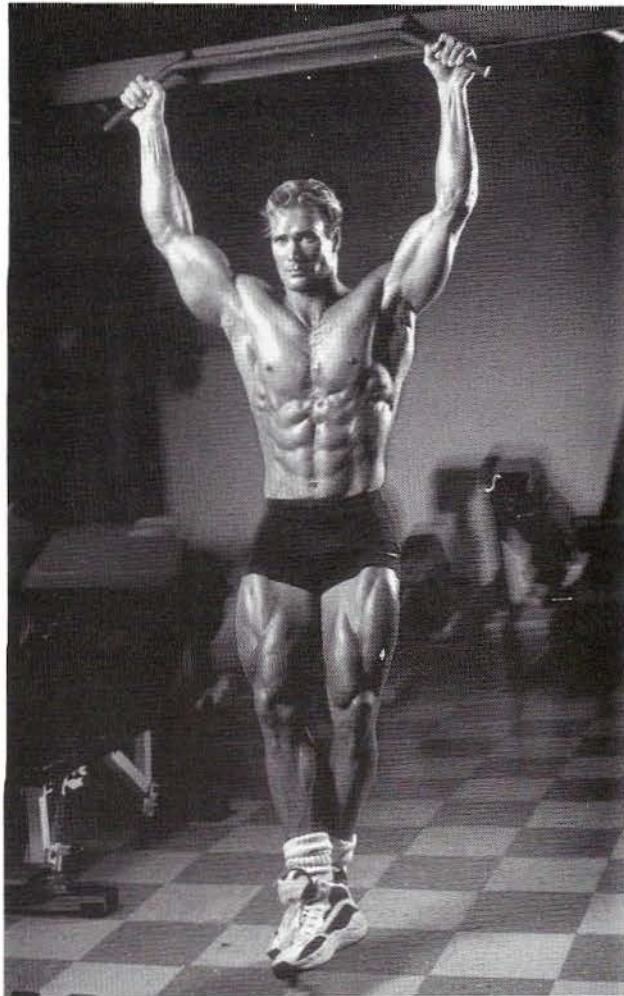
VARIATION: Any variation of an exercise forces the muscles to respond in new and different ways. When working the abdominals with Vertical Bench Leg Raises, try doing the movement using each leg alternately instead of simultaneously.

### **HANGING LEG RAISES**

PURPOSE OF EXERCISE: Emphasizes lower abs.

EXECUTION: (1) Grasp an overhead bar and hang at arm's length. (2) Keeping your legs fairly straight, raise them as high as you can, hold for a moment, then lower them under control back to the starting position. Keeping your legs straight adds to the resistance in this exercise, which makes the movement more difficult.

*Milos Sarcev*



Mike O'Hearn

## **TWISTING HANGING LEG RAISES**

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**PURPOSE OF EXERCISE:** For the obliques and detail at the side of the torso.

**EXECUTION:** Start as in Hanging Leg Raises, hanging at arm's length from the bar and keeping your legs fairly straight. Next, raise your legs as high as you can *slightly to the side while twisting the torso to involve the obliques, serratus, and intercostal muscles.* Hold for a moment, then lower them under control to the starting position.

## **ADDITIONAL LEG-RAISE EXERCISES**

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In addition to the basic abdominal exercises, there are a number of leg-raise movements I have always liked and that I believe help firm and tighten areas like the hips, the lower back, and the buttocks. These are exercises that can be done for very high reps and that are just as easy to do in a hotel when you are traveling as when you are home or at the gym.

One benefit of these movements is the way they work the lower body from every angle—front, back, and rear. They are also useful for a wide range of people, from competitive bodybuilders to serious athletes, weekend athletes, and men and women simply trying to stay fit and in good shape.

