The Radical Diet

3rd Edition

The Definitive Phase Shift Diet for Maximizing Weight Loss and Body Composition

www.RadicalDiet.com
www.MetabolicDiet.com

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Preface to the 3rd Edition of the Radical Diet

This edition of the Radical Diet represents the ongoing improvement of the best fat and weight loss diet in the world. The Radical Diet represents a new paradigm and is a quantum leap above all other diets that target fast weight and fat loss.

The Radical Diet has always championed fat loss as against weight loss, although both usually occur in tandem. However, the best way to lose weight is to target the loss of body fat while maintaining muscle mass since this makes losing body fat easier. It's also the best way to also keep the weight off.

One of the best features of the Radical Diet is that it gets fast results not only on weight and overall fat loss but on fat loss in problem areas that can be resistant to the usual diets.

As you'll see, one of the first things you'll notice when you're on the Radical Diet is that you'll start losing weight and fat where you'll notice it the most, around your middle. You'll immediately see a difference in your waistline and the way your clothes fit. You'll also notice the general loss of body fat including problem areas such as the hips and thighs for women and the abdomen and "love handles" in men.

The reason behind these dramatic losses is because of the macronutrient composition of the diet and the low calorie content. The combination of high dietary protein, low dietary carbohydrates, moderate dietary fat intake, and low overall calories, lead to the breakdown and burning off of body fat, a decrease in appetite, increased energy output, and to a rapid improvement in body composition.

Since I know that everyone is looking for the fastest and most effective way to lose weight and help shape their bodies, I've increased the emphasis on the use of my targeted MD+ supplements. Although the Radical Diet will works extremely well on its own, you'll get even faster results by using the supplements. That's because I formulated these supplements specifically for people who are on my phase shift diets so that they could further improve on the fast and impressive results that they get from following my diets.

This edition of the Radical Diet also has much more information, both practical and theoretical, explaining how and why my phase shift diets work to maximize body composition. This information includes a look at the scientific and medical evidence, especially the latest research, that back up my theories.

As well, this book is supported online at www.RadicalDiet.com. The RD site will have updates to the diet, as well as testimonials, articles, recipes, food charts and many other items and projects that will enhance your weight loss experience with the Radical Diet. Information on the theories and principles behind the Radical Diet, and much more, is also available at www.RadicalDiet.com www.MetabolicDiet.com and at www.MDPlusStore.com.

The bottom line is that this edition of the Radical Diet is geared to help you lose weight, mostly as body fat, as quickly as possible while at the same time maintaining muscle. The end result is a fitter, trimmer body that you can be proud of.

Original Preface

I meant The Radical Diet to be a quick fix and a simple guide for those wanting to lose body weight and fat as fast as possible. Although It was originally only meant to be a short-term diet, with the motto of “Eight Weeks to the New You”, it has become much more.

By following the Radical Diet you not only lose weight and body fat fast, but you also change your metabolism from a carbohydrate based one, to one that is less dependant on refined, empty carbohydrates. Your body will become more adapted to using fat as a primary fuel making it much easier to burn off that extra body fat, while at the same time maintaining your muscle mass.

That means that by using the Radical Diet you will not only lose an amazing amount of weight and body fat in eight weeks and truly look like a new you, but you can also lose all the weight you need to lose and keep that weight off. With the Radical Diet, and the support provided by the Metabolic Diet, you can keep your body looking trim and fit for life.

Since the Metabolic Diet, my innovative macronutrient phase shift diet, is the cornerstone of my Radical Diet, I included some of the basic and starting information for the Metabolic Diet throughout the book since some of the later weight loss and maintenance phases will be based on the more traditional Metabolic Diet.

The first section of the book discusses the struggles with weight loss, and the health benefits of losing fat. The second part discusses the theory behind the Radical Diet and the Metabolic Diet. If you find it too technical you can skip it and go directly to Part Three: The Radical Diet, which details the diet step-by-step. Part Four talks about motivation, discipline and various tips and tricks to help you stick to your diet plan and get the results you want.

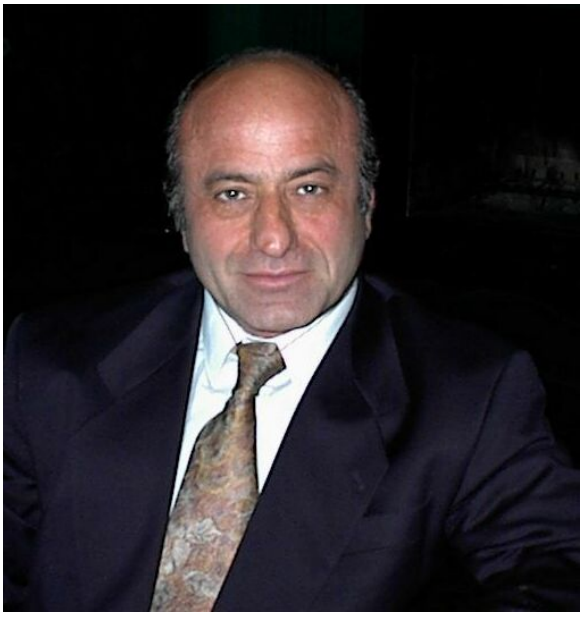
In addition to the diet, you may need a little extra help to shed the pounds. Parts Five and Six discuss the use of supplements and the role of exercise in a weight loss plan. They provide detailed supplementation plans and workout instructions.

Whatever you read and in whatever sequence you read it, just remember that the basic principles behind the Radical Diet are easy to understand and follow. Also remember that the principles espoused in this book are based on solid scientific principles and research, and real world use.

About Dr. Di Pasquale

Mauro G. Di Pasquale, B.Sc. (Hon.), M.D., M.R.O., M.F.S.

www.MauroDiPasquale.com



Dr. Di Pasquale is presently a licensed physician in Ontario, Canada, and for the last three decades has specialized in Bariatric (treatment of obesity) and Sports Medicine.

He holds an honors degree in biological science, majoring in molecular biochemistry and genetics (1968), and a medical degree (1971) - both from the University of Toronto. He is certified as a Medical Review Officer (MRO) by the Medical Review Officer Certification Council (MROCC), and as a Master of Fitness Sciences (MFS) by the International Sports Sciences Association (ISSA). He is also a member of the American College of Sports Medicine.

He was an assistant professor at the University of Toronto for ten years (1988 to 1998) lecturing and researching on athletic performance, nutrition, nutritional supplements, and drug use in sports.

He was a world-class athlete for over twenty years, winning the world championships in Powerlifting in 1976, and the World Games in the sport of Powerlifting in 1981. He was Canadian champion eight times, Pan American champion twice, and North American champion twice. He is the first Canadian Powerlifter to become a World Champion and first Canadian Powerlifter to total 10 times bodyweight in any weight class and he's the only Canadian to ever total ten times bodyweight in two weight classes.

Over the last four decades he has had extensive exposure to athletic injuries and disabilities, and ergogenic and nutritional supplement use by athletes. As well, he operated a Sports Medicine, Nutrition and Bariatric clinic for over three decades.

He has been chairman/member of several national and international powerlifting, bodybuilding and Olympic weight lifting sports federation medical committees. Over this

period of time he has acted as a consultant, medical advisor, drug testing officer and technical expert on the pharmacology and pathophysiology of sports, nutritional supplement use and drug testing.

He was the Medical Director to the World Wrestling Federation (WWF) and World Bodybuilding Federation (WBF) and the acting MRO for the National Association for Stock Car Auto Racing (NASCAR).

At present he is the President of the fledgling United World Powerlifting Federation (www.UWPF.com) and the Pan American (North, Central and South America, Bermuda, the Bahamas and the Caribbean Islands) Powerlifting Federation (www.PanAmPL.com).

He has written several books, many of which have been translated into various languages, dealing with diet, nutritional supplements and the use of ergogenic aids by athletes. Earlier books included *Drug Use and Detection in Amateur Sports*, *Beyond Anabolic Steroids*, and *Anabolic Steroid Side Effects, Fact, Fiction and Treatment*.

In the past three decades plus, he has been on several Editorial Boards for various fitness and strength magazines. He was the Editor-in-Chief of a peer reviewed, quarterly international newsletter titled Drugs in Sports, published by Decker. This newsletter was published in English, Spanish and Italian. He was also Editor-in-Chief of a bimonthly newsletter titled the Anabolic Research Review. Both newsletters contained information on drug testing and the use of drugs and nutritional supplements by athletes.

In 1995 he wrote two books. One of these books, the *Bodybuilding Supplement Review* is a review of nutritional supplements and the other, the Anabolic Diet, described an earlier version of his Metabolic Diet. This diet was aimed at bodybuilders and strength athletes. Both books were written to provide information to athletes on how to increase muscle mass and strength and decrease body fat, and to offer an alternative to drug use.

In 1997 he wrote *Amino Acids and Proteins for the Athlete - The Anabolic Edge* published by CRC Press was released in October 1997. He is presently working on the second edition of this book.

He has also written and is in the process of writing chapters for several books on nutrition, sports medicine, substance abuse, fitness and weight training. At present he is working on several other books including a comprehensive nutritional supplement manual.

In the past thirty-five years he has written a few thousand articles on training, diet, nutritional supplements, and drug use in sports for many magazines and association journals. He has written for and had regular monthly columns in all the popular bodybuilding and fitness journals including Muscle and Fitness, Flex, Men's Fitness, Shape, Muscle Media, Muscle Mag International, IronMan, Powerlifting USA and many smaller publications.

From 1996 to 1999 he was involved in writing, research and product development for Experimental and Applied Sciences (EAS) and Muscle Media, and was a member of the EAS Scientific Advisory Panel.

He has contributed chapters on ergogenic aids, diet and nutritional supplements to dozens of fitness, weight and sports medicine books as well as books on anabolic steroids and substance abuse. For example he contributed the chapter on Anabolic Steroids in The Handbook of Substance Abuse, 1998 and edited by Tarter et al., as well as chapters on nutrition appears in *Energy-Yielding Macronutrients and Energy Metabolism in Sports Nutrition* and in *Nutritional Applications in Exercise and Sport*, both edited by Judy A. Driskell and Ira Wolinsky and published in 2000 and 2001 respectively by CRC Press.

His latest collaborative effort, written along with Tudor Bompa and Lorenzo Cornacchia, is the second edition of *Serious Strength Training* released by Human Kinetics in late 2002.

In the past three decades he has been on several Editorial Boards for various fitness and strength magazines and was the Editor-in-Chief of a two quarterly international newsletter on sports nutrition and ergogenic aids.

He holds seminars and lecture all over the world on diet, nutritional supplements and training. In the past he has lectured and held seminars in dozens of cities in North America, and all over the world. He also formulates engineered, cutting edge, scientifically validated nutritional supplements for various companies that are sold under their specific labels.

He has developed a number of nutritional supplements over the past few decades, working on his own and with various supplement companies including EAS, Weider, Basic Research, Euthenics International, and Optimum Training Systems.

For example, he formulated a new group of nutritional supplements meant to combat nighttime post absorptive catabolism and enhance the anabolic and recuperative effects of sleep. He is now working on developing specific nutriceuticals along with some prominent researchers from the US and several other countries. Those in the US include doctors at Harvard Medical School and the Massachusetts College of Pharmacy and Health Sciences.

He acts as an international consultant and expert witness for amateur and professional athletes and sports bodies, private corporations and companies, and government agencies on all aspects of training, nutrition and supplementation and on legal matters relating to nutritional supplements, and the use and abuse, and drug testing of anabolic steroids, growth hormone and other ergogenic drugs.

About eight years ago Dr. Di Pasquale formed his own nutritional company and formulated a complete nutritional supplement line, which now includes over 25 cutting edge products designed to work with the Metabolic Diet and to maximize body composition (the amount of fat and muscle in the body – the idea for most of us is to minimize weight and body fat but not muscle mass), athletic performance and the beneficial effects of exercise.

These formulations were done using the latest scientific and medical information, along with the knowledge and expertise he has accumulated in the last four decades. He uses the best ingredients available regardless of costs to form products that are superior to any on the market today. These supplements, plus his book, *The Metabolic Diet,* and now *the Radical Diet,* along with related books and ebooks (www.MetabolicDiet.com), form the nutritional backbone of some of his new international ventures.

His **MD**+ line of nutritional supplements are available in many parts of the world, including North America, Japan, and most of Europe, and are featured on his two major web sites, **www.MetabolicDiet.com** and **www.CoachSOS.com**. The goal of these sites, and several others including www.RadicalDiet.com, www.FemmeBody.com, www.BoomerSolution.com and www.LongevitySolution.com is to provide specific and detailed training, diet and nutritional supplement schedules for all athletes and for anyone who just want to lose some weight and/or body fat.

His new "Solution" series of books and ebooks center on the use of the Metabolic Diet and nutritional supplements for various sports and for fat loss in both men and women. For example the Anabolic Solution for Bodybuilders, written for both recreational and competitive bodybuilders, is a cutting edge, training specific, diet and nutritional supplement guide geared to maximize muscle mass and minimize body fat.

All of the books in the Anabolic Solution series, by optimizing training, diet and nutritional supplement use, are meant to offer the athlete a drug free viable alternative to the dangerous use of ergogenic drugs such as anabolic steroids, growth hormone, IGF-I, clenbuterol, thyroid, insulin, and countless others.

His new Radical Diet Plan is meant for anyone wanting to quickly lose weight and body fat, both over the short-term and long-term, using a variation of the Metabolic Diet and his line of nutritional supplements for effective weight loss and weight management.

Along with his emphasis on weight loss, he has recently developed an anti-aging line of supplements. Over a dozen supplements in the MD+ lineup supplements address the effects that stress and aging have on the mind and body, including InsideOut (a formulation to rejuvenate and heal skin, nails and hair), InControl (for increasing concentration, memory and cognition), TestoBoost, GHboost and Metabolic (for optimizing the sex hormones and insulin, thyroid, adrenal and pituitary function), LipoFlush (for weight and fat loss and maximizing body composition), Joint Support (for decreasing inflammation and degeneration, and increasing strength and function of joints, muscles and tendons), ReNew (for decreasing inflammation in the body, increasing immune function, and optimizing energy metabolism), Regulate (for maintaining bowel health and regularity) and the three foundation supplements, MVM, Antiox and EFA+ that lay the foundation for anyone interested in allaying the effects of aging.

Dr. Di Pasquale has also started up the Metabolic Diet Nutritional Certification Council, an international body that provides nutritional certification at several levels. For more information on the certifications go to www.MDNCC.com .

The bottom line is that Dr. Di Pasquale is the most credible and qualified person on this planet to counsel you about weight and fat loss, and ways to maximize body composition. Unlike many of the others involved in the weight loss industry, he's no flash in the pan but a pioneer in the weight loss and body composition field with expertise and experience spanning four decades.

Part 1: Introduction to the Radical Diet

Dieting Today

We live in a society full of overweight people, peering anxiously at their mirrors and at themselves, looking for a way to shed their excess weight as quickly and easily as possible. As a result, new diets and nutritional supplements, no matter how outlandish and bizarre, cause ripples of excitement and anticipation - and renewed hope.

But gimmicks soon fail and outlandish diets pale when the pounds, easily lost at beginning, become harder and harder to lose, and then soon return. In fact, studies have consistently shown that the majority of people who are trying to lose weight don't reach their weight loss goals and soon regain back what weight they have lost.

In this book there are no promises and no gimmicks; you will not find the extravagant claims and eccentric ideas so common in many of the popular diet books. The concepts I present are based on science and on my clinical studies, rather than on the foundation on which most weight loss programs and fad books, diets and nutritional supplements rest – mostly bias and unsubstantiated opinions.

The information in this book is based on my knowledge and experience spanning over four decades. My interest in optimizing body composition began in my teens and remains today, over four decades later. Over those many years I became an elite level athlete winning national and international competitions, and also a medical doctor working with all kinds of athletes and overweight people.

The Radical Diet encompasses much of what I've learned over those years, including my 30 years of experience in helping people lose weight and running a Bariatric clinic, a clinic for people who are morbidly overweight. For over three decades I worked with people who had substantial amounts of weight to lose, with and without associated medical problems. And in those years I learned both the science and art of what it takes to help people lose weight and keep it off.

In the beginning I made extensive use of prescription diet medication because I felt that most of the people I was helping needed something more than the usual advice of eat less and exercise more. In fact telling many of my very overweight patients some of the usual advice that they've heard countless times was, I felt, insulting to their intelligence. Overweight people know what the problem is. They need help in overcoming their tendency to be overweight, not lectures and admonitions.

Unfortunately the prescription diet pills, while effective when used properly, had two major drawbacks. They lost their effectiveness when used continuously for a few months, and they had serious adverse effects.

What I needed, and what I eventually was able to come up with, was a diet plan that worked on its own, and a series of safe and effective supplements that made the diet that much easier to stick to and resulted in greater weight/fat losses.

The Radical Diet is not a temporary quick-fix weight loss schemes. These schemes are usually based on artificial fixes so that once you get back to reality the pounds soon find their way back.

But the Radical Diet, while a very low calorie diet, is based on the principles behind my Metabolic Diet, a diet that can be followed for life. So when you've lost most of your weight and body fat it's a simple matter to expand the Radical Diet to encompass the full Metabolic Diet, and as such to maintain your weight loss and body composition.

My Metabolic Diet is the answer to "what is the best diet to follow for maximum fat loss and for improving body composition," and my MD+ supplement line is the ideal accompaniment for this diet. That's because the Metabolic Diet is a "phase shift diet" that, unlike all the other diets out there, can be tailored to suit your genetic makeup.

In fact the Metabolic Diet is difficult to categorize in that it's not one diet. For example it's not a low carbohydrate diet, or a high protein diet, or like Atkins or South Beach. It's unique in that it takes into account individual differences in metabolism and as such is a continuum rather than a fixed diet. For most, the Metabolic Diet is the Holy Grail of Diets.

Because the Metabolic Diet is a continuum, it can also be taken to the extreme as far as using it for rapid weight and body fat loss. The Radical Diet is at that extreme and is written for those that either have a lot of fat to lose or want to lose what they have as fast as they can. For these people the Radical Diet, coupled it with my advanced line of weight and fat loss supplements, will do the job better than anything else.

As always, regular exercise helps increase weight and fat loss and maintains body tone and shape. You're more likely to reach your weight loss goal, and reach it faster, if you include regular exercise as part of this or any diet plan.

Also, before going on this diet, you should be medically sound, with no preexisting medical conditions or need for medications. I recommend that you get a complete physical and the OK of your doctor before starting.

This plan is not appropriate for pregnant or breastfeeding women, or for children or adolescents, except in special circumstances. In these cases careful supervision and monitoring is a must.

Is This Diet for You?

The Radical Diet was originally meant to be a short-term diet plan meant for rapid weight loss. However, it has evolved over the years and although it still produces rapid weight loss it can now be used for both short and long term weight loss, and for weight maintenance.

And because of the macronutrient mix, and the use of special supplements, this plan results in more fat and less muscle loss than any other weight loss plan.

The Radical Diet is a high protein, low carbohydrate, and low calorie diet, interspersed with higher carbohydrate and calorie days. The effect of the lowered calories is to put you in a calorie deficit. The low dietary carbohydrates is to switch over your metabolism to burning fat instead of carbohydrates (carbs), and with an inadequate amount of dietary fat in the diet, body fat serves as the energy alternative.

The high protein aspect of the diet, with dietary protein intake making up a larger proportion of the total calorie intake than in other diets, (in fact the protein intake equals or exceeds that of a normal, calorie balanced diet) offers a number of metabolic advantages that promote weight and fat loss.

In a recent review of the effects of dietary protein on body-weight regulation[1] the authors conclude that: “The role of protein in body-weight regulation, in comparison to other macronutrients, consists of different aspects: (i) satiety, (ii) thermogenesis, (iii) energy efficiency and (iv) body composition.”

The Radical Diet can be effectively used by anyone who wishes to lose weight and body fat, regardless of the amount they want to lose. This includes bodybuilders and other athletes who want to maximize lean body mass and minimize body fat.

By going on this plan you should be able to decrease your body weight, mostly by way of losing excess body fat, by at least 30 pounds (and often more) in a two-month period. Ongoing fat and weight loss is also possible, either through continuation of the Radical Diet if you still have a significant amount of weight to lose, or through some modifications according to the Metabolic Diet principles behind the diet.

If you need more information on the principles behind the Metabolic Diet, I recommend that you read my full Metabolic Diet book to so you have the information that you need to use the plan successfully over the long term. The Metabolic Diet book is a bound hardcover book that contains over 500 pages and can be ordered from www.MetabolicDiet.com or from other retailers such as Amazon.

For bodybuilders or powerlifters I recommend that you read my Anabolic Solution for Bodybuilders or Anabolic Solution for Powerlifters, either as ebooks or as soft-cover books. You can order any of the books and ebooks from my website **www.MetabolicDiet.com**. The website also contains information on my diets, books and nutritional supplements.

This rapid weight loss plan combines a very low calorie diet with my **Metabolic Diet**, along with the use of meal replacements and nutritional supplements that have been especially formulated for those on the Metabolic Diet. So, while the Radical Diet can be used for the

initial rapid weight loss, ongoing fat and weight loss is also possible simply by modifying the diet according to the same principles behind the Radical Diet.

The nutritional supplements allow you to lose weight faster and to improve body composition so that in the end you'll be healthier and fitter than on any other diet plan.

Testimonials, Etc.

I'm not big on testimonials (including shills - testimonials and endorsements made to look like they came from unbiased consumers), endorsements, before and after photos, money back guarantees (almost a sure sign that the product or service is a sham), and other marketing ploys that are used by the "big boys" to hawk their products. That's because most of these are fabrications of their marketing departments.

As far as testimonials, I've gotten hundreds of unsolicited testimonials for the Radical Diet. And we'll put up a lot of them, including some before and after pictures, on www.RadicalDiet.com. For example, you'll find out how one man lost an incredible 96 pounds in 11 weeks. We'll also post several testimonials from people such as Shelley and Bob below.

I've been on the Radical Diet for 5 weeks now and getting great results. I lost 10 pounds in 5 days - went from 268 to 258 lbs and have lost on the average about 4 pounds a week for the past month. That's 26 pounds in about five weeks, down to 242 lbs, and I'm so excited. I intend on going down to 165 lbs and am really looking forward to going shopping for a whole new wardrobe. Too bad you don't have an MD+ line of clothing. Shelley B

I started off by buying your Radical Diet ebook. I figured I had nothing to lose except my weight. I tried it at first without the supplements and it worked pretty well except that I didn't feel I was losing fast enough. I then ordered your basic package and used the Thermo and Metabolic for a month on their own. I then took the big step and ordered the advanced package. It was a pretty steep price and I wouldn't have ordered it except that I found out first hand that your stuff works. I've been on all the supplements now for two months and people can't believe the changes in me. Not only have I lost a total of 52 lbs in the last four months, but I gained muscle as well. I'm looking so good that people think I'm on a lot of drugs including steroids and they don't believe me when I tell them the truth. Bob A

But in the final analysis testimonials, pictures, guarantees, and endorsements from the stars don't mean much and you shouldn't let them influence you one way or another. The only time they do mean something is if you find out about them first hand from people who aren't involved with the company in question. This is called word of mouth and it's the best way, short of trying the product yourself, to find out whether a product is worth using.

Weight Loss versus Fat Loss

People feel better about themselves when they are not carrying excess weight. If you think about it however, it's not really the weight but the body fat that concerns them.

If you're carrying a lot of extra fat it shows. You don't need complex measuring devices to tell you someone is fat. It's plain to see. And because it is so plain to see, no one wants to appear fat. So it's not the weight but the fat that people are worried about.

I'll give you an example. Take two men who both weigh 225 pounds and are say six feet tall. If we use their BMI (body-mass index) measurements as an indicator (the BMI uses only the weight and height in consideration when determining if someone is overweight), they're identical as far as their BMI. But if you're somewhere in the real world and just look at these two people, it's a different story.

Side by side, Matt, who works out with weights and is pretty muscular and strong, looks lean and mean and has a body fat level of around 10%. This means that he's carrying less than 25 pounds of fat on his frame.

There's no way anyone would ever call Matt fat because he isn't. His weight is mostly lean body mass and he looks good. Now Jim, on the other hand, is a master of the remote control, and along with his well-worn couch and extravagant multimedia theatre, only exercises one part of his anatomy, his right forearm - needed of course to work all those gadgets.

His body fat level measures out at 30%, which means he's carrying almost 70 pounds of body fat on his frame. Jim is definitely fat and needs to lose some of that fat and maybe put on some muscle as well.

So BMI is only a rough measure, at best, of how much fat you're carrying on your body. A much better measure is just to measure your percent body fat. But this really tells you very little about what you look like.

In Part 3 of the book, under "Tracking your Progress", I describe the Metabolic Index (MIDx), which accounts for not only weight and height but also body fat, and provides a good snapshot of body composition.

So while the BMI stats for Matt and Jim are the same, seeing them side-by-side, or comparing their MIDx scores, gives you the real picture. Matt is lean and Jim is fat. Not only that but you can tell that not only is Matt lean, but he's also well muscled.

	Weight	% BF	BMI	MIDx*
Jim	225 lb	30%	30.5	10.49
Matt	225 lb	10%	30.5	31.47

* Higher MIDx score indicates higher lean muscle mass.

Weight Loss Is an Oxymoron

What am I trying to say? Just that weight loss is an oxymoron. Who really wants to just lose weight? That means losing weight from all of the various tissues in your body, including muscle and bone.

That's not what people want when they say they want to lose weight. What they really want to lose is FAT, not muscle. After all maintaining or even increasing muscle mass not only makes the body look and function better, but it makes it easier to lose body fat and keep it off.

It's important to realize that fat loss is not simply a matter of exercising more and eating less, although these are part of the fat loss equation. Effective fat loss also means guiding your body down the right metabolic paths where you target fat breakdown and spare muscle.

It's also more than just breaking down body fat. You also have to do something with that body fat so it doesn't simply reform (recycling of fat is a common occurrence – once fat is broken down but not used, the body just puts it back where it came from). That means getting rid of it by increasing the burning of this fat for fuel and flushing some of it right out of the body.

Besides increasing fat breakdown (lipolysis) and making sure you get rid of that released fat, it's also important to make sure that the weight you lose is mostly fat and not much, or if possible no muscle. Cutting calories can lead to weight loss but some or even most of this weight loss may in fact represent muscle and other tissues.

This is counterproductive because muscle helps you lose more weight and eventually keep weight off. If you lose enough muscle it'll be harder to lose weight and it'll pile back on a lot easier.

The trick to losing weight is to lose mostly fat so that when you're down to your target goal you still have most of your muscle. The result is that you'll be more likely to keep the weight off and you'll look and feel good.

It's also important to keep making progress. Anyone can lose weight at first but it's a real challenge to keep it up. That's because your body reacts to the imagined threat of starvation by instituting some ages old survival mechanisms, mainly slowing the metabolic rate so you can get by on fewer calories, and increasing hunger so you can take full advantage of any food that you find. Even though you're deliberately trying to lose weight to improve your looks and health, your body looks at the calorie reduction as a sign of impending starvation and adjusts accordingly.

So unless you understand what happens when you cut back on your calories, and make the appropriate adjustments, including taking the right supplements, you can reach a plateau fast.

Put all this together and it's no wonder that most people find it impossible to lose any significant amount of fat, to keep any fat they do lose from coming back on, and to prevent loss of muscle while they're dieting.

The most important steps to effective fat loss, besides reducing calories and exercise, are:

- Increasing fat release from the fat stores in the body, including cellulite.[i]
- Decreasing fat formation or lipogenesis. This is done by using various ingredients that decrease the stimulus and the enzymes that support lipogenesis.
- Increasing the elimination of the released fat from the body by burning it up and by flushing it out.[ii]
- Targeting fat loss and not muscle loss.
- And counteracting the metabolic effects of dieting, i.e. increased hunger and decreased metabolic rate.

As simple as all of this may sound, it's not what most diets and weight and fat loss supplements do. But it's what the Radical Diet and the MD+ line of nutritional weight and fat loss supplements are all about.

The Health Benefits of Losing Body Fat

Being overly fat is associated with more chronic health problems than smoking, heavy drinking, or being poor. According to one 2001 10-year study, the risks for developing diabetes, gallstones, hypertension, heart disease, stroke, and colon cancer rose proportionally with the degree to which the individuals were overweight.[2]

For example, the prevalence of type 2 diabetes in obese adults is 3–7 times that in normal-weight adults, and increases in proportion to the degree of obesity, with an incidence of over 20 times in the very obese. In addition, weight gain during adulthood is directly correlated with an increased risk of type 2 diabetes.[3,4] It's also been shown that losing weight results in an improvement in both the prevention and management of diabetes.[5]

Managing obesity has physiological and psychological benefits ranging from increased health and lifespan, to increased psycho-social functioning.[6]

That extra fat can contribute to disease in several ways:

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[i] This is done by triggering lipolysis via various mechanisms including triggering the right signaling systems (for example by selectively increasing cyclic AMP levels in fat cells either directly or indirectly) and maintaining thyroid hormone levels and activity.

[ii] Increasing the burning of fatty acids is done by increasing the metabolic rate (including normalizing thyroid hormone levels, increasing T3 formation and effect, increasing thermogenesis, and possibley by increasing UCP3 uncoupling protein – some of these also increase lipolysis), increasing the transport of fatty acids into the mitochondria (the fat furnaces of the body) and by priming and optimizing the functioning of the TCA cycle so that beta oxidation and the efficient utilization of the basic 2 carbon groups that result from fatty acids metabolism. Increasing the removal of fat from the body is done by increasing the amount of fatty acids that are dumped into the urine and flushed out of the body.

- **Metabolic Changes**. As fat cells increase in size, and number, especially those in the belly area, they produce more of certain chemicals, especially pro-inflammatory cytokines, that result in a chronic inflammatory condition and results in an increased risk for a number of diseases, including diabetes, high blood pressure, gallbladder disease, and some cancers.[7,8,9]

- **Increased Mass**. The increased weight from the excess fat causes structural problems that predispose to injury and diseases, including osteoarthritis and sleep apnea. This increased fat mass is also associated with emotional and psychological problems, especially depression.

- **Harmful Fat Cell Types**. Weight concentrated around the abdomen and in the upper part of the body (see below regarding keeping the waist trim) poses a higher health risk than fat that settles in a pear-shape around the hips and flank.

Insulin Resistance, Diabetes, and Metabolic Syndrome (Syndrome X)

Most people with type 2 diabetes (adult onset diabetes usually controlled by diet and oral medications) are obese and, in fact, studies strongly suggest that weight loss may be the key in controlling the current epidemic in diabetes.

Insulin resistance is a hallmark in most cases of adult diabetes, and results in the inability to use insulin effectively. This insulin dysfunction has the effect of increasing blood glucose (sugar in the blood), a common indicator of diabetes, and leads to problems in both fat and carbohydrate metabolism. Insulin resistance is also associated with high blood pressure and abnormalities in blood clotting.

Metabolic Syndrome (also called Syndrome X), which consists of obesity, especially abdominal fat, changes in cholesterol, hypertension and insulin resistance, is associated with heart disease and higher mortality rates from all causes.

Keep the Waist Trim to Ward Off Heart Disease

Not only is it important to lose fat, it's important for health reasons to lose it in the right places. Several studies have shown, for example, that storing the fat around the waist is a risk factor for diabetes, cardiovascular and various other diseases, including the Metabolic Syndrome.[10,11]

That's because an increase in visceral adipose tissue, the fat in and around the abdominal organs, can predispose you to among other things high blood pressure, insulin resistance, inflammation and abnormal blood lipids. These factors can lead to diabetes and cardiovascular disease, especially coronary artery disease. As well, visceral fat has been shown to be associated with an increase in deaths regardless of the cause of death.[12]

A recent Italian study has also shown that men with a "beer belly," otherwise known as central obesity, may be more likely to develop high blood pressure (hypertension) than those who have a more even fat distribution.[13] The study found that weight gain in the

belly area was associated with elevated blood pressure regardless of body mass index (BMI) and insulin resistance, two factors that are felt to contribute to hypertension.

The study looked at 700 men aged 25 to 75 who were not taking blood pressure medications. The parameters measured included waist and hip circumference, blood glucose and insulin levels after an overnight fast, calculated BMI and several blood pressure readings. “Central obesity” was determined by measuring the waist in relation to the hips.

In this study blood pressure rose together with BMI and the waist-to-hip ratios. The researchers concluded that a central distribution of body fat is associated with increased blood pressure, independently of body mass index and insulin resistance.

These findings are supported by the results of a second recent study involving more than 9,000 adults, which looked at the relationship between waist circumference and heart disease risk factors associated with obesity.[14] In this study waist circumference was found to be a more sensitive measure of heart disease risk factors than BMI, since it reflected more accurately adverse changes in cholesterol, high blood pressure, and elevated blood sugar levels.

But it’s not just the men that need to watch their waists. A recent study suggests that the distribution of body fat appears to be more important than obesity itself in terms of women's risk for developing the metabolic syndrome.[15] After looking at all the parameters the authors of the study found that the increase in abdominal fat is probably the most important factor associated with the syndrome.

This and other studies show that for both men and women staying healthy and looking good involves keeping the waistline trim.

Study Shows That the Radical Diet is Best

A recent study substantiated the effects of the Radical Diet on weight and fat loss, especially the dramatic effects of the Radical Diet on belly fat, the abdominal fat that expands the waistline and makes most people more self conscious than fat elsewhere.[16]

As we’ve already seen, that is also the most dangerous kind of fat since it increases insulin resistance and leads to various diseases and states including the Metabolic Syndrome, Diabetes, Hypertension, and cardiovascular disease, etc.

The study found that very low calorie and low carbohydrate diets offered distinct metabolic and body composition advantages over a low fat diet, including preferential fat loss in the trunk region.

The bottom line is that the Radical Diet results in better weight loss, body composition, and loss of body fat, especially around the waist, than any other diet out there!

Heart Disease and Stroke

Individuals that are carrying over 30% of their weight as body fat have an increased risk for death compared with individuals who carry less than 25%. Mortality rates from many causes are higher in obese people, but heart disease is the primary cause of death.

People who are obese have almost three times the risk for heart disease as people with normal weights. Being physically unfit adds to the risk.

Weight concentrated around the abdomen and in the upper part of the body (apple-shaped) is particularly associated with insulin resistance and diabetes, heart disease, high blood pressure, stroke, and unhealthy cholesterol levels. Fat that settles in a "pear-shape" around the hips and flank appears to have a lower association with these conditions.

Obesity poses many dangers to the heart and circulatory system.

- **Vascular Damage**. C-reactive protein (CRP) increases with obesity and increased abdominal fat. CRP is now considered to be a marker for inflammation and damage in the arteries and may also be responsible for the loss of flexibility of the aorta, the main artery coming from the heart. Losing weight reduces CRP levels, as does the use of LipoFlush.

- **Hypertension**. High blood pressure is commonly seen in obese people, with increasing problems as weight increases. Although the link between obesity and hypertension involves a number of factors, including genetic and environmental factors, hypertension, whatever the causes, carries serious risks for stroke, heart attack, and heart failure. Several studies have shown that weight/fat reduction reduces blood pressure.

- **Cholesterol and Lipid Levels**. In obesity there is usually an elevation of triglycerides and a lowering of the HDL – the good cholesterol. Both of these changes are considered risk factors for heart disease.

- **Stroke**. Obesity is also associated with a higher risk for stroke.

Cancer

Obesity has been associated with uterine, breast, prostate, gastrointestinal, and gallbladder cancer. This increase in certain kinds of cancer may be due to various growth factors, which are secreted by fat cells and can trigger rapid cell proliferation leading to cancer.

Musculoskeletal System

Excess weight, especially fat since it doesn't help support or move the body, places stress on bones and muscles, and overweight people are at higher risk for osteoarthritis, gout, low back pain, carpal tunnel syndrome and hernias.

Effects on the Lungs

Obesity also puts people at risk for hypoxia, where there's not enough oxygen to meet the body's needs. Not only do obese people need to work harder to breathe, tend to have inefficient respiratory muscles and diminished lung capacity, but they are also subject to the Pickwickian syndrome. In this syndrome, named for an overweight character in a Dickens novel, severe obesity results in lack of oxygen and produces profound and chronic sleepiness and, eventually, heart failure.

Effect on the Liver

People with obesity, particularly if they also have type 2 diabetes, are at higher risk for a condition called nonalcoholic fatty liver disease. This condition, which causes liver damage that is similar to liver injury seen in alcoholism, can be serious and even result in a need for liver transplantation.

Obesity also increases the incidence of gallstones in both men and women, and this incidence may increase further with rapid weight loss. Gallstone formation can be slowed down by the use of fiber supplements such as Regulate (see below).

Emotional and Social Problems

Since our society emphasizes physical appearance and often equates attractiveness with slimness, especially for women, being overweight can also lead to lower levels of self-esteem and confidence.

Several studies have shown an increase in depression and anxiety with obesity, and that symptoms are usually resolved with weight loss.

Why Natural Is Better

Many people see over-the-counter and prescription diet pills as a panacea. Unfortunately there are many adverse side effects to many body composition drugs. When you use drugs, such as most diet pills, injections of HCG, thyroid hormone, growth hormone, and even anabolic steroids, you're short-circuiting your body's normal processes. By providing hormones and other substances from outside the body, you shut down the internal mechanisms that would normally produce that substance.

This is easier to understand if we use the analogy of a factory producing some goods. If we provide the goods that the factory would normally make, then there is no need for the factory to be operational. If the factory is shut down long enough then sometimes it's hard to get it up and running since we have to round up the workers and raw materials, and get everything working at peak efficiency again.

The same things happen to our internal factories when we provide outside hormones and drugs. Whatever processes are involved in making these compounds, or in doing the things that these compounds do, are thus no longer needed so they're essentially shut down. This can result in long term and sometimes a permanent imbalance in the body that can be harmful to your health.

An example would be the use of anabolic steroids in males. Their use shuts down the hypothalamic, pituitary and testicular (evidenced by shrinking testicles) processes involved in the production of testosterone. After they're discontinued, in the time period during which the body is getting back to normal, most of the results and advantages of using drugs, are invariably lost. But it can be even worse than never having gone on the drugs since, in some cases, the systems never really return to normal.

On the other hand by maximizing the stimulation or activation of your internal factories, similar to how they would naturally be stimulated in the first place, you would be maximizing the input, the operation, and the output of your own body, making it hum along at peak efficiency.

As well, by staying natural, we avoid the possible short- and long-term consequences of drug use. These include short and long term changes in hormonal, metabolic and homeostatic processes and possible tissue and organ dysfunction. The long-term consequences of using some of the ergogenic and body composition changing drugs are yet to be determined but may well result in significant cardiovascular, hormonal, and carcinogenic (cancer producing and/or promoting) consequences.

That's what the Radical Diet, and the Metabolic Diet from which it stems, are all about: getting your system to naturally increase the fat burning, muscle sparing processes in the body. Couple the effects of the Metabolic Diet with the use of effective nutritional supplements, and use these in specific ways in different phases of dieting or training and you've got a natural, safe, and effective system for making progress and reaching your body composition and performance goals, without drugs.

Keep in mind that by using drugs you force your body to adapt in ways that it's not meant to, and that the changes brought on by drug use may have significant short- and long-term consequences. By using the Radical Diet and the MD+ line of nutritional supplements your

body is in control. You'll get better results than with the use of drugs, and you'll stay healthier in the process.

