

*Five
Last
Acts*

The safe and dignified ways that people use
to end their own lives when faced with
unbearable and unrelievable suffering

2nd edition, expanded and revised

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Five Last Acts

Dedicated to Virginia Woolf, (1882 – 1941)

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Saying 'goodbye' is often another way of saying 'I remember.'

Anon

It is only in full and uncompromising awareness of our own mortality that life can take on any purposeful meaning.

Martin Heidegger

There is but one freedom,
to put oneself right with death.
After that everything is possible.
I cannot force you to believe in God.
Believing in God amounts to coming
to terms with death. When you have
accepted death, the problem of God
will be solved – and not the reverse.

Albert Camus

Helium

Story – what you need – main features – general description – what is the evidence for helium? – how quickly does it work? – are there any unpleasant side-effects? – checklist – references & diagrams

Frank's story – a typical scenario

Frank had made his preparations well ahead of time. In the garage was a cupboard that was always kept locked. He and Miriam had always had their own hobbies, part of their lives they kept separate, and no-one ever asked what it was that he had behind that door. Miriam knew he believed in 'self-determination', in the right to end life at a time when it felt right. One evening he had brought the subject up over dinner.

"I'm going to this Exit workshop next Thursday," he mentioned casually. He had been a member for many years now. "You have a good day out", she replied. "You might want to stay over – I'm playing bridge that night anyway."

Frank enjoyed the workshop – it was not only a chance to find out the details he needed to know but he was able to chat to like-minded people. The next day, he discussed some of the ideas he had formed with his wife so that she would not be shocked if the fateful day ever arrived. He also wrote a 'last wishes' statement that he could leave in the event of his death, saying how everything was by his own hand and that it was what he had wanted. Then he went on the Internet and ordered what he needed. It was easy to find companies that supplied party balloons and the disposable helium tanks to fill

them. He ordered two, just to make sure. Then he made a shopping list – plastic tubing, some hose clips, a ‘T-junction’ connector. He checked in the garage to make sure he had a flat screwdriver. In the kitchen were some strong scissors he would use to cut the tubing. The first hardware store he went to didn’t have any poly tubing, but the larger one on the edge of town supplied him with everything he needed. It was all in the ‘home-brewing equipment’ section.

The following week, it was Miriam’s turn to play bridge at her sister’s, so Frank set aside the evening to put the equipment together and familiarise himself with it. The tanks of helium were quite light and could be lifted with one hand, but they would still need somewhere to be stored, so he cleared out the large garage cupboard. He unscrewed the valve from each tank then checked the tap on each, releasing just a small spurt of gas so he knew how much strength was needed to open and close it. Then he fitted a length of tubing to each – he had bought more than he needed in case he made a mistake, but it was quite straightforward. He connected the tubes from each tank by means of the T-junction – they were a good tight fit – leaving the third opening for the tube that would go to a plastic bag.

When he had been in the store, Frank hadn’t been quite sure if the poly tubing he chose would be a good fit for the outlet on the helium tanks. He had bought the diameter of tubing (and matching T-junction) that seemed the closest, but also purchased half a dozen hose clips to make them extra secure if need be.

Frank had obtained a sturdy transparent plastic bag, the opening of which he had elasticated in the way he had practiced at the workshops, using ordinary elastic and masking

tape. He had also fixed the end of a longer piece of tubing to the inside of it using adhesive tape. This tube was long enough to lead comfortably from head height (when he was seated in a nearby chair) to the T-junction.

Before making the final connection, Frank tested the bag again for comfort. It wasn’t a tight fit – it didn’t need to be, as air would have to escape from the bag as the gas pushed it out. He checked that the last piece of tubing, the one attached to the inside of the bag, was plenty long enough to easily reach the T-connection. He also checked he could reach the helium taps from his seat. Then he removed the bag.