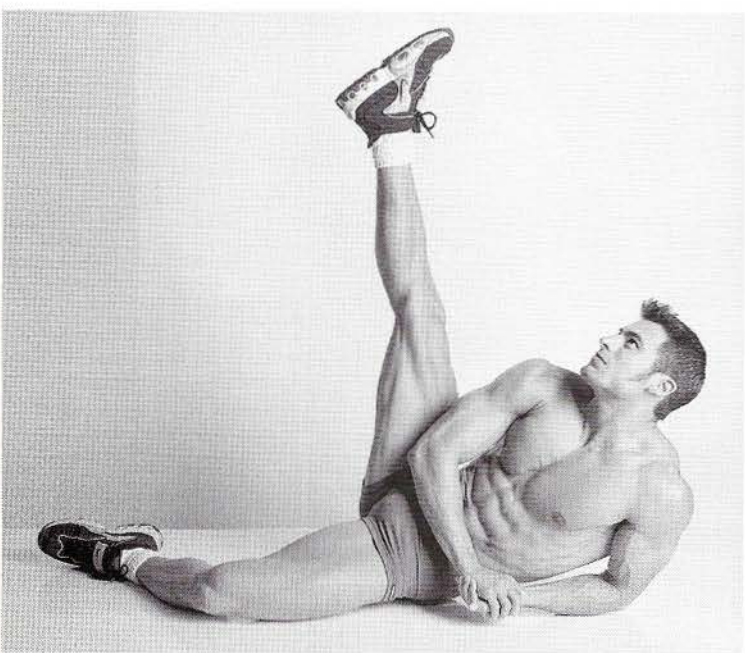


## SIDE LEG RAISES

**PURPOSE OF EXERCISE:** For the obliques and intercostals.

This exercise works the entire side of the torso and can really help give your waist a narrow look from the front.

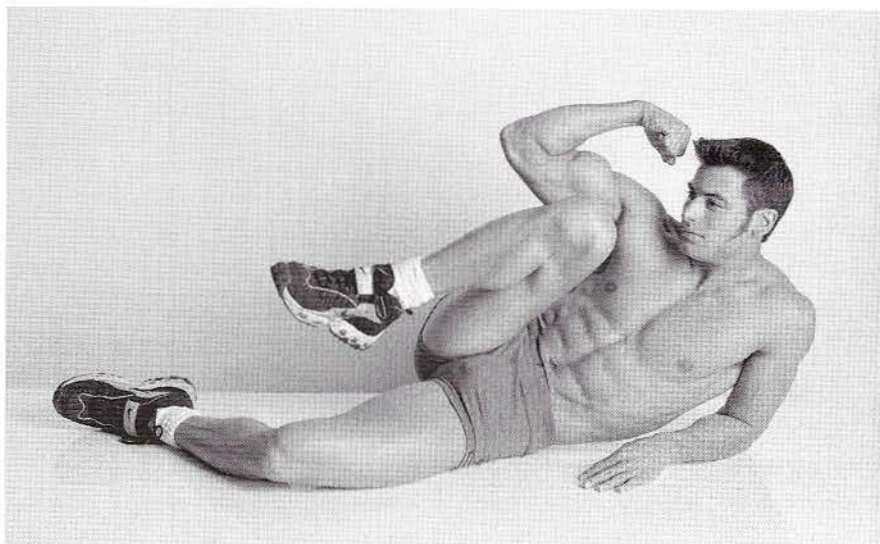
**EXECUTION:** (1) Lie on your side, supporting yourself on your elbow with your lower leg bent under for support. (2) Keeping the upper leg straight, raise it slowly as high as it will go, then lower it again, but stop short of letting it touch the floor. Finish your reps with this leg, then turn onto your other side and repeat the movement. Don't move your hips at all during this movement.