Smoking and Weight

I find that most patients are not overly concerned about the risks of smoking and believe that excess weight is more damaging to their health. Many of them claim that it's the smoking that keeps them from gaining more weight. This is reinforced by the fact that they in fact did gain weight when they attempted to quit.

Smoking, because of the stimulant nicotine, keeps weight down by three separate mechanisms. First smoking seems to decrease appetite - perhaps by a direct effect on the appetite control centers in the brain. Second it increases the smoker's metabolic rate by as much as 10%. Third smoking, because of the stimulant action of nicotine, increases activity. On top of all this, when you stop smoking, your taste buds soon recover (smoking deadens them) and food tastes better.

The end result is that when you stop smoking you need less calories to maintain your weight and you're hungrier. Is it any wonder that overweight people are reluctant to give up their cigarettes - even though they know that smoking is bad for their health?

Because smoking is such a health hazard I often will help my patients to stop smoking - but only after they have lost a significant amount of weight. It's easier to stop smoking once your confidence and self-esteem are high.

Also the use of ultra effective nutritional supplements, which actually work better than the prescription diet pills and which figure prominently in my program, make it easier to stop smoking. I've had scores of people who not only lost weight but also stopped smoking at the same time.

Although many people think it's easy to stop smoking (they've done it hundreds of times) the truth is that the craving for cigarettes and the underlying nicotine addiction are too strong to break without some help and a lot of motivation.

The problem with smoking is not just the nicotine but the 2000 different chemical substances contained in tobacco smoke. Many of these substances act as irritants and carcinogenic agents. Smoke also contains carbon monoxide. Carbon monoxide can impair athletic performance by decreasing your bloods ability to carry oxygen to your tissues.

Although LipoFlush wasn't developed to help the addicted smoker to stop smoking, it seems to do just fine in helping people quit. It likely works by a number of routes, one of them by increasing a person's energy and thus countering the drop in energy that's seen with the loss of the stimulant nicotine.

The idea behind LipoFlush is to not only cut back on the need to smoke, but also to decrease the weight gain that is often seen after someone quits smoking.

Part 2: The Theory Behind the Diet

A Very Low Calorie Variant of the Metabolic Diet

Introduction

The Radical Diet is a Very-Low Calorie Diet (VLCD) variant of my Metabolic Diet. The Metabolic Diet is a phase shift diet that uses macronutrient shuffling (varying the amount of dietary fat, carbs and protein that you take in on any one day) to maximize fat loss and muscle gain. Alternating a string of lower carbohydrate (carb) days with one or two higher carb days optimizes fat loss by manipulating the metabolism and various fat burning mechanisms. The result is a dramatic loss in body fat while retaining muscle.

The low carbohydrate part of the diet takes the body along different energy metabolic pathways than the more traditional higher carbohydrate diets. Following a low carb diet shifts the body energy metabolism to the use of more fat and protein for energy production. This produces dramatic effects on carbohydrate, fat, protein and energy metabolism (for those who are interested, see Appendix 3 and 4 for more details).

All of my phase shift diets are also high protein diets, including the Radical Diet. Higher protein intakes are inversely associated with abdominal obesity[17] so that people eating more protein tend to have a trimmer waistline.

High protein diets have been shown to decrease appetite, increase thermogenesis and thus metabolic rate, and increase fat loss preferentially so that muscle is spared.[18] High protein diets have also been shown to be especially effective when combined with low carbohydrate and calorie intake.[19],[20] As well, a high protein diet makes it easier to keep the weight off.[21]

In the Radical Diet, the food intake is reduced to a maximum of 1000-1200 calories on the low-calorie/low-carb days (depending on your sex and initial weight), and up to 2000 calories on the higher-carb day.

But there's more to the Radical Diet than just a low calorie, low carbohydrate, high protein, moderate fat diet plan. There's also another phase of the diet that allows more calories and more carbs. This phase of the diet helps to maintain muscle mass and reset your metabolism.

This diet is meant for those who have a substantial amount of weight to lose and/or want to lose weight and body fat fast. In order to do this most efficiently and to make the diet easy to follow, the diet is set up as a series of MiniSteps™.

So instead of having to face losing 30, 50 or 100 pounds all at once, you divide the weight loss into a series of manageable, achievable short-term steps. This process introduces and encourages consistency in your dieting ensuring that you achieve your goals.

But the MiniSteps™ do more than give you a simple way to follow the Radical Diet. They set up the occasional shift in the way you eat from the everyday lower calorie, lower simple carb approach, to a higher calorie, higher carb one every so often is necessary to keep your metabolism and hormones in tune, and to prevent that drop in metabolic rate that makes it so much harder to keep losing weight and body fat.

Without that shift in your diet, your body would go into starvation mode, decreasing the amount of calories you need to maintain your weight, and making every calorie you take in count. By introducing that higher calorie, higher carb day, you allow your body's metabolic rate, hormones, and strategy to change back to a more normal one – one that's more conducive to ongoing weight and fat loss.

Basics Behind the Plan

The Radical Diet is easy to understand and follow, and simple to use. And it works.

With the Radical Diet you learn what you need to do and how to keep doing it until you've get a substantial amount of your weight off. Then you simply ramp up the diet so that it becomes something that suits your metabolism so perfectly that you can easily manage your weight and body composition for the rest of your life.

If you follow the guidelines of the Radical Diet you are GUARANTEED to lose weight, and more importantly, body fat, and reach your body composition goals. This is because unlike all other diet plans that are goal oriented for reaching an ideal body weight, the Radical Diet is results-orientated from start to finish.

Most diets set up a goal weight for you and then hope that you'll lose weight on a steady basis. BUT IT NEVER HAPPENS THAT WAY AND YOU SOON LOSE INTEREST AND GO OFF THE DIET.

In fact, as I mentioned before, studies have consistently shown that 95% of people who are trying to lose weight don't reach their weight loss goals. And in my view it's because of the "ideal weight" goals that almost every single diet known to man treats as a first priority to losing weight.

Let's see now, you weigh 360 pounds at five foot three inches, so your ideal weight is 115 pounds. That alone is enough to discourage anyone no matter how enthused they are about losing weight. That's just too big a step for anyone to manage.

Radical Diet MiniSteps™

That's not the case with the Radical Diet because weight loss is not envisioned as one big step but a lot of MiniSteps™. These MiniSteps™ empower the Radical Diet with a failsafe way to lose the weight you want, ONE STEP AT A TIME. And each of these steps is a weight loss goal that you will make.

That's because if you fail to make weight at any one time, the diet goes into hyper mode until you do make that goal weight. It's simple, easy and there's no guessing involved. That means YOU WILL SUCCEED ON THE RADICAL DIET. IT'S INEVITABLE. YOU CAN'T FAIL IF YOU FOLLOW ITS PRINCIPLES.

The Radical Diet forces you to be the one thing that makes dieting successful. It forces you to be consistent. Consistency is the most important factor in the weight loss equation.

Sure you can lose 10 pounds the first week and then 5 pounds the next, resulting in a 15 pound weight loss in 2 weeks. But then what? If you don't consistently lose weight for the next few months, what's it all for?

I ran a weight loss and then a Bariatric clinic for severely overweight patients for three decades. In that time I had a lot of success helping people lose weight using a combination of diet, behavior modification and prescription diet pills. But I also had a number of patients who failed to reach their weight loss goals and many who never even got close.

The one thing that stuck out the most in those that managed to lose the weight they wanted to lose was consistency. It didn't matter if they started off with a bang and lost as much as 20 pounds in the first two weeks, or with a whimper and barely eked out 10 pounds in the first month. All that mattered was that they consistently lost weight, week after week, month after month.

The ones that didn't make it may have started off great but they soon fizzled out. They just couldn't stick to the plan because they didn't have that one important element, consistency.

Because of this problem with consistency, and because of the benefits to your metabolic rate and hormones that I mentioned above I came up with the Radical Diet MiniSteps™, short-term easily attainable goals that you have to reach before you can continue on. These MiniSteps™ provide the Radical Diet with built-in consistency. Because of this, if you follow the plan, YOU CAN'T FAIL!

The Radical Diet – a VLCD Variant of the Metabolic Diet

Very Low Calorie Diets (VLCDs) have been used for decades to dramatically and safely decrease body weight and fat.[22]

VLCDs come in different flavors. Most of the clinical studies involving VLCDs involve less than 800 calories a day. However, going lower than 800 calories a day in my experience is both unnecessary and counter productive. A recent study comparing 2 low calorie diets, one containing 458 calories and the other 800 calories found that the 800 calorie diet was as effective for weight loss but more cost effective and safer.[23]

Usually VLCDs use special commercially prepared formulas of 800 calories or less that replace all usual food intake. However, that needn't be the case. Regular foods can be used providing nutritional supplements and comprehensive meal replacements are also used to anticipate any potential nutritional deficiencies in the diet. When used properly, and that means making sure that the nutritional needs are met while on this plan, VLCDs result in significant long-term weight loss.

Interestingly enough, very low calorie diet plans work synergistically with the diet phases used in the Metabolic Diet to increase body fat loss and the use of fat as the body's primary fuel, while at the same time saving muscle from being broken down and used as fuel.

That's because, among other reasons, very low calorie diets have been found, like the Metabolic Diet, to cause a shift from the use of glucose to fat as the energy source, even during insulin stimulation[24].

Also several recent studies have shown that low carbohydrate diets are more effective for weight and fat loss than the high carb diets. Two studies published in the May 22, 2003 issue of the New England Journal of Medicine, found that people on the high-protein, high-fat, low-carbohydrate diet lose twice as much weight over six months as those on the standard low-fat diet recommended by most major health organizations.[25,26] In a follow-up to this study, the authors found that after one year there were several favorable metabolic responses to the low-carbohydrate diet.[27]

Another scientific study published in the same year compared the effects of a low-carbohydrate diet with a low-fat control diet on weight loss and commonly studied cardiovascular risk factors.[28] In this study, healthy obese women on the low-carbohydrate diet lost 8.5 kg, more than twice the amount of weight lost by women on the control diet, over a six-month period. Loss of fat mass was also significantly greater in the low-carbohydrate group.

In a follow-up study, released as an e-publication on Dec 14, 2004, with the print version in 2005, the authors concluded that short-term weight loss is greater in obese women on a low-carbohydrate diet than in those on a low-fat diet even when reported food intake is similar. The authors did not find an explanation for these results since there were no measurable changes between the dieters.

Another study published in May, 2004 found that not only was weight loss greater but serum triglyceride levels decreased more and high-density lipoprotein cholesterol level increased more with the low-carbohydrate diet than with the low-fat diet.[29]

The latest study looked at 4 weight loss diets, including a high carb/fiber, low fat diet and a moderate carb, moderate fat diet, over a period of 12 months.[30] The study found that those following the low carb, high fat diet lost more weight and experienced more favorable overall metabolic effects at 12 months than women assigned to follow the other diets.

But there's more as the Radical Diet is not just a low carb diet, it's a phase shift diet that helps you to maintain muscle mass, and keep the weight loss going by periodically decreasing the negative effects of long term low calorie diets.

This plan works to decrease body weight and especially body fat:

- **By limiting carbohydrates and calories, your body learns to burn fat (both in your diet and body fat) instead of carbs as its primary fuel.**

- **The high protein intake inherent in the Radical Diet increases satiety (feelings of being full), thermogenesis (energy output), and improves body composition (lose more fat while retaining muscle), with the end result that it's easier to lose weight and to keep the weight off in the long term.**

- **The higher calorie, higher carb days prevent your body from staying in "starvation mode" thus counteracting the decrease in metabolic rate and the increase in hunger, and also help maintain muscle mass and tone.**

- **The suggested targeted nutritional supplements I have developed for this diet offset the appetite, metabolic rate, immunity and other problems you might run into with this extreme diet plan. They will also help optimize body composition.**

The Metabolic Diet Principles Behind the Radical Diet

The Radical Diet is all about manipulating lean body mass and body fat. And it does this by affecting metabolic changes and altering the body's anabolic and the catabolic hormones and growth factors.

Since it's muscle, not fat, that moves our bodies and gives us the look we all want, our aim should be to minimize body fat while at the same time maintaining the muscle we have, or in some cases even increasing the amount of muscle. Also maintaining muscle helps to both lose weight and keep it off.

The fundamental rules of the Radical Diet are based on the principles of the Metabolic Diet. The Metabolic Diet is revolutionary in that it uses macronutrient shuffling to accomplish its strength and body composition magic. The effects of the Metabolic Diet are synergistically enhanced by the use of sophisticated, targeted nutritional supplements in various weight loss and exercise phases.

The Metabolic Diet is based on three steps and principles that explain how it works and why it's the best diet for maximizing strength and muscle mass, and minimizing body fat.

1. In order to change your metabolism to burning fat as your primary fuel, you replace the carbs you're eating now with protein and fat. The body adapts to the lack of carbs by priming up its fat burning machinery—increasing lipolysis and the oxidation of free fatty acids.

2. Once you're fat adapted (i.e. your body depends mainly on both dietary and body fat, not carbohydrates or muscle protein, to produce the energy it needs) you can cut calories by cutting the amount of fat in your diet. As the amount of fat in the diet naturally decreases, the body then uses body fat as its primary fuel.

3. Changing your metabolism to a fat burning one, and cycling from low carbs to a short phase of high carbs, allows you to naturally maximize muscle mass and minimize body fat. This is done by manipulating the major anabolic, anticatabolic, and fat burning hormones including testosterone, growth hormone, insulin, insulin-like growth factor I (IGF-I), cortisol, and thyroid.

Low Carb Controversy

There's been a lot of controversy about both the effectiveness and safety of lower carbohydrate diets. New studies, cited throughout this book, from leading institutions including Duke and Harvard Universities have shown that low-carb diets are safe, healthy, lead to more permanent fat and weight loss, and have shown improvements in the dieters' blood lipid and cholesterol profiles.

Effects on Body Composition

The low carb phase of the Radical Diet provides most of the weight and fat loss benefits. The higher carb shorter phase provides the stimulus that maximizes body composition so that the weight you lose will be mostly fat and not muscle or other important tissues.

The results of a study published in July 2002, showed that the long-term use of a low carb diet resulted in increased weight and fat loss, and a dramatic improvement in the lipid profile (decreased cholesterol, triglycerides and LDL, and increased HDL levels).[31]

Two studies published in the May 22, 2003 issue of the New England Journal of Medicine, found that people on the high-protein, high-fat, low-carbohydrate diet lose twice as much weight over six months as those on the standard low-fat diet recommended by most major health organizations.[32,33]

While there have been several reports over the last year about the benefits of a low carb diet, those reports have been presented at medical conferences and none until now was published in a top-tier journal. And one of the studies in the journal lasted a year, making it the longest one yet. The other study ran six months.

In both studies, the low carb dieters generally had better levels of "good" cholesterol and triglycerides, or fats in the blood. There was no difference in "bad" cholesterol or blood pressure.

The 132 men and women in the VA study started out weighing an average of 286 pounds. After six months, those on the low carb diet had lost an average of 12.8 pounds; those on the low fat diet 4.2 pounds.

The other study involved 63 participants who weighed an average of 217 pounds at the start. After six months, the low carb group lost 15.4 pounds, the group on the standard diet 7 pounds. In a follow-up to this study, the authors found that after one year there were several favorable metabolic responses to the low-carbohydrate diet.[34]

Another study published in May, 2004 found that not only was weight loss greater but serum triglyceride levels decreased more and high-density lipoprotein cholesterol level increased more with the low-carbohydrate diet than with the low-fat diet.[35] And yet another study published in September, 2004 found an overall favorable effect of a low carbohydrate diet on lipoprotein subfractions, and on inflammation, as shown by a reduction in C-reactive protein.[36]

Since obesity is characterized by chronic inflammation, and subsequently to increased susceptibility to various diseases such as diabetes and coronary artery disease, decreasing inflammation improves long term health and longevity. It's also likely that decreasing inflammation also serves to decrease the tendency to put weight back on.

On top of all this, a number of reputable researchers have published studies that back up much of what I've been saying all along about the effects of low carb diets on body composition. The newest study to add credence to my views looked at body composition and hormonal response to a low carbohydrate diet.[37]

In this study, a six-week carbohydrate-restricted diet resulted in a favorable response in body composition (decreased fat mass and increased lean body mass) in normal-weight men. The results of this study indicate that a low carb diet mobilizes and burns up body fat more than a high carb diet, while at the same time preserving muscle mass. Magical words to almost everyone I know.

That's not to say that there hasn't been other research showing that a low carb diet results in a significant fat loss and an increased retention of muscle mass, either alone or in comparison to a high carb diet.

For example back in 1971 a group of researchers looked at the effects of three diets that had the same calorie and protein levels, but varying fat and carbohydrate levels.[38] They found that as the carbs in the diets went down, there was an increased weight and fat loss. In other words the men who were on the lower carb diets lost the most weight and body fat.

In 1998 another study, this time involving obese teenagers, came up with similar results.[39] After 8 weeks on a low carb diet the teens not only lost significant amounts of weight and body fat, but they also managed to increase their lean body mass.

But that's not the whole story. In order to really appreciate the dramatic effects of the Radical Diet on weight and fat loss, and body composition, all you have to do is look and listen to the people who have been on it. Their successes will further substantiate its unique effectiveness of the Radical Diet. For their stories go to www.RadicalDiet.com.

Effects on Cardiovascular Health

While research has shown that low carb dieting results in more muscle mass and less body fat than low fat diets, there has always been sharply differing opinions about the effectiveness of low carb dieting for weight loss and their negative health impact.

The position of medical associations, federal health agencies and dieticians is that low carb diets, while perhaps effective for short term weight loss, are dangerous since they impact negatively on serum cholesterol levels, and as such result in cardiovascular disaster. But it turns out that this is not the case.

Several studies have shown that lower carb, higher fat diets are better for weight and fat loss. And now it also seems that the negative health implications have been grossly exaggerated. Research is now pouring in and shows that the low carb, higher fat diets are

not dangerous, as many high carb orientated people have consistently tried to point out, but in fact are heart healthy.[40],[41] Rather than raise cholesterol levels, low carb diets actually improve them. Total cholesterol decreases while HDL, the good cholesterol increases and triglycerides decrease. All three changes are felt to decrease the incidence of heart disease. For more specific info see Appendix 3.

At least three formal studies of the Atkins diet have been presented at medical conferences in the last couple of years, and all have reached similar results. For example, Dr. Eric Westman of Duke University presented his results on November 18, 2002 at the annual scientific meeting of the American Heart Association. This presentation contradicted much of what the AHA has had to say about the Atkins Diet; which was ironic since the AHA recommends a traditional low-fat, high complex carb diet.

This study looked at 120 overweight volunteers, who were randomly assigned to the Atkins diet or the heart association's Step 1 diet, a widely used low-fat approach. On the Atkins diet, people limited their carbs to less than 20 grams a day, and 60 percent of their calories came from fat.

After six months, the people on the Atkins diet had lost 31 pounds, compared with 20 pounds on the AHA diet, and more people stuck with the Atkins regimen. Total cholesterol fell slightly in both groups. However, those on the Atkins diet had an 11 percent increase in HDL, the good cholesterol, and a 49 percent drop in triglycerides. On the AHA diet, HDL was unchanged, and triglycerides dropped 22 percent. High triglycerides may raise the risk of heart disease.

While the volunteers' total amounts of LDL, the bad cholesterol, did not change much on either diet, there was evidence that it had shifted to a form that may be less likely to clog the arteries.

But that's not all. In a review published in February 2005 the authors noted that high carbohydrate diets that include foods with high glycemic indexes put many people, with or without diabetes, at an increased risk for developing cardiovascular disease.[42]

And in a study published a few months earlier, the authors concluded that a reduced carbohydrate, higher protein diet, like the Radical Diet, might be the most appropriate overall approach to reducing the risk of cardiovascular disease and type 2 diabetes.[43] Not only that but they felt that a higher fat diet, again like the Radical Diet, may be the most successful for weight loss.

The Radical Diet, rather than being a recipe for cardiovascular, Metabolic Syndrome, diabetes and other diseases, actually improves cardiovascular health, and helps you to lose more weight over all the other diets out there.

The bottom line is that the Radical Diet, a low carb, higher protein, moderate to higher fat, phase shift diet, is the ideal diet for anyone wanting to lose weight and stay healthy.

And what about insulin resistance?

I'll leave a detailed discussion of insulin sensitivity and resistance for another place and time. However, it's important to know that insulin resistance, because of its complexity, can actually be a good thing in certain conditions, and can be used to maximize body composition. That's because insulin resistance can be manipulated so that it applies differently to different body tissues and metabolic processes.

Insulin resistance in glucose metabolism, which can allow increased use of free fatty acids, and therefore body fat, as fuel, can be present along side of insulin sensitivity in amino acid transport and protein synthesis, which maximizes muscle mass, and with insulin resistance to fat tissue, which increases lipolysis and decreases lipogenesis.

The end result of the variation in insulin resistance and insulin sensitivity in different tissues makes it easier to lose weight, especially body fat, and to maintain muscle mass. It is this type of environment that's created by my Radical Diet, resulting in dramatic weight and body fat loss while sparing muscle.

The Truth About Fats

Even though views are beginning to change, the old “fat is bad and carbohydrates are good” mantra still seems to be the predominant view. We are beginning to realize that fat is not all bad, and is in fact important for good health. We’re also realizing that most of the carbs we eat aren’t good for us.

The high carbohydrate diet favored by so many dieters can actually work against them. First of all, by cutting down on dietary fat you actually burn less body fat and tend to lose more muscle. So, by cutting back on calories you’ll lose weight but a lot of that will be muscle. The end result isn’t pretty since, in trying to maximize your muscle mass/body fat ratio to get in shape, you’re going to end up losing a lot of muscle and strength.

There are also some health concerns regarding the high carb diets. Recent studies have shown that the high carb diet raises serum triglycerides and lowers HDL and as such can lead to an increase in cardiovascular disease. And if that’s not enough, the low fat diets can be too low in the essential fatty acids and may result in a problem with the absorption of the fat soluble vitamins including vitamins A, D, E and K.

Behind the “fat is bad” mantra are a lot of misconceptions, in both the scientific literature and in the popular media.

First of all, it’s commonly held that increasing dietary fat will increase dietary calories. The more fat you eat, the more calories you’ll take in and the fatter you’ll get. This has some basis in fact, for example if your diet is one that is uncontrolled for fat and carb intake. This kind of diet is high in both fats and carbs and can be a recipe for disaster, both for your health and for body composition. In this instance, studies have shown that both body fat and weight increase in test animals.

But what’s not taken into account in these studies, and with most people, is that you can manipulate your dietary fat and carb intake to produce the exact opposite. A low carb, higher fat diet, if used properly, can result in a decrease in caloric intake and a decrease in weight and body fat.

And it’s not just the transition to burning fat instead of carbs as a primary fuel (using both dietary and body fat) that takes place on a low carb, moderate to high fat diet. There are other factors at play such as appetite control and controlling body composition (see below under Good Fats).

Saturated Fat

The usual deal in the literature is that dietary fat and especially saturated fat are bad. The mantra still exists. Fat is bad, carbs are good, although even they’re realizing that the simple carbs in fact, really, truthfully, and honestly, aren’t.

In reality, fat is good, as long as it’s under the right circumstances and the right kind. And I’m not just taking about the monounsaturated olive oil kind of fat, or the essential fatty acids kind of fat, or even the fish kind of fat. I’m talking about the red meat kind of fat.

Fat is bad under some conditions but you can't generalize. All that the famous Finnish study back in the seventies,[44] one of the hallmark studies that's the foundation of how much better unsaturated fat is than saturated fat, showed was that high levels of saturated fat didn't go over well with mental patients. But then we're not all institutionalized are we? Maybe some of us should be but as a whole you can't use data from a weird subset of the population, under even weirder conditions (how can you replace the saturated fat from dairy products with soybean oil and margarine and not get some pretty distorted diets?) and then apply it to everyone.

You can't but they did, and do. And this criticism applies to almost all of the other studies that make a bad fat connection. But the weight of all these studies is having some effects that might not be to our best interests. For example, our agricultural and food manufacturing industry is gearing up to produce foods with lower saturated fat even though we still don't have the answer as to what levels are optimal or if in fact we should be reducing our saturated fat intake.[45]

And there are studies out there that show the opposite association.

As an example, let's start with a study published in 2004.[46] The authors of this study found that a higher saturated fat intake is associated with less progression of coronary artery disease.

In a nutshell they found that a high fat, high saturated fat diet is associated with a lessening of coronary artery disease in women who are insulin resistant, and have other symptoms consistent with the metabolic syndrome.

In other words feeding women a diet high in saturated fat, women who are already suffering from some pretty hefty diseases, which are partly supposed to be a result of eating too much saturated fat, results in an improvement rather than making their situation worse.

Another study published in 2005 found that substituting polyunsaturated fatty acids with saturated or monounsaturated fatty acids may reduce pancreatic cancer risk. Red meat contains about equal amounts of both saturated and monounsaturated fatty acids (see below).

Couple this with the French Paradox, the traditional Eskimo and Masai diets, where diets high in fat have resulted in low levels of cardiovascular disease, and various other inconsistencies, and you've got a problem with the popular "saturated fat leads to cardiovascular disease" hypothesis.

What About Red Meat?

Red meat has been maligned now for the past few decades. It seems that nothing good can be said about it except that it's great barbecued. But the tide is turning and research is showing that red meat has been undeservedly maligned.[47]

I've always said that red meat is good. And there are several reasons for this. First of all I never believed in what the naysayers were preaching. Again, just as with saturated fat,

there are too many inconsistencies. After all red meat has been a staple in our diets since the beginning of our time. So why all of a sudden is it poisonous to us?

And red meat contains as much oleic acid, the same monounsaturated fat as in olive oil, as it does saturated fat. Oleic acid is considered to have significant health effects,[48] and is also felt to act as a sensing nutrient and when present decreasing appetite.[49]

Red meat is one of the best sources for amino acids. It's high in vitamins A, E and B complex. Vitamin B12, while plentiful in meat, is not found in vegetable products. Red meat is loaded with iron that is easily absorbed, unlike iron that is present in many plant sources. As well, red meats are excellent sources of other nutrients including L-carnitine, taurine, conjugated linoleic acid (CLA), coenzyme Q10, potassium, zinc and magnesium – all vital nutrients, especially for those of us who want to improve our body composition.

For example, L-carnitine is primarily found in meat. And red meat is the best source of L-carnitine with about 600 mg present per 100 grams. Fish contains only 35 mg per 100 grams. For athletes, plentiful L-carnitine means not only a larger proportion of lean muscle mass, but increased use of energy-rich fat as fuel during exercise. As well CLA can result in a reduction of overall body fat and an increase in lean muscle mass, by increasing insulin sensitivity and helping to regulate protein and fat metabolism in the body.[50,51,52]

Red meat is also one of the best foods for maximizing body composition. A recent study found that women on a low calorie red meat diet lost more weight and were healthier than those who a low calorie low meat diet.[53] As well, there were no adverse effects on bone metabolism because of the high red meat/protein diet.

In another study, red meat was shown to have beneficial effects on serum cholesterol and triglycerides, the other important fat.[54] At the end of the nine month study, the researchers found that the red meat group had an average decrease of 1 to 3 percent in "bad' low-density lipoprotein (LDL) cholesterol and an average 2 percent increase in "good" high-density lipoprotein (HDL) cholesterol, and an average drop of 6 percent in their levels of triglycerides.

As well, red meat, with its saturated fat, increases serum testosterone levels. I've seen this in clinical studies that I've done on patients and athletes who I've put on my diets, with the emphasis on red meat. And this association has also been shown in some studies.[55,56,57]

The Importance of Having Fat in the Diet

Red meat has by nature fat and protein together. Now some people have been advocating a high protein, low fat, low carbohydrate diet as the ideal diet for health and body composition. As such, they don't advocate red meat, or for any matter any source of fat because they feel that fat just isn't necessary and it adds a lot of calories.

However, these people are wrong. If you're going to lower carbs in your diet then you need more fat than on a high carb diet. That's because fat acts as a primary fuel, taking the place of carbohydrate and if it's low in the diet then the body has to rely on mainly protein for its energy needs.

Relying on protein as the main energy source can run you into problems. In the extreme you can develop “rabbit starvation” a condition that seems to occur in diets that are very high in protein and very low in fat and carbohydrates, such as the consumption of very lean rabbit meat.[58] I believe that basis behind the toxicity associated with eating just lean meat is hyperammonemia, which occurs because of the excess of ammonia secondary to the breakdown of the large amounts of protein that are needed in an attempt to derive all of one’s energy from just protein.

Good Fats

In my Metabolic and Radical Diets, I discourage excess carbohydrate consumption, especially the refined carbs and sugars, and encourage the use of good fats in the diet, including the use of fish and fish oils and sources of gamma-linolenic acid (GLA) such as evening primrose and borage seed oils. At present, this is the best we can do is to make sure that enough and the right proportion of the essential fatty acids (EFAs) and other members of the omega-6 and omega-3 fatty acids are present in the diet.

The omega-3s like alpha-linolenic acid (LNA) and eicosapentaenoic and docosahexaenoic acids (known as EPA and DHA respectively) are critical to anyone concerned with dieting. They increase fatty acid oxidation (burning of fat), basal metabolic rates, and lower cholesterol. Omega-3 fatty acids also provide an anabolic effect by increasing the binding of IGF-1 to skeletal muscle and improving insulin sensitivity, even on diets high in fat which have a tendency to decrease insulin sensitivity.[59] As well, fish oils may also have important implications for women prone to osteoporosis since they appear to decrease calcium excretion.[60]

Omega-3s also stimulate prostaglandin production. Prostaglandins are eicosanoids that regulate activity in body cells on a moment-to-moment basis and are involved in critical functions like blood pressure regulation, insulin sensitivity, immune system and anti-inflammatory responses. They're also involved in literally hundreds of other functions, many of which have yet to be fully identified in research. If you have a problem producing prostaglandins or experience an imbalance between the different kinds of prostaglandins, overall health can be radically affected.

The series three prostaglandins are formed from EPA. As well, EPA reduces the production of the bad prostaglandins from arachidonic acid. EFA deficiency can lead to high blood pressure, hormonal dysfunction, impaired immune function, coagulation problems, inflammatory changes, dry itchy skin, peripheral edema, and many other conditions.

Essential Fatty Acids and the Radical Diet

EFAs can be beneficial even if a deficiency doesn't exist and, if used properly, can increase overall health, help you avoid heart disease and lose body fat. Overall, the increased processing of foods in our society has significantly lowered the amount of EFAs in the average diet. Foods rich in EFAs are highly perishable and not deemed practical or profitable for most commercial preparations. The extra EFAs you'll get from the Metabolic Diet, as explained below, is just one more reason for giving the diet a try.

The omega-3s are a positive factor in high-fat diets. They're found to a high degree in fish oils (as EPA and DHA) and have been hailed as a major factor in lowering serum cholesterol levels, preventing coronary heart disease[61,62] and perhaps even preventing or curing atherosclerosis.[63]

Marine oils are a big part of the diets of Eskimo tribes. Though their higher-fat diet would seem to make them prime candidates for heart disease and atherosclerosis, they've been found to be almost immune to cardiovascular problems, at least until Western dietary influences in recent years. Studies have centered on omega-3 fatty acids in the fish oils and their cardioprotective capacities as being central to this phenomenon.[64]

For the person on the Radical Diet, where fat and protein are found at high levels, the omega-3s can provide an excellent hedge against worries about cholesterol. Blood pressure, clotting, immune response, insulin resistance, and triglyceride levels are all positively affected.[65] Even in cases where dietary cholesterol is increased, omega-3s may aid in actually lowering serum cholesterol.[66] There is some evidence to suggest that in higher-fat diets aerobic exercise also reduces serum cholesterol[67] and thus may improve the effects of omega-3 rich fish oil on cholesterol.

Good Fats Will Help You Lose Weight

Several studies have shown that fish oil increases insulin sensitivity, the breakdown of body fat and the use of fat as a primary energy source. As such, besides decreasing inflammation and increasing cardiovascular health, they also provide substantial weight and fat loss benefits.

LNA, EPA, and DHA can enhance lipolysis (body fat breakdown)[68,69] and decrease lipogenesis (body fat formation).[70,71] The combined breakdown of stored body fat and decrease in additional body fat can have very positive results for the dieter. You actually end up making less fat and breaking down more of what's already on the body when using these oils.

EPA also decreases some of the possible inflammatory effects of using GLA supplements. That’s because GLA can be a precursor for arachidonic acid (AA, a “bad” type of prostaglandin that increases platelet aggregation and inflammation) and the addition of EPA reduces AA accumulation in some cells and tissues secondary to GLA supplementation.[72]

That's why I wholeheartedly support adding portions of fish and fish oil to your daily diet. And, while many foods contain more than one type of fatty acid, plant oils are usually richer in unsaturated fatty acid content than animal fat. It's not surprising, then, that flaxseed oil, nuts, seeds, and unprocessed vegetable oil are also rich in essential fatty acids.

Dietary Fats and Body Composition

Since fat-free mass, and particularly muscle mass, is the main determinant of energy expenditure, the possibility of increasing or even maintaining muscle mass is an important consideration.

Conjugated linoleic acid (CLA), naturally found in beef, milk and milk products since it is an intermediate in the biohydrogenation of linoleic acid that occurs in the gastrointestinal tract by bacteria, may promote fat-free mass. CLA refers to a group of positional and geometrical isomers of linoleic acid containing conjugated double bonds. The natural form is predominantly the *cis*-9, *trans*-11 isomer. Numerous physiological effects in relation to body-weight control have been attributed to CLA in animals.

In different animal models, CLA has been shown to reduce body fat and to increase lean body mass.[73, 74] While studies in humans have not shown the same effects of short term supplementation with CLA, a recent long term study found that a mixture of the two CLA isomers significantly lowered body fat mass in overweight humans.[75]

As well, CLA seems to have significant effects on weight regain, as it reduces fat uptake into adipocytes by decreasing the formation of fat and but not affecting fat breakdown. It likely does this by affecting various enzymes involved in lipid formation rather than enhancing fat breakdown, known as lipolysis.[76, 77, 78]

Thus there is an overall increase in fat breakdown since the two processes are usually in dynamic equilibrium with as much fat being produced as is broken down. Decreasing fat formation changes the dynamics to one of overall increased fat breakdown and subsequently a decrease in overall body fat.

EFA+

I formulated an advanced EFA formula that contains all the “usual suspects” as well as other important ingredients. The other ingredients include CLA, and a number of antioxidants. The antioxidants counteract some of the adverse effects that these essential fatty acids might have.

For example, although it’s been shown that fish oil increases oxidation of LDL cholesterol, the “bad” cholesterol in the body that’s been implicated in cardiovascular disease, it has also been shown that the use of antioxidants counteracts this negative effect of fish oil.[79,80]

That’s one of the reasons why my EFA+ (see info on EFA+ below) combines several antioxidants, including vitamin A, vitamin E, conjugated linoleic acid (CLA), alpha lipoic acid, and glutathione, with fish oil and other sources of essential fatty acids.[81, 82]

As well, the association of antioxidants with the omega-3 essential fatty acids, such as the fish oil and other ingredients found in EFA+, act in concert to enhance the beneficial effects of the essential fatty acids on the cardiovascular system.[83]

The antioxidants also preserve the natural state of the EFAs while in the capsule so that what you get are all the good effects that EFA+ has to offer and none of the bad.

EFA+ is a multi purpose formulation designed to provide the full gamut of all the essential fatty acids that are so important in optimizing your metabolism, maximizing the anabolic and fat burning effects of exercise, and decreasing the counter productive inflammatory response of exercise.

Fat Oxidation

Interestingly enough, it's well known that fats also stimulate fat oxidation beyond the effects of a low carb diet that forces the body to use fatty acids, both dietary and body fat, as a primary fuel. A prime example is diacylglycerol (DG).

Normal fat intake in the diet is as triacylglycerol (TG), although small amounts of DG may be present. Recent studies suggest that DG intake might have a beneficial effect on the lipid metabolism in humans and result in increased weight and fat loss.[84]

Compared to TG, consumption of DG lowered the postprandial elevation of plasma TG concentrations in humans and fasted serum TG levels in rats and humans. Also, prevention of total body fat accumulation and visceral fat accumulation in rats and humans by DG have been reported. These effects appear to be most likely attributable to differences in DG utilization, especially β-oxidation.[85]

In one recent study DG decreased the feelings of hunger, appetite, the estimate of prospective food intake and desire to eat.[86] The authors of this study concluded that consumption of DG increased fat oxidation and decreased hunger, appetite, estimate of prospective food intake and desire to eat.

Both DG and CLA are essential ingredients in my MRP LoCarb, which makes up an integral part of my Radical Diet.

But there's a lot more to MRP LoCarb. With it's macronutrient makeup and many other ingredients, it's a nutrient dense product that sets up your metabolism for weight loss, is low in carbs, and has the ingredients to both maintain muscle mass and increase the loss of body fat.

CLA is also an important ingredient in my LipoFlush, a research-driven, synergistic blend of natural ingredients designed to dramatically decrease body fat, increase energy levels, preserve skeletal muscle, and provide major health benefits.

As well, CLA, because of its effects on lipid metabolism and serum lipids, is an important part of both my ReNew and EFA+ (see above).

Bad Fats

Introduction

There's a very popular misconception that commercial vegetable oils are a good healthy source for essential and non-essential fatty acids. Nothing could be farther from the truth. The fact is that most of those vegetable oils you see on the shelf of your local supermarket including corn, canola and soybean oils, have been hydrogenated or very heavily refined, and are so overly processed that they can be harmful to your health. Processing not only removes any useful properties the oil had such as EFAs or antioxidants, but depending on the processing can cause immune problems and predispose us to certain cancers.

The problem is that the natural poly- and monounsaturated fatty acids are reactive to light and heat and spoil readily. Even natural polyunsaturated fats, because they are unstable and oxidize readily, have been recently shown to have two serious drawbacks. First of all, they seem to promote certain cancers at a dietary concentration of 5% or more.[87] Secondly, while they can lower total cholesterol they can also lower the HDL[88] and thus increase the chances of coronary artery disease.

To make matters worse, polyunsaturated fats are usually treated in an effort to solve some of the problems associated with their commercial use. A process called hydrogenation has been used for decades to change natural oils into fats that are more solid and stable at room temperature, have a longer shelf life and are easier to use in certain foods and baked goods. Hydrogenation involves heating the oil in a vacuum and then forcing hydrogen through it under pressure. The process is continued until the required degree of hydrogenation is achieved.

Unfortunately, while hydrogenation and other methods used to refine or change oils, such as chemical solvents, bleaches and heat may be healthy for business, it isn't for our bodies. Not only do these processes destroy any natural qualities present in the natural oils, they create by-products that can be harmful to our health. Trans-fatty acids, cross linked fatty acid chains, and fragments of fatty acid chains produced secondary to hydrogenation can have significant adverse effects on blood cholesterol and can increase the risk of heart disease. By competing with EFAs these fats lead to EFA deficiencies and subsequently to a host of other health problems including diabetes, cancer, and weight gain.

Trans-Fatty Acids

Trans-fatty acids have been the most widely researched of these toxic by-products. Trans-fatty acids are found in refined vegetable oils, shortenings, almost all margarines and other oil-based foods, and even in baked and prepared snack foods such as cookies, crackers, and chips.