When it came to the final part of his dress rehearsal, Frank knew he must take care. Helium acts very quickly, so he could not open the taps while the bag was over his head and all the tubes connected, but he had gone through all the separate stages. The taps worked fine, the bag was comfortable in use (he particularly liked the clear plastic) and the tubes were all the correct length. He made the final connection, fitting the tube from the bag to the T-junction securely, then carefully pushed the assembled equipment into the garage cupboard and locked it.

Each year or so, Frank would re-read the literature, get the equipment out and remind himself of how he would use it. One year, he found that with advancing age he had less strength in his hands for turning the gas taps. Always keen on gadgets, he and Miriam had a couple of devices for turning taps with ease. The one he liked had a good firm handle with an easy grip. It fitted over any tap (like the small one on the helium tank) and made it easier to turn them. It was easy to get a spare one and keep it the cupboard.

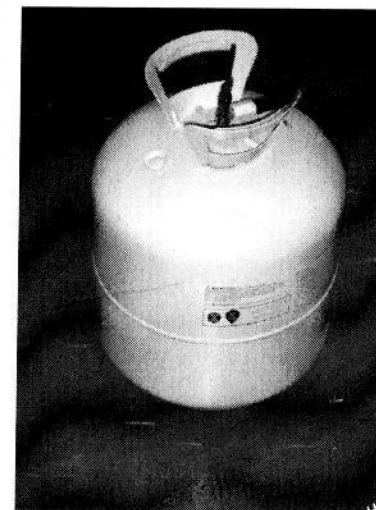
It was some years later when Frank realised the time was getting near. He and Miriam had many times discussed dying and understood each other's wishes. Under English law, even if a person ends their life with their own hand, a loved one cannot be in the room at the same time. On the day, Miriam spent the afternoon walking in the park.

When he was alone, Frank pulled the equipment out and got himself comfortable. It took a bit longer these days as it was less easy to get about than it had been. He had only had a very light breakfast, wanting to leave his departed body in a way that would cause minimum mess. He sat in the chair for a little while, contemplating his decision and with some of his favourite Chopin playing softly in the background. A book of his favourite poetry lay in his lap. He also knew that, although this was the perfect opportunity, he could change his mind if he wanted to. But he didn't. His illness was too far advanced and at his last check-up he had asked enough explicit questions to know that, even if he could be kept comfortable in hospital, it was not possible to prevent further deterioration. He left a last loving note to his wife, and also a note to whoever it might concern explaining his actions, how they were entirely his own and well-considered. A book of poetry rested on his lap. He put the last nocturne on 'repeat.' He positioned the bag over his head so the elasticated part was like a headband and squeezed out most of the air. As the gentle piano music rose, Frank reached across and turned on both helium taps quickly in succession. The bag filled with helium. Frank took a last breath then with a whoosh expelled the air from his lungs and immediately pulled the rim of the helium-filled bag down over his face. Within seconds he experienced a light-headed floating sensation as he started to faint. The last thing his eyes took in were a couple of lines from Walt Whitman . . .

What you need

- A tank of helium - or preferably two (about £45 each from party balloon supply companies)
- some poly tubing
- an 'equal-T' connector (if using two tanks)
- Five hose clips (clamps) – optional
- A screwdriver if fitting the clamps
- Some fairly sturdy scissors to cut the poly tubing
- A sturdy plastic bag
- Adhesive tape and elastic

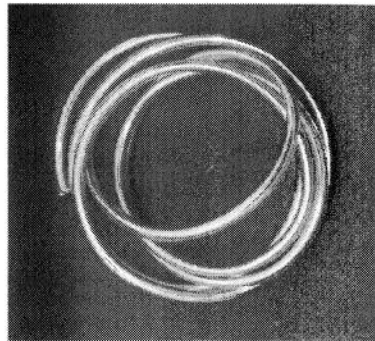
Helium – you can find companies on the Internet by searching for 'helium balloons' or in yellow pages under headings such as *Parties* or *Balloons*. (As companies change from time to time, there is little point in giving addresses but they are certainly not difficult to find.) If you order by credit card over the Internet, it also avoids the need to speak to anyone personally but these companies generally are not suspicious of people buying kits of helium and balloons. Some companies have two products – disposable tanks which are lightweight and sold; and larger, heavier tanks for bigger parties that are only rented. Buy the disposable ones. They will be sent by courier. When the tanks arrive they have a valve to make it easier to attach balloons while inflating them. On all the tanks I have come