## BENT-KNEE SIDE LEG RAISES

**PURPOSE OF EXERCISE:** For the obliques and intercostals.

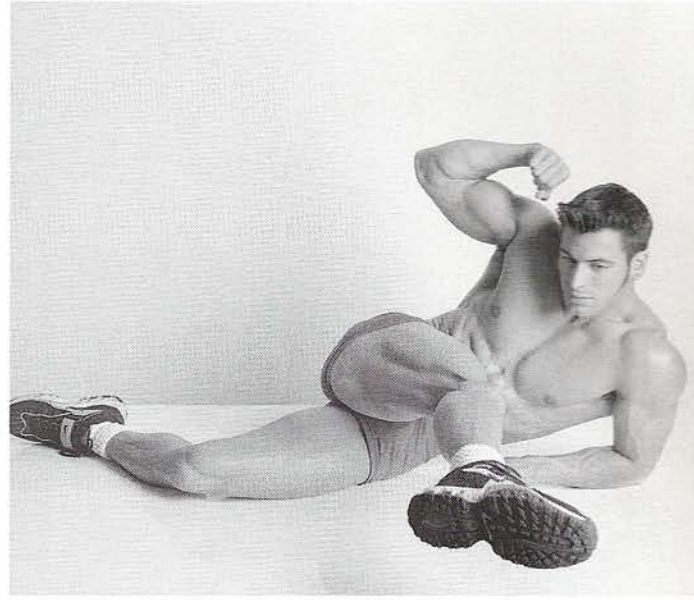
**EXECUTION:** Lie on your side, supporting yourself on your elbow with your lower leg bent under for support. Bend the knee of your upper leg and raise it slowly toward your chest as high as you can, then lower it again, stopping short of touching the floor. Finish your reps with this, then turn and work the opposite leg.



## FRONT KICKS

**PURPOSE OF EXERCISE:** For the obliques and intercostals.

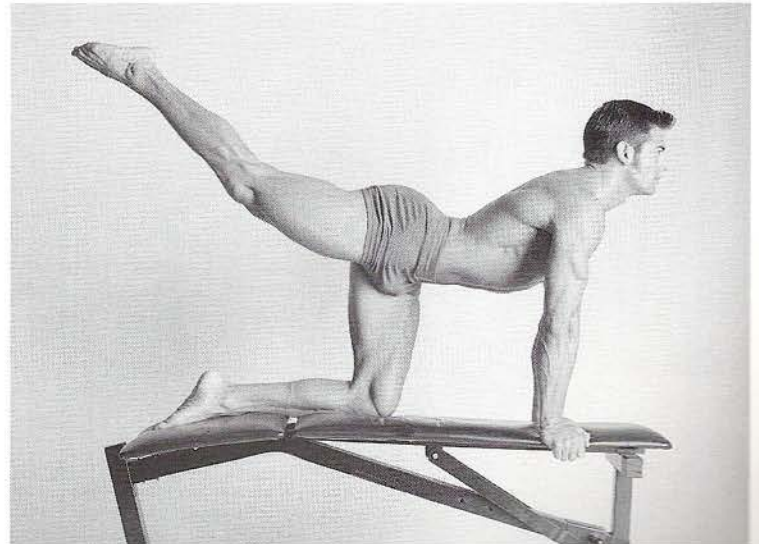
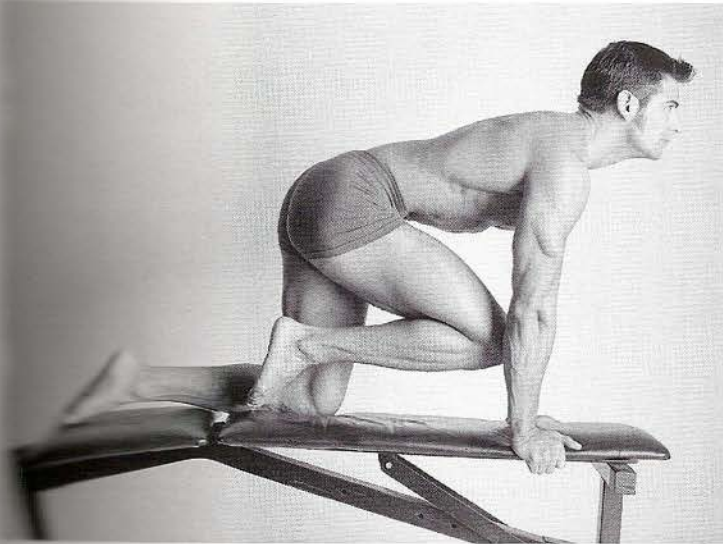
**EXECUTION:** This exercise begins in exactly the same position as Side Leg Raises. Here, though, you slowly move your upper leg forward as far as you can, keeping it straight throughout the movement. Finish your reps, and turn and work the opposite leg.