Large quantities of unnatural trans-fatty acids are also found as food contaminants during excessive heating of cooking oils for deep-frying and other excessive heat-requiring mass food preparation procedures. They've been found to raise overall cholesterol levels, lower HDL, decrease testosterone and insulin response, adversely affect liver enzyme activity and impair the immune system. They've thus been linked to heart disease, cancer, and

other diseases associated with aging. Because of recent studies documenting all the adverse effects of trans-fatty acids, the population at large is beginning to demand less trans fats in foods.[89]

Much of the problems with trans-fatty acids reside in the fact that the shape of a fatty acid is essential to its proper functioning. While trans-fatty acids have the same exact number of carbon and hydrogen atoms as the original fatty acid (known as the "cis-fatty acid"), its shape has been greatly changed. This change in shape, from "cis" fatty acid to "trans", causes competition for existing enzymes. As a result, the cis-fatty acids are unable to carry out their proper biological role.

The amount of trans-fatty acids, or other toxic by-products, found in a food varies according to the extent and nature of the processing. Generally, vegetable oil products that are hard at room temperature (like shortening or margarine) are more riddled with trans-fatty acids than products that are liquid at room temperature (like vegetable oil).

Several studies have pointed to the adverse health effects of hydrogenated fats and the trans-fatty acids in them (especially hard margarines, but even soft margarines are suspect), including an increased incidence of heart problems[90] likely secondary to unfavorable changes in serum lipoprotein[a], a strong risk factor for coronary heart disease.[91]

Recently a number of studies have shown that trans monounsaturated fatty acids from hydrogenated oils and fats unfavorably affect the serum lipoprotein profile.[92] When compared with cis unsaturated fatty acids, trans monounsaturated fatty acids decreased HDL cholesterol concentrations and increased those of LDL cholesterol and triacylglycerol.[93]

Still, relationships between the consumption of trans monounsaturated fatty acids with cardiovascular risk in many studies are stronger than predicted on the basis of these lipid changes.[94] This suggests that trans monounsaturated fatty acids also modify other cardiovascular risk markers.

Two other studies examined the effects of trans fatty acids on markers of low-grade chronic inflammation, which has been implicated in cardiovascular and other diseases as well as aging.

In two recent studies, one involving women and the other men, a high intake of trans fatty acids was positively associated with concentrations of soluble tumor necrosis factor [alpha] receptors 1 and 2, and IL-6, three markers of systemic inflammation.[95, 96]

In addition to the well-recognized roles of EPA, the lack of trans-fatty acids in the traditional Eskimo staple diet may also be responsible for their cardiovascular health. This diet contains cis-forms of the unsaturated fatty acids in physiologically optimal concentrations and is virtually totally devoid of unnatural and potentially hazardous trans and cis isomers of these fatty acids.[97] These differences in the Eskimo diet would likely ensure the synthesis of eicosanoids from dihomo-gamma-linolenic acid, arachidonic acid and eicosapentaenoic acid in balanced, optimal physiological concentrations.

Fats to Avoid

- All Margarines except those with low trans-fatty acid content.
- Hydrogenated and partially hydrogenated oil products and foods (check the labels).
- Shortening.
- Old fats and oils of any type.

In summary, bad fats are fats that have been altered by processing and so that they compete with essential fatty acids and thus negatively affect cellular metabolism and structure. There is also some speculation that trans-fatty acids may adversely affect insulin sensitivity, decrease fat oxidation and increase fat synthesis. All three of these effects would be counterproductive to anyone on the Radical or Metabolic Diets.

Foods containing significant amounts of trans-fatty acids usually list hydrogenated or partially hydrogenated products in their listing of ingredients. These foods include baked goods, crackers, candies, almost all fried fast foods, potato chips, and other foods that have or are made with shortening, margarine or refined oils. Keep away from them as much as possible.

Good and Bad Fats – Using Your Head

Good Fats—EFAs, Fish oil, flax seed oil, GLA (EPO), Olive oil, some saturated fats.
Bad Fats—too much saturated fats, trans-fatty acids, MCTs.
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The Lowdown on Fiber

Fiber from plant foods such as grains, fruits and vegetables is an essential part of our daily diet. Both soluble and insoluble fibers are necessary to keep our bowels working properly. This is especially important for those on reduced calorie diets, as the drop in food intake often means a drop in fiber as well.

However, besides keeping us regular and preventing constipation, fiber also appears to reduce the risk of developing various conditions, including heart disease, diabetes and diverticular disease.[98,99] Fiber is also effective at increasing your feeling of fullness.

Fiber makes up most of that part of the plant that isn't digested by humans and is generally broken down into two types, soluble and insoluble. For most purposes looking at fiber as two distinct types, based on whether or not the fiber is soluble in water, is more than adequate to explain fiber's role in the body, even though there's a more to the story.[100]

Foods usually contain a variable amount of both soluble and insoluble fiber. For example oat bran contains, along with regular carbs, equal amounts of soluble and insoluble fiber whereas wheat bran contains about 20% soluble and 80% insoluble fiber. In general there is more insoluble fiber than soluble fiber in the average diet. That's because there are fewer foods that contain appreciable amounts of soluble fiber.

The recommended intake of fiber for good health is between 20 to 35 grams per day depending on personal requirements and conditions.

Categories of Dietary Fiber

Insoluble Fiber

- Cellulose, found in the stalk and leaves of vegetables, root vegetables, cabbage family, grains, legumes, peas, bran, and the outer covering of seeds, and apples.
- Hemicellulose, found more so in bran and whole grains. Also contains some soluble fiber.
- Lignin, not strictly a fiber but it increases resistance to digestion - found in root vegetables, wheat, fruits with edible seeds (such as strawberries).

Soluble Fiber

- Pectins, found in fruits, especially in apples, strawberries oranges, grapefruit, and lemons.
- Gums and mucilages, found in legumes (beans, peas, lentils) oatmeal, and barley. Psyllium seeds contain from 10 to 30 percent mucilages, as well as insoluble fiber.
- Polyfructoses (Inulin and Oligofructans).
- Galactooligosaccharides, found in milk and dairy products.
- Resistant Starches, found in ripe bananas, potatoes.

Insoluble Fiber

Insoluble fiber, often referred to as roughage, comes from the structural parts (cell walls, etc.). Insoluble fiber does not dissolve in water but retains water, and is used to soften and build up stool, and is useful for dealing with bowel problems, especially constipation, and

hemorrhoids. It may also be useful in conditions such as irritable bowel, diverticulitis and colon cancer, although scientific proof of this usefulness in these conditions is still lacking.

Insoluble dietary fiber is found in grain brans and makes up most of the fiber in vegetables and part of the fiber in fruits. Good sources include most vegetables such as green beans, broccoli, tomatoes, cucumbers, celery, carrots, squash and spinach, fruit – such as oranges, grapefruits, strawberries and apples, especially in the edible skins, psyllium husk, oats, beans and peas, flax seed, barley, and corn and wheat bran.

Soluble Fiber

Soluble fiber comes from the gel like parts of the cell and dissolves in water. This solubility generally makes soluble fiber accessible to the natural bacteria in our bowels and allows the fiber to be fermented to varying degrees, depending on the fiber involved. Because of this fermentability, soluble fiber has health benefits and beneficial effects on a variety of conditions including bowel dysfunction, diabetes and heart disease.

Foods that are high in soluble fiber include fruits, vegetables, oat bran, barley and some beans. Soluble fiber is found in oats, oatmeal, oat bran, beans, legumes, barley, citrus fruits and certain fruits, psyllium (the main ingredient in Metamucil), vegetable gum include konjac gum, pectin, guar gum and gum arabic, to name a few.

Normal food, however, has a small percentage of soluble fiber. For example, the cereal containing highest level of soluble fiber is oat bran, which has about 14% soluble fiber. All other food grains contain much less soluble fiber than oat bran.

Soluble fiber, like insoluble fiber, because it’s not digested and absorbed like proteins, fats and carbs, technically contains no calories. However unlike insoluble fiber, soluble fiber is fermented by bacteria in the colon (good bacteria) resulting in the formation of short chain fatty acids such as butyric acid. The cells lining the colon use butyric acid as a source of energy.

Two other short-chain fatty acids produced during fermentation, propionic and acetic acid are used as fuel by the cells of the liver and muscles. In addition, propionic acid may be responsible, at least in part, for the cholesterol-lowering properties of fiber. In animal studies, propionic acid has been shown to inhibit HMG-CoA reductase, an enzyme involved in the production of cholesterol by the liver. By lowering the activity of this enzyme, blood cholesterol levels may be lowered.

In addition, fermentable fibers help maintain healthy populations of friendly bacteria. Regulate, as well as having significant amounts of soluble fiber, also contains some friendly bowel bacteria to help the process along.

The calories generated by the bacterial fermentation of soluble fiber amounts to around 1.5 calories per gram. While this is relatively low, (fats provide 9 calories, while carbs and protein provide 4 calories per gram.) the calories can add up if a lot of soluble fiber is added to the diet.

Dietary fibers are carbohydrates and in some cases are included in the calorie counts of foods the same as carbs. This in a way is an advantage for those on restricted calorie diets, such as the Radical Diet, in that the calorie count for foods with appreciable amounts of fiber is actually lower than the stated amount for that food.

Regulate

On the other hand, using a good fiber supplement to ensure you're getting enough fiber is often worth the few extra calories it adds to the diet. For example **Regulate**, my MD+ fiber supplement, contains around 4 calories per dose but provides almost 6 grams of total fiber with a blend of several soluble and insoluble fibers. For more information on Regulate go to www.mdRegulate.com.

Part 3: The Radical Diet

The Radical Diet for Dummies

Introduction

The Radical Diet is a Very Low Calorie Diet (VLCD) version of the Metabolic Diet. It combines a low-calorie/low-carbohydrate diet that maximizes fat loss with the macronutrient shift principles of the Metabolic Diet to minimize muscle loss. Interspacing low-calorie/low-carbohydrate days with weekly moderate-calorie/moderate-carb days primes the body's lypolytic (fat burning) processes, while ensuring that the body uses mostly fat and not muscle for energy.

The theory behind the Radical Diet is complex and in tune with recent medical and scientific research, which give us some of the facts on why it's so successful. But we still have a lot to discover on just how the mix of macronutrients used in my phase shift diets produce the dramatic weight loss and body composition results.

However, right now it's best to keep things simple and to the point so the message about how to use the Radical Diet doesn't get lost in scientific and medical terms. On the other hand if you're interested in learning more about the history and theory behind my phase shift diets I've put some useful info in Appendix 4.

The Radical Diet uses a series of MiniSteps™ to make it easier to follow the diet and to maximize weight and fat loss. The MiniSteps™ are short term (usually one week), realistic, achievable weight loss goals that you work towards. You stay on the lower carb strict phase of the Radical Diet until you reach each of your MiniStep™ goals, then you are allowed a moderate day in which you're allowed the higher carb foods.

The MiniSteps™ provide an element of consistency to the diet. You stay in the strict phase until you reach your MiniStep™ goal. This is why the Radical Diet works. It forces you to be successful as long as you follow it.

Before going on this diet, you should be medically sound, with no preexisting medical conditions or need for medications. I recommend that you get a complete physical and the OK of your doctor before starting.

This plan is not appropriate for pregnant or breastfeeding women, or for children or adolescents, except in special circumstances. In these cases careful supervision and monitoring is a must.

The Basics

I like those books that assume that we know very little about the subject that they're covering. As a result the approach that these books take is a gradual one, starting off with information that anyone can understand, and then building step by step until you really get a good grasp of the topic.

That's the approach I'm taking with the Radical Diet. You don't really have to understand the way that the macronutrient shift affects your metabolism and hormones, or any of the other principles behind the diet. All you have to know is that it will work for you and that it's easy to do.

And that's good because you can start losing weight and body fat right away and gradually get into it more as you become more excited about what's happening to your body. Then, if you really want to understand why and how the diet works, you can simply by reading some of the info in this book that you may have initially glossed over.

All you really have to know is that you'll be following one type of diet on most days interspersed with a day on which you'll be following another type of diet. It's like going on a lower carb, lower calorie diet for say 5 days followed by a higher carb, higher calorie diet for one day, and then back to the low carb diet. If we take it month by month, you'll be on the lower carb, lower calorie diet for most of the month, say for at least 24 days, and on the higher carb, higher calorie diet for 4 to 6 days.

If we draw this as a line graph the first 15 days might look like this:

Diet	lower calorie lower carb	higher calorie higher carb	lower calorie lower carb	higher calorie higher carb
Days	1-6	7	8-14	15

As you can see it's a simple diet to follow but is also a diet with a lot of science behind it. Now we'll get into the specifics.

The Diet – Day by Day

In the first part of the diet you follow a low calorie, low carb ("strict") phase until you've lost an initial five pounds, and then a one-day higher calorie, higher carb phase. After losing the initial five pounds, you then set your next target goal based on how much you want to lose before you have another higher calorie, higher carb day. Once you hit this target goal, **and not until then**, you allow yourself that higher calorie, higher carb day. You repeat this cycle for each new target goal you set for yourself.

Total calories allowed per low carb day are 800 up to a maximum of 1,000 calories for women and 1,000 up to a maximum of 1,200 calories for men. The higher calories are for those weighing substantially over 200 pounds. Maximum allowed per higher calorie, higher carb day is 2,000 calories for both men and women.

Let's go over it again just to make sure you get off on the right foot and understand how the diet works.

Let's say your starting weight was 220 pounds. Your first target weight would be 215 lbs. After hitting this weight, you then go on the one day higher calorie/carb diet. Let's say that you hit the 215 pounds on a Friday. At that point you set your MiniStep™ goal weight at say 212 pounds (or lower depending on how fast you want to lose the weight, and if in the past you find that it's not that hard for you to take off the initial 20 pounds or so) That's a 3 pound weight loss goal that has to be reached before you're allowed to shift to the one day higher calorie/carb diet.

If by the following Friday you're 212 pounds, then you will set you next MiniStep™ goal at say 209 (or lower) and have your higher calorie day. Keep in mind that the higher calorie, higher carb day has a limit of 2,000 calories. Taking in any more would sabotage your efforts to reach your next goal within a reasonable time frame.

If you don't reach your target weight of 212 pounds within say a week, then you should take it to the next step and be really strict, taking in only the 2 MRP per day until you hit your goal weight. Once you hit that weight, you set your next MiniStep™ goal weight and have a higher calorie day that day.

Below is a table representing the first three weeks of the diet. For a real-world weight loss example from one of my patients please see page 78.

Day	Diet	Weight	MiniStep™ Goal
1		220 lbs	
1 – 5	Strict		215 lbs
6	"higher" calorie	215 lbs	
7 – 13	Strict		212 lbs
14	"higher" calorie	212 lbs	
14 – 20	Strict		209 lbs
21	"higher" calorie	209 lbs	

The following day, after the one day higher calorie/carb diet, you return to the very low calorie/carb diet until you hit your next goal weight. And you stay in this phase of the diet **FOR AS MANY DAYS AS IT TAKES TO REACH YOUR NEXT TARGET WEIGHT.**

Now if it's taking a longer time than it should to do so you might have to take some drastic measures for a few days. For example if you haven't reached your MiniStep™ goal weight in a week's time, you may want to take ONLY TWO MRP LOCARB meal replacements per day until you hit that goal weight. **THIS IS ALL YOU'RE ALLOWED OTHER THAN WATER AND NO CALORIE DRINKS.**

At this point, you're on a 500 calorie per day MRP LoCarb only diet. This will definitely get your weight down and allow you to reach that target weight.

Remember, you don't allow yourself a higher calorie, higher carb day until you've reached your target weight. Once you reach this weight you can allow yourself a high carb day. Then back on the diet until you hit your next target weight.

You will then keep setting MiniStep™ goals every week or so (the amount of weight you'll want to lose at each MiniStep™ should ideally be 2 to 3 pounds) until you reach your target weight. Now this isn't necessarily your final goal weight since we might want to switch you over to the less radical Metabolic Diet (or Anabolic Solutions if you're into bodybuilding or powerlifting or any sport for that matter) to get the rest of that weight off and for long-term weight maintenance.

For example if you're five feet six inches and weigh 350 pounds, and your final goal weight is say 160 pounds, you might want to stay on the Radical Diet until you get under the 200 pound mark, and then switch over to the Metabolic Diet for the rest of your weight loss. You can always return to the Radical Diet if you're not losing the rest of your weight fast enough.

Why MRP LoCarb? Because it's the only meal replacement on the market that's good enough for this diet. It is a nutrient dense product that sets up your metabolism for weight loss, is low in carbs, decreases cravings, and has the ingredients to both maintain muscle mass and increase the loss of body fat. For more information on exactly why it's the best, see the section on MRP LoCarb in Appendix 2.

Exceptions to the Rule

The only time you should make an exception is if you have a special event to attend and you need that day to be a more normal calorie day. At these times you can simply take that day as a higher calorie/carb day, and then carry on with the diet the very next day, keeping the same weight goal that you had set prior to that special day. For example if your next goal weight was 192 pounds but you had a special event say a few days into it, then have the event, but get back on the strict part of the diet the next day, keeping that 192 pound goal as the weight to reach before having another higher calorie/carb day.

However, try and keep these days to a minimum since taking too many of them is disruptive to the diet and can be discouraging since it will take much longer to reach your goal weight. Appendix 1 includes "moderate" meal plans for higher calorie/carb days that you can also use a guidelines on how and what to eat at special events and functions.

What You Can Eat

This radical weight and fat loss plan is simply a very low calorie variant of my Metabolic Diet. As such, it's important to not only pick low calorie foods and portions, but also ones that are low in carbs.

I feel that diet plans based on food portions are not representative of the hectic way in which most people eat. In real life, meals and snacks etc. are not made up (at least not consciously) of one food portion from group one, two from group two, four from group three, etc. Most people do not lead lives that lend themselves to rigid eating patterns.

The ideal diet should be flexible enough to take into account the different circumstances and the somewhat chaotic way our lives are today. It's impossible for the average person to always to be able to plan what will happen on any one day. Life has a way of disrupting our well thought out schedules.

I prefer, therefore, to give my patients a list of foods that they should stick to while they are dieting.

Foods That Are Allowed

The list below contains all of the foods allowed. Don't bother asking about any foods not mentioned, as the list is complete. If it's not there, it's not to be eaten.

You'll notice that there are no refined carbohydrates or carbohydrates that tend to be absorbed quickly into the body in the list of allowed foods. That's because it's been shown that these kinds of foods are the ones responsible for the present obesity epidemic. In a recent study increased body weight was proportional to the glycemic index of foods consumed. All the foods in the allowed list have a relatively low glycemic index.[101]

There are three reasons for making such an exclusive list.

1. Using both a VLCD and Metabolic Diet approach, not only are these are foods that are low in carbs and/or calories, but many of them are negative calorie foods. By that I mean that the energy the body needs to process these foods exceeds their caloric value.

2. It cuts down on food choices and therefore the endless questions and confusion of what you can and can't eat. It's simple. If it's not on this list, you can't have it.

3. By cutting down the choices you introduce some monotony in the diet that by itself will decrease food intake.

Calorie Intake

I don't specify the portions to be eaten since I prefer that your motivation and instinct guide you. Although the diet plan is flexible in the amounts and variety of food that you can eat (as long as it's on the list) you are **limited to a maximum of 1,000 calories a day for women and 1,200 calories a day for men, and you should ideally take 250 calories of that in MRP LoCarb every day**.

Some people find it easier to follow the diet if they know how many calories they're allowed over a several day period rather than on a daily basis. For example on one day they may be strict and only eat say 700 calories whereas on another they're less strict for one reason or another (usually some social event or interaction) and take in say 1400 calories. In the longer term, however, their daily intake averages out to 1,000 calories a day it's just that it's not the same every day.

So if your lifestyle is such that it's difficult to stick to 1,000 calories every day, then allow yourself 5,000 calories over 5 days or even 7,000 calories over a week. For some people this way of counting calories makes sticking to the diet even easier.

As well as the foods in this list it's important that EACH DAY you take one MRP LoCarb shake. This nutrient dense shake, which contains only 250 calories, provides the daily metabolic foundation for your weight loss and decreases your appetite.

The reason that it's so important is that the MRP LoCarb will not only help you lose weight and body fat, but it will also decrease hunger and food cravings both in the short and long term. It's often hunger and food cravings that make us reach for the wrong foods no matter how motivated you may be.

The decrease in hunger and food cravings is due to the intrinsic nature of having the diet partially supplemented with the MRP LoCarb macronutrient mix, and by the special weight and fat loss enhancing ingredients that it contains.

It's been shown that a restrictive supplement based diet results in larger decreases in food cravings than a totally food based diet – even when the supplement based diet was lower in overall calories.[102] I've found that when people use MRP LoCarb at least once a day it makes the whole job of weight loss and improving body composition that much easier.

As an alternative, perhaps every other day, you can use two scoops of **Myosin Protein** in water twice a day for 280 calories. You could even use the MRP LoCarb on a daily basis as well as one scoop of Myosin Protein once a day for a total of 390 (250+140) calories. In this case, at the lower calorie intake that's allowed, you would be left with only 410 calories, or 610 calories for men, from other foods.

For the other calories choose from the list on the next page. You can use any combination of the foods below that appeal to you, in whatever quantities you wish as long as the overall calorie count does not exceed the calories that are left after using any combination of the Myosin Protein and MRP LoCarb.

The Complete Radical Diet Food List

Lower Calorie, Low Carb Days

If it's not here, you can't eat it on the low calorie/carb days.

Also when you shop, stick to the foods on this list. That way you won't be tempted by off limit foods that are in the house. There'll be enough of the other foods around the house and in restaurants for the higher calorie/carb days.

FOOD	CALORIES	CARBS
Meat		
Bacon - 3 slices	129	0
Bacon, pre-cooked - 3 slices	80	0
Beef bologna - 2 oz	76	0.4
Beef bouillon 1 cup	17	0
Beef broth in water - 6 oz	20	0.6
Beef, eye of the round roast - 3 oz	143	0
Beef, lean ground - 3 oz	218	0
Beef, rib eye or T-bone steak - 3 oz	188	0
Beef, tenderloin - 3 oz	141	0
Beef, top sirloin steak - 3 oz	176	0
Bison/beefalo, ground – 3 oz	207	0
Corned beef, bresaola, lean prosciutto - 2 oz	142	0
Deer, elk – 3oz	180	0
Kidney - 3 oz	130	0
Lamb, lean, all cuts – 3 oz	190	0
Pork, tenderloin/chops/ham, lean – 3 oz	170	0
Tripe (trippa) cooked, simmered - 3 oz	90	3
Poultry		
Chicken (baked, broiled, or BBQ) - 3 oz	133	0
Chicken broth – Low Fat - 1 cup	10	1
Cornish hen – 3 oz	160	0
Duck, meat only – 3 oz	150	0
Pheasant or quail breast – 3 oz	120	0
Turkey breast - 3 oz	133	0
Turkey breast, processed - 1½ oz	47	0
Turkey salami - 2 oz	111	0.3
FOOD	**CALORIES**	**CARBS**

Fish & Seafood		
Fish, fresh or packed in water*** -** 4 oz	120	0
Oysters, 1 dozen medium – 4 oz	130	4
Salmon, fresh or canned - 3 oz	130	0
Shrimp, scampi, lobster, or crab - 5 oz	125	0
Sushi/sashimi, fish only – 1 oz	30	0
Eggs		
Egg substitute, liquid, equivalent to one large egg	45	0
Egg white, from one large egg	19	0
Egg, large, hard boiled or poached	75	2
	130	0
Dairy		
Cheese (mascarpone, parmigiano) 1 oz******	110	1
Cheese, low fat - 1 oz	60	1
Cottage cheese or plain yogurt, low fat – ½ cup	90	4
Skim Milk Cheese – 3 oz	80	3
Vegetables		
Alfalfa sprouts ½ cup	5	0.6
Asparagus ½ cup	15	3
Brussel sprouts - ½ cup cooked	25	5
Cabbage, broccoli, cauliflower ½ cup cooked	15	3
Carrots ½ cup chopped (125 grams)	50	12
Celery ½ cup diced	10	2.2
Coleslaw, non calorie dressing, 2 tablespoon	12	2
Cucumbers and dill pickles 1 medium	5	1
Green, pole, snap or wax beans ½ cup	15	3
Lettuce loose leaf, arugula, endive 1 cup	10	2
Lettuce greens 2 cups + 1 tbsp light dressing	50	3
Mushrooms ½ cup	21	4
Onions, shallots, leeks - ½ cup	25	6
Peppers green, red, yellow – 1 Whole	20	4
Radishes ½ cup	10	2
Rhubarb 1 cup diced	25	5
Sauerkraut ½ cup	21	4
FOOD	**CALORIES**	**CARBS**

Spinach, Swiss chard, collards, and beet, turnip, and mustard greens - ½ cup cooked	20	3.5
Winter squash, zucchini - 1 cup sliced	20	4
Tomato - ½ cup	15	3
Watercress - ½ cup chopped	2	0.2
Fruits* **		
Apple – ½ portion	45	10
Cantaloupe – ½ portion	45	10
Lemon without skin – ½ portion	8	2.7
Orange or medium sized grapefruit – ½ portion	45	10
Strawberries - 1 cup	40	10
MD+ Powder Supplements		
Creatine Advantage, one scoop – 10 grams	30	3
MRP LoCarb Meal Replacement, 1 packet	250	3
Myosin Protein, one scoop - 19 grams	70	1
Power Drink, one scoop – 22 grams	80	2
Miscellaneous		
Artificial Sweeteners with no calories	0	0
Diet pop, tonic water, and other no carb drinks	0	0
Mustard, Dijon, 1 tablespoon	15	1
Mustard, regular yellow	9	1
Mustard, regular yellow, no calorie	0	0
Oils and Fats - 1 tsp (4.5g)****	40	0
Popsicles, calorie free	0	0
Salsa, 2 tablespoons	14	3
Spices and herbs	0	0
Sugar free Jell-O, 1 cup	8	0
Tea or coffee – black	0	0

* Fish includes almost any fish you can think of including salmon, tuna, cod, flounder, haddock, halibut, sole, eel, octopus, squid, anchovy, sardines, trout and whiting. With fish such as eel, mackerel and salmon, which have more body fat and therefore more calories, broil or BBQ the fish to get rid of most of the fat.

** Cheeses include many of the hard cheeses and some of the soft. The low fat variants of any of the cheeses listed are usually about half the calories as the full fat ones. Cheeses that are OK include blue, brie, camembert, cheddar, Colby, edam, goat, gouda, gruyere, limburger, mascarpone, Monterey, mozzarella, muenster, parmesan, provolone, Roquefort, and Swiss. Pasteurized process cheese slices are usually OK but make sure that the carb levels are less than 2 grams per 30 gram serving.

*** Although I've added the low carb fruits to the list of allowed foods, you shouldn't over indulge in these as they will raise the daily carb intake more than any other allowed foods. It's usually a good idea to restrict your intake of fruits until the higher carb day, at least until you reach your weight and body composition goals.

Of all the fruits, perhaps the most useful on this diet are grapefruit and strawberries. As such, these should be your first choices. If you need to sweeten either or both you can use an artificial sweetener.

Grapefruit seems to encourage weight and fat loss more than most other foods, regardless of its carb content. Eating half a grapefruit (but not grapefruit pills or juice) seems to lower insulin levels.[103] Thus its effects seem to be opposite to the effects of carbs on insulin and as a result doesn't act like a real carb.

As well, it's been shown that the grapefruit flavanone naringenin inhibits insulin-stimulated glucose uptake in fat cells by inhibiting the activity of phosphoinositide 3-kinase (PI3K), a key regulator of insulin-induced GLUT4 translocation.[104] This leads to a decrease in the amount of dietary carbohydrate that is stored as fat. Thus grapefruit seems to decrease the insulin response in two ways, by decreasing insulin levels and by decreasing the effects of insulin on fat formation from carbohydrates. One half a medium sized grapefruit also has 5 grams of fiber, which accounts for almost half of its caloric value.

Strawberries, along with grapefruits, are also almost an ideal fruit for those on the Radical and Metabolic Diets. That's because they are relatively low in carbs, contain useful fiber and have positive effects on health.[105]

**** Fats and oils include animal fats, shortening, lard, butter, margarine, and olive, corn, vegetable, palm, peanut, soybean, walnut, coconut, flax, avocado, borage, and fish oils. However, as noted below it's wise because of their high calorie content, to keep away from most extra fats and oils other than olive and fish oils and even these should be used sparingly.

It's also wise to keep to a minimum foods that although low in carbohydrates (and thus usually allowed in the low carb phase of my Metabolic Diet, are relatively high in fat and not recommended for the Radical Diet. This includes sausages, salami, nuts and peanuts.

Avocado is another food that falls in the low carb but high calorie category and although allowable on the Metabolic Diet is discouraged on the Radical Diet. That's because a medium sized avocado (about 145 grams) contains 280 calories and about 28 grams of mostly unsaturated fat (which makes up 250 of the 280 calories). It also contains about 1.5 grams of carbs, 1.5 grams of protein and 4.5 grams of dietary fiber. The mix is OK and fits into the low carb phase of my phase shift diet, but not into the low carb, low calorie phase of the Radical Diet.

If for the sake of variety, you do use some of these fats, oils and foods, they obviously have to be figured into your daily calorie count.

The Top Radical Diet Fiber Foods

Including these allowed foods in your diet will ensure that you're getting an optimal amount of both insoluble and soluble fiber for both bowel and overall health.

As well, these foods, because they contain more water as well as fiber, provide more volume, which will make you feel fuller, but less calories than the other foods, making it easier to stick to the Radical Diet.

- Apples (with skin)
- Asparagus
- Broccoli
- Brussels sprouts
- Cabbage
- Carrots
- Cauliflower
- Grapefruit
- Green beans, pole beans
- Greens - including spinach, Swiss chard, turnip and beet greens, kale, collards.
- Oranges
- Strawberries

Higher Calorie, Higher Carb Days

On these days, almost anything goes. Most people will indulge in the foods that they're not allowed on the strict part of the diet, including breads, pasta, pizza, desserts, other fruits, alcoholic drinks, etc.

However, you do have to watch the calorie content and keep the calorie count under 2000 calories for that day. Taking in too many carbs and calories on these reward days can set you back several days and make it more difficult to reach your next goal weight.

Weighing Your Food

It's important to know how much food you're eating. And this involves making sure that the portions you're eating are what you think they are. In some cases you can get just the weight you need by buying it that way. In most cases, however, you have to figure out just how much of a certain food makes up the portion you're allowing yourself.

In these cases, because we can easily get it wrong, you should weigh everything that is weight restricted before you eat or cook it - at least at first until you get used to just how much some of the food in the allowed food list weighs.

Keeping a Daily Food Journal

Keep a daily journal of the foods you eat – what you eat and how much. I know that for most it’s a boring, time consuming task but you’ll find that it helps to write down what you eat. Not only does it keep you honest but it cures dieter's amnesia. If you write it down its hard to forget just how much you've eaten. This list will not only allow you to keep tabs on what you’re eating and when, but if you need to make changes, it’s easier to see where and how to make them if it’s all down in black and white.

As well the list will allow you to make sure that the diet is not too lop-sided in one food. For example you shouldn’t live mainly on vegetables to the exclusion of any form of complete protein.

Keep It Simple

Keep it simple and make it yourself so you know exactly what’s in the food you’re eating. Also try and eat foods as much of the allowed vegetables and fruits as possible since many are high in fiber.

Eating Out

Unless you're a martyr try to keep eating out to a minimum. Read more about socializing and eating out in the “Mental Edge” section.

What You Can Do With It

Now that you know what you can eat, let me tell you how you can prepare it.

First of all a few tips: Use a small, inexpensive kitchen scale to measure the weight of the portions you choose to ensure that the daily calorie count is accurate. Also Pam (original, olive oil or even light) can be used for cooking. A 0.6 second spray is only 4 calories or less.

Meats, Poultry and Fish - You can broil, bake, barbecue, roast or fry it. However, don't add any calories while cooking (for example, use a Teflon pan or Pam when frying instead of adding oil or other fats).

Fish – Most kinds of fish or shellfish are OK as long as you keep away from the butter and batter. If you buy canned fish, such as tuna, buy the water packed tins rather than the oil packed.

Pork - is only negotiable when you're close to your goal weight. Until then don't eat any pork (including bacon, chops, ribs etc.).

Eggs - If you have a problem with cholesterol you may want to limit your intake of eggs. However, most people can safely eat one to three eggs a day. I have found that even those patients who have higher than normal serum cholesterol can eat eggs while on this diet. In fact in several of my patients who had elevated serum cholesterol before dieting have had their serum cholesterol decrease while on the diet even though these patients were eating up to a dozen eggs a week.

Grains and Cereals - Keep away from rice, cereals, breads and baked goods. Daily use of some fiber will help keep you regular. My Regulate is formulated for people on this diet and has a dual purpose. First of all it keeps your bowels healthy and functioning normally, and secondly it decreases your appetite.

Salads - Use a diet dressing or make your own with vinegar, salt and a squirt of olive oil. Be inventive with your salads. Use combinations of several of the foods in the “allowed” list including asparagus, bean sprouts, cabbage, celery, cucumber, dill pickles (not sweet pickles), endive, escarole, fiddleheads, lettuce (Boston, iceberg, romaine, etc), mushrooms, radish, spinach, green beans, and watercress.

Spreads and Dressings - Keep away from butter, margarine, mayonnaise, oils (other than the essential fatty acids and olive oil), and ketchup.

Soups – Clear soups are OK in moderation. Keep away from any other commercial soups. You can make your own with the ingredients in the food list. Once cooked, cool the soup and skim the fat off before eating it. You can also use this soup as a soup stock to liven up other dishes.

Dairy foods are mostly banned on this diet except for the higher calorie days. Even on these days stick to the cheeses on the “approved” list. Cottage cheese should have 1% or less butterfat content.

Yogurt - Keep away from yogurt and fruit combinations. Stick to the skim milk plain yogurt. If you wish, you can add artificial sweetener and blend in one of the fruits below.

Fruits - Unlike some other low-carb diets, fruits are allowed, even on the low calorie days. There are a number of low carbohydrate fruits you can eat, including oranges, apples, cantaloupes and strawberries.

Beverages - Permissible beverages include water, diet pop, soda and mineral water, diet tonic water, coffee and tea (preferably black).

The general rule is to cut down on beverages with any significant amount of calories. Soda water or mineral water on the rocks with a twist of lemon makes a refreshing drink and can be used at outings and parties instead of soft drinks (since few hosts and hostesses provide diet soft drinks but do have club soda and ice and often lemon juice on hand).

Alcoholic drinks - Avoid beer and sweet wines. You can drink dry wines and hard liquors but be careful - diet pills and alcohol don't mix well. Since both dieting and diet pills may increase the effect of alcohol (nobody likes being told about their lamp shade antics the night before, especially if you can't remember any of it), it's best to limit your alcohol intake.

Condiments - The use of condiments makes food more appetizing. However, try not to make it too appetizing. Mustard, vinegar, lemon juice, soy sauce, chili powder, horseradish, salt, pepper, garlic, basil, cinnamon, nutmeg, curry and other herbs and spices are OK. Ketchup and most of the steak sauces aren’t.

Things to Look Out For

Disguised Carbohydrates

Most carbohydrates are pretty easy to spot. Everyone knows that sugar, potatoes, rice, bread and baked goods are mostly carbs. But some carbs or carb like ingredients are harder to spot. And even reading the ingredients panel may not tell you much as far as how many real carbs are in certain foods and supplements.

The confusion revolves around compounds that are sweet and have a significant calorie count but aren't technically carbs (which excludes the artificial sweeteners – see below). Neither are they fats or proteins.

The reason of course is that the idea of what's a carb and what's not a carb seems to be open to interpretation by just about anyone trying to prove his point or trying to deceive the public. So anyone who wants to include some of these substances into their products, because they add the taste of carbs, but doesn't really want to list them as carbs in the nutrition panel, can do so up to a point.

First of all let me state that in my Anabolic, Metabolic, Anabolic Solution Diets (www.MetabolicDiet.com), and the Radical Diet (www.RadicalDiet.com) the reason for low carbing it is to maximize body composition - to decrease body fat and maintain or increase muscle. As such, I'm not looking at how you can count carbs or the issue of carbs as calories. I look at the way macronutrients, whether they're technically carbs or not, behave in the body as far as their impact on both endogenous and exogenous macronutrient metabolism.

Basically I'm interested in whether a substance acts like a carb or not. If it does then it has to be counted as a carb, at least to some extent.

In that context, anything that disrupts fatty acid breakdown and oxidation should be considered a carb and as such can be detrimental to the diet. This is always important and even more so in the initial stages of my diets when you're trying to determine the lowest level of carbs that works best for your metabolism.

Getting Around the FDA

There are times when a carb is not a carb, and when something which isn't technically considered a carb is in fact a carb. The confusion mainly stems from the food and supplement industry.

Manufacturers are a tricky lot. First and foremost they want you to buy their products. For that to happen they have to tell you what you want to hear, whether they're bending the truth or not.

First the facts.

The FDA guidelines allow the use of “Low Carb" on a food label if that product has 3 grams or less of fat per serving.

The Food Label terms for carbohydrates as defined by the FDA can be confusing however some of the definitions are straightforward, such as.

1. Total carbohydrate: calculated by subtraction of the sum of the crude protein, total fat, moisture, and ash from the total weight of the food. " Sugars: the sum of all free mono- and disaccharides (such as glucose, fructose, lactose, and sucrose)."
2. Sugar alcohol: “the sum of saccharide derivatives in which a hydroxyl group replaces a ketone or aldehyde group whose use in the food is listed by FDA (mannitol, xylitol) or is generally recognized as safe (sorbitol)."
3. Other carbohydrates: “the difference between total carbohydrate and the sum of dietary fiber, sugars, and sugar alcohols if present.[106] (reference for above 3 points) "
4. Glycerol and glycerin refer to the same substance. FDA nutrition labeling regulations require that when glycerin is used as a food ingredient, it must be included in the grams of total carbohydrate per serving declaration. Also, when the label of a food containing glycerin has a statement regarding sugars, the glycerin content per serving must also be declared as sugar alcohol.[107]

As straightforward as these definitions are the manufacturers have succeeded in muddying the waters by introducing some new phrases to describe the carbohydrate content of their products.

The relatively new phrases "net carb," "low carb," and "impact carb" are not FDA definitions but rather created by companies so that you'll see their product on the shelves and be attracted enough by what they're saying that you'll buy the product.

They know that consumers are not likely to have the time or interest in the calculations of crude protein, total fat, moisture, and ash. And if they did, they couldn't possibly come up with a really good reason to buy it.

To calculate the "net carb," companies subtract the grams of fiber and sugar alcohols from the total carbohydrates. The reason behind this, at least as far as these companies are concerned, is that the body does not digest fiber so it shouldn't be counted as part of the total carbohydrates.

While I'm sure that taking the strict definition of carbs suits the food industry and increases sales, they're deceiving the public as far as the usefulness of their products for those on low carb diets.

While what they say is true for insoluble fiber, it's not the case with either soluble fiber or sugar alcohols.

Insoluble fiber, even though technically a carb, is not absorbed and is excreted unchanged. As such, it doesn't provide any calories or impact on your systemic

macronutrient mix. So insoluble fiber shouldn't be counted in either the carb or calorie columns.

Soluble fiber is another story and is somewhat of a gray area in the carb/calorie equation. Pectin, for example, undergoes vigorous "friendly" bacterial fermentation in the cecum and produces high levels of short-chain fatty acids. These short chain triglycerides are used up by cells in the colon and also absorbed systemically. Thus about half of soluble fiber should be counted as carbs even though the calories come from short chain fatty acids.