Large disposable tank of helium as supplied for filling party balloons

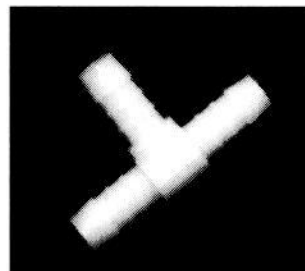
across, this valve can simply be unscrewed, but if this isn't the case you need to remove it forcibly. Once the valve is off, the helium can be released from the tank simply by opening and closing the tap.

Poly tubing – this is sold for various purposes including home brewing, aquariums and garden water systems. It comes in various diameters and you need some that will fit fairly snugly over the outlet on the helium tank. The first time I bought some, I



didn't want to walk around the home-and-gardens store carrying helium tanks and hadn't measured it, so I judged it as closely as possible and bought two different diameters and matching T-connectors. When I got back, I found one was a good tight fit (but needed a bit of pressure to fit), whereas the slightly larger one would need hose clips to secure.

An 'equal T' connector – this is simply a hard plastic piping connector with three outlets. It's sold at the same place as the tubing so you can get a T-connector of the right diameter made specifically to fit.



An equal T connector can be used to join two tanks

Five hose clips – if the tubing is a good fit, you won't need these, but if it is even slightly loose they are a good precaution. You place them on the tubing *before* you fit the tubes over the

outlet or T-connector then tighten them with a screwdriver. (It may be easier to hold the hose clip steady using a wrench in one hand and the screwdriver in the other.) If you think you might want them, maybe get slightly more than you need in case you damage one – they can be slightly fiddly to tighten. Someone at a workshop suggested using strong adhesive tape or duct tape to secure the tubes once they were fitted. If you do this, do check it from time to time in case the tape has deteriorated and needs to be replaced (the same goes for any tape holding the tubing to the bag).

Plastic bag – the bag you use with helium does *not* have to be very large. It is simply a way of ensuring the helium stays around your mouth and nostrils for a few moments. A sturdy one, such as a large roasting bag, will ensure you don't accidentally damage it on the day. A transparent one is pleasant as you can see out, and looks less morbid to those finding you. It *does* need to be big enough to allow the air to circulate freely. (The bag is very different in size to the one usually used for the *Plastic Bag and Drugs* method.)

Adhesive tape and elastic – tape is needed to prevent the smooth poly tubing from slipping out of the bag. Elastic for securing the bag in this method can be ordinary elastic, about a quarter of an inch wide. The bag does not need to be a tight fit around the neck and the elastic is simply to keep it in place. Any adhesive tape can be used. Micropore tape as sold in chemists is easy and convenient to use.

Main features

Helium provides a totally painless and reliable way to end one's life. Some preparation is needed, as well as basic skills and physical mobility to put the equipment together. Additionally, it requires a safe place to store the assembled kit until

time of need and sufficient privacy to put it into effect. In the unlikely event that the person was disturbed and 'rescued' at a critical moment after losing consciousness, some brain damage could have occurred (as with any other method of asphyxiation, such as drowning). So make sure you *won't* be disturbed!

General description

Helium gas is released into a small bag over the head, displacing the air inside the bag. Breathing continues normally, but the lack of oxygen means the brain is rapidly starved and shuts down, causing death. The presence of helium in the body (for instance in post mortem) is very difficult to detect. Unconsciousness is swift, and there is little discomfort from the carbon dioxide build-up that would normally occur from use of a plastic bag alone.