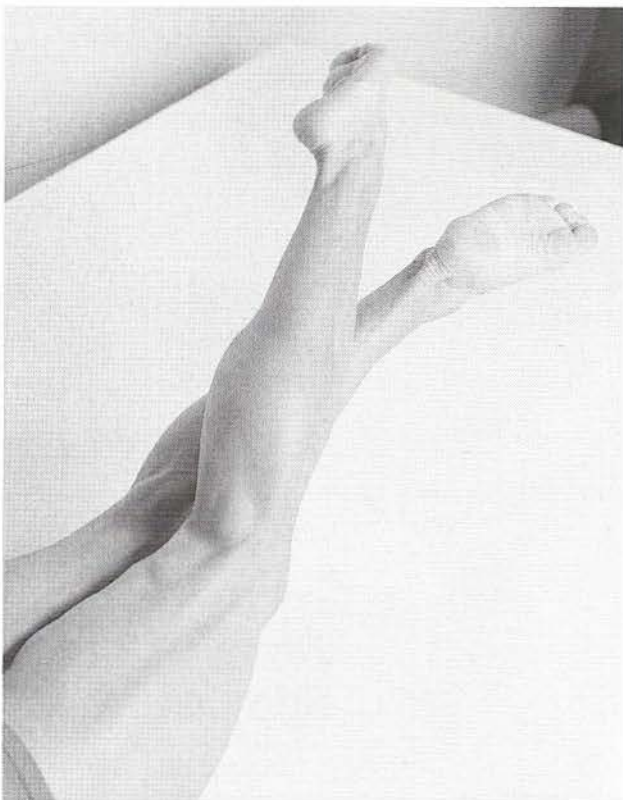
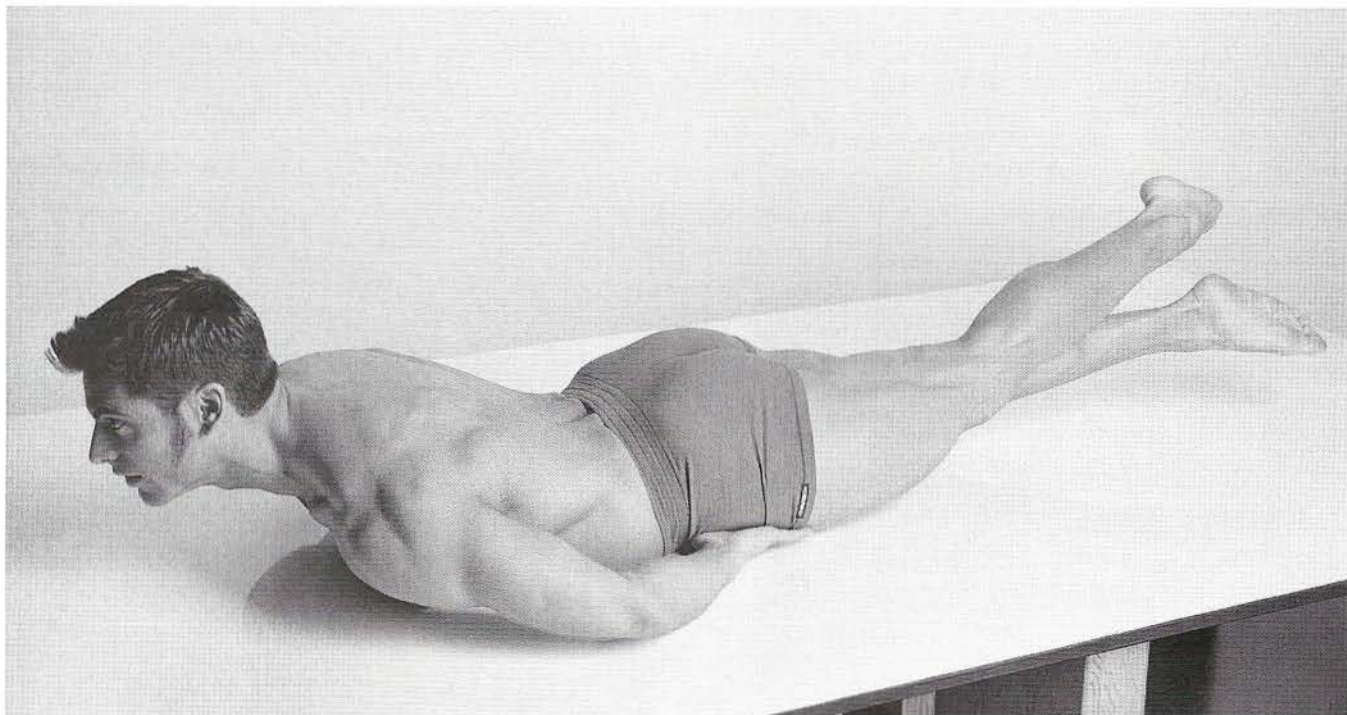