But it's not just the calories. The problem with the short chain and even the medium chain triglycerides (see below) is that they're used by the body preferentially over the long chain triglycerides (which make up body fat) so that like carbs they can short change your metabolism away from burning the fatty acids that make up body fat. Thus if you're looking to maximize body composition the short and medium chain fatty acids can be counterproductive.

I know that medium chain triglycerides (MCTs), are often used by athletes to enhance body composition, however, they can be counterproductive in low carb phase of my phase shift diets. MCTs, while having a protein sparing effect when on a high calorie diet high in complex carbohydrates, is counter productive when on a higher fat, low carbohydrate diet.

The body, instead of using the long chain fatty acids that make up most of body fat, uses the MCTs - bypassing the metabolic processes that are set up to allow the body to burn its own fat and thus decreasing both the lipolytic effect of the diet and the transfer of fatty acids into the mitochondria where it undergoes beta oxidation and is preferentially (and this is the important word for becoming fat adapted instead of being carb adapted) used as fuel for the body.

The long chain triglycerides found in most foods allowed in my Anabolic, Metabolic, Anabolic Solutions, and Radical Diets, and which make up our body fat, have other advantages over MCTs. First of all the LCTs have greater protein sparing effects than MCTs.[108] MCTs, unlike LCTs, have little inhibitory effect on the activity of enzymes involved in lipogenesis (increased formation of body fat).[109,110] As well, several studies have shown that LCTs increase lipolysis or the breakdown of body fat.[111] Overall LCTs in contrast to MCTs, should result in decreased body fat levels, if used properly.

The case with sugar alcohols is more straight forward. Manufacturers claim that while sugar alcohols also are technically carbohydrates and a source of calories, they have a negligible effect on blood sugar and shouldn't be counted as part of the total carbohydrates.

That's not entirely true. In fact one of the reasons for low carb diets is so the body will become fat adapted and burn off body fat preferentially. Unfortunately sugar alcohols act just like regular carbs in short circuiting the fat adaptation response.

The American Dietetic Association takes the middle road and looks at calories alone by recommending that persons with diabetes managing their blood sugars using the carbohydrate counting method should "count half of the grams of sugar alcohol as carbohydrates since half of the sugar alcohol on average is digested."[112]

And there are several other macronutrients and ingredients that, while not technically carbs, should be factored in as if they were carbs. This includes alcohol, carbs that are difficult to digest, glycerin or glycerol, lactate and pyruvate.

Most of these foods or ingredients, while technically carbs, don't act as regular carbs on the metabolism.

For example inulin and oligofructose, storage carbs that are found in some plants, have just under 1/3 the effect of regular carbs on metabolism and as such can be taken into account at that level - for example 3 grams of inulin would be equivalent to one gram of carbs. The reason for this is that inulin and oligofructose have a ß(2 1) bonds linking the fructose molecules. These bonds render them nondigestible by human intestinal enzymes.

Thus, inulin and oligofructose pass through the mouth, stomach and small intestine without being metabolized. As such, almost all of the inulin or oligofructose ingested enters the colon where it is totally fermented by the colonic microflora. The energy derived from fermentation is largely a result of the production of mostly short-chain fatty acids and some lactate, which are metabolized and contribute 1.5 kcal/g of useful energy for both oligofructose and inulin.

However, because most of these products are likely mostly absorbed into the portal vein and therefore enter the body proper, and because I consider lactate and short chain fatty acids as equivalent to carbs, this 1.5 calories per gram, out of a possible 4 calories per gram, has to be factored into your carb intake.

The bottom line is that several macronutrients and ingredients, including soluble fiber, sugar alcohols, alcohol, lactate, pyruvate and glycerol act like carbs and if they're not taken into consideration as being the equivalent to either full or partial carbs will sabotage the effects of low carb diets on weight and fat loss, and body composition.

Processed and Junk Foods

Try to keep away from processed, prepared and fast foods. Why? First of all processed food (canned, packaged, bottled and sometimes even many of the frozen foods) are too high in sugar, flour, starch, fat and salt. The sugar, fat and white flour and starch are calories you can do without. Too much salt will bloat you up.

Junk food and fast food don't just come from variety stores and fast food outlets. They're sometimes made right at home. Taking good food and changing it into junk food is easy to do. You just smear it, mix it, dip it, and cover it with salt, ketchup, mayonnaise, grease, artificial color, flavor and lots of sugar, salt and fats.

The best way to kick the junk food habit is not to go to junk food establishments and not to have any junk food in the house.

Salt

What about salt? Although I allow the use of salt, I usually caution against its overuse - don't overdo the salt in an attempt to compensate for the foods you're not allowed.

People with high blood pressure, and those with a family history of high blood pressure or heart disease, should put the salt shaker to rest and make do with the salt that’s naturally in many foods, or added sparingly while cooking.

Women who are prone to fluid retention and bloating and those who suffer from the premenstrual syndrome should also avoid taking in too much salt.

Cutting back on your salt intake may make food taste bland at first, but your taste buds will soon adjust to the lower salt intake. After a while you'll be surprised how much better food tastes when you don't smother it with a layer of salt and the natural flavor comes through.

As well those who need to cut back on their salt intake should keep away from foods that are high in salt, even on their higher calorie days. This includes certain juices (orange juice has much more salt than grapefruit juice), pickles, sauerkraut, canned vegetables, canned fish, diet pops, frozen dinners, ketchup, commercial soups, some cereals and breads, self-rising flours, cured meats, corned beef, olives, baking powder, bouillon cubes, most cheeses, and many other foods.

Also anything that’s been processed or changed in some way usually has much higher levels of salt than foods in their natural state. For example, a cup of fresh mushrooms has about 12 mg of salt while cream of mushroom soup has almost 1,000 mg. Another example is the difference between say 3 ounces of pork and hot dogs. The pork has around 50 mg of salt while the equivalent amount of hot dogs has over 1,000 mg.

Artificial Sweeteners

There's still a lot of controversy over the benefits and risks of using artificial sweeteners.

Sugar, a natural food, is much higher in calories than the artificial sweeteners. Although the sugar industry is trying to down play the calorie content of sugar, you're best off to use sugar substitutes instead of sugar and to use foods with artificial sweeteners instead of sugar whenever you can (for example using diet pop instead of regular pop).

Aspartame is now the main sugar substitute used in North America - although saccharin and cyclamates are still widely in use (The USA restricts the use of cyclamates and allows saccharin to be used freely while in Canada the opposite is in effect.) and sucralose and acesulfame K are making headway.

Saccharin is made from petroleum products and is about 300 times sweeter than sugar. Canadian studies have shown that saccharin may be a weak cancer agent.

Cyclamate is a synthetic chemical, which although not as sweet as saccharin (it is 40 times sweeter than table sugar) does not leave the bitter aftertaste so familiar to saccharin users. As with saccharin some research studies have shown that it may have cancer causing potential. Cyclamates may also have mutagenic properties (causing genetic damage).

Aspartame, one of the newer contenders for the sweetener market (it's sweeter than cyclamate but not as sweet as saccharin), is a man-made substance made up of three products - two naturally occurring amino acids, phenylalanine and aspartic acid, and methyl alcohol. All three of the ingredients of aspartame are broken down by the body into natural components - unlike saccharin and cyclamate, which are broken down into synthetic chemicals.

Aspartame actually contains the same amount of calories as sugar (about 4 calories a gram) but since it's far sweeter than sugar (about 200 times) we use much less. Twenty years of extensive research testifies to aspartame's safety in healthy persons.

There is, however, a small group of people who should not use aspartame. Anyone who is sensitive to phenylalanine, such as those with phenylketonuria (PKU), must not take this sweetener.

Sucralose, marketed as Splenda, is a white crystalline powder made from sugar itself that is 400 to 800 times sweeter than sugar. Because it is stable even when subjected to extreme heat or cold, sucralose can be used in a variety of cold and hot drinks, pastries and baked goods, and frozen and canned fruits and vegetables. Although its chemical structure is very close to that of sucrose or table sugar, sucralose is not recognized by the body as a carbohydrate and has no effect on insulin secretion or overall carbohydrate metabolism in healthy human beings.

Acesuflame Potassium (AceK) is one of the newer kids on the artificial sweetener block and is marketed under the brand name Sunett. AceK is 200 times sweeter than table

sugar. People who are on a potassium-restricted diet or are allergic to sulfa type antibiotics should not use AceK until they have consulted with their physician.

Stevia, a natural sweetener found in Stevia rebaudiana, a plant native to Paraguay, like the artificial sweeteners, is essentially calorie free. Although stevia seems to have many beneficial qualities, including increasing insulin sensitivity[113] and normalizing blood pressure,[114] issues that were raised over the safety of the stevioside extract keeps it from being approved by the FDA in the US.

This in spite of the fact that early reports of its toxicity have been found to be groundless[115,116] and it's been widely used in Asia for many years with no evidence of adverse effects or toxicities.

Vitamin and Mineral Supplements, Antioxidants and Essential Fatty Acids

I give all my patients a multipurpose multiple vitamin and mineral supplement to take every day. I've had enough experience to know that few people take in enough essential nutrients (not that vitamin pills are a substitute for a balanced diet - science has not yet worked out all that's needed for our bodies to remain healthy and disease free). The vitamin and mineral supplements are just a form of insurance in case a mild deficiency develops.

The supplemental vitamin and mineral pill should contain at least the minimal daily requirements of the vitamins A, B1, B2, niacinamide (niacin, nicotinic acid), B6, B12, pantothenic acid, folic acid, C, D, and E as well as potassium, iodine, zinc, iron, calcium, and magnesium. My **MVM** supplement is designed to provide full spectrum nutrition for dieters. Combined with the **MD+ Antiox** and **EFA+**, the three supplements form a foundation to achieve your health and body composition goals.

Calcium

Calcium, while generally considered a key element for maintaining bone density and strength, also has other health benefits including reducing blood pressure,[117] and more importantly for both men and women losing weight, the prevention of any adverse effects of dieting on bone mass and a preventative effect on osteoporosis.[118]

For example, calcium can also help lower your cholesterol.[119] In a recent study it was found that people with cholesterol levels in the high range of 240 to 260 reduced their total cholesterol by 6 percent when they took in an extra 1,800 milligrams of calcium a day. And the best part is that LDL (low-density lipoprotein) cholesterol--the bad cholesterol that's implicated in coronary artery disease, dropped by 11 percent. As well, calcium has recently been inversely associated with the incidence of colorectal adenomas.[120]

But there's more. Calcium has also been shown to increase weight loss. A recent study found that an increase in dietary calcium intake, together with a normal protein intake, increased fecal fat and energy excretion by about 350 calories per day.[121] This observation may help explain why a high-calcium diet produces weight loss, and it suggests that an interaction with dietary protein level may be important.

Several studies have shown that calcium plays a key role in body weight regulation and especially on fat metabolism (with possible effects on lipolysis, fat oxidation, lipogenesis, energy expenditure and appetite suppression) and thus is a useful supplement for those looking to decrease weight and body fat.[122,123,124,125,126,127,128,129,130,131]

For example, Zemel et al (2002) looked at the effects of calcium supplements on obese adults who were dieting. They found that a high-calcium diet (1200-1300 mg/day) resulted in greater weight and fat loss in humans compared to a low-calcium diet (400-500 mg/day).

Another study published in November, 2004 found that a high intake of calcium may hinder weight and fat regain.[132] The study found that after putting mice on a low calorie diet and producing weight and body fat loss, that those on a low calcium diet regained their weight after 6 weeks. However, for those on a high calcium diet it was a different story. They found that the high calcium diets produced significant increases in lipolysis, decreases in fatty acid synthase expression and activity, and reduced fat regain. They also found that increasing calcium through the use of dairy products had significantly greater effects on fat regain.

The bottom line is that increasing calcium intake is a boon to those who want to not only lose weight, but to lose fat, improve body composition, and keep that fat and weight from coming back.

Extra calcium can also help other problems sometimes seen when people are dieting (see section on side effects - fatigue and muscle cramps).

Several of the MD+ line of products directly address dietary calcium. For example in the Radical Diet, the three most useful supplements for maximizing weight and fat loss, while at the same time maintaining optimum health, are MRP LoCarb, MVM and LipoFlush. All three contain supplemental calcium with the end result of markedly elevated intake.

MRP LoCarb increases the intake of calcium derived from dairy products since it contains high levels of whey and casein proteins, natural sources of dairy derived calcium, without the fat and carbs normally present in dairy products. It also contains several other ingredients that tend to increase calcium absorption including vitamin D, zinc and magnesium.

LipoFlush contains almost 500 mg of calcium in the form of calcium phosphate. This, along with other ingredients in LipoFlush, also supplies substantial amounts of phosphate, an important ingredient that counteracts some of the counter productive aspects of dieting by increasing thyroid hormone and metabolic rate, and supporting thermogenesis. All actions that promote fat breakdown and oxidation. LipoFlush also contains many other ingredients that act synergistically to maximize weight and fat loss, while at the same time preserving muscle. For example the combination of guggulsterones and phosphates has been recently shown to optimize body composition in adults.[133]

MVM, besides providing the ultimate in vitamins, minerals and other elements for those who want to optimize body composition, also provides substantial amounts of vitamin D, zinc, and magnesium, which increase calcium absorption.

Potassium

Often, especially in women who tend to bloat before their periods or who tend to retain fluid, I add extra potassium tablets to their supplements.

A Special Note for Women

You'll find that the week prior to your period will be your roughest week. Besides the variability in mood and hunger that many women experience, you'll find that it's more difficult to determine your weight loss at that time. That's because the unavoidable fluid retention that is part of the premenstrual syndrome, will keep your weight artificially high.

In some women the fluid retention, along with other symptoms (premenstrual syndrome), can be quite severe. Those women with severe symptoms may experience increased irritability and decreased ability to cope with everyday stresses during the premenstrual phase - they often compensate by eating more. In these women the weight gain is due to a combination of fluid retention and increased caloric intake.

During this time it's important to keep to the regimen you've set for yourself and not get discouraged. Three or four days into your period, once you lose that excess fluid, you'll be amazed to find out how much weight you've really lost.

You can minimize fluid retention by cutting down on salt intake - avoiding foods heavy in salt and the use of the saltshaker. Although it may seem contradictory, you should drink more plain water (not diet pops and mineral water which contain salt) as this helps to flush salt from your system. Keeping up your exercise or even increasing activity can help to minimize fluid retention.

Premenstrual symptoms are often eased with the use of fluid pills and other medications. However, there's a healthier and more effective solution: the use of LipoFlush during the premenstrual and immediate menstrual week. That's because LipoFlush flushes out fat mainly through the urine. Flushing out fat in the form of acylcarnitines acts as an osmotic diuretic and increases urine flow, in some people more than others. As such, LipoFlush, along with its effects on appetite and fat loss, may be effective in relieving the symptoms of PMS.

What Can You Expect To Lose?

What you can expect to lose depends on several factors, including your initial body size and shape, and your activity level.

In general, after the initial loss you should expect to lose 2 to 3 pounds a week. In the first ten weeks, it's possible to lose up to 40 pounds (a combination of the initial loss of the first few weeks plus the 2 to 3 pounds a week loss of the other weeks). In the next ten weeks it’s unlikely that you'll lose more than 30 pounds. Still that amounts to a potential weight loss of up to 70 pounds in four and a half months. If you have a lot of weight to lose, you shouldn't lose it any faster. If you've more than a hundred pounds to lose it could take you up to a year, and in some cases much more.

Most dieters begin to taper off and lose less as they get closer to their goal weight. Patients often complain that they haven't changed their diets or activities but now the weight seems glued on.

Why is it harder to lose weight the longer you're on a diet? There are several explanations. As you lose weight you need less calories per day than when you were heavier. It’s easy to see that while a fifteen hundred calorie diet would result in substantial weight loss when you weighed two hundred and fifty pounds, the same diet wouldn't do much when you weigh one hundred and fifty pounds. You need less calories to maintain a lower body weight. Thus as you lose weight you must take in even less calories if you wish to continue losing the same amount of weight.

As you diet the body decreases its metabolic rate so you need fewer calories to survive. The body's protective mechanisms automatically take over in times of famine (whether the famine is voluntary or not - your body can't tell the difference). The ability to be able to get by on a small number of calories has great survival value. Unfortunately, in our industrialized society with its readily available supply of appealing foods, this ability complicates weight loss.

As well, most dieters stray somewhat from their diet after the first few weeks or months (depending on their motivation). Dieting becomes boring - so they eat a few treats once in a while. They tend to eat more in social occasions. Some dieters resent having to diet and, either consciously or subconsciously, begin to eat more. Or they gradually increase their portions without realizing it. Thus the initial 800 to 1000 calorie diet can stretch out to 1200 calories or more.

The Radical Diet avoids the monotony of other diets by allowing the higher calorie/carb day when you reach your goal. As long as you stay under 2000 calories on that day, you can have foods that are “forbidden” under other plans. Once you get close to your weight target, you can switch to the Metabolic Diet for long-term weight maintenance. The Metabolic Diet provides additional variety in the food allowed, while continuing to help you lose pounds.

Example of Weight Loss

Female patient, age 35 – always had an easy time losing the first bit of weight but quickly stalemated after the first three weeks or so. Also she chose to by-pass the original 5 pound weight loss and lose more weight before having her higher calorie/carb day.

She followed the MiniStep™ method of setting a target and staying on the "strict" diet until she reached it. Then she set her next target and enjoyed a higher-carb day, being mindful of the 2000 calorie limit.

Because she knew from previous experience that she plateaus after the first month of dieting, she set smaller targets in the second month, making them reasonable, achievable and yet meaningful. It took her anywhere from 5 to 8 days to reach each MiniStep™ target.

Day	**Weight**	**Target**
1	224	
6	215	209
13	209	204
20	204	199
28	199	196
34	196	194
40	194	192
45	192	189
53	189	186
61	**187**	

Total weight loss for 60 days was 37 lbs.

Anticipating Possible Problems

You may run into some side effects while on this diet plan. Most can be easily solved. The use of the foundation supplements, consisting of a vitamin and mineral, antioxidant and essential fatty acids supplement, acts as insurance against some problems including possible nutritional deficiencies.

Dry Mouth

Dieting can cause some dryness and bad breath. In most cases the dryness soon improves. Drinking more water (or diet drinks) and gargling with a mild salt solution often help.

Constipation

Constipation often results from this restrictive a diet. In most cases daily use of a few tablespoons of natural bran (mixed into soup or allowed beverage) will straighten out the problem. Constipation usually settles out after the first few weeks on the diet. If using bran and drinking more water doesn't work, then I suggest you use Regulate, the supplement I formulated for to normalize bowel function while on the Radical and Metabolic Diets.

Fatigue and Irritability

Dieting is stressful. Often the stress comes out as irritability and tiredness. One of the commonest problems encountered on a VLCD is fatigue.

This isn’t as much of a problem if you’re taking the recommended nutritional supplements since they provide all the essential nutrients. But, if after using the MVM, Antiox and EFA+ you’re still fatigued there are several things you can do to increase your energy levels.

In women, low potassium levels may be the culprit since as discussed, many women’s potassium levels are borderline. The loss of water while dieting, coupled with the low food intake may decrease these levels even further. In light of this one of the first things you should do is to increase your potassium intake.

While there are many foods that are high in potassium, most, such as bananas, fruit juices, dried fruit, potato skins, etc. are not allowed on this diet. Ones that are allowed should be included in your diet whenever possible, both because of the potassium content and the low caloric value. These include oranges, strawberries, mushrooms, spinach, Swiss chard, cauliflower, broccoli, asparagus, celery, and tomatoes. As well, various meats/poultry/fish (beef/veal, chicken, halibut, pork, salmon) are high to moderately high in potassium.

For example:

- One cup of cooked spinach has around 800 mg of potassium.
- 4 ounces of sardines or flounder has around 650 mg.
- One cup of Brussels sprouts has around 500 mg.
- 4 ounces of chicken, turkey, beef, pork, lamb and cod contains around 400 mg.
- One cup of canned tuna or pink salmon contains about 400 mg of Potassium.

- One cup of green beans or one medium tomato contains around 400 mg.
- One cup of cooked cabbage, cauliflower, or broccoli contains around 300 mg.
- One cup of strawberries has around 250 mg.
- One half cup of cottage cheese has around 110 mg.

Also keep in mind that several other drinks and foods contain some potassium. For example a cup of coffee and tea contains around 70 mg and a medium sized egg around 60 mg.

Besides increasing the intake of potassium rich foods, you should also take a potassium supplement, at least at first. There are many inexpensive slow-release potassium supplements available in health food outlets and drugstores. Take between 1,000 and 1,500 mg of potassium daily (usually two to three tablets of the high dose potassium supplements). You should see some improvement within a few days. Once your energy levels improve you can adjust or even discontinue the potassium supplements and see if increasing potassium-containing foods does the trick. If not you may need to take one or two tabs a day.

If you're still tired, then another product you might want to try is **Creatine Advantage**, an energy system optimizer that will increase both your baseline and training energy levels.

Muscle Cramps

A low calcium intake can result in muscle cramps, occurring most commonly at night and affecting mainly the calves (the muscles at the back of the leg below the knee). Calcium supplementation usually clears up the cramps.

Water, Where and How Does It Fit In

One of the universal truths, or so it seems, is that if you're exercising and/or dieting you should drink lots of water. But is that really true and if it is why? And how much water should we be drinking?

Water is involved in every function of the body including transporting nutrients, and waste products, helping with the digestive, absorptive, circulatory, and excretory functions, and for body temperature regulation. You need to drink water (or sometimes take it in other ways, especially with certain conditions and illnesses) to make up for water that is lost from the elimination of waste and other products, sweating and evaporation from the lung, mucous membranes and skin.

Under Normal Conditions

Water balance and thirst are detected by complex systems in the body that are extremely sensitive and react quickly and accurately to fluid balance in the body. However, the popular view is that we need to drink at least eight glasses of water a day. That it's important to drink water before and during exercise. That coffee and tea don't count in the fluid replacement equation because caffeine can dehydrate our bodies. And that you can't trust your thirst as an accurate measure of when you need water since if you're thirsty you're already dehydrated.

For the first time, in a recent review in the Journal of Physiology, these myths have been looked at in a scientific and co-ordinated way and shown for what they are, unsubstantiated opinions.[134]

This review looked at the scientific evidence of the 8*8 mantra – drinking at least eight 8 ounce glasses of water a day, and found that there really was none. The claimed benefits of taking in that much water each day, including benefits for weight loss, preventing constipation, fatigue, arthritis, mental alertness and headaches, are also mostly unsubstantiated.

Other water myths that are debunked in this review include:

- By the time a person is thirsty that person is already dehydrated. This in fact isn't true and the best measure of how much water to drink is your thirst.
- Dark urine means dehydration. Again that's not strictly true either as there are many other factors that can contribute to dark urine.
- Caffeinated beverages dehydrate us. As you'd expect much of this is also unsubstantiated. In fact, contrary to popular opinion, a study conducted at the University of Nebraska has found that coffee, tea and sodas are hydrating for people used to caffeine and thus should count toward their daily fluid total.

So how much water should you drink? Under ordinary circumstances, you don't have to even think about how much to drink, or bother counting up the number of glasses of water to see if you hit that magical number. Drink when you're thirsty and don't force fluids when you're not.

As far as drinking water in and around exercise, I've outlined a few simple guidelines that will make sure you're well hydrated without hitting any extremes.

The amount of fluid you need to drink goes hand in hand with the duration of the exercise, and most importantly how much you're sweating. The more you sweat, the more you need to drink to keep ahead of the game. Even with the body's efficiency in protecting water balance, it's not a bad idea to drink ahead if you know you're going to be doing some long-term exercise and/or sweating excessively.

As a rule of thumb, within an hour or so of training, drink a glass of water so you start well hydrated. But don't overdo it since hyperhydration can also affect exercise performance, as seen in a recent study on horses which found that hyperhydration reduces the amount of oxygen that's carried in the blood.[135]

While training you can drink a glass or so of water for every 15 minutes you train, especially if you're sweating it out. However, even during times of heavy sweating don't take in more than a quart and half of water per hour. After training, especially if you've been sweating heavily, take in a few glasses of water before taking a shower. A recent study shows that taking in some fluid right after training more rather than less water after training was better for replacing lost fluid and for plasma volume restoration.[136]

As far as how much your daily intake of water should be, The American College of Sports Medicine that 12 quarts is the maximum amount to drink in a 24-hour period. In my view, however, you're really pushing the envelope if you drink this much on a daily basis, and you risk the chance of overhydrating yourself.

The bottom line is to drink water in moderation when you're thirsty, and in and around exercise.

But What if You're Trying to Lose Weight?

That may be another story, and is in fact more pertinent to those following the Radical Diet than any of the considerations above.

Several studies have shown that drinking more water than you would normally need may help you to lose weight and decrease body fat.

In fact studies have shown that taking in more water than you may actually need to just satisfy thirst might help breakdown and burn more body fat and help you to lose more weight.

There are several reasons as to why water may be beneficial for weight and fat loss. It seems that first of all drinking cool water exerts some thermogenic effects, likely some of that secondary to the body having to warm the water up to body temperature and that takes calories to accomplish. However, approximately 60–70% of the water-induced thermogenesis cannot be attributed to the heating of the ingested water. Studies have shown that the reduction in plasma osmolarity after water drinking mirrors the time course of the metabolic response.

A recent study found that drinking 500 ml of water increases metabolic rate by 30% in both men and in women. The increase in metabolic rate was observed within 10 min after completion and reached a maximum 30–40 min after water drinking. The effect was sustained for more than an hour.

They also found that in men, water drinking led to a marked increase in lipid oxidation. Carbohydrate oxidation did not change after water drinking. In contrast, in women, carbohydrates mainly fueled the increase in metabolic rate after water drinking.

Studies have also shown that increasing the volume of fluid in the body can lead to an increase in fat breakdown, or lipolysis.[137] It can also leads to increased cellular hydration and subsequently increases in protein synthesis.

So it seems that liberal ingestion of water helps build larger muscle cells, or at least help maintain your muscle while you diet, as well as shrink your body fat.

As well, in some people more water may be needed to flush out the ketones and other products of metabolism, including acylcarnitines, parts of fatty acids that are flushed out in the urine and act as a mild diuretic when using **LipoFlush**.

Tracking Your Progress

The simplest way to track your progress, and something you have to do in order to see where you are in relation to your mini-goals, is to weigh yourself daily. You'll see some ups and downs that you didn't expect based some things you can't control, such as water retention, bowel dysfunction, and in women menstruation. All of these are temporary and will iron themselves out as you continue on the diet.

But there's more to tracking your progress than your weight. You also should see how you're doing as far as body composition. It's always good for the morale and motivation if you can see some improvements in your shape. Losing inches off problem areas is almost as important as losing weight in the Radical Diet. Changes in these measurements can give you a boost at times when weight loss seems slow. And losing inches is always followed by significant weight loss if you stay on the diet.

Tracking your body composition can be as simple as standing naked in front of a full-length mirror. Another way is by the fit of your clothes. Both these methods are somewhat subjective and you can go wrong if you're not completely honest with yourself.

The next step would be to take a few body-measurements. The two best are your waist and hips and. But you can also measure your thighs. arms and chest/bust. You can take these every week or so to see how many inches you've lost.

However, for those who are looking a more accurate snapshot of how they're doing the most objective simple way to measure weight and fat loss progress, while ensuring that you maintain muscle mass, is the Metabolic Index (**MIDx**). I formulated the **MIDx** to determine if you're losing weight and fat while at the same time not breaking down excessive amounts of muscle mass.

The **MIDx** is the best way to measure your body composition progress while you're on my phase shift diets as it takes into account all the variables that other methods can't. Not only does it address the height/weight issue (the basis of the Body Mass Index that is almost universally used but which can't track body composition) but also the degree of body fat. With the **MIDx** you get a snap shot of your body composition and progress.

I could give you the complex formula that you need to use to get your **MIDx**, and I do at online and in the Metabolic Diet book. However, an easier way to figure out your **MIDx** is to go to **http://www.metabolicindex.com** and plug in your stats. Your body fat percentage can be easily measured by using a set of inexpensive calipers (available online at **www.mdplustsore.com**). Since it's so easy to do you can check your **MIDx** often and use it as a guide and measure of your progress.

The ideal for the average woman is different than the ideal for average man. For women the ideal is around 13 to 20 while for men it's between 22 to 32. In reality the final point doesn't really matter since it's the improvement that counts. As long as the index keeps going up then there is some improvement being made. Once the index gets above 18 for women and 32 for men you've looking at muscle mass and body fat levels that are too extreme for most of us although not to those who aspire to bodybuilding and competitive fitness standards.

The Metabolic Index Page on www.MetabolicIndex.com

Metabolic Index

The Metabolic Index is the most advanced way to monitor your weight loss progress. Please complete the form below to calculate your metabolic index. When you are done, click the "Calculate" button.

Enter your weight in pounds: 165

Enter your height in inches: 65

Enter your body fat percentage: 15 %

Calculate Reset

Keeping the Fat Loss Going

At some point, usually after you've lost at least 70 percent of the weight/fat you want to lose, you can shift down a notch and go on a diet that's not as strict, but that will still keep the fat loss coming.

This is when we switch over to the Metabolic Diet in full force. For this stage of the diet, you'll have to follow the basic Metabolic Diet Principles and it would be to your advantage to buy one of the Metabolic Diet how-to books. If your goal is simply to lose more body fat and look good, then the Metabolic Diet book is for you. If you want to get buffed like a bodybuilder or even want to compete, then the Anabolic Solution for Bodybuilders is the book you should get. If you're into Powerlifting or into power and strength sports, or need to maximize your power and strength, then get the Anabolic Solution for Powerlifters.

Below I'll outline some of the basics of the Metabolic Diet in all its forms. As well, go to **www.MetabolicDiet.com** for more guidance and information.

Keep in mind that if you've been successful on the Radical Diet, then you're already fat adapted and can skip some of the steps as outlined below. By going on the Radical Diet you've already paid your Metabolic Diet dues and are ready to reap its body composition rewards.

The Metabolic Diet

The cornerstone of the Radical Diet is the Metabolic Diet so you are already familiar with the macronutrient phase-shift methodology. There are a couple of other concepts we need to present.

While in most books have you sift through a lot of introductory, basic, and theoretical information before you get to the part you're really interested in, that's not the case here. We're going to tell you what you need to know in this introduction.

Metabolic Diet Set Point

The first thing I want you to understand about the Metabolic Diet is that it's a living, breathing entity, and not a static diet like all the rest. In other words it takes into account the differences in the ability to use carbohydrates and fats that exist in people, and allows them to individualize the diet to suit their own unique metabolism. As such, at the heart of the Metabolic Diet is the notion of your Metabolic Diet Set Point.

Your Metabolic Diet Set Point is the lowest level of carbs that you need to function optimally, while at the same time maximizing body composition.

The fact that you can figure out the best level of carbs that suits your metabolism while at the same time maxing out your ability to increase muscle mass and decrease body fat, makes the Metabolic Diet a "Holy Grail" of diets.

For some people, those that are efficient fat oxidizers and have little need for dietary carbohydrates, the Metabolic Diet Set Point will be less than 20 grams a day. For a small number of people, the Metabolic Diet Set Point may well be high enough that it ends up being a high carb diet. Most, however, fall somewhere in between, usually between the 30 to 100 grams of dietary carbs per day. Almost as important as the amount of carbs is the timing of the carb intake.

When you have to increase the level of carbs in your diet it will take a while before you discover what is your carb set point. I've found that it takes people an average of about two months to find their ideal dietary carb level. Once you discover your Metabolic Diet Set Point, you can fix your diet at that level for several months while you work on changing your body composition.

The Three Priorities of the Metabolic Diet

1. Priority number one in the Metabolic Diet is switching your metabolism to burning fat as its primary fuel. This is done by limiting dietary carbohydrates and providing ample dietary fat. During this adaptation stage you don't really need to change your normal caloric intake. Simply substitute protein and fat for your former carbohydrate calories. An easy way to do this is to stick to mainly meat, chicken, fish, eggs, hard cheeses, salads (watch the carbs in the dressing, and no croutons) and whatever vegetables you want (except for the starchy vegetables like potatoes, carrots and peas). As far as what to drink, that's easy too. Water, diet drinks, coffee and tea (with cream and artificial sweetener only) are about it. That means no juices or any sugared drinks.

2. Once you're fat adapted, the next priority is to vary your calories to suit your goal. To increase muscle mass you increase your daily caloric intake by increasing fat and protein in your diet. It's usually a good idea to do a controlled weight gain first and then to drop that extra body fat while maintaining most of the muscle you packed on while you gained weight.

3. The third priority is to refine your physique so that you're muscular and lean. To lose body fat while at the same time maintaining muscle mass, you slowly decrease your caloric intake and at the same time your fat intake. By providing less calories and dietary fat, your body will use its fat stores, not muscle, more and more to make up any energy deficits. In some circumstances, because of lower dietary fat levels, your diet may contain only moderate or even low levels of fat, mainly in the form of the essential and monounsaturated fatty acids.

Metabolic Diet – Four Practical Steps for a Quick Start

1. Replace the carbs you're eating now with protein and fat—don't drop your calorie level right at the start.

2. For the first cycle, stick to the low carb phase for a full 12 days before beginning the high carb phase.

3. When you carb up, end carb loading the minute you start smoothing out.

4. Once you're fat adapted (usually after the first two weeks), change the calorie level depending on the training phase you're in. (i.e. Mass, Strength or Cutting Phase.)

The Metabolic Diet Works Because…

- Your body learns to burn fat instead of carbs.
- Your body continues to prefer fats as you drop calories, mainly in dietary fat and, depending on your dietary carb intake, some carbs, always keeping protein high to spare muscle.
- As calories drop, body fat becomes the main fuel even if you lower dietary fat dramatically.

Also…

- Cycling from low carbs, high fat to high carbs/lower fat manipulates the anabolic and fat burning hormones and processes in the body to increase strength, and maintain or increase muscle mass while at the same time decreasing body fat.

Remember…

- You teach the body to burn mainly body fat in preference to carbs and protein.
- By shifting from a low carb diet on weekdays to a higher carb diet on weekends, you manipulate the muscle building and fat burning processes and hormones.

Maintenance

The next step, if you can't lose any more weight, or if you've reached your goal weight, is maintaining your new weight. For most of us keeping the weight off can be harder than taking it off in the first place.

It's obvious that you can't go back to eating the way you did before the diet. You'll just go back to your former weight - after all this is the way you put it on in the first place. You must learn to change your habits and lifestyle in such a way that it complements your new weight. This means maintaining your resolve by keeping your self-esteem high (see section on the psychology of losing weight) and by keeping some of the habits and lifestyle changes you made while losing weight.

Theoretically the best way to adjust to the maintenance phase of your diet would be to systematically increase your portions of food and gradually introduce new foods until your weight stabilizes. Unfortunately few people lead lives disciplined enough for this method to work. For most people the maintenance phase is a time to experiment, to find out what works for them.

During the maintenance phase your weight will fluctuate. At times you might gain several pounds and then have to diet more strictly to take the weight off again. If something you try doesn't work, you will gain weight; but you will have learned something.

Because the maintenance phase is so personal there can be no hard and fast rules. If it works for you then use it. (For example, you may find that dieting during the week will allow you to indulge socially during weekends.) If you're not sure what works or what doesn't, listen to your scales and clothes. They won't lie to you.

Expect to be hungry during the maintenance phase of your diet. It will take a while before your body accepts your new weight and lowers its expectations (after all your body still feels that you are being deprived). Your body will eventually adapt to a lower caloric intake, but it will take time. During this difficult adjustment phase, you must be vigilant and determined not to gain weight. Self-control is easier if your purpose is clear and you are in control of your life. Your increased self-esteem (from losing the weight in the first place and from your new outlook) will be your most powerful tool in maintaining your weight.

Continued support from your family, friends (and physician of course) is as important during the maintenance phase as during the weight loss phase.

Part 4: The Mental Edge

Introduction

As social beings, we are very much affected by the feelings and opinions of those around us. This is especially true for women whose worth in society, especially from the male perspective, is far too often determined by appearance. Most people link their feelings of self-worth to what others think of them and, for the overweight, this can be devastating.

Many have been dealing with feelings of inferiority and lack of self-worth since their childhood years. To best achieve weight loss and stick to a diet a successful mental approach to your efforts will be necessary. Below I've supplied 17 suggestions for creating a personal climate for diet success that will aid you greatly in losing your weight and shaping the body you desire.

Motivation is the Key

Motivation is the key to losing weight. If motivation is strong, then an overfat person can overcome all obstacles and lose weight.

In order to survive the rigors of dieting motivation must come from deep within. If the motivating force for losing weight is material gain (such as a new set of clothes when you get to your goal weight) then it simply won't last.

The motivation needed to maintain a new body weight is that which comes from knowing yourself and consciously determining what kind of person you want to be. You must consciously decide what it is that you really want - not what others want you to be.

The determination to conquer the weight problem once and for all must come from a fundamental change in your self-concept. Successful dieters have successfully changed their self-concept from one of, at best, indifference, to knowing what they want out of life.

Motivation makes self control possible. However, you should realize that self-control is also influenced by your environment. For example, it is harder to maintain motivation and self-control if you are constantly under stress and food is readily available. Thus as well as motivation, you need the right environment in order to effectively lose weight.

An effective reducing diet and nutritional supplement regimen, which provide all the essential nutrients (except calories) and assist in weight loss by attacking the fat loss equation from several angles, a consistent and effective exercise program, and encouragement and support from others are all essential elements of a successful weight loss program.

It’s also important to remember that motivation is encouraged by success. And to be successful in weight loss, it’s important to see some success. The fact that you will lose substantial amounts of weight following the Radical Diet, will keep you motivated to keep losing weight.

The nutritional supplements that are part of the Radical Diet will also fuel your motivation and drive to succeed. That’s because they will not only help you lose weight faster but give you the energy you need to feel good while you’re dieting.

Focus on Your Expectations

Those who have their self-esteem tied to what others think of them are going to be very vulnerable to the whims of others. Unfortunately, in our competitive and somewhat dysfunctional society we also have a tendency to define our worth in relation to others, and when that "other" is looking to find a way to feel better about his or her own life it may come at your expense. As such, their criticism of you may indicate little more than their own feelings of inadequacy.

When you rely on others for self-esteem you're usually going to be disappointed. Many overweight people have become conditioned to the criticism and live life expecting pain and lack of success. Their failure to lose weight can become something of a self-fulfilling prophecy.

Before you lose weight and keep it off, you're going to have to reshape your thinking. Try to rid yourself of other people's expectations and learn to trust and strive for your own goals and define your life by your standards. This involves setting realistic goals for yourself and giving yourself proper credit when you meet them.

Realize You Deserve To Be Happy

You haven't done any injustice to humanity. In fact your weight problem is a result of your genetic makeup not something you planned. You don't need to feel guilty about anything. However, because of your genetics you're just going to have to work harder and be more dedicated than the next person to get to the weight you want. We're not all born with the same abilities or physical gifts. But we all do have the right to strive for happiness.

Once you decide that you deserve to be happy, then it's time to do the things necessary to achieve success. You are your own master. You run your own life and should make decisions on what you need, not on what somebody else thinks you need. That’s why you should disregard what anyone says about this diet and stay the course.

If you blow your diet on occasion, you won't feel like a total failure and give up on it. Indeed, even on this Radical Diet plan, you'll find that the occasional lapse won't harm you at all. You may even celebrate the fact those experiences that previously caused you to think of defeat are now nothing more than an annoyance.

By living up to your own expectations and avoiding the resentment based on other's expectations and your fear of failure, you'll find yourself energized and motivated. Again, you deserve to be happy, so live the life you want to and make the changes you need to be happy and healthy.