What is the evidence for helium?

Helium is an odourless, tasteless, colourless, non-toxic gas that is lighter than air and fairly readily available. The 'helium method' was developed by researchers in Canada and the United States and has become an increasingly common method of choice in 'rational suicide' or 'self-deliverance' over recent years. In the UK alone, according to a report by St George's University of London and funded by the Department of Health, there were 25 helium-related deaths in 2008, an increase from ten in the previous year. It is impossible to survive without oxygen, and helium simply provides a way of displacing oxygen while simultaneously providing a comfortable environment.

How quickly does it work?

Loss of consciousness occurs very rapidly, as with any other method of asphyxiation such as drowning, choking, or

hanging (though without the unpleasantness of those methods). Inert gas is used by vets for putting animals to sleep. In experiments, animals (dogs, cats, rabbits, mink, chickens) showed little or no evidence of distress from inert gas asphyxia, become unconscious after one to two minutes, and die after about three to five minutes. Make sure you will not be disturbed for 30 minutes, just to be sure.

Are there any unpleasant side-effects?

None known.

Checklist

- Check that assembled equipment is in good order and that you can operate the helium tank taps. You should be familiar with their action, so you can turn them easily, quickly, and to an extent that achieves a steady flow rather than sudden, high-pressure gas.
- Check that you will not be disturbed.
- Leave a note for whoever finds you explaining your last act.
- Exposure to atmospheres containing greatly reduced oxygen (increased helium) can bring about unconsciousness without warning; for the sake of those who may find you, you may want to ensure the room is well ventilated – although the amount of helium, which rises and quickly disperses in the atmosphere is very unlikely to present a danger to others unless you are in a very tiny enclosed space. There have been deaths, for instance, when persons stepped inside a giant helium balloon (the sort used for advertising), but a small canister of helium dispersing into the air is not likely to pose a threat.
- Variations on the method (instead of using a plastic bag) include use of a gas delivery mask (such as used in hospi-

- tals) or a sealed tube tent. If an oxygen mask is used, this is designed to mix the gas with air, so must be modified.
- Nitrogen, or any other inert gas, could be used instead of helium, but is harder to obtain. Rubber tubing could also be used instead of poly tubing. Body bags or mountain survival bags (some with clear view panes) are also adaptable options and can be purchased online.
 - Exit suggests following the helium hood method described in this chapter as closely as possible. But not to the point of obsessiveness. As long as the nose and mouth are surrounded by helium long enough for death to occur, the rest is rather like icing on a cake. To underline the simplicity of the method, we'll also describe how a man used helium to end his life in Switzerland with materials obtained the same day and without any preparations. But why not do it as well as you can and with the best possible safeguards? Let us look at the method in detail.

Helium uncovered – everything you need for self-deliverance

Helium has become the number one method of self-deliverance world-wide. It probably vies with all other methods combined. Materials are relatively easy to obtain, no drugs are needed, and it is entirely painless, swift, and certain. This present guide builds on existing knowledge worldwide, shares tips developed from the workshops, as well as the latest ideas analysed and evaluated. But even if it is the most popular, it won't be suitable for everyone. The main reason for this is that a person's circumstances can change unexpectedly, whether due to illness, infirmity or living arrangements. For this reason, it will still be best to familiarise themselves with several methods of self-deliverance.

This section will include:

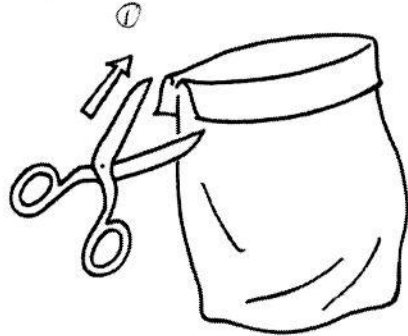
- Making a helium hood. How to adapt a bag to make a hood in which to breathe the helium, which will result in death after a few moments.
- The 'scrunch' method. A particularly effective way of self-deliverance using helium that minimises even slight possibilities of momentary discomfort.
- Where to buy things - and we review some of the 'gadgets' available worldwide.
- How to store your equipment discreetly.