## BENCH KICKBACKS

**PURPOSE OF EXERCISE:** For the glutes.

**EXECUTION:** (1) Kneel with one leg on the end of a bench. Grip the bench with arms locked for support. (2) Kick one leg back as high as you can, then bring it back down, not letting it quite touch the bench. Concentrate throughout the movement on flexing and contracting the buttocks. Complete your repetitions then repeat using the other leg. (This can be done kneeling on the floor, but it's slightly more difficult.)





## **REAR LEG SCISSORS**

**PURPOSE OF EXERCISE:** For the glutes.

**EXECUTION:** (1) Lie on your stomach, hands under your thighs. Raise your legs off the floor as far as possible. (2) Move your feet apart a short distance, then bring them together and cross one over the other. (3) Move them apart and then cross them again with the opposite leg on top. Repeat, alternating legs continuously until you have completed your repetitions. Throughout the exercise, concentrate on feeling the contraction of the buttocks.

## VACUUMS

Being able to control your abdominal muscles to the point where you can hit and hold a full vacuum is becoming a lost art in bodybuilding. This is unfortunate, since a vacuum pose is not only impressive onstage, creating a much smaller waistline and exaggerating the size and fullness of the chest and rib cage, but also helps to develop abdominal definition and gives you the total control of the abdominal muscles that helps you avoid letting your abs bulge the moment you relax and stop concentrating on them.

Bodybuilders often forget under the pressure of competition that they are being watched the whole time they are onstage—even when they are standing at the back of the stage waiting for a comparison call-out. You should never give the judges the impression that you are tired, and keeping your abs from bulging and protruding is one way to assure you make the proper impression.

Nowadays, bodybuilders frequently have trouble hitting a vacuum because their abs get so massive—but the primary reason is that *they don't practice hitting vacuums*. This is not something you can master in an hour. You have to practice on a regular basis, just as you do any other kind of posing, for a period of weeks or months until you develop full control over these muscles.

To practice vacuums, get down on your hands and knees, blow out all your breath, and suck in your abdominals as much as you can. Hold this for 20 to 30 seconds, relax for a few moments, and then try it again two or three times.

The next step is to practice your vacuum in a kneeling position. Kneel upright with your hands on your knees and try to hold the vacuum as long as you can.

Doing a seated vacuum is more difficult still. But once you can hold a vacuum in a seated position without any problem, you will be able to practice holding a vacuum while standing and doing a variety of poses.