Build on Your Own Momentum

Nothing contributes to success as much as success. You can compensate for your initial lack of self-esteem or confidence by using your prior losses to energize you toward future success. Celebrate those early losses and take pride in them. You've begun to achieve the goals you've set for yourself. As you begin to lose weight, you'll also find your self-image changing for the positive and realize that you can take charge of your life and achieve the things you want to.

Give It Your All

As I mentioned above, motivation is the mechanism for transforming desire into reality. Weight loss and fitness require focus. You can't just give it half an effort. Use your successes to cheer yourself on while keeping those long-term goals and that picture of the body you're striving for in your mind. If you intensely desire to lose weight and use a proven program like this one, you've got a very good chance of doing so. Having expectations based on your personal needs and realizing that you deserve to be happy will insure positive results.

Learn to Deal With Stress

Stress can play a major role in the inability to lose weight and build a healthy body. Surrendering to it can lead to self-destructive behavior. Unfortunately, in our modern lifestyle, stress is almost impossible to avoid. But in the end it's not so much the stress but how we react to stress that’s the biggest problem.

Anger is often directed inward, especially by those who have long-standing weight problems. This self-absorbed anger can ultimately lead to an apathetic attitude and leave a person resigned to failure. Try not to keep in your anger and let it eat you up.

Because of a lack of self-esteem, some overweight people may falsely feel that they are responsible for anything and everyone and take the problems of the world on their shoulders. Taking responsibility for the moods of others is a big mistake. This can leave you feeling tense and guilty and lead to further loss of self-esteem and destructive behavior. Also realize that, while the roots of anger can be buried and long-standing, some anger is based on superficial concerns and can be constructively dealt with.

Watch Out For Saboteurs

At one time or another you're going to run into people who, consciously or unconsciously, try to sabotage your diet.

You've heard the phrases before- "But I bought them just for you," "You can make it up tomorrow," "I like a little meat on your bones," "A little bit won't hurt you," "Eat! You're going to get sick," Not another diet!" In many cases, the person making these statements may be doing so without any awareness of the implications of their actions.

The only solution is to be your own person. You're the boss. You're responsible for your diet and you must make the decisions and conduct yourself accordingly. Don't let someone else make them for you.

You'll also frequently find cases where a husband or wife will nag the dieter in an attempt to destroy their diet. Perhaps they feel that a thinner spouse will be more attractive to the competition. Insecurity, which may have been hidden while the mate was overweight, can grow stronger with each pound their partner loses. Talk with your spouse, reassure them and do your best to get them to join you in enjoying your new body.

Don't Be Afraid To Lose Weight

For some people, being overweight takes the pressure off them as far as having to look good. And some stay overweight because it’s the easy way out. No watching calories or food and you just avoid the mirror. What could be simpler? Some overweight people are afraid to lose weight. They fear the world will change and that more will be expected of them.

And some people get so resentful after they’ve lost weight because people treat them differently than when they were overweight, that they gain the weight back again. They resent the fact that even though they haven't changed inside, they suddenly find themselves more accepted, more desirable as a mate. This change in the people around him or her can create anger at everyone and at a society that judges people so superficially.

I agree; people are judged on silly grounds. Appearance takes precedence over personality. For a personality to be appreciated, you've got to get past the way a person looks first. Many great personalities go undiscovered merely because the body they're packaged in doesn't appear to suggest worth.

It's not fair, but in our society it helps to pay attention to appearances. It's far better to deal with this reality than to spend your life unhappy and bitter. Improving your appearance can open up a whole new world and aid you in becoming a more positive, successful person. While more may be expected of you, you'll also find yourself capable of delivering it.

Don’t Sabotage Yourself

Patients are encouraged to keep all the high calorie and snack food that they have in the house out of sight, to keep high-calorie foods out of the house in the first place, and to limit the accessibility of food that must be kept in the house. Candy and nut dishes are to be eliminated, and when visitors arrive, low-calorie foods should be served. Foods that require preparation (raw vegetables, soups, etc.) are to replace those that are prepared (e.g., potato chips).

Many overweight people report eating when watching television (or doing some other activity) regardless of whether the person is hungry. Therefore, patients are instructed to minimize the number of times, places, and events associated with eating. They are asked

to do nothing else while eating, to eat in a specific place, and to eat only at scheduled times.

By controlling the act of eating, behavioral programs attempt to bring the act of eating under the patient's control. This involves slowing the rate of eating and increasing awareness of the components of the eating process. You should eat in a manner so as to give your body time to respond to the signals of satiety. Thus it’s a good idea to pause between bites.

Stress and Eating Behavior

There is a definite relationship between anxiety and eating behavior. Many people step up food intake under anxiety situations, when bored or certain desires are frustrated. These people use food for non-nutritive purposes, to relieve anxiety, to assuage anger, boredom and frustration.

It was the writer Cyril Connolly, who was obese himself, who said that obesity is a state of mind brought on by boredom and despair. He is also the person that said that inside every fat person there is a thin person wildly signaling to be let out.

There are some ways to counter this that may be useful, or not depending on the situation.

The simplest techniques involve teaching the patient to put down their fork after each mouthful, eating the meal under circumstances where they are conscious of the act of eating. Don't read a book or watch TV while you eat or you might be gobbling food without thinking. Don't leave food out in the open anywhere in the house, you will be tempted to eat it. Avoid shopping when hungry. In fact there are countless tips and ways to get your mind off food and eating both during and between meals and to eat less during meals. Some useful examples follow.

Shopping and Cooking

Both are tough to do when on a diet. The following hints, even though some may seem rather artificial, may help. Always remember that it’s difficult to eat food you don’t buy.

So when shopping:

Don't shop when hungry or tired. You’re going to be compulsive, be susceptible to the sneaky supermarket marketing strategies (they’ll do anything to encourage impulse buying), and end up buying food you shouldn’t.

Make a list of the foods you really want and need to buy. On the Radical Diet, this is really simple. Print out the list of foods you’re allowed and don’t buy anything that’s not on that list. This simplifies shopping and makes the trip to the supermarket much easier since you can avoid most of the isles, such as the junk food and baking areas.

Make sure that the food you do buy is fresh. Fresh food tastes better and is more satisfying. Not only that, but fresh food will reduce cravings.

Limit the amount of money you take with you when shopping. This way you'll buy the essentials and not have enough for anything else.

Take someone shopping with you who knows you're on a diet. And make sure that they have access to the list of foods that you can have.

Do your shopping at times when you're least hungry, usually after a meal and early in the day.

At home:

At home, make sure that you put all the snacks and high calorie foods out of sight (or better still give them away or throw them out if the other family members will let you). In the fridge put all the tempting foods at the back and keep the low calorie foods up front.

Don't taste as you cook, just follow the recipes or get someone to taste for you.

Socializing

Social gatherings are centered around food and although everyone appreciated the dieter's dilemma, almost all hosts are affronted if you don't fully savor the fruits of their labour. It's their way of expressing their affection for you and they feel rejection if you only pick at the food and drink. There is a relationship between food and affection.

At many social events eating is the only activity that everyone can do equally well and to which we can turn when fear or boredom sets in. Eating also soothes the anticipated stress of social contact - we're all a little nervous, at least at first, when confronted with family get togethers and social events.

Eating Out

Eating out, even if just with one other person, is often a disaster. I've found it's best to keep social events and eating out to a minimum if you're serious about dieting. It's just not worth the frustration.

If you must go out, try and stick to the basic food list presented below. Insist on foods without the special sauces and extra butter. Bring your own diet pop to parties and dances (for some reasons there's never any around when you're watching your calories). If all else fails, leave early - or better yet don't go in the first place.

Never eat with anyone who is not sympathetic to your dieting (many otherwise thoughtful people will almost deliberately try to sabotage your diet - don't let them).
Never, ever go out (or even associate) with anyone who utters anything even remotely resembling the phrases below:

- "come on a little won't hurt you."
- "eat, its good for you."
- "eat, you're going to get sick."
- "EAT!"

In fact go out as little as possible, at least in the first few months - it's not nice to suffer.

But if you do eat out then keep in mind that the temptations to go off the diet will be tremendous and you will put yourself through some unnecessary suffering.

Then try and pick the restaurant. More restaurants, including the fast food joints, are catering to dieters by offering low cal dishes along with regular fare. Even fitness cuisine is available from ritzy restaurants and even low cal chains of fast food outlets are popping up all over North America.

If you must then here are some suggestions for dining out that may help out:

- Order mineral water with a twist of lemon instead of higher calorie drinks and juices.
- Order a la carte and never order complete meals.
- Order children portions if the restaurant serves them.
- If not then split some orders with your dinner mate and order less.

Understand that Weight Loss Is Not a Panacea

While weight loss can change your life, you shouldn't expect it to be the solution to all of your problems. Some people go on a diet and expect it to cure all their ills. This is unrealistic and will lead to regaining weight because of the discouragement and frustration that results from being unable to lead the perfect life.

Long-term changes in your life will come from the decisions you make about yourself and your lifestyle, not the diet itself and any resulting changes in your appearance. While the diet may give you an entirely new look, you'll still be the same person inside. Lasting weight control usually comes from dedication and personal growth rather than the other way around.

Make Necessary Lifestyle Changes

Examine your daily routine. What's wrong with it? What's right with it? What makes you feel uncomfortable? What gives you a lift and makes you feel good about yourself? Why?

Try to put together a profile of the positive and negative people and forces in your life. From this profile, you can see what things need to be changed. Make changes that will increase your feeling of self-worth such as making time to relax and exercise or minimizing your time with troublesome people and situations. Identify sources for anxiety and work to consciously and productively deal with them with a view to your own right to happiness and respect for your own needs and standards.

To maintain weight loss, you're going to have to identify those things that make you slip off the track to success and minimize their effects. A good weight loss program involves not

only a well-planned diet but also the kind of psychological approach that will keep you from sabotaging yourself and denying your own happiness and success.

Accept Responsibility For the Things That You Do

No one else can take that responsibility and no one else is to blame if you can't. Accept yourself as you are and take responsibility for it. Forget what the others say and don’t compare yourself to anyone else.

In order to lose weight, shape a new body and maintain it you must monitor yourself constantly and be aware how behavior and habits can affect your weight. If you go off the diet, it'll be because you wanted to. If you stay on it, it will be because you decided it was important. Take pride in your progress. You're the one responsible for it.

Realize That You Are Not Alone

Though the ultimate responsibility for your weight rests with you, having the support of spouse and friends can make losing weight much easier. It's important that they be supportive. It's helpful to have someone to lean on. Someone to call when the going gets rough.

In fact, it can be helpful to have friends or family diet with you, at any level. This will not only give you a support system but also make a positive impact on their eating behavior. Your need to lose weight may turn out to be the best thing that ever happened to them if they get their habits in order as a result.

This can be tricky, though. You need to be considerate of each other. Make mutual goals but don't compete with each other directly. Don't make it a contest to see who can lose the most the fastest. It's not competition but cooperation that rules here. Don't harbor bad feelings or jealousy. If you're a woman and your partner a man, understand that he will likely lose weight faster than you, because of metabolic differences, even though you may be eating less.

Get together often and talk about your diet techniques and any problems you're having. Support each other when you falter. Plan a regular exercise program together (having a good training partner can spell the difference between a successful exercise program and one that dies on the launchpad). Never criticize your partner. Instead, make helpful suggestions when asked.

Part 5: Supplements

Introduction

Nutritional Supplements are an important part of this weight loss plan and in fact any VLCD[138]. I recommend the use of my MD+ Line of Nutritional Supplements because I formulated these supplements specifically for the Metabolic Diet and for weight and fat loss. These supplements, unlike most of the supplements on the market today, contain what you need to keep you healthy and will accelerate your weight and fat loss.

The supplements below are crucial to the success of this plan because not only do they help keep you healthy, but also they counter the changes that occur in the body as a reaction to the extreme weight loss.

Your body, thinking you're starving, dramatically increases appetite (so you'll eat anything and everything to stop this supposed threat to the body) and decreases the metabolic rate (so you need less food to feed the metabolic furnace) to survive and adapt as much as possible to the perceived starvation.

To counter these effects, the supplements I recommend below will help you lose weight and body fat by, among other things, decreasing hunger and increasing your metabolic rate and thermogenesis, and thus energy expenditure.

As well the supplements ensure that the most of the weight you lose is body fat and not other important tissues such as muscle and bone. As such, they help maximize body composition, improve your appearance as you lose weight, and both directly and indirectly help you keep the weight off.

MD Line of Targeted Nutritional Supplements

Full information on my line of targeted weight and fat loss supplements is available on www.MDPlusStore.com and www.MetabolicDiet.com.

Specific information on individual supplements are available on the following sites:

LipoFlush	**www.LipoFlush.com**
ThermoCell 35	**www.ThermoCell35.com**
Metabolic	**www.mdMetabolic.com**
Cellusol	**www.Cellusol.com**
MRP LoCarb	**www.MRPLoCarb.com**
GHboost	**www.GHboost.com**
ReNew	**www.mdReNew.com**
Regulate	**www.mdRegulate.com**
Myosin Protein	**www.MyosinProtein.com**
MVM	**www.mdMVM.com**
Antiox	**www.mdAntiox.com**
EFA+	**www.mdEFAPlus.com**
InsideOut	**www.mdInsideOut.com**
Exersol	**www.Exersol.com**
NitAbol	**www.NitAbol.com**

Nutritional Supplements – Which Ones and When to Take Them

There are a variety of choices as far as which supplements to use and when. It all depends on how much body fat and weight you have to lose, and your exposure and experience in the use of the different types of supplements commonly used for weight loss.

There are a number of ways to use the various weight loss supplements, depending on how much weight and body fat a person wants to lose. For those who have a lot of weight to lose, the various supplements can be used sequentially and stacked for long-term effectiveness.

I'll give some basic recommendations below for both categories and then following that some more information on supplements and fat loss and the complete guidelines on how to best use LipoFlush, Metabolic, and the various other supporting supplements.

But don't worry if all of the info below is confusing at first. It'll all be clearer once you look at the real world sample supplement regimens further down. In fact, if you want you can skip to the section titled **Sample Regimens – Putting It Together** (ten or so pages down) and go over all of the rest later on.

Supplements and Fat Loss

The products in my nutritional supplement line can be used on their own or together. When using two or more of the supplements they can be used sequentially or stacked together for maximum effectiveness.

I've put together some sample schedules for using LipoFlush, Metabolic and other supporting supplements. What you use depends on your level, although MRP LoCarb and LipoFlush should be used by everyone. From there you can take many more supplements depending on your circumstances and need.

For example, at the start you could start off with just the LipoFlush and MRP LoCarb (see sample beginner's regimen below). Those who need to lose more weight should take more of the supplements. For these people, the Intermediate and Advanced supplement packages are ideal since they'll usually need more to first of all start off with a bang, and secondly so they can continue to lose weight and body fat and reach their goals.

For those that have more to lose, it's a good idea to use both LipoFlush and Metabolic, as well as some of the other supplements as outlined below.

Besides splitting the supplement programs into beginner, intermediate and advanced, I'm splitting each one of these into three four-week phases. The four-week phases work like the Cellusol, once you finish the third phase, of any of the phases, you start again either at the beginning of the first Beginner phase again, or if you've advanced further at the beginning of either the intermediate and advanced phases respectively.

The schedules below are designed to keep fat loss from stalling since people tend to get used to any one regimen rather quickly. Changing the supplements, by altering the ones they're using or altering the dosages, keeps the body in adaptation mode and constantly losing body fat. We're never going to let the body get so comfortable that it adapts to any one regimen, which in turn effectively puts a stop to continuing fat loss.

Everyone at the start could use the Beginner phases. First of all because it's effective for everyone initially and if you only have say up to 30 pounds to lose then one or two cycles of the beginner program would be all you would need.

If you have more than 30 pounds to lose then you might want to start at the beginner phases then go directly to the Intermediate phases and once you're finished the 24 week cycle you could start again at the beginning of the Beginner phase or the Intermediate phase, again depending on how much body fat you have to lose.

If you have a lot of body fat to lose, you could go right through all three phases, a full 36 weeks, and then begin again at the beginning of any one of the phases. If after going through the full 36 weeks (enough to lose between say 40 to 100 lbs of fat) you still have substantial amounts to lose, it's best to start the full 36 weeks cycle all over again. If you only have small amounts left using another Advanced cycle might be your best bet.

Regardless of exactly how you cycle the phases, remember that cycling the supplements by following a well-planned regimen, is the key to long-term weight loss.

You'll notice that at the advanced phases I've introduced NitAbol and Exersol. I'm assuming that at this stage they're also training harder and the Exersol will come in handy, along with the Metabolic and LipoFlush.

Also the advanced phases can be use by bodybuilders or anyone who really wants to cut their body fat to the bone and maximize muscle mass while they're doing this.

Beginner's Phase

When you first start the Radical Diet you'll lose weight and body fat without using supplements. However, as with all diets, it can get more difficult as you go along and the weight doesn't drop as easily.

Using some supplements right from the start can help you to lose more weight than on the diet alone. And this can motivate even more and set you up for more weight and fat loss throughout the diet.

And as you go along and you can use more help you can also up your supplement intake.

For example, to begin with you might want to go on just LipoFlush, 2 tablets twice a day, along with an MRP LoCarb once a day.

Then in time you may want to introduce Metabolic say in the evening and perhaps a few tablets of ThermoCell 35 prior to working out.

In this case your supplement regimen might look like this:

1. In the morning.

LipoFlush – 2 tabs
One MRP LoCarb

2. Before Training

ThermoCell 35 – 2 tabs

If you don't train then take 2 LipoFlush mid afternoon.

3. With Supper

Metabolic – 2-4 tabs

MD Foundation Supplements

These are supplements that should be used by everyone on this diet as a foundation upon which you can achieve your weight loss and body composition goals.

MVM – a comprehensive, specially balanced, multiple vitamin and mineral formula designed in accordance to published research to provide full-spectrum front line nutrition with an emphasis on the needs of anyone who diets and/or exercises. MVM is especially important in VLCDs, which can be low in some of the important trace nutrients.

For example both calcium and phosphate should be supplemented in VLCDs and MVM specifically contains 400 mg of calcium in the phosphate form.[139][140]

EFA+ - a complete essential and synergistic fatty acid formulation designed to provide the full gamut of all the essential fatty acids and other ingredients such as CLA that are so important to optimizing your metabolism and maximizing the fat-burning effects of exercise.

As well, studies have shown that increasing fat intake (as with the use of essential fatty acids) while on VLCDs may prevent the gallstone formation and problems that can plague women when they diet.[141]

Antiox – a complex formulation that provides targeted antioxidant support and immune enhancement to the whole body. Besides the usual vitamin and mineral antioxidants, Antiox also contains glutathione, the most important, all-purpose, endogenous antioxidant in our bodies, alpha lipoic acid, co-enzyme Q10, quercetin, lycopene, resveratrol and grape seed extract.

Studies have shown that overweight people have lower antioxidant levels in their system than those of normal weight, and as such may be more prone to cardiovascular disease, such as atherosclerosis.[142]

MD Weight and Fat Loss Supplements

These supplements can be used for decreasing body fat while maintaining critical muscle mass and strength, and for maximal weight and fat loss. They can also be used to deal with some of the problems sometimes encountered when on a VLCD.

Insulin resistance is common in those who have difficulty in losing body fat. Several of the supplements below, both alone or acting synergistically with one or more of the others, held to control insulin by decreasing insulin resistance and increasing insulin sensitivity.

LipoFlush - Ephedrine Free Revolutionary Fat Loss Formula - is a research-driven, synergistic blend of natural ingredients designed to dramatically decrease body fat, increase energy levels, preserve skeletal muscle, and provide major health benefits. While other fat loss supplements work on one or at the most two dimensions of the fat loss equation, LipoFlush attacks fat from several independent and synergistic ways, resulting in unprecedented fat loss. One of these ways, not available in any other fat loss supplement, will literally flush the fat right out of your body. For more information go to **www.LipoFlush.com**.

Metabolic - Anabolic and Fat Loss Primer – formulated to stabilize your metabolism and hormones and reverses the adverse effects of severe dieting by decreasing hunger and increasing your metabolic rate. Metabolic also optimizes the body's hormones, including thyroid, growth hormone, testosterone, insulin and cortisone in order to maximize weight and fat loss.

ThermoCell 35 -Body Shaping and Pre-Training Formula – formulated to help you get rid of fat in those problem areas and to increase fat loss while exercising.

Metabolic, ThermoCell 35, and LipoFlush Combos

Metabolic is formulated to aid in maximizing body composition and to maintain hormonal homeostasis. As such, it's useful as an aid to weight and body fat loss, and can be used on its own or along with LipoFlush and/or ThermoCell 35. When used together LipoFlush, ThermoCell 35, and Metabolic are particularly effective in maximizing body composition and in decreasing body fat, especially cellulite.

When used together with either of the other two, Metabolic adds another dimension to the weight loss equation by providing increased impetus to weight and fat loss efforts, especially in the evening and during the night.

Metabolic is different from LipoFlush and ThermoCell 35 in that it attacks weight and fat loss from different directions, and also takes into account the hormonal status of the body, optimizing insulin, thyroid, growth hormone, sex and adrenal hormones.

The result is that Metabolic, besides being an effective weight and fat loss product, also functions to restore optimal hormonal functioning, regardless of whether the hormonal dysfunction is due to dieting, stress or aging.

LipoFlush works incredibly well for weight and fat loss, and ThermoCell 35 for body shaping and as a pre-training fat loss primer, but combined with Metabolic you'll get even better results. Together they make an effective AM/PM combination.

Metabolic, when used with LipoFlush and/or ThermoCell 35, is most effective if used in the evening, a time when LipoFlush and ThermoCell 35 shouldn't be used as they may give you some problems falling asleep. As such Metabolic is the perfect evening and nighttime companion to the other two and together they're a potent force against weight and fat loss, and are especially useful for reducing cellulite.

Other Weight and Fat Loss Supplements

ReNew – Homeostatic and Immune System Enhancer - formulated to enhance and stabilize weight and fat loss and allow the body to return to an optimal metabolic and immune state so that it is ready and able to make dramatic weight and fat losses.

Myosin Protein Complex – is the most advanced, synergistic blend of the highest quality protein powders, peptides and amino acids on the market today. It contains the precise amino acid mix to maximize protein synthesis, decrease muscle breakdown and by various pathways, enhance the loss of body fat.

MRP LoCarb - Is the nutritional foundation of my Radical Weight and Fat Loss Plan. It's an engineered high-protein, low-carbohydrate and moderate-fat meal replacement powder containing an advanced protein blend, healthy fats, a balanced array of vitamins and minerals, and special ingredients that act as partitioning agents, allowing you to lose body fat while at the same time maintaining muscle mass. For more information see the Appendix below.

Regulate –The various insoluble and soluble fibers and other compounds contained in Regulate keep the intestinal tract healthy by clearing up irregularity problems and providing probiotic essentials, and have also been found useful as an **appetite suppressant**, to decrease cholesterol levels and the formation of gallstones, and increase natural insulin sensitivity.

Creatine Advantage - Keeps the energy system in high gear by not only increasing endogenous levels of phosphocreatine, but also by optimizing the glycolytic and TCA cycle energy processes. The added amino acids and dipeptides allow a natural increase in the absorption and utilization of creatine without carbohydrates, and increase the volumizing, anticatabolic and anabolic effect of the formula.

Cellusol

Info on Cellusol is available on the site at http://www.mdplusstore.com/pdfs/cellusol.pdf.

Cellusol was formulated to accomplish maximum weight and fat loss, **especially cellulite**, while at the same time minimizing the loss of muscle. This means that the weight you lose will be mostly body fat and you'll look both fit and trim as you lose your weight.

Cellusol is a stacked/cycled product consisting of 3 formulations, LipoFlush, Metabolic and ReNew. Each formulation is meant to attack the problem of maximizing body composition from a different angle.

The way most people use Cellusol is to take each supplement for 2 weeks in turn, LipoFlush first, then Metabolic and then ReNew. However, the trio can be taken in various ways depending on the individual's response.

For example not only can they be taken consecutively but the time intervals can be varied and they can also be stacked. I've outlined two other regimens that might be useful.

LipoFlush for the first two weeks, Metabolic for one week, ReNew for one week, then back to LipoFlush for two weeks, and so on.

Another way, especially if you have to lose a lot of weight is to use the initial 2 wk/2 wk/2 wk or 2 wk/1 wk/1 wk schedule for the first two or more cycles and then as it gets more difficult to lose weight, use LipoFlush and Metabolic together for three or four weeks, followed by one to two weeks of ReNew and then back to the LipoFlush/Metabolic combo for another three to four weeks followed again by one to two weeks of ReNew and so on.

There are a lot of innovative ways to use the Cellusol combination, keeping in mind that LipoFlush is geared to maximizing weight and fat loss, Metabolic for continuing or adding to the weight and fat loss and optimizing your metabolism for weight and fat loss, and ReNew for normalizing your metabolism and immune system, decreasing the stress of dieting, and getting you body primed for the effects of both LipoFlush and Metabolic.

I think it's also important to know that unlike most of the other weight loss supplements and drugs, Cellusol, and each of its components are meant to also maximize health and fitness. For example, have a look at the detailed information on LipoFlush at http://www.mdplusstore.com/pdfs/lipoflush.pdf.

The supplement regimens below outline the use of the various MD+ products, including the three formulations in Cellusol, in ways that will facilitate weight and fat loss.

Complete Supplement Programs Divided Into Phases

Overview

The whole process of setting up the supplement regimen can be quite complicated. In order to give you an idea of how you can cycle the supplements, using less at first and more later on as you continue lose body fat and weight, I've listed some sample regimens that are divided into 4 week phases. I've found that varying the regimen somewhat, every once in a while keeps the body from adapting to any one regimen and allows you to lose more weight in the long run.

At first I'll just list various phases and supplements that can be used, keeping in mind that this listing is just to give you an idea of more complicated supplement regimens. The regimen is split up to provide 3 phases for each regimen, each phase lasting four weeks, for a total of 12 weeks.

After this listing I'll give you some simple practical regimens that you can follow.

Each Phase Below Lasts 4 Weeks

Supplement Programs

Beginner (12 weeks - three four week phases)

Phase 1 (4 weeks)
MVM
Antiox
EFA+
Regulate
LipoFlush
MRP LoCarb.

Phase 2 (4 weeks)
MVM
Antiox
EFA+
Regulate
Metabolic
MRP LoCarb.

Phase 3 (4 weeks)
MVM
Antiox
EFA+
Regulate
Metabolic and LipoFlush, half doses each
MRP LoCarb.

Intermediate (12 weeks - three four week phases)

Phase 1 (4 weeks)
MVM
Antiox
EFA+
Regulate
Metabolic – weeks 1&2
Metabolic & LipoFlush– weeks 3&4 full doses each
MRP LoCarb.

Phase 2 (4 weeks)
MVM
Antiox
EFA+
Regulate
ReNew – week 5
Metabolic – week 6
LipoFlush weeks 7&8
MRP LoCarb.
Creatine Advantage

Phase 3 (4 weeks)
MVM
Antiox
EFA+
Regulate
LipoFlushand Metabolic – half dose – weeks 9&10
Metabolic & LipoFlush full dose – week 11
ReNew – weeks 12
MRP LoCarb.
Creatine Advantage
GH Boost

Advanced (12 weeks - three four week phases)

Phase 1 (4 weeks)
MVM
Antiox
EFA+
Regulate
LipoFlush & Metabolic – half dose week 1&2
LipoFlush & Metabolic full dose – week 3&4
MRP LoCarb.
Myosin Protein

Phase 2 (4 weeks)
MVM
Antiox
EFA+

Regulate
ReNew – week 5
LipoFlush & Metabolic – week 6&7&8
NitAbol
MRP LoCarb.
Creatine Advantage
GH Boost

Phase 3 (4 weeks)
MVM
Antiox
EFA+
Regulate
LipoFlush & Metabolic & Exersol Competition – week 9-12
MRP LoCarb.
Myosin Protein
Creatine Advantage
NitAbol

Sample Regimens – Putting It Together

These regimens are guides for those choosing one of the Radical Diet Packages. These regimens are not fixed in stone and can be adjusted to suit your specific circumstances and needs. After we list three regimens we'll talk about changes that can be made so that the supplement regimens are more in tune with your life.

Basic Regimen

Breakfast

MRP LoCarb
LipoFlush – 1 to 4 tablets (start off at a lower dose and then increase it as needed).

Mid Afternoon

LipoFlush or ThermoCell 35 - 1-4 tabs

Intermediate Regimen

Breakfast

MRP LoCarb
LipoFlush – 1-4 tabs
Metabolic – 1-3 tabs

Mid Afternoon

LipoFlush or ThermoCell 35 - 1-4 tabs
Metabolic – 1-3 tabs
Regulate – 5 caps

Evening

Regulate – 5 caps

Advanced Regimen

Breakfast

MRP LoCarb
LipoFlush – 1-4 tabs
Metabolic – 1-3 tabs

Lunch

EFA+ - 2 caps
MVM – 2 tabs
Regulate – 5 caps

Mid Afternoon

LipoFlush or ThermoCell 35 - 1-4 tabs
Metabolic – 1-3 tabs
Creatine Advantage – 1-2 scoops with water

Evening

EFA+ - 2 caps
Antiox – 1 tablet
MVM – 2 tabs

Before Bed

Myosin Protein – 1-2 scoops with water
Regulate – 5 caps

Changes to the Regimens

You can make almost any changes you want to the above regimens. For example, some people take their LipoFlush or ThermoCell 35 before training as they feel more energized and train harder. In this case simply take one of the LipoFlush or ThermoCell 35 doses at that time, as long as it's not late in the evening.

The regimen might look like this if say you train at 11 AM:

Breakfast

MRP LoCarb

Before Training

LipoFlush or ThermoCell 35 – 1 to 4 tablets about 15 minutes before exercising

Late Afternoon

LipoFlush or ThermoCell 35 - 1-4 tabs

Also some people like to use the Regulate at problem times. For example if they get the munchies late at night they'll take all 10 Regulate with a large glass of water and find that it satisfies that urge.

For those that find they're hungry more after supper than any other time, they will often use the Regulate and Metabolic only at that time. So their regimen might look like this, using the Intermediate Regimen as an example.

Intermediate Regimen

Breakfast

MRP LoCarb
LipoFlush – 1-4 tabs

Mid Afternoon or Before Training

ThermoCell 35 – 1-4 tabs

Evening

Regulate – 5 caps
Metabolic – 1-3 tabs

Later in the Evening

Regulate – 5 caps
Metabolic – 1-3 tabs

Another example is the person who does very well in the morning with just coffee and a boiled egg and doesn't really start to get hungry until early afternoon. Their supplement regimen might look like this. Again we'll use an intermediate regimen as an example.

Intermediate Regimen

Breakfast
LipoFlush – 1-4 tabs

Early Afternoon

MRP LoCarb

Late Afternoon or Before Training

ThermoCell 35 – 1-4 tabs

Evening

Regulate – 5 caps
Metabolic – 1-3 tabs

Later in the Evening

Regulate – 5 caps
Metabolic – 1-3 tabs

Sample Regimens for Maximizing Body Composition

For those who are looking at minimizing body fat and maximizing muscle mass at the same time the following regimens have been used successfully by both men and women who are into fitness, bodybuilding and sports.

Basic Fat Loss Supplement Regimen

1. In the morning with breakfast.

MVM – 2 tabs
LipoFlush – 2-4 tabs

2. Before, During and After Training

Before training

ThermoCell 35 2-4 tabs

During training

Power Drink – 1-2 scoops diluted out in 20 to 30 ounces of water

After training

Amino – 10 tabs

An hour or so after training

MRP LoCarb shake, preferably mixed with water.

3. With Supper

MVM – 2 tabs

Intermediate Fat Loss Supplement Regimen

1. In the morning with breakfast.

MVM – 2 tabs
GHboost – 3 tabs
LipoFlush – 2-4 tabs

2. Before, During and After Training

Before training

LipoFlush or or ThermoCell 35 - 4 tabs

During training

Power Drink – 1-2 scoops diluted out in 20 to 30 ounces of water

After training

Amino – 10 tabs

An hour or so after training

MRP LoCarb shake, preferably mixed with water.

3. With Supper

MVM – 2 tabs

4. Before Bed

GHboost – 3 tabs

Advanced Fat Loss Supplement Regimen

1. In the morning with breakfast.

MVM – 2 tabs
EFA+ - 2 capsules
LipoFlush – 4 tabs

2. Before, During and After Training

Before training

LipoFlush or or ThermoCell 35 – 4 tabs
GHboost – 3 tabs

During training

Power Drink – 1-2 scoops diluted out in 20 to 30 ounces of water

After training

Amino – 10 tabs

An hour or so after training

MRP LoCarb shake, preferably mixed with water.

3. With Supper

MVM – 2 tabs
EFA+ - 2 capsules
Metabolic – 3 tabs

4. Before Bed

GHboost – 3 tabs
TestoBoost – 4 tabs
2 Scoops of Myosin Protein mixed with water (blender is best), either flavor

Some Tips

1. **If your normal sleep time is say 11 PM, don't take LipoFlush after say 5 PM. If evenings are your biggest problem then Metabolic can be used either alone or with LipoFlush. Taken together LipoFlush and Metabolic make an extremely effective AM and PM combo.**

2. **Use the MRP LoCarb at the most difficult time of day as far as cravings and hunger. For many, using it in the AM sets them up for the rest of the day. However, if this doesn't work best for you take it later on. Or use two MRP LoCarb a day if need be.**

3. **Use Regulate at times when you have cravings.**

4. **Experiment with the supplements to find out what regimen works best for you.**

5. **In the more advanced stages of weight and fat loss, other supplements can be used, including Resolve, Exersol, GHboost and NitAbol.**

Part 6: Exercise

Activity and Weight Loss

Introduction

It's important to keep in mind that activity is more than just going to the gym or going through an aerobic and/or weight training workout. While it's important for health and body composition reasons to exercise, it's also important as far as weight and fat loss to increase your activity.

Any activity will increase the amount of calories you burn and thus can be important for both losing weight and also for keeping the weight off.[143] The usual tendency with anyone trying to lose weight is to do less. I've found that people on a lower calorie diet, even though they may exercise religiously, often will do less as far as their day to day activities. They'll drive when they can walk, use the elevator when they should be using the stairs, and sit and watch TV when they should be doing something more active.

That's the wrong approach to take. Ideally when you're trying to lose weight you should be as active as possible through the day because at the end of the day you'll burn more calories this way. All activities, including walking, doing house or garden work, typing, organizing your room, in fact anything at all that makes you get out of the sitting position, whether at home or in the car, is worth doing as it expends energy, both directly in performing the activity, and indirectly by putting out more heat (non exercise activity thermogenesis). Even fidgeting and chewing gum can help you in your weight loss efforts.[144][145]

Weight Loss and Exercise Go Hand in Hand

Several recent studies and reports, two from the US Centers for Disease Control and Prevention,[146] confirm what we've suspected for years. That as a society were getting fatter than ever, and so are our children. While we can all think of several reasons for this epidemic, everything from genetics, lifestyle factors to societal changes, it's time we accepted this trend and looked for some solutions, or suffer the health consequences down the line.

Of course that's what the Radical Diet is all about. However, it's important to realize that to get the most out of the Radical Diet you should exercise. Many studies have shown that exercise combined with dietary energy restriction results in improved weight loss compared with either treatment alone and that the level of exercise participation may be one of the best predictors of long-term weight maintenance.

A study published in 1999[147] reported that individuals engaging in greater levels of exercise maintained greater weight loss compared with individuals not achieving this level of exercise. This and other research over the years have shown that high levels of exercise help to maintain long-term weight loss.

A study published in the October 2002 issue of Medicine and Science in Sports and Exercise,[148] looked at the exercise/weight loss equation from a slightly different viewpoint. Instead of examining whether exercise and dieting were independent factors that added

together to produce weight loss, they examined whether changes in exercise levels reinforced dietary and behavioral changes and thus increased dietary success and long-term weight loss.

The results of the study suggest that increased physical activity during a behavioral weight loss program is associated with changes in eating behaviors and energy intake, which results in an improvement in long term weight loss when compared to the combination of diet and behavioral changes without exercise. In other words it was the exercise that seemed to help people stick to their diets and lose weight or keep weight off. In a nutshell, sticking to a long term exercise program is crucial to losing and keeping weight off, not just because it increases energy output but because it helps people stick to their diets as well.

The Benefits of Exercise

Exercise does the body good and helps you to both lose weight and keep it off. Among the benefits that regular exercise has to offer the following:

Exercise Increases Calories Expended

The most obvious effect of exercise is that it burns up extra calories - but not as much as most people think. Running, swimming or bicycling vigorously for a half hour period may burn off four hundred calories. Running a brisk mile (in under eight minutes) only burns off about a hundred calories.

However, it's not the immediate effects of exercise that are important, but the long-term effects. For example, regular running (of at least two to three miles a day) could decrease your body weight by up to 25 pounds in one year. Thus, while each running session may only help you to lose a few ounces, a year of running can make quite a difference in your weight.

Exercise raises basal metabolic rate (BMR) both during and after exercise and may counteract the reduction in BMR that occurs in response to dieting. This increase in metabolic rate continues for many hours after exercising. The long-term increase in the BMR is likely due to an increased heat production (thermogenesis). Many studies have shown that regular exercise brings about sustained changes in the bodies hormonal levels that may aid long-term weight loss.

As well, resistance exercise increases muscle mass, which, since muscle is thermogenic, increases energy expenditure, fat oxidation and fat loss. Also the effects of a bout of resistance exercise, but not aerobic exercise, on energy output lasts over 24 hours. Another reason to hit the weights rather than the treadmill.

Exercise Decreases Appetite and Increases Feeling of Well-being

Increasing physical activity is vital to effective weight loss. As well as directly increasing caloric output, research has documented several other benefits and reasons to include regular exercise in your weight loss programs.

Exercise of moderate intensity decreases food intake (by decreasing appetite) in both men and women (although to a lesser extent in women).

Regular exercise makes you feel good about yourself. And when you feel good you'll have less trouble sticking to a diet. As well those who exercise are not as irritable while they are dieting.

The person who loses weight with a combination of diet and exercise will lose more fat and less muscle than someone who has lost the same weight just by dieting. Exercise minimizes the loss of lean muscle mass and is felt to have some sparing effect even on the muscles of the heart.

Having more muscle mass makes it easier to maintain your weight since muscle, pound per pound, burns more calories than fat (especially during exercise). As well, muscle is less efficient than fat in retaining body heat.

Your metabolic rate is partially dependant on the amount of muscle you have compared with your body fat content. The more fat you have in relation to muscle, the lower your metabolic rate will be.

Exercise and Body Fat

As we've shown above that regular exercise not only helps burn off calories, it also helps to keep you on your diet. But exercise does even more. A new study has shown that exercise appears to be able to partition dietary fat to oxidation rather than storage.[149]

In this study, involving 7 young active women, fat oxidation was measured after exercise and meals containing oleate, a monounsaturated fat, and palmitate, a saturated fat. The researchers then collected breath samples hourly up until 10 PM to measure how the women's bodies were using the fat. The women were found to oxidize more dietary monounsaturated, but not saturated fat when they did a heavy exercise session than when they rested or did some light exercise.

What that means is that working out can help you burn off the fat that you eat, as well as the body fat. The bottom line is that if you want to keep body fat under control, you have to exercise with some gusto, and you should also substitute monounsaturated fat for saturated fat in your diet.