Making a helium hood (diagrams 1 – 5)

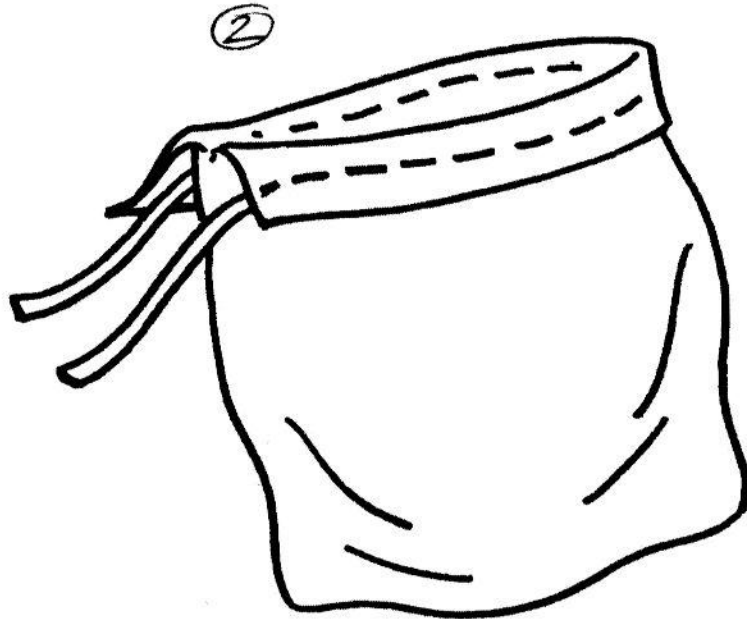
Making an elasticated bag yourself to use with helium is not a difficult or complicated business. Exit Workshop participants usually make one in the space of a few minutes. A variety of materials can be used to make the elasticated hem. The simplest method, described here, involves some ordinary thin elastic, micropore tape to seal the hem, and an optional toggle to adjust tightness.

Start with a large roasting bag, elastic, and adhesive tape. Use a bag that is about 24" long and wide enough to fit comfortably over the head. These roasting bags or 'oven bags' are strong, see-through bags available from some supermarkets or shops such as Lakeland. It should be large enough to fit comfortably over your head and down your neck. It doesn't need to be larger than this – a large bag could take too long to fill with gas. The open end of the bag is folded inside out for about an inch (like a trouser-leg turn-up). A cut is then made in this hem (*diagram 1*). Don't cut through the main part of the bag, just the hem. When you have placed or threaded the elastic in the hem, that small cut will enable you to tape the elastic into

the hem but still leaving an opening to make a sort of draw-string, or at least pull the ends together and knot them.



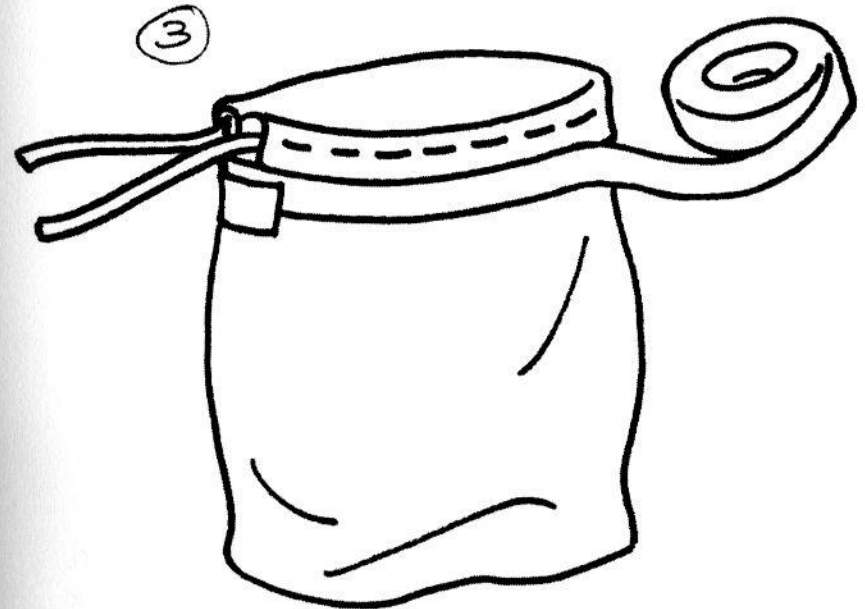
Thin elastic (eg approx '4-cord' thickness) is placed in the hem seam, and the seam sealed with tape (*diagrams 2 & 3*). You will