Exercise Does the Body and Mind Good

Thousands of studies in the past several decades have shown the physical and mental benefits of exercise, including increased feeling of well being, decreased diseases and increased ability to function as we age.

Exercise Can Lift Your Mood

Regular exercise keeps not only your body, but also your mind in shape. Over the years several studies have shown that there is a mind body link and that exercise is the key for keeping the mind alert and your mood on an even keel.

Exercise has been shown to improve cognitive function, memory performance, fluid intelligence, information processing, attention, and some types of reaction time. It's also been shown to be an effective strategy for reducing stress and symptoms of depression, and for increasing psychological well-being. Some of these effects may be due to the ability of exercise to increase the levels of brain endorphins (natural pain killers and mood elevators) and serotonin (natural anti-depressant), and decrease cortisol, the stress hormone. Indirect routes by which exercise might elevate mood are by improving self-esteem and confidence, and by social contact.

Exercise also seems to help if you're one of the many people that suffer from the winter blues, known more scientifically as seasonal affective disorder (SAD). A recent study showed that exercise, combined with bright light exposure, had a positive effect on decreasing the depressive feelings associated with SAD.[150] In this study the subjects were put into one of two groups - exercise in bright light or exercise in normal indoor light, and their mood and quality of life were examined over an eight week period. The results of the study showed that physical exercise both in normal indoor illumination and in bright light was effective at alleviating depressive symptoms. The exercise was significantly more effective at alleviating depressive symptoms when combined with bright-light exposure.

Another interesting point is that the effect of exercise on depression may be dose dependant. That is the more you do, up to a point of course since you can overdo anything, the more of an effect it has.[151] My feeling is that you should do the amount of exercise that it takes to make you feel better.

Precautions

You should get your doctor's OK before undertaking a strenuous exercise program (this is easy if you're being followed by a physician). Even if you have heart problems, high blood pressure, arthritis, diabetes etc., there is always some form of exercise you can do. For example, swimming is often a good exercise for people who are physically incapacitated.

Exercise also prevents the heart muscle from wasting. During prolonged fasts (and in anorexia nervosa) the loss of cardiac muscle can be significant (and rarely may be fatal).

Exercise should be a part of everyone's daily lifestyle. About an hour a day in fact, according to a new report entitled *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*, released on September 5, 2002 by the Institute of Medicine. This is especially true if you're overweight.

Unfortunately, exercise is often a very low priority in the lives of people who are overweight. I know, many people find it tough to exercise and they have any number of

reasons for not doing it. But the fact is that regular exercise is a very important part of losing weight.

Being Fit Is Only Part of the Equation

There are people that believe that if you're fit it doesn't matter if you're overweight. Their argument is that being fit gives you a health advantage that cancels out the health problems

Over the years the fit and fat controversy has been the subject of a lot of debate. A recent study has shed some light on whether weight doesn't matter and it's enough to be fit to reap the benefits that exercise has to offer. A new study has shed some light on this controversy by showing that weight matters and that regular exercise doesn't cancel out the health risks of being overweight or over fat.[152] It seems that the people who live the longest are the ones that are fit and of normal weight.

The findings in this study are based on over 5,000 men and women who were followed from 1972 to 1998. During that time their fitness levels and body mass index were regularly assessed. They were then grouped into 4 categories: fit-not fat; fit-fat; unfit-fat; and unfit-not fat. Among both women and men, the unfit-fat group faced the greatest risk of death. But while exercise helped boost longevity in the overweight group, it did not erase all the negative effects of the excess weight. Likewise, people who were thin but unfit also faced a shortened life span, results showed.

The bottom line is that it's best to keep fit and keep your weight under control.

Should I Exercise Alone or With Others?

It all depends on how much and what kind of exercise you do. Milder forms of exercise such as walking or swimming may be easier to stick to if you go it alone. And usually no matter what kind of exercise you do, if you're knowledgeable and motivated, you'll probably be able to do well on your own. For many people, though, exercising with others and, in some cases with a trainer and/or under supervision, is the best way to go. Enthusiasm stays high, there's much more variety, and you're not as likely to miss exercise sessions since you have to make a commitment to be there.

What Kind Of Exercise Should I Do?

Most importantly, you should think of your life in terms of activity potential and try to stay as active as possible. Sitting is preferable to lying down. Walking is preferable to sitting. And any kind of exercise is preferable to none at all.

Whenever possible, take a more active approach to transportation or chores. Walk instead of driving the car. Take the stairs instead of the elevator. Push the lawn mower instead of riding it. For some, especially men, this in itself can be enough activity to achieve a desired

weight loss. But for most of us, more will be required. The best exercises for losing weight are those that work your heart, lungs and muscles.

Walking

Walking is as basic an exercise as you can get. For some people, this may be all their doctor will allow. This is how heart patients often begin their comeback from a heart attack or some other debilitating incident.

There are also several practical advantages to walking. You don't need special equipment (other than good shoes), it rarely causes injuries and you can walk practically anytime and anywhere. If done briskly and on a regular basis, walking can be an effective exercise both for weight loss and improving fitness. The only problem is that walking has only a minimal impact on fitness when compared to other forms of exercise. If you can do more, you should.

Running

Although an excellent exercise, it may not be suitable for overweight people. Runners in general, and overweight runners in particular are especially susceptible to the injuries that can result from the stress of pounding pavement. The joints and muscles most often involved are those in the back, hip, knee, ankle and foot. Injuries in these areas can be painful and nagging. They can also put a damper on any exercise program.

As well, running is not a good conditioning exercise for the upper body. Only the muscles of the hips, legs and buttocks receive a good workout. You'll note that runners possess upper torsos that are less than flattering. The goal of this weight loss plan and of the Metabolic Diet is to help you lose weight and get an attractive body. Running, of and by itself, is not going to get you that.

Running also becomes very difficult in the Northern climates during the winter. Along with being hard to run in a snow or rainstorm, winter conditions can also make injury more likely.

Running on one of the more sophisticated treadmills, or even using the newer elliptical walkers in some gyms, because of the way they are constructed, decreases the musculoskeletal trauma and the likelihood of injury. As well, the activity can be combined with other exercises to provide a more balanced workout.

Cycling

Cycling has many of the same limitations as running although injuries aren't as frequent. As for stationary cycling, while convenient, it can be very boring and people often give up on it very quickly, especially at home. But it does have advantages for those who are really overweight or have back problems or arthritis because you can also do it in the privacy of your home and at your own pace. As such, it can be very good for people who are too self conscious to be seen exercising by others. Once you lose some weight and feel more

comfortable, you can substitute or add other exercises, or do your cycling as part of an overall program either at home or at a fitness facility.

Swimming

Swimming exercises most of the major muscle groups in the body and is an activity that can be performed by virtually anyone. Even those with heart or joint problems can enjoy swimming. Unfortunately, if overweight, the prospect of donning a swimsuit can be a bit intimidating. Swimming also doesn't provide the kind of tone that most people are searching for when reshaping their body. If swimming makes up a good part of your exercise program, make sure you do it as consistently and vigorously as your physical condition allows.

Aerobics

Low impact aerobic exercise like aerobic dancing, jazz dancing and dancercise has become the exercise of choice for many who want to lose weight. Seniors and others who may be predisposed to hip, knee and ankle problems have also benefited from low-impact aerobics. In fact, any of the rhythmic movement programs set to almost any kind of music will get you results.

Unfortunately most people associate aerobic activity with weight loss when they think of the exercise part of a weight loss program. But that’s not the case. While aerobics does help burn fat, it’s a temporary measure at best.

First of all while any aerobic exercise is good for cardiorespiratory fitness, it may not be the best for body toning and shaping. Also while aerobics exercise increases metabolism, unlike weight training, it only does so while you’re exercising.

Also some of the more advanced types of aerobics, such as spinning, also run the danger of overtaxing the cardiorespiratory system. Trying to follow an overenthusiastic instructor can be difficult both physically and psychologically. For those who have a bigger weight problem or possess poor cardiorespiratory fitness, these kinds of aerobics may be a big mistake.

Home Fitness Equipment

There has recently been a boon in the sale of home fitness equipment including stationary bicycles, rowing machines, universal machines, home gyms, treadmills, weight lifting equipment, and other paraphernalia such as pulleys, springs, mini-trampolines and other knick-knacks.

Is this home equipment useful for losing weight? In most cases, no. Most people are better off joining a gym or health club.

Not many people have the expertise, stamina and self-discipline to make a go of it at home. Thus most home fitness equipment ends up collecting dust after the initial few

weeks of enthusiasm. You're more likely to stick to an exercise program if you're in the right surroundings and exercising with other people.

At times you may not even feel like working out, but will make the effort to do so because you've made the commitment to be there to meet someone. Once you're there and working out, you're usually glad you made the effort.

Home gym equipment is useful to have for the times when you just can't make it to the gym but you still want to do some sort of workout - in other words as a stop gap measure.

Other Sports

Any sport can be effective for increasing your fitness level and for helping you to lose weight. Some, like squash, handball, soccer and cross country skiing, can be quite vigorous and demanding while others, such as tennis, basketball, baseball, downhill skiing and water skiing are usually not as taxing (but can be, depending on the circumstances).

With many of the competitive sports there is a problem with injuries since it can be difficult to pace yourself when under the stress of competition.

In the Beginning

It's important not to overdo it when you begin any form of exercise. Go slow at first - getting fit takes time and patience. It's easy to be lulled into doing too much, but you'll suffer later, and you'll get discouraged. Start small and slowly work your way up.

Above all don't treat exercise as a chore. It needn't be. Choose things you enjoy doing rather than those you feel you should do. Don't feel that you need to depend on one exercise or sport. Varying the kind of exercise with the seasons may be preferable to sticking to one sport or type of exercise. For example you could golf, play tennis and swim in the summer, and attend aerobic classes, ski and weightlift in the winter.

Making Excuses

Many people say that they can't find the time to exercise. For most people this may be true - but only because they squander their time on other less important activities - like watching TV.

If you make exercising a priority, then you'll find time in which to do it. I often recommend that my patients exercise in the morning so that the pressures of their day don't interfere. Often by the time night comes, it difficult to find the time and energy to exercise. It is too easy to make excuses and to make other tasks a priority.

There are other reasons for not exercising, almost as many as for not sticking to a diet. Next to lack of time perhaps the biggest reason for not exercising is that the dieter knows so little about what exercises to do. Most equate exercise with calisthenics and other rigid and unenjoyable activities. They are surprised when I tell them that any physical activity above what they're doing now is exercise.

Another common excuse is that they're too old to exercise. No one is too old to exercise. Anyone can and should become more fit - it would make their day-to-day living easier and make them feel and look younger.

Pace Yourself

The syndrome of the weekend athlete is well known to doctors. Injuries and soreness are the result of attempting to do too much too fast. You have to learn to pace yourself and only do what your body is capable of doing.

It's important to listen to your body. If it aches too much the next day, you're overdoing it. If you can't catch your breath while exercising, you're overdoing it. If you don't feel well enough to exercise, don't. By exercising when you feel ill, you are doing more harm than good. On the other hand if it all seems too easy and you're not getting sore or injured, step up the pace.

How to Begin

Any exercise that burns off more calories per minute than you normally would, is a step in the right direction.

For many the best place to start is by going for a brisk walk every day and gradually making the walk more demanding by increasing the pace or the distance. If walking is not enough then try some other activity such as swimming, bicycling, skating, jogging, aerobic dancing, weightlifting, bodybuilding and perhaps even some demanding sports such as racquetball, wrestling or boxing.

Perhaps the best shaping and fitness activity is aerobic bodybuilding, which combines the cardiovascular fitness of aerobic exercise with the muscle and strength building properties of weight lifting.

The Key to Success

Whatever you do, the key is to make is to feel good and enjoy the activity, both for itself and for the part it plays in your weight loss program. If the activity is not enjoyable and the whole experience doesn't give you a lift, then you won't last. You'll find some excuse to begin missing exercise sessions and then drop the exercising altogether.

You'll enjoy exercising more if you see some results and if you're exercising with a group that shares your enthusiasm. With one or a few good partners, male or female, you'll also exercise more regularly.

I would recommend keeping a record of your exercise sessions and your weight. This way you can chart your progress and see what effect the exercise is having on your weight.

Exercise Gimmicks

There is no such thing as an effortless way to lose weight. Overweight people, however, because dieting is so difficult, are ever hopeful for a quick cure. It is on these false hopes that the con artists prey on. The TV and magazine ads all claim to make you thin and fit the easy way - in the comfort of your own home. Keep away from anything that promises you effortless weight loss. It just isn't true. The only thing that will lose weight is your wallet.

Any gimmick that makes you sweat is touted as a weight burner. Unfortunately sweating is not synonymous with losing solid weight, only water weight - which readily goes back on once you rehydrate yourself. In fact exercising in a rubber or plastic suit, because of heat buildup, can be dangerous - and could possibly lead to heat stroke.

Bust Developers

Some women lose weight off their busts, a place where many would rather put weight on. As a result, many women look for ways to increase or maintain bust size while losing unwanted fat from their waist, buttocks and legs.

Unfortunately there aren't any exercises or devices that will increase bust size - regardless of what the ads say. The bust development courses include exercises that have no effect on breast tissue, only on the ribcage and chest muscles. These courses, therefore, may increase chest size (by developing the ribcage and the pectoralis muscles - the ones under the breasts) but they do not increase actual breast size - for example, you may go from a 34B to a 38B.

The devices and creams sold to increase actual breast size are also useless.

Spot Reduction

Spot reduction exercises and gadgets don't work. You can tone the muscle underneath the fat so that the area looks better, but you won't reduce the amount of fat under the skin unless you lose weight all over. It's impossible to selectively burn off fat from a certain part of the body by exercising, massaging or vibrating that area.

Training With Weights

No doubt, many of you have been turned off by weightlifting or bodybuilding by now. You see those big competitions on the sports channels or pick up the magazines at stores and end up thinking that bodybuilding is only for a select group dedicated to building their bodies to superhuman levels.

The fact is that training with weights is the ideal exercise for losing weight. It’s the most effective way to keep your metabolism revved up and for losing body fat and managing your weight and body composition in the long run.

With overall fitness and shape in mind, it can enhance both the male and female physique. While women who lift weights will gain some extra muscle, muscle that will only accentuate their feminine looks, they won't gain muscles like a man.

Building muscle not only improves the way you look but it also helps burn off more energy and makes getting and keeping weight off easier.

The benefits of weight training are many. You get that feeling of well-being common to people who are gaining some strength and improving their bodies. Musculoskeletal disorders, such as low back pain, tennis elbow, and even arthritis can be improved. You'll retain the body tone that others lose when they go on a diet. You lose less protein and more fat. Indeed, no other form of exercise offers so much.

You can combine weight training with other forms of exercise, including aerobics, cardiovascular conditioning, or even walking. In fact you can even combine aerobics and weight training by using lighter weights, more repetitions and cutting back on the time between doing the exercises.

This process, which I call aerobic bodybuilding can combine the best of the aerobic exercise and weightlifting worlds, allowing you to develop cardiovascular health and shape your body to the level you want. If you want more musculature, you can do that and if you want less and are just looking for toning, that's possible too. Like weight training, aerobic bodybuilding also exercises all the major muscle groups so you don't end up lacking shape in critical, visible areas.

Whatever your goals, a properly designed weightlifting program can deliver results. For more information on training and exercise programs go to www.CoachSOS.com, or read the Metabolic Diet and/or the Anabolic Solution for Bodybuilding.

Women and Weight Training

Numerous studies have shown that weight training can enhance physical and mental health, decrease some of the problems associated with ageing, such as osteoarthritis, osteoporosis and muscle wasting, and improves mobility and function.

Not only that but weight training results in increased hemoglobin levels – 25% in both men and women, and increased stroke volume – more blood circulating at any one time. As such, it increases exercise tolerance and decreases fatigue.

Unfortunately, while it's clear that using weights offers many benefits, many women shy away from it because they're afraid of getting too muscular and manly. So they keep away from using weights, sticking to aerobics, yoga and Pilates.

Lifting weights, and even better, lifting relatively heavy weights, is the best way for a woman to reshape her body and look trim and fit.

While women who lift weights will gain some extra muscle, muscle that will only accentuate their feminine looks, they won't gain muscles like a man. That's the stance that the new position paper on weight lifting for the American College of Sports Medicine has taken.

Getting too muscular for women is a myth. They won’t become manly if they train with weights. That’s because they don’t have the hormonal and genetic apparatus to put on the amounts of muscle that men can.

The problem is that women see the muscular female bodybuilders and other athletes and think this will happen to them if they train with weights. What they fail to realize is that first of all some of these women are genetic freaks, and most of them use anabolic drugs, such as anabolic steroids, to increase muscle mass and strength beyond what would normally be possible.

But you don't have to be afraid of muscle. It's good for you and, with a proper weight program; you can get exactly the kind of body you want.

The bottom line is that training with weights accentuates femininity and is the best exercise to help you lose body fat and maintain a fit and trim body.

Where to Work Out - Home or Gym?

I would strongly suggest that you work out at a gym where qualified instruction is available.

The best way to learn the basics is to be shown the correct way to do the exercises. Watching and learning from the more advanced bodybuilders will also help you to determine which exercises work best for you.

You're less likely to miss a workout if you're committed to going to a gym - especially if you're training with someone else and they're waiting for you.

Exercise Machines Versus Free Weights

Comparing the benefits of exercise machines (such as the Nautilus and the universal gyms) versus free weights is a favorite pastime of many weight enthusiasts.

For most people it really doesn't matter. Both have their advantages and disadvantages.

Free weights provide more flexibility in the way that muscle groups can be worked - for this reason professional bodybuilders prefer free weights. Free weights are easier to use for aerobic training. Machines on the other hand are often easier to learn and use and can be done without a training partner (in some free weight exercises it is wise to have someone spot you in case you need some help).

What equipment you use is not as important as how you use it. The most important thing is doing the workout on a regular basis.

To Stretch or Not to Stretch

Whenever I discuss stretching and it's benefits or lack of benefits, there's always an uproar from people on both sides of this argument. Those that are for stretching list among their reasons decreased injuries, decreased muscle soreness, increased flexibility, and increased performance. Those against say it's a waste of time, and even worse, can increase the susceptibility to injuries.

First of all let me tell you that I'm not a big fan of stretching. I guess I got turned off by seeing the gym mullets stretching forever with those broomsticks and then maxing out at 135 lbs in the squat. But there's more to it than that. I feel that stretching too much, especially past the normal range of motion and/or when you're cold, will set you up for injuries. And frankly I always found that I got all the stretching I needed when I did some warm up sets before lifting the heavier weights. I also feel that stretching a muscle before lifting or jogging may produce microtrauma that can be aggravated during the regular workout and subsequently increase the chance of injury.

Much of the literature in the past few years has backed up my negative feelings about stretching before and after training. In the latest study the authors did a systematic review of the effects of stretching before and after exercise on muscle soreness and risk of injury.[153] The spirited debate prompted by this review is ongoing as seen by the recent article that appeared in Journal Watch.[154] The original review concluded that stretching before or after exercising does not confer protection from muscle soreness and that stretching before exercising does not seem to confer a practically useful reduction in the risk of injury.

The bottom line is that stretching is not all it's made out to be and you should be careful not to overdo it. On the other hand active and passive stretching can be useful when rehabilitating musculoskeletal injuries when it's done with the help of a qualified therapist.

Starting Out

If you prefer or have to work out at home all you need is a set of barbells and dumbbells (dumbbells are held one in each hand while the barbells are long bars of steel held with both hands), a bench and a set of squat racks to get started. It's preferable, however, to learn and do your workouts at a well equipped gym.

Three exercise sessions a week are enough at the start. The first few workouts should be easy. If you start off by doing too much you'll regret it later.

The exercises are done for a certain number of repetitions (or rep - one execution of an exercise). A series of reps done without resting is known as a set.

Your program should consist of several exercises done with either free weights or progressive resistance machines (such as the Nautilus or pulley like machines). For the first few weeks do only one set of each exercise for 12 repetitions. In the third week, you can do two sets of 12 repetitions for each exercise. In the third week do three sets of 12 reps for each exercise. After the fourth week instead of increasing the sets or reps, increase the weight you are using. You could also increase the reps when working areas of the body that you particularly want to trim down.

Once you feel more confident, you can vary the number of repetitions and sets according to the exercise and the part of the body you want to concentrate on.

While performing the exercises keep the breathing as natural as possible and don't hold your breath when exerting yourself. You can either inhale or exhale when you are exerting yourself, whatever feels more comfortable.

The Exercises

If you don’t have much time for training, try to exercise at least twice a week for an hour at a time. Better still would be three times a week, keeping a day of rest in between each day you train.

You can either do whole body workouts on each day, or better still work on different muscle groups in each session. For example for your first workout you might do exercises that specifically work your chest, shoulders and triceps. On your second workout you might do exercises that work your back and biceps and on your third workout you might do exercises that work just your legs, front, back and calves.

And you don’t need a lot of exercises. For example, although a tad extreme for most of us, you can do a good workout using only two exercises, the parallel squat and the bench press. It's best, however, to do six to ten different exercises one or more for each major body part - perhaps doing more for the areas you want to concentrate on.

For the lower body the parallel squat is the king for building strength and endurance or simply for shaping the leg. Done in high repetitions it provides both cardiovascular fitness and strength. The squat works all the musculature of the hips and legs as well as working

the back, abdomen and ribcage musculature. There is no better single exercise for achieving overall fitness.

The best way to do the squat is to hold the barbell behind your neck and resting on your shoulders. Keeping your head up do a deep knee bend until the tops of your thighs are parallel to the floor. With this exercise it is important to have someone show you how its done. When done properly the squat is a safe and effective exercise and does not harm the knees.

There are many other exercises that also work the legs, hips and buttocks. You can experiment with them and choose the ones you find most effective.

The bench press does for the upper body what the squat does for the lower. The bench press, as the name suggests, is done while lying on a bench. The barbell is pressed straight overhead and brought back down to the chest. This exercise, unless done on a machine, should never be done alone in case you tire out and can't get the weight off your chest.

There are several other good exercises for the upper body such as barbell curls, chin ups, rowing and various pressing movements.

How Hard Should You Work Out

It’s best to start any exercise program on the careful side. In the beginning doing one set of each exercise with a light weight for eight reps is the way to go. If you’re not sore the next day then in your next session you can increase the weight slightly and do it all again. Once you’re at a weight that is challenging, you can also add another set. Keep going until you’re three sets of eight reps for all of your exercises.

It's important in aerobic bodybuilding (when you're ready for the harder workouts) to keep up a good pace. A minimum of time should be spent going from sets and exercises in order to give the cardiorespiratory system a good workout, the exercises should be done for 10 to 15 repetitions as quickly as possible so as to raise the heart rate by at least 50 to 60 percent above the resting rate (120 to 140 beats per minute). Time between sets should be no more than one minute so that the heart does not have a chance to get back down to resting rate. One way is to alternate two exercises that work different body parts, and only take a few seconds rest between sets. A few minutes rest can be taken before the next two exercises are alternated.

If you wish, aerobic dancing, running, swimming, bicycling etc. can be done once or twice a week to complement the aerobic portion of the exercise program.

When is the Best Time to Train?

Anytime you can is the simplest answer. However, for some people certain times of the day may be better than others. For most people their metabolic rates may be highest between 4 and 8 pm (see section on metabolic rates in Part *) and this time period may well be their best time to workout. In fact for many the late afternoon workout may not only

work off more calories but may decrease their hunger at suppertime and later in the evening (the most difficult time for most dieters).

Your metabolic rate is also highest after meals. Going for a walk after meals may, therefore, be more beneficial than at other times since you may use up even more calories than the equivalent walk taken at other times.

Some Sample Routines

Example of a Slim Down Program – done three times a week.

Using free weights, circuit training, machines, and cardio equipment.

* WARM-UP: Start with 20 Min./End with 10. (Bike, Tread or Stepper).

Exercise	**Reps**	**Sets**
Leg Extension	15-20	2
Leg Curl	15-20	2
Inner Thigh	15-20	2
Outer Thigh	15-20	2
Calf Raise	15-20	2
Abdominal	15-20	2
Butt Blaster (or Leg Press)	15-20	2
Shoulder Press	15-20	2
Vertical Butterfly or Pec Dec	15-20	2
Seated Chest	15-20	2
Bicep Curl	15-20	2
Lower Back Machine	15-20	2
Seated Row	15-20	2
Triceps Push Down	15-20	2

Once you've been on this routine for 4 weeks decrease the reps and use more resistance as in the routine below.

* WARM-UP: Start with 20 Min./End with 20. (Bike, Tread or Stepper).

Exercise	**Reps**	**Sets**
Leg Extension	10-12	2
Leg Curl	10-12	2
Inner Thigh	10-12	2
Outer Thigh	10-12	2
Calf Raise	10-12	2
Abdominal	10-12	2
Butt Blaster (or Leg Press)	10-12	2
Shoulder Press	10-12	2
Vertical Butterfly or Pec Dec	10-12	2
Seated Chest	10-12	2
Bicep Curl	10-12	2
Lower Back Machine	10-12	2
Seated Row	10-12	2
Triceps Push Down	10-12	2

For more information on the above Supplements, FAQs, Sample Diets, Calorie and Carb Charts, Articles and much more, visit www.MetabolicDiet.com

Also, if you're exercise or sports minded, visit **www.CoachSOS.com** for training and coaching advice and information.

Appendix 1: Sample Diets

These are actual diets written out by patients and others on the Radical Diet. As such, the formats differ and there may be some inconsistencies with the allowed food list, and some inaccuracies in the calorie counts and portions. However, they're representative of real world Radical Diet food lists.

"Strict Diet" – only foods from the "Allowed" list.

Sunday

		calories
Breakfast	MRP	250
Snack	3 slices bacon	109
Lunch	3 oz baked chicken	92
	8 oz lettuce	10
	2 tbsp lowfat dressing	38
	2 cups Jell-O Light	16
Supper	3 oz turkeybreast	133
	1 cup diced celery	20
	1 cup gr beans	30
	1 tbsp cream cheese	36
Snack	1 cup chicken broth	39
	Total calories	**773**

Monday

		calories
Breakfast	MRP	250
Snack	2 cups Jell-O Light	16
Lunch	3 oz t-bone steak	188
	8oz lettuce	10
	2 tbsp lowfat dressing	38
	1/2 cup 1% cottage cheese	90
Supper	5 oz shrimp	125
	1/2 cup cauliflower	15
	1/2 cup broccoli	15
Snack	1 boiled egg	65
	Total calories	**812**

Tuesday

Breakfast	MRP	250
Lunch	3oz salmon	130
	8 oz lettuce	10
	2 tbsp lowfat dressing	38
Snack	1 cup Jell-O Light	8
Supper	3 oz tenderloin	141
	1 cup spinach	40
	1 cup 1% cottage cheese	180
	total calories	**797**

Wednesday

Breakfast	MRP	250
Lunch	1 cup chicken broth	39
	1 cup tuna (water)	125
	8 oz lettuce	10
Snack	1 cup Jell-O Light	8
Supper	3 oz lean beef	218
	1/2 cup 1% cottage	90
	1 cup green beans	30
	total calories	**808**

Thursday

Breakfast	MRP	250
snack	3 slices bacon	109
	Lunch	
	1 cup beef bouillon	17
	2 hard boiled eggs	130
	8 oz lettuce	10
	1 tbsp lowfat dressing	19
Supper	5 oz fish	125
	1 cup spinach	40
	1 c alfalfa sprouts	10
	1 cup mushrooms	42
	1 cup lettuce	5
	1/2 cup radish	10
	1 tbsp lowfat dressing	19
Snack	2 cups Jell-O Light	16
	Total calories	**802**

Friday

Breakfast	MRP	250
snack	2 cups Jell-O Light	16
	Lunch	20
	2 oz turkey salami	111
	1 boiled egg	65
	8 oz lettuce	10
	2 tbsp lowfat dressing	38
Supper	3 oz chicken	92
	1cup cauliflower	30
	1 cup broccoli	30
	8 oz lettuce	10
	1 tbsp lowfat dressing	19
	1 pickle	5
Snack	1/2 cup 1% cottage cheese	90
	Total calories	**776**

Saturday

Breakfast	MRP	250
Lunch	3 oz lean beef	218
	1 cup gr beans	30
	3 slices tomatoes (med thickness)	20
Supper	5 oz fish	125
	1 cup 1% cottage cheese	180
	1 cup gr beans	30
	Total calories	**853**

Strict 800-900 Calories

Monday			
Breakfast	1 poached egg	65	1
	black coffee or tea	0	0
Lunch	1 MRP LoCarb	250	3
	Diet Pop	0	0
Dinner	4.5oz lean roast beef	307	0
	1/2 cup frozen cauliflower	17	3
	small Romaine salad w/ olive oil and vinegar	80	0
Total Calories		817	7
Tuesday			
Breakfast	1 boiled egg	65	1
	black coffee or tea	0	0
Lunch	3oz tuna in water	90	0
	1/2 cup Green Giant medley	35	9
	1/2 cup cottage cheese	102	4
	1oz cheddar cheese	115	0
Dinner	6oz sole baked	160	0
	1/2 cup cottage cheese	90	4
	1 cups spinach	42	7
	small Romaine salad w/ olive oil and vinegar	80	0
Total Calories		790	25
Wednesday			
Breakfast	1 egg, scrambled (Pam)	75	0
	3 slices fried bacon	110	0
	black coffee or tea	0	0
Lunch	1 MRP LoCarb	250	3
	2 cups Jello light	32	0
	diet drink	0	0
Dinner	6oz broiled sirloin steak	480	0
	1 cup green beans	30	6
	1oz Swiss cheese	105	0
	diet drink	0	0
Total Calories		*992*	*30*
Thursday			
Breakfast	3 slices of bacon	110	0
	3oz all fruit yogurt	40	6.5
	black coffee	0	0
Lunch	3oz baked red salmon	140	0
	small Romaine salad w/ olive oil and vinegar	80	0
	diet drink	0	0
Dinner	4oz t-bone steak	338	0
	1 cup cooked carrots	70	14
	1/2 cup cauliflower	13	3
	1oz cheese	115	0
	2 cups Jello light	16	0
Total Calories		*922*	*23.5*
Friday			
Breakfast	1 poached eggs	75	0
	1 piece pumpernickel toast	70	15

	1 tsp butter	35	0
	black coffee or tea	0	0
Lunch	3oz pan fried pork chop	335	0
	small Romaine salad w/ olive oil and vinegar	80	0
	diet drink	0	0
Dinner	3oz roast lamb rib	315	0
	1 cup carrots	35	8
	2 cups Jello light	32	0
Total Calories		*977*	*23*
Saturday			
Breakfast	2 eggs poached	150	0
	1 tsp butter	35	0
	black coffee or tea	0	0
Lunch	4oz tuna in water	120	0
	small Romaine salad w/ olive oil and vinegar	80	0
	diet drink	0	0
Dinner	3oz roast veal rib	330	0
	small Romaine salad w/ olive oil and vinegar	80	0
	1/2 cup canned Italian zucchini	50	8
	1 cup green beans	30	6
Total Calories		875	14
Sunday			
Breakfast	2 boiled eggs	150	0
	black coffee or tea	0	0
Lunch	1 serving KFC chicken breast	260	8
	1 cup frozen carrots	26	6
	2 cups Jello light	16	0
Dinner	4oz baked or broiled haddock	127	0
	1oz cheddar cheese	115	0
	1 cup cauliflower	34	7
	large Romaine salad w/ olive oil and vinegar	160	0
Total Calories		988	*21*

Sample 1000 Calorie Diet

		Calories	Carbs
Breakfast	1 pork patty	180	0
	1 boiled egg	75	6
	black coffee or tea	0	0
Lunch	3oz tuna in water	90	0
	1/2 cup Green Giant medley	35	9
	1/2 cup cottage cheese	102	4
	1oz cheddar cheese	115	0
Dinner	6oz sole baked	160	0
	1/2 cup cottage cheese	102	4
	1 cups spinach	42	7
	small Romaine salad w/ olive oil and vinegar	80	0
Total Calories		**986**	***30***

Sample 1200 Calorie Diet

		Calories	Carbs
Breakfast	3 slices of bacon	110	0
	1 boiled egg	70	0
	black coffee	0	0
Lunch	3oz baked red salmon	140	0
	small Romaine salad w/ olive oil and vinegar	80	0
	diet drink	0	0
Dinner	6 oz t-bone steak	510	0
	1 cup green beans	30	6
	1 cup cauliflower	34	7
	2oz cheese	230	0
	2 cups Jello light	16	0
Total Calories		**1220**	**13**

“Moderate Diet” – slightly higher in carbs, still low calorie

These meal plans have some foods that are not normally allowed on the Radical Diet. They are only slightly off and can be used (and modified) for special occasions and other times when you can’t stick to the stricter diet.

Sunday

		calories
Breakfast	1/4 cantaloupe	
	1/2 apple	
	1/2 orange	125
Snack	1 Hollywood toast	45
	1 tbsp cream cheese	36
Lunch	3 oz baked chicken	92
	1 boiled egg	65
	8 oz lettuce	10
	2 tbsp lowfat dressing	38
Snack	1/2 cup 1% cottage cheese	90
Supper	3 oz turkey breast	133
	1/2 cup diced celery	10
	1 cup gr beans	30
	1 tbsp cream cheese	36
Snack	1 apple	80
	Total Calories	**790**

Monday

		calories
Breakfast	3 egg white omelet	51
	1 oz each tomatoes onions green pepper	30
	2 slice Hollywood toast plain	90
Snack	2 oz celery	20
	2 tbsp salsa	14
Lunch	3 oz t-bone	188
	8 oz lettuce	10
	2 tbsp lowfat dressing	38
	1 cup 1% cottage cheese	180
Snack	2 cups Jell-O light	16
Dinner	5 oz shrimp	125
	1/2 cup cauliflower	15
	1/2 cup broccoli	15
	1 cup asparagus	30
	Total Calories	**822**

Tuesday

Breakfast	2 Hollywood toast	90
	1 tbsp cream cheese	36
	1 cup strawberries	40
Snack	1 cup Jell-O Light	8
Lunch	3oz salmon	130
	8 oz lettuce	10
	2 tbsp lowfat dressing	38
Snack	1 apple	80

Wednesday

Breakfast	1/4 cantaloupe	
	1/2 apple	
	1/2 orange	125
Snack	dill pickle	5
Lunch	1 cup chicken broth	39
	2 Hollywood toast	90
	1 cup tuna (water)	125
	1 tbsp mayo light	70

Supper	3 oz tenderloin	141
	1 cup spinach	40
	1 cup 1% cottage cheese	180
Snack	1 cup diced celery	20
	1 tbsp salsa	14
	Total Calories	**827**

Thursday

Breakfast	3 slices bacon	109
	1 Hollywood toast	45
	1 tbsp cream cheese	36
Snack	1/2 cup 1% cottage cheese	90
Lunch	1 cup beef bouillon	17
	2 hard boiled eggs	130
	2 cups lettuce greens	10
	1 tbsp low fat dressing	19
Supper	5 oz fish	125
	1 cup spinach	40
	1 c alfalfa sprouts	10
	1 cup mushrooms	42
	1 cup lettuce	5
	1/2 cup radish	10
	1 tbsp lowfat dressing	19
Snack	apple	80
	Total calories	**797**

Saturday

Breakfast	1/4 cantaloupe	
	1/2 apple	
Supper	3 oz chicken	92
	1 cup green beans	30
	1 cup mushrooms	42
Snack	1/2 cup 1% cottage cheese	90
	Total Calories	**753**

Friday

Breakfast	3 egg whites	51
	1/2 c spinach	20
	1 oz each Onions Tomatoes Peppers	30
Snack	1 cup diced celery	20
	1 tbsp cream cheese	36
	2 tbsp salsa	14
Lunch	2 oz turkey salami	111
	1 boiled egg	65
	1/2 c 1% cottage cheese	90
	1 cup lettuce	5
	1 c tomato chopped	30
	1 tbsp lowfat dressing	19
Supper	3 oz chicken	92
	1 cup gr beans	30
	2 cups lettuce	10
	1 tbsp lowfat dressing	19
Snack	1 orange	80
	1 Hollywood toast	45
	1 tbsp cream cheese	36
	Total calories	**795**

	1/2 orange	125
Snack	1 Hollywood toast	45
	1 tsp honey	20
Lunch	3 oz lean beef	218
	1 cup gr beans	30
	3 slices tomatoes (med thickness)	20
Supper	5 oz fish	125
	1 cup 1% cottage	180
	1 cup gr beans	30
Snack	1 cup Jell-O Light	8
	Total Calories	**801**

Sample Diets for Higher Calorie/Carb Day

Breakfast	2oz Special K	220	42
	1/2 cup whole milk	75	6
	2 links brown and serve sausage	100	0
Morning Snack	1 medium apple	80	21
Lunch	3 slices cheese pizza	440	59
	2 pieces of garlic bread	200	36
	8oz Crystal Light	0	0
	1 cup Jello light	8	0
Afternoon Snack	2 cups popcorn	60	12
Dinner	8oz t-bone steak	550	0
	small Romaine salad w/ olive oil and vinegar	80	0
	2 cups green beans	60	12
	2 cups carrots	110	24
Evening Snack	1 piece cheesecake	280	26
Total Calories		***2263***	***238***
Breakfast	1 large bagel toasted	200	38
	1 cup skim milk	90	12
	3oz cream cheese	300	0
Morning Snack	1 cup cranberry juice	145	38
Lunch	4oz hamburger w/ bun	480	38
	1 tsp ketchup, 1 tsp mustard	10	0
	Romaine lettuce	0	0
Afternoon Snack	1 banana	105	27
Dinner	6oz roasted chicken breast	280	0
	1 cup white rice (instant)	280	40
	1 cup green beans	30	6
	1 slice pound cake	110	15
	Crystal Light	0	0
Evening Snack	3 cups Jello light	24	0
Total Calories		***2054***	***214***

More Extreme Sample Diet for Higher Calorie/Carb Day

		Calories	Carbs
Breakfast	6oz glass orange juice	80	20
	2oz muesli cereal	200	40
	1 cup whole milk	150	11
Morning Snack	1 banana	105	27
Lunch	1 cups spaghetti (Kraft dinner)	300	50
	small Romaine salad w/ olive oil and vinegar	80	0
	1 piece breadstick	40	7
Afternoon Snack	Neapolitan torte cake	380	43
Dinner	4oz braised pork shoulder	593	0
	1 cup green beans	30	6
	1/2 cup mix potato	150	21
Evening Snack	2 cups Jello light	16	0
Total Calories		***2124***	***225***

2 Week Strict Regimen

This regimen was submitted by a determined woman with over a hundred pounds of weight to lose. She kept strict for over 2 weeks before her higher carb day. She was on the diet for one month prior to these two weeks and lost 19 lbs during that month.

However, because she had so much weight to lose, I recommended she set her goal weight so that she would lose more weight between higher carb/calorie days.

Over these two weeks she lost 13 lbs. As of the end of September 15th she has lost 40 pounds in total.

The diet for those two weeks is submitted below, as it was sent to us (typos and all), with absolutely no editing.

WEEK OF AUG 15 TO 21, 2005

MON MORNING
3 coffee 0
2 Lipoflush 0
MRP shake 240
1/2 CUP STRAWBERRIES MIXED IN..20
TOTAL CALORIES..260
LUNCH
1 DIET COLA..0
5 OZ CRAb...125
1/2 cup cottage cheese...90
dill pickle..5
2 Lipoflush
TOTAL CALORIES..220
Dinner
4 oz steamed fish...120
1/cup cottage cheese...90
1 cup lettuce...10
small cucumber...5
1 tablespoon salad dressing...7
1 diet cola...0
1 tea...0
3 Metabolic
TOTAL CALORIES..232
snack,,dill pickle...5
TOTAL CALORIES FOR THE DAY===717
==========
TUE MORNING
2 Lipoflush...0
3coffee....0
Ran out of MPR shake so i had
1 scrambled egg,,cooked in the Microwave..65
1 oz cheess...110
1/2 a pita,, stuffed my egg and cheese in there..40

TOTAL..215
Lunch
5 oz crab...125
1 oz cheese ,,,110
diet cola...0
2 Lipoflush..0
TOTAL CALORIES==235
DInner
1/2 cup cottage cheese...90
small cucumber...5
small tomato sliced...15
1/2 cup green beans...15
3 oz bbq steak...141
diet cola...0
3 Metabolic ...0
TOTAL CALORIES...266
TOTAL CALORIES FOR THE DAY===746
==========
WED MORNING

2 Lipoflush...0
1coffee....0
MRP shake with.....240
1/4 cup strawberries mixed in.....20
TOTAL CALORIES==260
Lunch
5 oz crab...125
1 oz cheesee...110
small cucumber...5
diet cola....0
2 Lipoflush
total CALORIES==240
Dinner
1 cup shredded lettuce..10
1 small tomatoe.....15
small cucumber....5
1/2 cup baby carrots....50
3 oz steak....141
1/2 cup cottage cheese....90
3 Metabolic
Diet cola,,,,,,0
TOTAL CALORIES===311
TOTAL CALORIES FOR THE DAY ====811..
DARN - WENT OVER 800 CALORIES

==========
THUR MORNING

2 Lipoflush...0
3coffee....0

MRP shake with.....240
TOTAL CALORIES==240

Lunch
2 Lipoflush...0
3 oz canned salmon...130
1 cup shredded lettuce...10
1/2 tomato...10
small cucumber...5
1 oz cheese...110
glass of water...0
TOTAL CALORIES==265
Dinner
3 0z backed chicken,,133
1/2 aspearagus...25
1 cup lettuce...10
small cucumber...5
1/2 tomato...10
tea...0
3 Metabolic...0
TOTAL CALORIES==183
TOTAL CALORIES FOR THE DAY ====688
==========
FRI MORNING

2 Lipoflush...0
3coffee....0
MRP shake with.....240
TOTAL CALORIES==240

Lunch
2 Lipoflush...0
cucumber....5
2 pickled eggs..130
TOTAL CALORIES==135
DInner
3 Metabolic...0
3 oz chicken...133
1 cup lettuce...10
1 cucumber...10
1/2 tomato...5
1/2 green beans...15
1 diet cola...0
TOTAL CALORIES==173
TOTAL CALORIES FOR THE DAY ====548
==========
Sat Morning

2 Lipoflush...0
2coffee....0

MRP shake with.....240
TOTAL CALORIES==240

Lunch
2 Lipoflush...0
1 cucumber...10
1 cup shredded lettuce...10
diet cola.....0
TOTAL CALORIES FOR THE DAY ====20

Dinner
3 Metabolic...0
1 cup lettuce...10
1 cucumber...10
1/2 tomato...5
1/2 green beans...15
3 oz steak....141
1 diet cola...0
TOTAL CALORIES==181
TOTAL CALORIES FOR THE DAY ====441
==========

SUNDAY MORNING

2 Lipoflush...0
3coffee....0
MRP shake with.....240
TOTAL CALORIES==240

Lunch
2 Lipoflush...0
1 cucumber...10
1/2 tomatoe..5
5oz crab...125
diet cola....0
TOTAL CALORIES==140

Dinnner
3 Metabolic...0
3 oz baked chicken,,,133
1/2cup brocolia...
1/2 cup califlower...15
1 dill pickle....5
cup of tea....0
TOTAL CALORIES==168
TOTAL CALORIES FOR THE DAY ====548

WEEK OF AUG 22 TO 28

MON MORNING
3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

Lunch
1 cup lettuce...10
small cucumber...5
2 pickled eggs...130
bottle of water..0
2 Lipoflush 0
TOTAL CALORIES..145

Dinner
3 0z chicken..133
1 cup lettuce,,10
small cucumber..5
1/2 cup sugar free jello...4
1/2cup green beans,,,15
3 Metabolic
1 glass cranberry juice mixed half with water,,,20
TOTAL CALORIES..187
TOTAL CALORIES FOR THE DAY===572
==========
Tues Morning
3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

Lunch
2 Lipoflush 0
5 oz crab...125
1 oz cheese..110
diet cola...0
TOTAL CALORIES..235

Dinner
3 Metabolic
3 0z baked chicken...133
1 cup lettuce...10
cucumber...5
1/2 tomato..5
1/4 cantaloupe..45
tea..0.
cranberryjuice mixed with water..20
TOTAL CALORIES..218

TOTAL CALORIES FOR THE DAY===693
==========
Wed morning
3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

Lunch
2 Lipoflush 0
1 oz cheese...110
40z tuna...120
diet cola...0
TOTAL CALORIES..230

Dinner
3 Metabolic
4 oz fresh fish...120
1cup lettuce...10
cucumber...5
1/2tomato...15
1/2cup mixed vegs==broccoli/cauliflower==15
1 diet cola...0
ToTAL CALORIES..165
TOTAL CALORIES FOR THE DAY===635
==========
THUR MORNING
3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

LUNCH
2 Lipoflush....0
3 0z chicken...133
2 pickled eggs...130
1 cucumber...5
ToTAL CALORIES..268

Dinner
3 Metabolic
3 oz chicken..133
1cup alfalfa sprouts..10
diced..green n red peppers,green onion,
mmixed in with the sprouts,,20
diet cola..0
ToTAL CALORIES..163
TOTAL CALORIES FOR THE DAY===671
==========
Fri morning

3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

Lunch
2 Lipoflush....0
1 cup lettuce..10
1/2 tomato...10
cucumber..5
3 0z crab mixed in the salad,,,125
ToTAL CALORIES..145

Dinner
3 Metabolic
3 0z fresh salmon...130
1 cup lettuce..10
1/2 tomato from lunch,,,10
cucumber...5
1/2 cup steamed baby carrots..50
1/2cup...spinich..20
diet cola,,,,
2 coffee....
ToTAL CALORIES..225
TOTAL CALORIES FOR THE DAY===590

==========

SAT morning
3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

Lunch
2 Lipoflush 0
1 cucumber...5
4 oz crab...125
1 pickled egg...65
TOTAL CALORIES..195

snack
6 pork rinds...60
diet cola.....0

Dinner
3 Metabolic
3 0z fresh salmon...130
1 cup lettuce....10
1/2 tomato from lunch,,,10

1/2 cup steamed baby carrots..50
1/2cup...squash..20
tea..0
ToTAL CALORIES..220
TOTAL CALORIES FOR THE DAY===715

diet cola,,,,
==========

Sun morning
3coffee 0
2 Lipoflush 0
MRP shake 240
TOTAL CALORIES..240

Lunch
2 Lipoflush 0
1 cucumber...5
1 tomato sliced...10
1 oz cheese...110
coffee...0
TOTAL CALORIES..125

Dinner
3 Metabolic
1cabbage roll stuffed with ground turkey...3oz..133
1 cup lettuce....10
1/2 tomato from lunch,,,10
1/2cup...squash..20
1 oz cheese,,110
diet cola..0
ToTAL CALORIES..283
TOTAL CALORIES FOR THE DAY===648

Appendix 2: Supplement Details

Overview of the Best Radical Diet Supplements

This section will give you first an overview of the supplements that I recommend you use with the Radical Diet to give you unprecedented weight and fat loss. Following this overview you will find a detailed description of these and other useful supplements.

LIPOFLUSH

Revolutionary Fat Loss Formula

LipoFlush version. III is a research-driven, synergistic blend of natural ingredients designed to dramatically decrease body fat, increase energy levels, preserve skeletal muscle, and provide major health benefits.

www.LipoFlush.com

MRP LOCARB

The Ultimate Anabolic, AntiCatabolic, Fat Burning, Meal Replacement Shake

MRP LoCarb, the ultimate low carb, high protein meal replacement, is also engineered to increase the anabolic hormones and decrease the catabolic ones, increase fat burning, increase energy, and provide the body with an enhanced immune response to help recovery and combat overtraining.

www.MRPLoCarb.com

ThermoCell 35

New Thermogenic and Fat Burning Supplement will be available in the Spring of 2007. Check www.ThermoCell35.com for updated information.

METABOLIC

Advanced Anabolic and Fat Loss Primer

Metabolic, by normalizing and optimizing metabolism and macronutrient utilization (the use of fats, carbs and protein) as well as the body's hormonal balance, increases the anabolic and fat burning effects of exercise, helps in fat and weight loss, and combats fatigue, wear and tear on the body, stress and hormonal dysfunction.

www.mdMetabolic.com

RENEW

Advanced Immune System Enhancer

ReNew, by normalizing the metabolic processes in the body, supporting the central nervous and immune systems and enhancing thyroid, testosterone, GH, insulin, and hepatic and andrenergic function, combats physical and mental stress, fatigue, and over-training.

www.mdReNew.com

GHBOOST

Growth Hormone Enhancer

GHboost effectively increases growth hormone (GH) secretion and tissue levels of the potent anabolic growth factor, insulin-like growth factor I (IGF-I), resulting in increased protein synthesis, decreased muscle breakdown and increased body fat loss.

www.GHboost.com

REGULATE

Fiber and Probiotic Supplement

Regulate is a potent blend of natural soluble and insoluble fibers, plus probiotic ingredients, formulated for dealing with bowel irregularity, especially for those on lower carb diets, and for improving health.

www.mdRegulate.com

MYOSIN PROTEIN

Myosin Protein, the most advanced, synergistic blend of the highest quality protein powders, peptides and amino acids on the market today, contains the precise amino acid mix to maximize protein synthesis, decrease muscle breakdown and enhance body composition.

www.MyosinProtein.com

EFA+

Essential Fatty Acid Formula

EFA+ is a specially formulated and balanced combination of carefully chosen ingredients that work synergistically to enhance the health, anti-inflammatory and body composition properties of the essential and related fatty acids.

www.mdEFAPlus.com

CELLUSOL

The Six-Week, Three-Phase Cellulite and Weight Loss Solution

Cellusol is a three-phase supplement and the most advanced weight and fat loss formula ever. It has been formulated to accomplish maximum weight and fat loss, including cellulite, while at the same time minimizing the loss of muscle.

www.Cellusol.com

The Radical Diet Supplement Plans

The Radical Diet plans are available as beginners, intermediate and advanced plans. Each plan includes the Radical Diet eBook or book, and a number of supplements that work together to maximize fat loss and body composition.

RADICAL DIET BEGINNERS

This is the Beginners version of the 'Radical Diet Loss Plan'; the ultimate short-term diet plan meant for rapid weight loss.

Consists of the Radical Diet eBook or Book, LipoFlush III and the meal replacement shake, MRP LoCarb in either Vanilla or Chocolate.

RADICAL DIET INTERMEDIATE

This is the Intermediate version of the 'Radical Diet Loss Plan'; the ultimate short-term diet plan meant for rapid weight loss. This package is for those who have more weight and fat to lose or who want to lose it in the quickest possible time.

Consists of the Radical Diet eBook or Book, LipoFlush III, Metabolic, Regulate, and the meal replacement shake, MRP LoCarb in either Vanilla or Chocolate.

RADICAL DIET ADVANCED

This is the Advanced version of the 'Radical Diet Loss Plan'; the ultimate short-term diet plan meant for rapid weight loss. This package is meant for those who are serious about getting their fat levels down to an absolute minimum, while maintaining maximum muscle mass and strength.

Consists of the Radical Diet eBook or Book, LipoFlush III, Metabolic, ReNew, MVM, EFA+, Antiox, Regulate, the meal replacement shake, MRP LoCarb in either Vanilla or Chocolate, Myosin Protein in either flavor, Creatine Advantage and a pair of fat calipers. .

BODY BEAUTIFUL COMBO

Covering All the Bases

The LipoFlush, InsideOut combo covers all the bases: the ultimate weight and fat loss supplement and the leading anti-aging skin, hair and nail support formula. Improve the way you look and feel.

BODY COMPOSITION COMBO

LipoFlush and GHboost form the ulitmate body composition combination. Stacking the two supplements results in fat loss instead of muscle loss, a reversal of the negative effects of dieting, an increase in anabolic and a decrease in catabolic hormones, more energy and a feeling of well being.

LipoFlush

Ephedrine Free Revolutionary Fat Loss Formula

LipoFlush is a research-driven, synergistic blend of natural ingredients designed to dramatically decrease body fat, increase energy levels, preserve skeletal muscle, and provide major health benefits.

While other fat loss supplements work on one or at the most two dimensions of the fat loss equation, LipoFlush attacks fat from several independent and synergistic ways, resulting in unprecedented fat loss.

One of these ways, not available in any other fat loss supplement, will literally flush the fat right out of your body.

Like liposuction, LipoFlush can make some of your fat simply disappear, but unlike liposuction, LipoFlush can do it in the problem areas and also evenly all over your body, leaving you with an aesthetic looking body with just the right look.

LipoFlush - The Nutritional Equivalent to Liposuction

What better way to lose body fat than to simply make it disappear? This is the promise of liposuction and in fact it does deliver somewhat as liposuction is one of the most effective ways to decrease body fat. But it has some serious problems to overcome before it becomes everyone’s favorite way to lose body fat.

The good thing about liposuction is that it basically takes fat out of the metabolic equation. You don't have to worry about the calories in that fat since it's physically removed. Up to now any other method of losing body fat has involved increasing the calorie deficit by either exercising or dieting, and usually both, so that the fat is burned as fuel to make up the calorie deficit.

But liposuction has its problems. First of all liposuction is a surgical procedure and like all surgery, it carries inherent morbidity and mortality risks – you can get sick and even die from the surgical procedure alone. Also liposuction is best used for small problem areas. In fact it doesn't do that good a job on large areas since it can leave the areas looking lumpy and uneven. And doing large areas carries much more risk. And last of all liposuction doesn’t just suck out your body fat, it can also suck your wallet dry.

Wouldn't' it be much nicer if you could just take the fat out of the equation, the same way that liposuction does, but do it naturally? And wouldn’t it also be nice if you could take the fat off in the problem areas and everywhere else at the same time, and not have to mortgage your house to do it?

Well now you can. Not only does LipoFlush help you to break down body fat and burn it off more efficiently, it also flushes some of your fat out of your body and takes that fat, just like liposuction does, out of the metabolic equation. Like liposuction, LipoFlush can make some of your fat simply disappear, but unlike liposuction, LipoFlush can do it in the problem

areas and also evenly all over your body, leaving you with an aesthetic looking body with just the right look. And it's affordable. In fact, given the high cost of the ingredients in LipoFlush, never mind the work that's gone behind this innovative product, it's a real bargain.

LipoFlush represents a quantum leap in fat loss supplements. It's the first supplement that effectively decreases body fat by working at all the relevant metabolic, absorption and excretion levels, while at the same time providing substantial health benefits.

The bottom line is that my revolutionary new, ephedra/ephedrine-free LipoFlush is by far the best fat loss supplement on the market today. **If you question this statement compare the ingredients in LipoFlush with ANY OTHER product on the market today and you'll be convinced.**

So if you want maximum fat loss, maximum muscle retention, and a healthy and vibrant body and mind, then LipoFlush is the perfect supplement for you!

ThermoCell 35

Advanced Thermogenic Shaping Formula

ThermoCell 35 has a unique formulation containing 35 active ingredients that work synergistically along several pathways to increase thermogenesis and fat loss in problem areas in both men and women. It works anytime and is especially effective as a pre-training thermogenic and energy primer.

ThermoCell 35 is formulated to target fat loss in problem areas around the butt, thighs, and stomach. With its help you can create an environment that will shape your body and achieve your true esthetic, body composition potential.

Unlike most thermogenic and fat loss products on the market that are several years old and therefore behind the times, ThermoCell 35 is brand new and cutting edge, using current science and up to date medical and scientific research to formulate the most effective body shaping product ever.

MRP LoCarb

The Ultimate Anabolic, AntiCatabolic, Fat Burning, Meal Replacement Shake

MRP LoCarb is a high protein/low carbohydrate/ moderate fat meal replacement powder containing the most advanced protein blend on the market. One serving of MRP LoCarb contains 250 calories, 3 grams of carbs (excluding the fiber), 45 grams of protein (42 grams of whole protein and 3 grams of glutamine peptides), healthy fats and fiber, and a complete balanced Vitamin and Mineral profile, making it the highest quality, most nutritionally complete meal replacement shake on the market today.

But MRP LoCarb is much more than just a low carb, high protein meal replacement. It's also engineered to increase the anabolic hormones and decrease the catabolic ones, increase fat burning, increase energy, and provide the body with an enhanced immune response to help recovery and combat overtraining. As well, the ingredients in MRP LoCarb work together to maximize weight and fat loss and improve body compostion.

MRP LoCarb has a complete complement of macro and micro-nutrients, including:

1. A sophisticated blend of proteins (CFM whey protein isolate, calcium caseinate, egg albumen, soy protein isolate, and glutamine peptides) that give fast and intermediate spikes of amino acids that increase protein synthesis, and long duration increases in amino acids that decrease muscle breakdown. For more information about the properties of the protein blend, see the description of Myosin Protein Complex.

2. Choline and L-carnitine. This combination of ingredients has recently been shown to aid fat and weight loss.[155]. The combination of ingredients increases fat loss by both increasing the breakdown and burning of body fat and, interestingly enough, actually flushing fat (in the form of acylcarnitines, which are actually chunks of fatty acids combined with carnitine) into the urine and out of the body. In this latter action it's almost the nutritional supplement equivalent of liposuction.

3. Compounds (including choline and L-carnitine) that improve training, recovery and body composition by increasing energy, decreasing muscle damage, increasing protein synthesis, and increasing the mobilization and burning of body fat, including:

    - L-carnitine (1,000 mg per serving)
    - Lecithin
    - Choline
    - Inositol
    - CLA (conjugated linoleic acid)
    - Xylitol
    - D-ribose
    - ALA (alpha lipoic acid - 200 mg per serving)
    - Chromium picolinate
    - Phosphates

- A complete vitamin and mineral blend that includes 24 vitamins, minerals (many as complexes with Krebs Cycle intermediates, and amino and organic chelates) and antioxidans.

Without going into a lot of detail each of these ingredients were chosen for their specific effects on weight loss and body composition, and for the additive and synergistic way they work together to achieve these ends. For example, Combining chromium with CLA enhances insulin sensitivity and body composition even more when used together. A recent study found that CLA alone lowered body weight, total body fat mass, and visceral fat mass, the last of which decreased further with the combination of CLA and chromium.[156]

4. Significant amounts of the monosaturated, polysaturated, and essential fatty acids, including mono and diglycerides (diacylglycerol or diglycerides have recently been shown to enhance weight and fat loss,[157] GLA from evening primrose and borage oil, fish oil (EPA and DHA), alpha linoleic acid, alpha linolenic acid, and oleic acid.

   Diglycerides (also known as diacylglycerol or DAG) have been shown to enhance weight and fat loss.[158] Several studies have shown that DAG may be a valuable nutritional supplement to decrease body weight, reduce abdominal body fat, enhance fat oxidation.[159]

5. Soluble and insoluble fibers (psyllium husk, oat fiber, cellulose gum, apple pectin, carrageenan, xantham gum, and pre and probiotics (including fructooligosaccharides, inulin and lactobacillus acidophilus) that keep the bowel and your body healthy, increase insulin sensitivity, and also help keep cholesterol levels in check.

MRP LoCarb, because it's a complete low carbohydrate meal replacement powder, can be used in confidence by anyone on the Metabolic Diet and any low carbohydrate diet plain including Atkins' and Protein Power. It's also useful for those on the Metabolic Diet higher carb plans, or other higher carb diets, because the level of carbs can be easily modified by mixing the powder with milk or juices instead of water or simply by adding carbs in the form of fruits or other carb sources including easily available maltodextrins.

The use of MRP LoCarb within a few hours of training increases the training response and protein synthesis, maximizes rebound macronutrient replenishment and improves recovery. The special blend of proteins in MRP LoCarb, like the Myosin Protein blend, maximizes protein synthesis and minimize protein breakdown for several hours.

Easy to prepare and use, our MRP LoCarb simplifies meal planning and can be taken in place of any meal, as an in between meal and/or before bed snack, and as a post training meal. You just add a packet contents to 8-12 fl. oz. of cold water, milk or juice (depending on the carb level of the diet you're on) and mix/blend thoroughly.

Information For Those On The Metabolic Diet Or Any Lower Carb Diet

MRP LoCarb is the perfect meal replacement for anyone on lower carb diets. The blend of macronutrients is optimal for utilizing the beneficial effects of insulin on protein metabolism while at the same time avoiding the unwanted effects of insulin on fat metabolism. One of the reasons is that when you're fat adapted insulin doesn't do exactly the same things as when you're carb adapted. For example insulin has less of an effect on lipogenesis and on decreasing lipolysis when you're fat adapted than if you're carb dependant.

Post Training Nutrition

MRP LoCarb is the perfect post training drink for anyone on a low carb diet as it dramatically increases protein synthesis, and replenishes all of the muscle cell energy sources including glycogen (partly through the gluconeogenic process) and the important intramuscular triglycerides pool, while at the same time limiting fat formation and storage and increasing recovery.

The special blend of proteins in MRP LoCarb, similar to the one that’s in the Myosin Protein blend, maximizes protein synthesis and minimize protein breakdown for several hours, thus making efficient use of the increased protein synthesis that occurs up to 24 hours after training.

Since the presence of fat combined with protein and limited carbs does not decrease the insulin response or the absorption of amino acids and protein as it does with those who are carb adapted, MRP LoCarb is the perfect post workout meal supplement for those who are fat adapted and are on a lower carb diet.

The problem with taking in a lot of carbs post training is that while it increases insulin, something that amino acids and protein can do quite well, it also decreases GH and IGF-I expression. On the other hand using protein and amino acids to increase insulin also increases GH and IGF-I levels and provides a much more anabolic effect overall while at the same time preserving lipid oxidation post exercise.

Also the use of amino acids and fat, with a minimum of carbs post workout, in someone who is fat adapted, besides leading to an increase in insulin (without as much of an adverse effect on fat metabolism - at least for our purposes) and not affecting the absorption of protein and amino acids from the GI tract, it also dramatically increases intramuscular triacylglycerol levels, which is the fat that is first used up with exercise, before blood levels of FFA.

At the same time there is also some increase in glycogen levels, both hepatic and muscular, first of all through the small amounts of carbs that are part of the MRP LoCarb, and more importantly through the gluconeogenic process in which the body forms only the carbs it needs by making glucose mainly from fats (the glycerol portion) and protein (various amino acids).

On the other hand, because of it’s sophisticated blend of ingredients, MRP LoCarb can also be used for those on higher carb diets. Using MRP LoCarb as the base, they can mix it in milk and/or add fruit, honey, ice cream, or other sources of carbs. Below is an example of a Metabolic Shake for those on lower and higher carb diets.

Myosin Protein Complex

Myosin Protein Complex is the most advanced, synergistic blend of the highest quality protein powders, peptides and amino acids on the market today, bar none. It contains the perfect amino acid mix to maximize protein synthesis, decrease muscle breakdown and enhance athletic performance.

We use a variety of the highest quality protein powder to make use of the special characteristics of each and thus enhancing their overall effect while at the same time eliminating their relative disadvantages. Because of the gentle processes used to isolate the various proteins, the formula maintains the beneficial immune and other effects of the undenatured whey, casein, egg and soy proteins.

Myosin Protein Complex—(CFM whey protein isolate, whey protein concentrate, egg protein, Soy protein isolate, calcium/sodium caseinate, and glutamine peptides) combines both fast and slow proteins and peptides that flood the body with an initial large peaked pulse of amino acids and then a sustained release that maintains protein synthesis and decreases muscle breakdown for hours. This is because the body treats the mix of proteins as if each protein was taken separately. Thus these proteins, even when taken together, maintain their different (fast, intermediate and slow) absorption rates. (Boirie Y, Dangin M, Gachon P, Vasson MP, Maubois JL, Beaufrere B. Slow and fast dietary proteins differently modulate postprandial protein accretion. Proc Natl Acad Sci U S A 1997 Dec 23;94(26):14930-5.).

The blend of proteins and amino acids in Myosin Protein is unique and contains the exact amino acid formulation to maximize protein synthesis and minimize protein breakdown. Myosin provides for a varied spectrum of blood amino acids with spikes from the whey protein, intermediate spikes from the egg and soy, and a prolonged amino acid response from the slowly absorbed casein.

Since Myosin Protein was engineered to increase protein synthesis with fast and intermittent spikes of blood amino acids, and to decrease protein/muscle breakdown with a sustained low-level increase in blood amino acids, it's ideal as a nighttime protein, especially when used in combination with GHboost and TestoBoost (all three make up my NitAbol combo).

Although some try, you can't compare any of the other proteins on the market with Myosin Protein. Myosin has all the advantages of the best whey protein on the market, and of all the other proteins, peptides and amino acids that make it up. As such, Myosin Protein with its ideal amino acid profile maximizes protein synthesis better than any other protein out there.

Besides being engineered to increase protein synthesis and increasing the anabolic hormones and decreasing the catabolic ones, Myosin Protein also provides your body with an increased immune response to combat overtraining and maximize the anabolic and fat burning effects of exercise.

Ingredients

Protein Blend (ion exchange whey protein isolate, milk protein isolate, egg albumin, calcium caseinate, sodium caseinate, potassium caseinate, whey protein concentrate, and soy protein isolate), enzymatically hydrolyzed wheat gluten (as a source of glutamine peptides), cocoa, natural flavors, carrageenan, xylitol and sucralose.

Macronutrients – Protein and Amino Acids

Combination of Proteins

- Whey – fast protein – increase GH spike, Increase insulin.
- Casein – slow protein – delay postabsorptive phase.
- Milk Protein Isolate/Colostrum.
- Egg and Soy isolate give Intermediate amino acid spikes and decrease the postabsorptive phase.

Peptides and Amino Acids

- Glutamine Peptides Provide:
- Glutamine
- Proline
- Branched Chain Amino Acids.
- Phenylalanine
- Serine
- Glutamate
- Glycine.
- Arginine.
- Tyrosine
- Threonine
- Asparagine/Aspartate
- Alanine
- Histidine
- Methionine
- Ornithine.
- Cysteine

Directions: 2 to 6 scoops as needed in water, milk, juice or diet drink. Can be used as a low calorie, high protein meal supplement, after training and before bed. 6 Scoops of Myosin Protein Complex contains 90 grams of mixed proteins and 12 grams of glutamine peptides.

Cellusol 1-2-3 System

The Complete Nutritional Supplement Cellulite and Weight Loss Solution

Cellusol is a multi phase supplement and by far the most advanced weight and fat loss formula ever. It beats anything out there right now including prescription diet aids. Cellusol has more than ten times the active ingredients of any other weight loss product, and instead of using one or two approaches, like most other products, it attacks the problems of weight and fat loss from several directions ensuring both immediate, and more importantly, long-term success.

Cellusol has been formulated to accomplish maximum weight and fat loss, **especially cellulite**, while at the same time minimizing the loss of muscle. This means that the weight you lose will be mostly body fat and you'll look both fit and trim as you lose your weight.

How to Use Cellusol

Cellusol is a stacked/cycled product consisting of 3 formulations. Each formulation is meant to attack the problem of maximizing body composition from a different angle. The way most people use Cellusol is to take each supplement for 2 weeks in turn, LipoFlush first, then Metabolic and then ReNew. However, the trio can be taken in various ways depending on the individual’s response.

In the 2 week for each product regimen, you take LipoFlush for the first two weeks. LipoFlush is a research-driven, synergistic blend of natural ingredients designed to dramatically increase metabolic rate, decrease body fat, increase energy levels, preserve skeletal muscle, and provide major health benefits.

While other fat loss supplements work on one or at the most two dimensions of the fat loss equation, LipoFlush attacks fat from several independent and synergistic ways, resulting in unprecedented fat loss. One of these ways, not available in any other fat loss supplement, works similar to liposuction and will literally flush the fat right out of your body.

For the next two weeks it's Metabolic, which is meant to help you keep your precious muscle and keep the fat coming off. It also optimizes the important hormones and processes in your body including increasing insulin sensitivity, and regulating growth hormone, testosterone and thyroid levels.

For the next three weeks it's Renew, a sophisticated, cutting edge product meant to enhance the immune systems and support your metabolism - essentially to get the body raring to go and ready for the weight and fat loss actions of LipoFlush.

Each package of Cellusol contains enough product for two successive cycles – each 6-week cycle will take you to a new level of weight and fat loss. By cycling each formula for a two-week period you won't allow your body to adapt to any one formula and as such your

weight and fat loss won't plateau. You'll continue to lose weight and body fat in each of the six-week cycles.

Because one of the phases is a renewal phase, during each six-week cycle you'll be allowing your body to regain its normal balance and become more receptive to the weight and fat loss supplements that are in the other two formulations. You'll no longer have to worry about staying on any supplement for too long and reaching a weight and fat loss plateau because your body gets used to the supplements, or go through a rebound and gain your weight back when you stop taking the weight loss aids.

Another way to take the 3 formulations is to take them consecutively but varying the time intervals. As well, they can also be stacked. For example LipoFlush for the first two weeks, Metabolic for one week, ReNew for one week, then back to LipoFlush for two weeks, and so on.

Another way, especially if you have to lose a lot of weight is to use the initial 2 wk/2 wk/2 wk or 2 wk/1 wk/1 wk schedule for the first two or three cycles and then as it gets more difficult to lose weight, use LipoFlush and Metabolic together for three or four weeks (for example using the LipoFlush in the morning and mid-afternoon, and the Metabolic in the evening since it won't disturb your sleep), followed by one week of ReNew and then back to the LipoFlush/Metabolic combo for another three to four weeks followed again by one week of ReNew.

There are a lot of innovative ways to use the Cellusol combination, keeping in mind that LipoFlush is geared to maximizing weight and fat loss, Metabolic for continuing the weight and fat loss and optimizing the metabolism, and ReNew for normalizing the body and immune system and getting you body primed for the effects of both LipoFlush and Metabolic.

I think it's also important to know that unlike most of the other weight loss supplements and drugs, Cellusol, and each of its components are meant to also maximize health and fitness. For example, have a look at the detailed information on LipoFlush at http://www.mdplusstore.com/pdfs/lipoflush.pdf .

The Complete Program

While Cellusol will work it's magic alone, it works best if you follow a complete exercise and nutrition program. Regular exercise and going on the Metabolic Diet will maximize Cellusol's effects on body composition and weight and fat loss and allow you to reach your goals much faster and easier. The end result of using all three will be a fit and toned body that you'll be proud of.

- Phase One Formulation - **LipoFlush**
- Phase Two Formulation - **Metabolic**
- Phase Three Formulation - **ReNew**

LipoFlush

Ephedrine Free Revolutionary Fat Loss Formula

LipoFlush represents a quantum leap in fat loss supplements. It's the first supplement that effectively decreases body fat by working at all the relevant metabolic, absorption and excretion levels, while at the same time providing substantial health benefits.

LipoFlush can be used by anyone who wishes to lose body fat. Most people who are just interested in losing weight while at the same time looking trim and toned will find LipoFlush ideal for them.

Athletes looking to maximize functional muscle mass and strength and minimizing body fat will find that LipoFlush is the perfect supplement to complement their training. Bodybuilders looking to maximize muscle mass while taking body fat levels to the absolute minimum will find that LipoFlush is the perfect supplement to maximize their diet and training efforts, especially when in their cutting and pre-competition training phases.

Directions: Two to four tablets twice a day.

Metabolic

Advanced Anabolic and Fat Loss Primer

Metabolic is formulated to optimize the body’s hormones in order to maximize the anabolic and fat burning effects of exercise.

Metabolic optimizes the effects of thyroid hormone, decreases cortisone levels and increases levels of growth hormone and testosterone (in both men and women) along with increasing insulin sensitivity. These effects increase weight and fat loss while maintaining or even increasing muscle mass. As well, the hormonal environment created by Metabolic will allow cellulite, that stubborn dimpled fat, to be oxidized along with the rest of the body fat.

Directions: One to two tablets three times a day.

ReNew

Homeostatic and Immune System Enhancer

ReNew is a premier product that, as part of the Cellusol team, enhances and stabilizes weight and fat loss and allows the body to return to an optimal metabolic and immune state where it's once again ready and able to respond to the next two Cellusol cycles. With ReNew you return to a state where the body solidifies previous weight and fat losses and is once again sensitive and responsive to both LipoFlush and Metabolic. In a sense, ReNew rejuvenates your body so that it is ready and able to make dramatic weight and fat losses.

Directions: Five tablets once or twice a day with meals.

GHboost

GHboost, a research driven nutritional supplement, is a unique growth hormone stimulating product that increases growth hormone (GH) secretion more effectively than any other GH boosting product on the market.

GHboost also increases serum and tissue levels of the potent anabolic growth factor, insulin-like growth factor I (IGF-I). Growth hormone and IGF-1 act together to increase protein synthesis, decrease muscle breakdown and increase body fat loss.

What can I expect from the use of GHboost?

GHboost will:

1. Increase GH
2. Increase IGF-I
3. Increase insulin function and sensitivity
4. Increase testosterone secretion and effect
5. Decrease cortisol
6. Optimize thyroid
7. Increase nutrient delivery to muscle

As a result you can expect:

1. Increased muscle mass
2. Decreased body fat
3. Increased energy
4. Increased exercise performance including power and endurance (yes even endurance benefits from increased levels of GH[160])
5. Increased recovery
6. Increased well-being
7. Anti-aging effects

Regulate

Regulate is a potent blend of natural soluble and insoluble fibers, plus probiotic ingredients, formulated for both preventing and treating constipation, frequent bowel movements, and other problems.

While useful for anyone looking to improve health and support natural bowel functions, it's especially formulated for those on low carb diets, which tend to be low in fiber. Regulate helps the gastrointestinal tract to acclimatize to the changes in macronutrient intake, improves bowel health and regularity, and provides prebiotic and probiotic health benefits.

Regulate, by delaying gastric emptying and reducing the time to perceived fullness, is effective as an appetite suppressant. Taken before meals or whenever hungry, Regulate lessens your hunger and curbs cravings.

The various soluble fibers, and prebiotic[161] and probiotic[162] compounds contained in Regulate have been found beneficial for promoting health and for dealing with a variety of conditions and problems including:

- Weight Loss.[163,164]
- Constipation – especially recommended in the initial stages of the Metabolic Diet.[165]
- Frequent bowel movements.
- Other bowel problems including hemorrhoids, irritable bowel syndrome, and inflammatory colitis (ulcerative colitis, Crohn’s disease, diverticulitis, diverticulosis).[166]
- Gallstones. The incidence of gallstones is significantly higher in overweight women and men. The risk for stone formation is also high if a person loses weight too quickly.[167]
- Elevated cholesterol levels from whatever reasons including genetic predisposition and a higher fat diet. Fiber results in decreases in total and LDL levels without lowering HDL levels.[168]
- Cardiovascular disease including hypertension and coronary artery disease.[169]
- Insulin resistance and diabetes.[170]
- Certain cancers.[171]

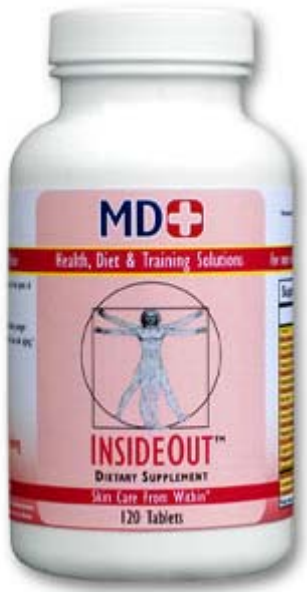
InsideOut

While the Radical Diet and the supplements mentioned so far are meant to help you lose weight and body fat fast, there's another supplement you should consider for improving the way you look and feel.

MD InsideOut

Skin, Hair and Nail Care From Within

www.MDInsideOut.com



InsideOut is formulated to support and enhance all the layers of the skin, hair and nails, and the supporting structures. The result is healthier, stronger, more vibrant skin, hair and nails that can better resist damage due to wear and tear, regardless of the cause.

By providing ingredients that are essential for the body's natural synthesis and maintenance of the skin, hair and nails, and supporting layers, InsideOut heals and protects all three from all manners of stress and trauma, including sun exposure and aging.

InsideOut will:

1. Increase the health and strength of all layers of your skin, the dermis, epidermis and supporting structures, resulting in healthier, younger looking skin.
2. Decrease wrinkles, help clear up any skin problems, and increase healing while at the same time decreasing side effects from environmental stresses, including exposure to the sun, and cosmetic procedures and surgery.
3. Help firm up sagging skin in the face, neck and body.
4. Decreases inflammation, scarring and fibrosis secondary to skin damage.
5. Increase scalp and hair health and strength resulting in faster hair growth, increased hair follicle health and activity, a fuller head of hair, and decreased damage from hair coloring, curlers, perms, blow dryers, etc.

6. Increase nail strength and thickness, get rid of white spots, protect nails from the damage of using artificial nails.
7. Optimize the functioning and protective effects of the oil and sweat glands, thus helping to prevent dry, damaged skin and hair.

Appendix 3

Low Carbohydrate, High Protein Diets and Energy Metabolism

The macronutrient mix of low carbohydrate diets takes the body along different energy metabolic pathways than the more traditional higher carbohydrate diets. Following a low carb diet shifts the body energy metabolism to the use of more fat and protein, both as immediate substrates and for the formation of ketones (in the case of both fats and amino acids) and glucose (in the case of amino acids).

This shift changes the dynamics of energy metabolism to the extent where dietary carbohydrates no longer make up an important energy substrate. Instead fat oxidation is increased, glycogen spared and amino acids are used to provide carbon skeletons for gluconeogenesis which in turn is used to supply baseline glucose and glycogen levels, which in turn are used for glycolysis as needed.

Two pivotal enzymes in energy metabolism are pyruvate dehydrogenase (PDH), which decarboxylates pyruvate to form the two carbon unit acetyl coenzyme A (acetyl CoA), and pyruvate carboxylase (PC) that carboxylates pyruvate to form oxaloacetate. Both enzymes are intimately involved in carbohydrate oxidation and help to control the degree of involvement of fatty acids and amino acids in energy metabolism. With low dietary carbs PDH is downregulated so that less pyruvate is converted to acetyl CoA, and subsequently the formation of acetyl CoA from fatty acid oxidation increases proportionally. At the same time, because glucose cannot be formed from fat (except for the case of odd chain fatty acids where the remaining 3 carbon units can enter the TCA cycle and be used for gluconeogenesis) more amino acid carbon skeletons are involved in the formation of glucose, pyruvate and TCA cycle intermediates.

The increase in the utilization of amino acids for energy production is seen in all cases of carbohydrate deprivation regardless of calorie intake. For example, in eucaloric low carbohydrate diets there is an increase in 24 h nitrogen loss. However, an increase in dietary protein mitigates any adverse effects low carbohydrate diets might have on protein metabolism and lean body mass.[172]

A recent study looking at the effects of a low-carbohydrate/high-protein diet on skeletal muscle protein synthesis and whole-body proteolysis found that increasing dietary protein intake during carbohydrate restriction may prevent the protein loss and the resultant decline of lean tissue mass that has been associated with low carbohydrate diets.[173]

An interesting finding in this study, one that might partially explain the protective effects of increased dietary protein intake, was a two fold increase in muscle IGF-I expression, which was independent of changes in either plasma growth hormone or IGF-I levels. The authors of this study suggest that “the high intake of dietary protein in the present study and probable rise in systemic amino acid availability may have been responsible for the increased IGF-I mRNA expression, which likely contributed to the elevated skeletal muscle fractional synthetic rate.”