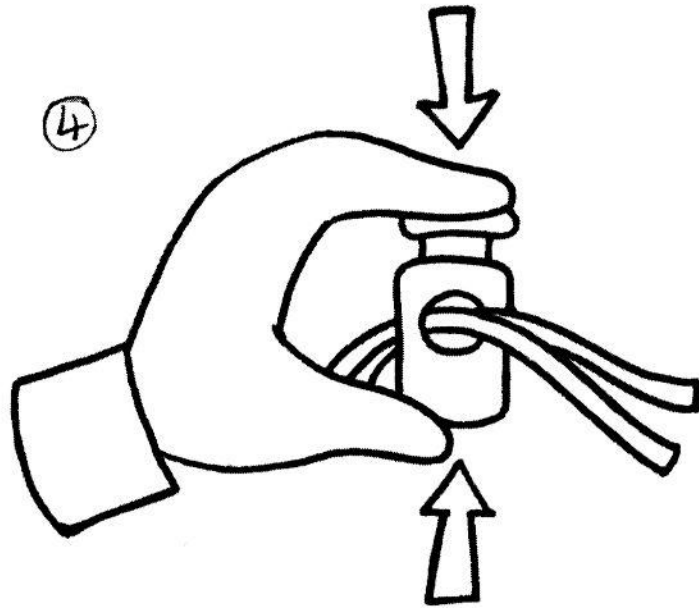
probably find this easiest to accomplish if you lay everything out on a flat smooth surface such as a table. Remember, tape the hem (cuff) shut: don't tape the bag shut! If you have difficulty keeping the elastic in place long enough to tape down the hem, you could do it another way: simply tape down the hem first, and then thread the elastic through it by attaching one end to a large (closed) safety pin while you pass it along the closed seam. (This way is a bit like threading a belt.)

Whichever way you do it, it's not rocket science. Make sure your bag looks similar to the one in diagram 3. You can also strengthen the bag underneath the cut, running the adhesive tape under the opening and under the free ends of the elastic.

You can use any sort of adhesive tape. Some brands may deteriorate in time. Micropore is good – an adhesive paper



tape sold at chemists for dressing small wounds. Masking tape (as used for decorating) is also a good alternative. But the bag-making process is simple enough: not only will you maybe have two or three attempts in order to get a result that looks tidy, but you should find yourself pretty expert after you've made one. So if you need to make a fresh bag a few years later (if it has been stored for a long time) then you can whip one up in a few moments. (Don't leave it until the last minute though – just in case your fingers are less nimble one day!)