Several studies have shown that muscle IGF-I expression is linked to protein metabolism and muscle hypertrophy. Resistance exercise for example is associated with an increase

in muscle IGF-I expression.[174] Also muscle IGF-I has been shown to increase with increasing dietary protein intake and systemic amino acid availability.[175,176] As well, increased levels of dietary protein and systemic amino acid availability have been shown to work in concert with IGF-I to increase protein synthesis.[177]

Metabolic Advantage of a High Protein, Low Carbohydrate Diet

The metabolic advantage in low-carbohydrate diets results in greater weight and body fat loss compared to isocaloric diets of different composition such as the low fat, high carbohydrate diets.

Dietary Calories from Macronutrients

It's widely held that a calorie is a calorie and by this it's usually meant that two isocaloric diets lead to the same weight loss. A calorie is a measure of heat energy and when talking about food it represents the total amount of energy stored in food. Used in this way all calories are equal, whether from fat, protein or carbohydrates. However, the idea that a dietary calorie is a calorie as far as how it influences useable and storable energy, body weight and composition under all conditions is simplistic at best.

Many factors influence how much energy is actually derived from dietary macronutrient intake. Calories can be "wasted" in many ways. Decreased absorption from the GI tract and increased excretion are two obvious ways. An increase in thermogenesis and energy expenditure will also waste calories. In the case of thermogenesis (thermic effect of feeding), or the heat generated in processing food, the thermic effects of nutrients is approximately 2–3 % for lipids, 6–8 % for carbohydrates, and 25–30% for proteins.[178] This in itself is almost enough to explain the metabolic advantage of low carb, high protein diets. But there's more involved. For example it's been shown that increasing dietary protein increases fat oxidation.

As well, the calorie cost in the use of the various macronutrients for energy also differs, with protein being the least efficient.

Through the interaction of both cytoplasmic and mitochondrial pathways it's possible to store both carbohydrates and protein as body fat. In the case of protein it involves both the glucogenic and ketogenic amino acids. The ketogenic influence on body fat is obvious since ketones are readily metabolized to two carbon units and can be directly used for lipogenesis. The glucogenic amino acids can enter the TCA cycle as intermediates and either through a short or long pathway end up as two carbon units that can be exported to the cytoplasm for lipogenesis.

Low carbohydrate and higher protein diets do more than increase weight loss. It's also been shown that low carbohydrate, high protein diets favorably affect body mass and composition[179] and that these changes are independent of energy intake.[180]

But this is nothing new. Prior research also found that a low carb diet results in a significant fat loss and an increased retention of muscle mass, either alone or in comparison to a high carb diet.

For example back in 1971 a group of researchers looked at the effects of three diets that had the same calorie and protein levels, but varying fat and carbohydrate levels.[181] They found that as the carbs in the diets went down, there was an increased weight and fat loss. In other words the men who were on the lower carb diets lost the most weight and body fat.

In 1998 another study, this time involving obese teenagers, came up with similar results.[182] After 8 weeks on a low carb diet the teens not only lost significant amounts of weight and body fat, but they even managed to increase their lean body mass.

In the study, a six-week carbohydrate-restricted diet resulted in a favorable response in body composition (decreased fat mass and increased lean body mass) in normal-weight men. The results of this study indicate that a low carb diet mobilizes and burns up body fat more than a high carb diet, while at the same time preserving muscle mass.

Insulin, by varying the amount of fat and carbohydrate storage, can also make the body more efficient in the use of dietary calories. For example, decreased insulin levels, increased insulin sensitivity and even lack of an insulin receptor in fat tissue leads to increases in energy expenditure helps to protect against obesity even in obesiogenic environments.[183]

Also calories from different macronutrient mixes can affect appetite, satiety, compliance, short and long term compensatory responses, and changes in the oxidation of other substrates and thus make a difference as far as weight loss and body composition.

For example, a recent study found that fat mass status and the macronutrient composition of an acute dietary intake influence substrate oxidation rates.[184] This study found that the intake of a high protein, lower carbohydrate single meal improved postprandial lipid oxidation in obese women and produced an increased thermic response. These responses were due to elevated insulin levels that occurs with higher carbohydrate meal as well as the increased energy needs associated with the higher protein meal.

The enhanced weight loss on protein enriched diets as compared to balanced diets has been often assigned to a greater food-derived thermogenesis, an effect generally attributed to the metabolic costs of peptide-bond synthesis and breakdown, urogenesis and gluconeogenesis.[185]

Low Carb Controversy

There’s been a lot of controversy about both the effectiveness and safety of lower carbohydrate diets. New studies from leading institutions including Duke and Harvard Universities have shown that low-carb diets are safe, healthy, lead to more permanent fat and weight loss, and have shown improvements in the dieters’ blood lipid and cholesterol levels.

Several studies have shown that low carbohydrate diets are more effective for weight and fat loss than the high carb diets. The results of a study published in July 2002, showed that the long-term use of a low carb diet resulted in increased weight and fat loss, and a

dramatic improvement in the lipid profile (decreased cholesterol, triglycerides and LDL, and increased HDL levels).[186]

Two studies published in the May 22, 2003 issue of the New England Journal of Medicine, found that people on the high-protein, high-fat, low-carbohydrate diet lose twice as much weight over six months as those on the standard low-fat diet recommended by most major health organizations.[187,188] In both studies, the low carb dieters generally had better levels of “good” cholesterol and triglycerides, or fats in the blood. There was no difference in “bad” cholesterol or blood pressure.

The 132 men and women in the VA study started out weighing an average of 286 pounds. After six months, those on the low carb diet had lost an average of 12.8 pounds; those on the low fat diet 4.2 pounds.

The other study involved 63 participants who weighed an average of 217 pounds at the start. After six months, the low carb group lost 15.4 pounds, the group on the standard diet 7 pounds. In a follow-up to this study, the authors found that after one year there were several favorable metabolic responses to the low-carbohydrate diet.[189]

Another scientific study published in the same year compared the effects of a low-carbohydrate diet with a low-fat control diet on weight loss and commonly studied cardiovascular risk factors.[190] In this study, healthy obese women on the low-carbohydrate diet lost 8.5 kg, more than twice the amount of weight lost by women on the control diet, over a six-month period. Loss of fat mass was also significantly greater in the low-carbohydrate group.

In a follow-up study the authors concluded that short-term weight loss is greater in obese women on a low-carbohydrate diet than in those on a low-fat diet even when reported food intake is similar.[191] The authors did not find an explanation for these results since there were no measurable changes between the dieters.

Another study published in May, 2004 found that not only was weight loss greater but serum triglyceride levels decreased more and high-density lipoprotein cholesterol level increased more with the low-carbohydrate diet than with the low-fat diet.[192]

In the latest study researchers from the Harvard School of Public Health, after analyzing data collected over 20 years from more than 82,000 women participating in the Nurses' Health Study, concluded that low carb diets do not seem be linked to a higher risk of heart disease in women.[193]

Appendix 4

Phase Shift Diets - Back to the Future

The information in this appendix is an introduction to my phase shift diets (using two distinct macronutrient phases), showing some of the theory and practice behind them so as to make them more understandable by those wishing to use them personally and for others.

We're Different but the Same

It's a fact that we're all different. We hear it all the time from those in the know. We all react differently to various foods and nutritional supplements, we all metabolize differently and we all have different genetic makeups that make us unique.

There's a misconception that we're not all that much different from each other, especially since it's widely felt that more than 99.9% of human DNA sequences are the same across the population. However, recently it's been shown that at least 10 percent of the human genome can vary in the number of copies of DNA sequences, and that these variations have a major impact on an organism's function, including how we respond to almost everything, including macro and micronutrients, drugs and chemicals.[194]

For example it's been shown that insulin sensitivity is affected by many variables, including lifestyle, body weight, exercise, diet, certain nutritional ingredients and supplements,[195,196] inflammation, and certain diseases. But just because you may have a genetic predisposition to insulin resistance and perhaps even eventually to diabetes, doesn't mean it has to happen.

That's because the body has a certain redundancy built into it so that many genetic roadblocks can be opened up or circumvented under specific environmental conditions. In other words a single altered gene or even several of them, although affecting some function or functions in the body, may make only a small or even no effect depending on the circumstances.

For example, this redundancy, which plays a part in our reaction to specific nutritional and other environments, means that broad principles will in fact apply to the majority of people following my phase shift diets. From there applying some minor variations will make the diet universally effective.

However, before I get into the basics and the theories behind my diets, let me give you some background information that will put it all in context.

The Evolution of my Phase Shift Diets

My phase shift diets are a work in progress. It all started over 40 years ago when I entered university. At that time I had been using weights to increase muscle mass and strength since I was in my early teens.

Up to that time I had experimented with my diet and found that I grew more muscular and stronger on what was to me an intuitive high protein, moderate fat, lower carb diet. But it wasn't until I attended university at the age of 18 that I began to see why this kind of diet worked for me.

The details of that time in my life are covered in the upcoming book by Randy Roach on the history of nutrition in bodybuilding – see www.musclesmokeandmirrors.com .

The bottom line is that in the early to the end of the 1960s I formulated the basic theories behind my phase shift diets and used the diet to propel me into my elite level powerlifting and IPF World and World Games powerlifting gold medals.

What I then attempted to do, and continue to do to this day, is to put our genetics and metabolism in perspective and manipulate both by making specific changes in the environment, mostly through macronutrient and micronutrient manipulation.

The principles and theories behind my phase shift diets, as exemplified by my Metabolic Diet and its variations, such as the Anabolic Solutions and Radical Diet, are complex and when trying to work out the minutiae, it's obvious that more research needs to be done. But then that's the case in any of the advanced research being done today.

But the principles behind the diet can be taught, and when learned provide a basis for understanding nutrition and how it affects our metabolism, and how we can manipulate it to maximize health, body composition and performance.

And it's important at this time in my life to share the knowledge I have accumulated in more than four decades so that others can see more clearly just what it's all about and how to use the knowledge for improving themselves and for teaching others.

Man's Survival - The History of Food

It's estimated that humanoids have been on this earth for millions of years and that modern man has been around for at least a few hundred thousand years. Some genetic theorists believe modern man emigrated from Africa around 100,000 BC and dispersed around the world by 50,000 BC based on the X chromosome.

It's generally felt that farming had its beginning about 10,000 years ago (marking the beginning of the Neolithic Revolution – see http://en.wikipedia.org/wiki/Neolithisation) and that it was introduced into Europe from the Near East more than 8,000 years ago, then spread west and north to the Atlantic Ocean. It's likely that the farmers influenced the Paleolithic hunter-gatherers—whose ancestors arrived on the European continent as long as 40,000 years ago—to adopt farming.

A number of recent genetic studies have supported this model. For example, one study concluded that less than 25% of the mtDNA gene pool of modern Europeans could be traced to incoming early farmers (*Science*, 10 November 2000, page 1080)

But this controversy in unimportant for the purposes of this discussion. What is important is that humans evolved during the Paleolithic period, from approximately 2.6 million years ago to 10,000 years ago. And that starting 10,000 years ago there was a gradual transition from a hunter-gatherer mode of subsistence which was practiced by all early human societies prior to that time, to one based more upon the deliberate nurturing and cultivation of crops for the purpose of food production.

That time span prior to agriculture has defined modern man's genetic makeup and there has been little change in the past 10,000 years.[197] However, the diet and lifestyle that shaped out genes have changed dramatically.

Granted there is evidence of some evolutionary change during this time to the present, mainly in genes affected by the shifts in habitats, food sources, population densities, and pathogen exposures, which have likely led to direct selection pressures on medically relevant phenotypes.[198] However, many of the genetic tendencies of our hunter-gatherer ancestors still prevail.

Recipe for Disaster

"Hundreds of millions of years of vertebrate evolution and most of human history has produced efficient metabolic adaptations to episodic starvation."[199]

Given the fact that for most of man's time on earth the problem was lack of food rather than an abundance, the biggest genetic hurdle for modern man is all about excess calories. And because of shifts in the types of food available, the second hurdle is the constant macronutrient content of the modern diet. Couple that with a relatively sedentary lifestyle and it spells the recipe for our current obesity dilemma.

Genetically our bodies are engineered for gaining weight and not for weight loss. That's because weight loss mimics starvation and in our past episodic starvation was the norm and threatened survival.

In fact through most of our history episodic starvation that has shaped our genes with the result that our metabolism has evolved to counteract most of human history has produced efficient metabolic adaptations to episodic starvation. So the body is genetically programmed to gain whatever weight it can to prepare for the all too common food shortage.

In other words we have inherited a primal drive to eat. The result is that in times when food is plentiful we're programmed to gain as much weight as possible, and increasing to the max our storage energy supply (mainly fat).

Ongoing research validates this scenario. Since the early 1990s we've gained insight on the neuronal, hormonal and other pathways involved in the regulation of metabolism, nutrient partitioning, appetite, weight control, and body composition.

Prior to then our knowledge in some of these areas was somewhat simplistic. For example, our notions of the regulation of appetite came from gross studies of the effects of lesions on parts of the brain in both animals and humans. While these studies did give us some useful information, they were also misleading in some respects.

For example gross lesions of the arcuate nucleus were found to have little affect on appetite. However we now know that this area of the brain is a major centre for the control of appetite with effects on increasing (orexigenic) and decreasing (anorexigenic) eating. Lesions of this area affected both pathways and essentially cancelled them out leaving little observable overall effects.

The Control of Weight and Body Composition

The control of weight and body composition, our primary areas of concern here, involves complex central and peripheral interactive systems. The complexity of this system is only just beginning to be understood with current research uncovering new mechanisms and signals on a regular basis.

However, while there is much to be learned we know enough to lay out the basic groundwork of how things work, and from that a strategy on how to attain specific weight and body composition goals.

In order to focus on these goals, I'm only going to cover some of more important mechanisms involved as we know them today, making some extrapolations from this knowledge so that we can come up with a reasonable plan.

The main areas of concern revolve on how the body reacts to an increase and decrease in the calorie and macronutrient content or our diets, specifically on the effects of changes in one or both on energy metabolism, appetite, nutrient partitioning, and body composition. Subsequent to this will be ways that we can favorably influence these reactions by manipulating the diet and through the use of various nutritional ingredients and nutritional supplements.

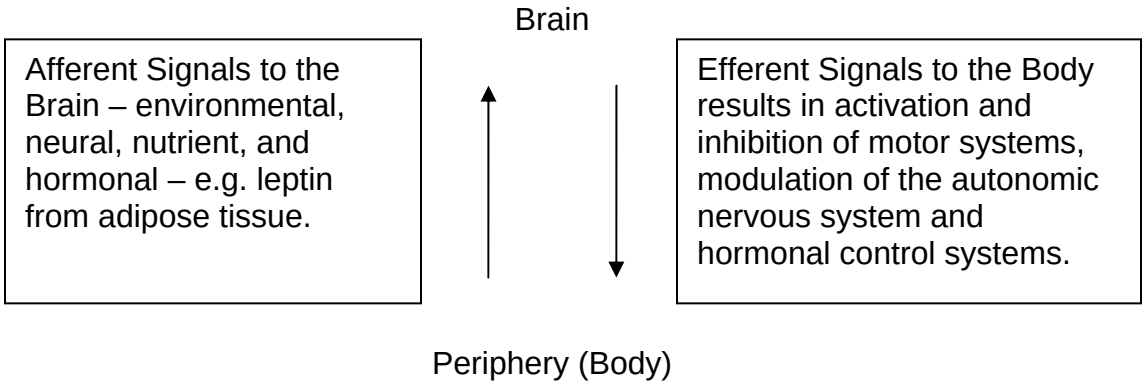
Energy metabolism is central to regulating body weight. To maintain body weight we have to take in a mix of macronutrient that is the energy equivalent to the amount of macronutrients that are oxidized for energy in the body. Excess energy is mainly stored as body fat since the body has limited capacity for storing carbohydrates as glycogen and protein as muscle.

The body's control mechanisms are finely tuned and involve almost all tissues of the body including the brain, peripheral nervous system, gastrointestinal tract, liver, pancreas, muscle and fat.

The body, everything outside the brain, includes the digestive tract, which ingests, digests, and absorbs food; pancreas, the metabolic systems in liver, muscle, and kidney that

transform nutrients; and the adipose tissue, which both stores and release fatty acids and acts as a secretory endocrine organ.

For our purposes I'm going to describe the control mechanisms on the basis of a feedback model with two components, the brain and the rest of the body. Signals come from the body to the brain, are processed and then in turn the brain signals the body how to respond.



This feedback model functions similar to a thermostat for controlling room temperature. If the room is too cold or too hot (afferent signals) then the thermostat (the brain) turns on the heating or cooling systems (efferent signals).

The signals coming to the brain come from a number of sources including the environment (senses), the macronutrients themselves, as well as signaling molecules such as leptin, ghrelin, adiponectin, CCK and others produced in the GI tract, pancreas, muscle and fat.

The complexities of the signaling mechanisms is beyond the scope of this article other than a brief mention of them.

For example, looking just at role of two of the hormones in the regulation of appetite: there's leptin, made by fat tissue, which suppresses appetite; and ghrelin, made by the stomach, which increases appetite; both act on the arcuate nucleus.

Leptin indicates satiety and sufficient bodily 'energy abundance' (i.e. adipose mass) for reproduction and other purposes. In contrast, the peptide ghrelin, derived predominantly from the stomach, is released prior to eating and is a potent stimulus to increased consumption of calories, acting upon a separate group of neurons in the arcuate nucleus.

But of course the simplistic description I've just given for leptin and ghrelin is just that. There's much, much more to the story, both in intrinsically in the functions of both and in their interactions with other endogenous and exogenous compounds and systems.

For example, the peripheral signals, such as leptin and ghrelin interact with neuronal and hormonal components of the intra-and extra-hypothalamic and pituitary areas of the brain and result in a series of changes that alter metabolism, appetite and nutrient partitioning.

And we've still a lot to learn that will enlarge and change many of the views we have today on the structure and function of the various players involved in weight control and body composition.

A case in point is leptin which because of its theoretical effects on decreasing appetite and increasing metabolism, was thought to be a candidate for treating obesity and improving insulin resistance. However, further research found that leptin shows paradoxically increased levels in obesity, reflecting a state of leptin resistance. Whilst the potential biological value of such resistance to allow our ancestors fully to exploit episodic caloric excess may be speculated upon, this does rather obviate any therapeutic utility for the majority of obese patients.

As well, in the past decade we have dramatically changed our views on adipose tissue. It seems that plain old body fat does a lot more than just store those extra calories. In fact, adipose tissue, besides being a repository for excess energy, also actively secretes a number of hormonal signals (collectively called adipokines and include leptin, adiponectin, and tumor necrosis factor alpha) that help regulate energy metabolism, body composition and insulin action.

While the exact relationships and interactions of these adipokines, other signaling hormones and mechanisms such as those from the GI tract, and the brain have yet to be worked out, it's known that there are relationships between these and other hormones and growth factors in the body including testosterone, growth hormone, IGF-I, insulin, thyroid and adrenal hormones.

The bottom line is that peripheral and central signals are intertwined to sense the metabolic status of the individual and through a complex series of actions and interactions, the central nervous system has developed a meticulously interconnected circuitry to keep us adequately fed. And to sabotage any and all efforts to lose weight and/or body fat.

I developed my phase shift diets to circumvent as much as possible the negative effects of dieting and attempts to maximize body composition and performance, including increases in appetite, the drop in metabolic rate, the adverse effects on energy metabolism, the decrease in the anabolic hormones and increase in the catabolic ones, and the loss of lean body mass as you attempt to minimize body fat.

Monophasic vs. Phase Shift Diets

My **Metabolic Diet** is a **structured phase shift diet**. As such, it's different from any other diet out there today. That's because all of the other diets are monophasic diets in which you eat the same every day. Whether it's the Zone or Atkins or South Beach, they're all monotone diets.

And it's only because of our recent past that we all follow those kinds of monophasic diet and think that, with some minor variations, it is the natural diet for us humans.

But that's not true.

Unstructured Phase Shift Diets

It doesn't matter whether we follow a high carb, low carb, high protein, low protein, high fat, low fat kind of diet, it's not the best diet because they're all the result of modern agriculture and industry which guarantees us a constant supply of palatable foods.

As we've already discussed, for most of the time that man has been on earth this wasn't the case.

Up to the time when agriculture took hold there was no guarantee of a regular diet. Unlike today you couldn't go to the grocery store and get what you needed. You ate what you could scrounge up.

If you killed an animal, then you basically had a low carb meat-based diet for as long as the meat lasted. When you ran out and didn't bag anything else, you foraged for what you could get from plants above and below ground, and the diet was higher in carbs.

As such, we're genetically more suited to phase shift diets, diets with varying macronutrient content, as against the monophasic (the same diet every day) diets that almost everyone today is on.

This somewhat erratic phase shift diet that has shaped our genes essentially ended only a relatively short time ago. Once agriculture took hold the carbohydrate content of the diets increased. However, regardless of what most of us are used to eating today, the point still remains that our genes are still optimized for phase shift dieting, high protein/low carb sometimes, and lower protein/higher carbs at other times, rather than the relatively recent agriculturally based monophasic diets.

And although modern man for the most part follows a high carb monophasic diet, high protein, low carb diets lived on with special groups. For example, Ori Hofmekler, in his book "The Warrior Diet", writes that the diet of soldiers of the Roman army consisted mainly of high quality protein foods such as meat, fish, eggs, and cheese, with carbohydrates playing a secondary role. When these high protein foods were unavailable, they ate more carbs to make up the calorie deficit. So even in these cases the Roman soldiers, while following a low carb diet when they had the necessary foods, actually followed an unstructured phase shift diet.

Structured Phase Shift Diets

Taking a hint from what must have occurred as far as unstructured phase shift diets (low carb phases followed by higher carb ones), especially those of primitive man, and in special groups such as the Roman soldiers mentioned above, I started thinking about the consequences of shifting from low carb to higher carb diets on a structured basis.

It occurred to me, as I've already stated, that in all lower carb diets based on the availability of meat, fowl, fish, eggs and cheese there were times when these foods were in short supply. At these times carbohydrates filled the energy gap and the diet was then a higher carb one.

With this idea in mind, I experimented with phase shift diets to see what would happen if periods of low carb were alternated with periods of higher carbs. What I found, after several years of trying many different phase shift variations, was that a longer carb restricted phase followed by a shorter higher carb phase resulted in more favorable changes in body composition that any other diet, including the monophasic low carb diets that are so popular today, including the Atkins, Zone and South Beach Diets.

So back in the late 1960s, even before Atkins introduced and then made popular his low carb diet, and way before all the others, I was working on improving the low carb diet and attempting to make up for its shortcomings as far as body composition and performance.

After several years of experimenting and research, my conclusion was that while low carb diets are great for losing weight and body fat, it's not all that great for increasing muscle mass and for maximizing body composition.

Part of the problem is that while you're stimulating some of the anabolic hormones with the low carb diets, you're not making use of the potent anabolic effects of insulin, and the beneficial synergism of insulin with other hormones and growth factors.

In order to do that you need to somehow combine the effects of the low carb diet on losing weight and body fat, with dietary changes that also made use of the anabolic effects of insulin, while at the same time minimizing the counter productive effects that insulin has on body fat.

I worked on this puzzle back in the late 1960s, giving birth to my ideas about structured phase shift diets, and refined it over the ensuing decades. I used this diet in the 1970s and 1980s when I was an elite powerlifter and won every title there was to win in Powerlifting.

I first published this diet as the Anabolic Diet over a decade ago, and then followed it up with a more generalized and more exhaustive Metabolic Diet, and later specialized versions of the Metabolic Diets, the Anabolic Solution books and the Radical Diet.

The Metabolic Diet

The Metabolic Diet, with its origins back in the 1960s, is the first ever structured phase shift diet designed to replace all other diets for optimizing body composition and performance.

The Metabolic Diet, previously known in a more restrictive form as the Anabolic Diet is the only diet that works to minimize body fat while at the same time maximizing lean body mass, giving you that look lean muscled look we all want.

The low carb phase of the Metabolic Diet, which is usually 5 to 6 days, switches the metabolism over to burning fat as the body's primary fuel. The higher carb phase, which is usually one to two days, maximizes the effects of insulin (as well as testosterone, growth hormone and IGF-I) on protein synthesis but minimize its effects on fat metabolism.

The Metabolic Diet is structured so that the effects of the low carb phase on fat and energy metabolism, and the decreased effects of insulin on fat metabolism, are carried over into the higher carb phase. The end result is a continual burning off of body fat, but a sparing of muscle protein during the low carb phase. If desired, the higher carb phase is also useful for increasing muscle mass.

Another advantage of my phase shift diets, unlike all the low carb diets, is that they're socially more acceptable since for most the higher carb phase can be made to coincide with weekends. They also allow a variety of foods into the diet that would normally not be allowed on a straight and constant low carb diet, making the diet easier to adhere to.

My phase shift diets are optimized for maximizing body composition and accomplish this much more effectively than all the other diets, all of which are monophasic diets, regardless of their macronutrient content.

As well, they're healthier than any monophasic diet could ever be as they allow a maximum dietary variety of foods, albeit not at the same time. And keep in mind that in my opinion the phase shift diet is the most natural diet for humans, since genetically we're more suited to this type of diet than any other.

Also keep in mind that the association between obesity and cardiovascular problems, and a high-fat intake that occurs in diets high in both fat and carbohydrates simply doesn't happen with the Metabolic Diet.

Although several studies have shown that both lean and obese people are capable of rapidly adjusting fat oxidation to fat intake on a higher fat diet when glycogen stores are low in muscle, the Metabolic Diet allows you to remain in fat burning mode, sparing muscle protein, even through the shorter higher carb phases.

The Metabolic Diet gives you the best of both worlds, variety in the foods you're allowed to eat, and maximum results as far as minimizing body fat.

Once you've adapted to utilizing fat as your body's primary fuel, you'll continue to do so even when carb intake is high over a short period of time as the body stays primed to burn fat preferentially.

Cultural Carbohydrates

First of all it's important to realize that humans can exist on almost any macronutrient mix, whether it be low fat, high fat, low carb, high carb, low protein, high protein. Your metabolism will adjust to whatever you feed your body, up to a point. So all of us, regardless of age and sex, have the ability to adjust macronutrient utilization and oxidation in response to changes in diet composition.[200,201,202,203,204]

However you have to provide your body with the four basics: enough calories, the essential amino acids, the essential fatty acids, and water. That means you have to have some protein and fat in your diet to survive.

It's interesting to note that although there are essential amino acids and essential fats, there are no essential carbs. That means we can live if we have fat and protein in our diets, but carbohydrates are almost superfluous. Lacking carbs the body can make glucose from both protein and fat (the glycerol portion of fatty acids).

So where do carbs fit in?

For most of us carbs make up a significant part of our diets. The reason is that since you tend to eat what's most available, in our agriculturally based world that means carbs. Carbs are easy to produce, inexpensive and provide a lot of calories. As such, different societies depend on foods that are most available, but not necessarily the best foods for our metabolism.

Because they're easy to get and supply needed calories, they have become a staple of every agricultural society. They're a cultural and convenience food. As such, Italians eat pasta, much of the third world eats rice, and the English speaking world eats potatoes. And we all eat some form of bread.

The Carbohydrate Dilemma

As I mentioned the Metabolic Diet, and my other diets, are phase shift diets. It's far superior to the straight low carb diets because it maximizes the response to the various hormones, including insulin. The low-carb diets have reduced the insulin response, but remember, insulin is a very anabolic hormone.

The two phases, a longer low carb phase, and a shorter higher carb phase, present different scenarios metabolically, leading to better body composition results. And because there are two phases to the diet you really don't miss out on anything, as long as you eat the foods that you're allowed in each phase. Each food has its time and you needn't ever feel deprived.

The Higher Carb Phase

The higher carb phase of the Metabolic Diet isn't a problem for anyone. In fact it allows you to have foods that you can't have on the low carb phase. For most of use it means that you can have your, breads, pizza, potatoes, spaghetti, etc. in this phase.

The Low Carb Phase

It's the low carb phase that people have most trouble with, especially people where high carb foods are considered part of the cultural tradition, and something that everyone eats every day. This is the crux of the problem of low carbing for most people.

But all is not lost even though carbs are almost a given in most people's diets and going on a long term low carb diet may seem like an impossibility given the culture and customs. Most cultures are steeped in foods that are low in carbs and many that are high in protein. The list of the foods that fit the low carb phase of the Metabolic Diet is very long indeed.

Scientific Validation

Although further studies need to be done to validate some of my theories, we've already got enough valid information to point us in the right direction.

The problem with many of the studies that have been done on low carb diets are inadequate first of all because the subjects being studied were not on the low carb diet long enough to be able to measure and assess the changes in the metabolic parameters. Secondly, there haven't been any formal studies so far looking at phase shift diets.

In the first instance, although some of the adaptive changes are evident after a few days (for example the changes in glucose metabolism) it takes a much longer period of time to become fully adapted and able to utilize the increased ability to metabolize fat as the primary fuel, to realize the increases in myoglobin, increases in IMTG, and the full abilities to be able to function almost fully aerobically and to function more efficiently anaerobically.

Expected changes in muscle secondary to the Metabolic Diet - resulting in enhanced Aerobic Metabolism, Less Reliance on Anaerobic Metabolism, and Enhanced Anaerobic Metabolism when needed:

1. Higher mitochondrial density.
2. Higher levels of myoglobin.
3. Higher activities of citrate synthase (CS - catalyzes the first reaction in the Citric Acid Cycle (also known as Kreb's Cycle and TCA Cycle) and is a measure of aerobic capacity).
4. Higher activities of hydroxyacyl coenzyme A dehydrogenase (HOAD - catalyzes one reaction in the beta-oxidation of fatty acids and is a measure of the capacity for fatty acid catabolism).
5. Higher activities of lactate dehydrogenase (LDH - catalyzes the reversible conversion of pyruvate to lactate and is a measure of muscle anaerobic capacity)
6. higher capacity to oxidize fatty acids as a source of energy.
7. respiratory exchange ratios (CO_2 produced/O_2 consumed) closer to .7 (full fat oxidation) both during rest and during exercise, which indicates that fat is the main source of fuel at rest and during exercise.
8. A greater reliance on fatty acid oxidation within the locomotory muscles spares glucose for red blood cells and the central nervous system, which are obligatory glucose metabolizers.

LDH activity is usually interpreted as an index of tissue anaerobic capacity, because it is required for redox balance during anaerobic ATP production in vertebrate muscle (by catalyzing the conversion of pyruvate to lactate).

Elevated LDH levels, as well as the higher LDH/CS in all of the active muscles may support a parallel adaptation for both sustained aerobic metabolism for muscle contraction within the enhanced aerobic muscle limit and, when needed, an enhanced ability to produce ATP anaerobically for the occasional times that the muscle power needed exceeds the aerobic muscle limit.

The greater CS and LDH enzyme activities and Mb concentrations would allow increased oxygen consumption and work performed by the exercised muscles, when oxygen is limited. The high-oxidative enzyme activities are an indicator of enhanced aerobic capacity. This enhanced aerobic capacity appears to be an adaptation for sustained, low-level metabolism under conditions of low glucose availability.

Again, while it's impossible to adequately cover even in small part the theory behind the above statements, and the anticipated effects of my phase shift diets on maximizing body composition and performance, I thought I'd cover a bit of it just to stimulate your appetite for the whole story.

Glucose Metabolism at the Start of the Low Carb Phase of the Metabolic Diet

Carbohydrate restriction alters carbohydrate and lipid metabolism, shifting energy metabolism away from glucose to fat.

On an isocaloric diet (a diet providing a maintenance amount of calories and meant to keep body weight constant) where the only modification is to replace carbohydrate calories with calories from fat and protein, there are changes in whole body carbohydrate oxidation, glucose availability, endogenous glucose production, and peripheral glucose uptake.

Some of the changes, especially in the first few days, are similar to the changes seen in the first few days of fasting/starvation[205] (indicates perhaps that low carbohydrate availability may be a stronger metabolic regulator than a negative energy balance) and are meant to prevent hypoglycemia and keep critical levels of glucose available for specific tissues, especially red blood cells (RBC) and to some extent the central nervous system.

RBC are obligatory glucose users since their only means of producing energy for vital functions is through anaerobic glycolysis since they don't contain mitochondria. As such they metabolize glucose through glycolysis with the production of pyruvate and then lactate which they export for other tissues to use.

Other than RBC there are no other tissues that absolutely need glucose to survive. The brain can metabolize a variety of substrates besides glucose, either directly or through the astrocyte-neurone nutrient shuttle, including lactate (a preferred substrate even over glucose and produced by RBC, muscle, and astrocytes), fatty acids, ketones, glycerol, and amino acids, especially alanine, glutamine and glutamate.

The first few days of carb restriction results in the utilization of stored glycogen in both the liver and muscles, the formation of glucose from other substrates such as lactate, glycerol, and amino acids, an increase in the formation of ketones and their use by most tissues in the body including the brain and muscles, and an increasing reliance on free fatty acids.

A recent study looked at the metabolic effects of short term carbohydrate restriction over a one week period on endogenous glucose production and uptake and whole body oxidation, without the confounding influence of weight loss or negative energy balance.[206]

The study found that in the face of dietary carbohydrate restriction, adaptations in the uptake and oxidation of carbohydrates help prevent hepatic glycogen depletion and maintain plasma glucose concentration. This consisted of a reduction in endogenous glucose production and systemic glucose uptake. However, the reduction in whole body carbohydrate oxidation exceeded the reduction in systemic glucose uptake so that the nonoxidative rate of glucose disposal actually increased in the postabsorptive state with carbohydrate restriction.

This adaptation can help prevent liver glycogen depletion and thereby may play an important role in preventing hypoglycemia when dietary carbohydrate availability is very low.

There are a lot of interconnecting aspects of the diet that need to be discussed. However, without going into much detail suffice it to say that restricting daily carbohydrate intake to very low levels reduces hepatic and muscle glycogen content and increases hepatic glycogenolysis, while at the same time decreasing glucose utilization.

The combination of reduced insulin concentration and increased fatty acid availability contribute to the increase in gluconeogenesis and the maintenance of hepatic glycogen levels and hepatic glucose production (although both are lower than on a higher carb diet).

The end result is that systemic carbohydrate availability is maintained and because the decline in carbohydrate oxidation is greater than the reduction in glucose uptake, a larger proportion of glucose taken up and produced endogenous by gluconeogenesis, is converted to glycogen rather than being oxidized.

Since the energy status of an individual is one important factor that influences the partitioning of ingested lipid and carbohydrate between oxidation and storage, it's important to go through the metabolic switch from carbs for fats in an eucaloric state for a period of time, in most cases more than 10 days, before cutting calories to lose weight and body fat.

The Metabolic Diet is a phase shift diet with specific periods of carb restriction followed by shorter periods of carb refeeding. These periods cycled for long periods of time result in significant ongoing anabolic and fat burning effects that in turn allow you to maximize body composition and improve performance.

Since carb restriction is connected to some aspects of fasting and starvation, it's important to consider studies that look at these conditions. For example a relatively recent study looked at the changes in *1*) nutrient oxidation and nutrient balance and *2*) the circulating substrate and hormone environment in response to refeeding a normal mixed meal after a 72-h fast vs. an overnight fast (13 h).[207] This study was performed in a group of normal healthy men.

The results were as follows:

- Carbohydrate oxidation after the 13-h fast plus meal was significantly greater compared with after the 72-h fast and postprandial fat oxidation was significantly greater after the prolonged vs. overnight fast.

- Even though carb oxidation was greater after the short fast, the increased carb oxidation actually produced a negative carbohydrate balance (more was used than was taken in) while the longer fast resulted in a positive carb balance (less was used than taken in resulting in increased glycogen stores).

- Fat balance was negative under both conditions but more so after the 72-h fast plus meal than after the 13-h fast plus meal.

- Premeal levels of glucose and insulin were significantly reduced after the 72- fast vs. 13-h fast, whereas FFA, glucagon, cortisol, norepinephrine, and β-HOB were significantly increased.

This study demonstrated that both the nutrient balance and the substrate and hormone response to a normal mixed meal are profoundly affected by the duration of fasting. Compared with an overnight fast, 72 h of fasting resulted in a significant reduction in postprandial carbohydrate oxidation but a significant increase in fat oxidation.

The findings of this study are similar to finding with carb restricted diets since the shift from the low carb phase to the higher one keeps the status quo for a period of time even though substrate intake as far as macronutrient ratios has changed dramatically.

Again, there are many other aspects to my phase shift diets that while outside the context of an article, even one this lengthy, need to be discussed in order to understand the diet and what it has to offer.

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As a final example I'll mention post exercise nutrition.

Post Exercise Carbohydrates Are Counter Productive

The usual advice is that carbs, with some protein thrown in, are a necessary part of post exercise nutrition regardless of diet that you're following, including a low carb diet.[211,212]

That's not true. In fact keeping the use of carbs post training can be counter productive and keeping it low carb can have added anabolic and fat burning effects.

That's because the intake of carbs after exercise blunts the post exercise insulin sensitivity. That means that once muscle has loaded up on glycogen, which it does pretty quickly on carbs, insulin sensitivity decreases dramatically.

As you know this statement runs counter to present thinking and research about post exercise nutrition. As such, let's take it step by step so that I can make my reasons for the above statements clear and easier to understand.

First of all it's well known that a single session of exercise increases insulin sensitivity for hours and even days.[213,214]

It's also known that a bout of resistance exercise results in a significant decrease in glycogen and that total energy content and CHO content are important in the resynthesis of muscle and liver glycogen.[215]

Glucose uptake and glycogen synthesis are enhanced in the presence of insulin following an acute exercise bout that lowers the muscle glycogen concentration and activates glycogen synthase.[216,217]

Muscle glycogen concentration dictates much of this acute increase in insulin sensitivity after exercise.[218] Therefore, an increased availability of dietary carbohydrate in the hours after exercise and the resultant increase in muscle glycogen resynthesis reverses the exercise-induced increase in insulin sensitivity.[219]

Along with glucose uptake, amino acid uptake and protein synthesis also increase. As well, the use of fatty acids as a primary fuel also rises after exercise since glycogen resynthesis takes priority to the use of glucose for aerobic energy.

However, as liver and muscle glycogen levels get replenished, insulin sensitivity decreases, AS DOES amino acid uptake, protein synthesis and the use of fatty acids as a primary fuel.

By increasing insulin levels and not providing carbs you shunt your body's metabolism to the use of more fatty acids for energy while at the same time keeping muscle glycogen levels below saturation and amino acid influx and protein synthesis elevated for a prolonged period of time post exercise.

This increased capacity for glycogen synthesis, and everything that goes with it, can persist for several days if the muscle glycogen concentration is maintained below normal levels by carbohydrate restriction. By keeping carbs low and protein and energy high after training, you can increase protein synthesis over a prolonged period of time and get long term anabolic effect.[220]

The bottom line is that the key to maximizing body composition, and to increase performance in fat adapted athletes is to keep carbs low and energy and protein intake high for several hours or even more after exercise.

There are also reasons for fat adapted athletes to keep carb levels low before and during exercise but those are topics for another article.

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