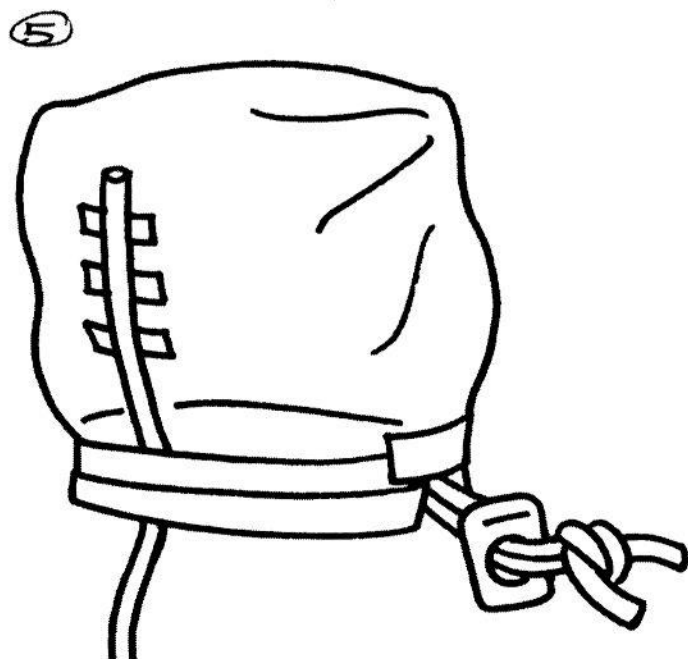
A small toggle may be used to adjust the tension (*diagram 4*). This is not essential – you can just knot the ends of the elastic after a bit of experimentation to find the correct tightness.

These toggles are available from outdoor adventure suppliers or good habershers such as John Lewis. Or you might even use one from an old anorak. Squeeze the toggle to open it, finger pressure holding it open as you pass both ends of elastic through the opening.

The elastic does not need to be tight. Experiment and knot the free ends of the elastic so the bag closes around the neck but can still be slipped on and off. You may find a toggle makes this easier, as you can adjust the tension. Or you may prefer it without; either is fine.

Once the ends of the elastic are tied (with or without the toggle attached first), a long piece of tubing is fixed inside the bag so the end of the tube is well up inside the bag (*diagram 5*). The end of the tubing should be near the top of the bag when it is worn, to quickly push any air out of the bag. Attaching adhesive tape to the inside of a bag can be awkward. It tends to stick to whatever part of the bag it touches. To overcome this, turn the bag inside-out for a few moments while you attach the tubing.

This tubing has to fit either the nozzle of the helium tank, or the similar-sized T-junction, so you may want to leave attaching the tubing until later when you have the other pieces of equipment that we will discuss in a moment.

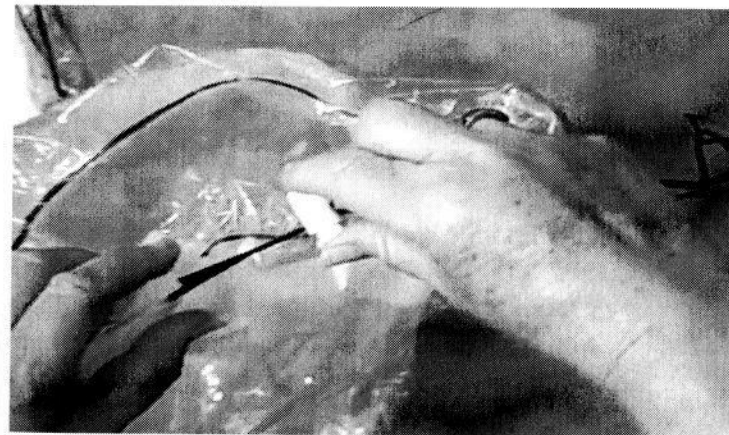


Variations Some people may also prefer to sew a wider strip of elastic to the bag itself, instead of using tape. If you decide to do this, remember to stretch the elastic as you sew, otherwise it will not 'close' the bag. Do this by stretching the bag and elastic over a cereal box.

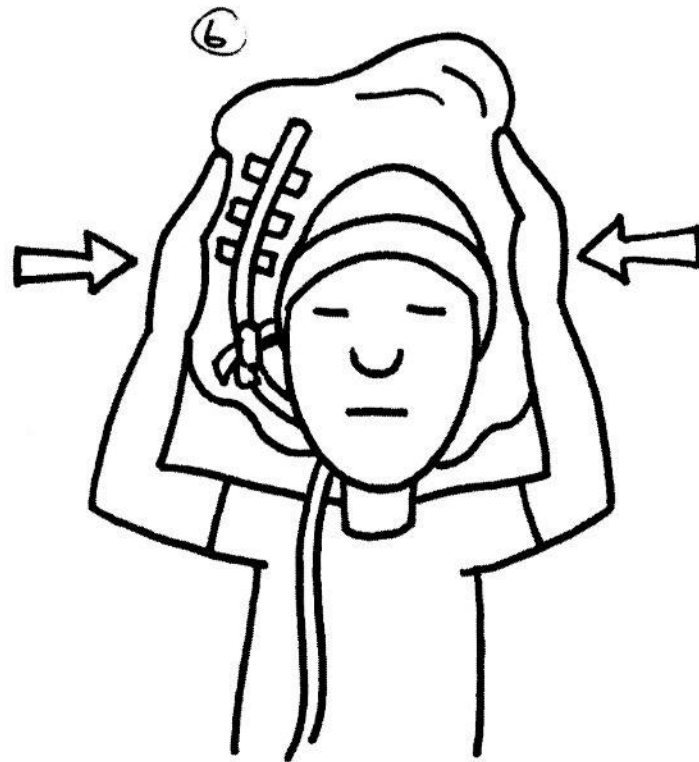
Another variation is to use a Velcro strap which attaches to itself (available from shops such as the larger hardware stores such as B&Q). The advantage of making a bag beforehand with an elasticated opening avoids the problem of managing bag, rubber bands and tubing, pulling them over the head and making sure everything is in place. Even if an elasticated bag is not used, tubing should be securely attached so it won't slip.

Some people will find this explanation rather wordy. But bear with us. Others people like things explained in a detailed way. Not all of us are equally alert either as our age progresses. So we have tried to avoid the writing style of technical manuals. The aim is to transfer an *understanding* of the mechanics. Small variations are not critical – it's a case of finding what you are comfortable with. Let's go over some details.

The helium 'scrunch' method The most obvious way to use helium for self-deliverance is to arrange all the equipment with the bag over the head and slowly open the gas taps. The 'scrunch' method is a refinement that involves first putting the bag onto the head like a shower cap. The elasticated edge is around the forehead at the front, and nearer the neck at the back. With the bag in position like this, as much air is squeezed out of the bag as possible, using both hands. Then the helium is turned on and the bag quickly fills with gas. When it is full of helium, exhale fully and then quickly pull the bag down completely over the head and face (diagrams 6-10).



A participant at a workshop in Manchester makes a 'helium hood' out of a roasting bag, elastic, Micropore tape and a small trachea.



There are some distinct advantages to this method. It allows a slight margin for turning the taps on and adjusting them. It means that any air in the bag is greatly reduced from the start, rather than just being pushed out by the helium. The chance of inhaling a mixture of air and carbon dioxide can therefore be reduced to a minimum. Carbon dioxide causes hyperventilation and might account for any momentary distress exhibited by only one or two isolated persons who turned the taps on only when the bag was fully over the head (a sudden feeling of claustrophobia or last minute nerves is also a

possible explanation). The evidence for the advantages of the scrunch method are not, on careful examination, overwhelming as other reasons can't been firmly ruled out. Did the person just experience a last minute panic? Were they using a very large bag with a lot of air? Was the gas flow insufficient? But as there are still some unknown factors, it is probably better to be safe than sorry, so the scrunch method seems a very plausible precaution. One should be seated in an armchair (or lying down) so that one cannot fall over, and the tank should be secure — either in its box to stabilise it and/or fastened to the chair with an elasticated bungee cord strap such as used for fastening luggage. Occasionally some small jerking is reported at death or just before, so the possibility of accidentally knocking the cylinder over or dislodging the tubing is to be avoided.



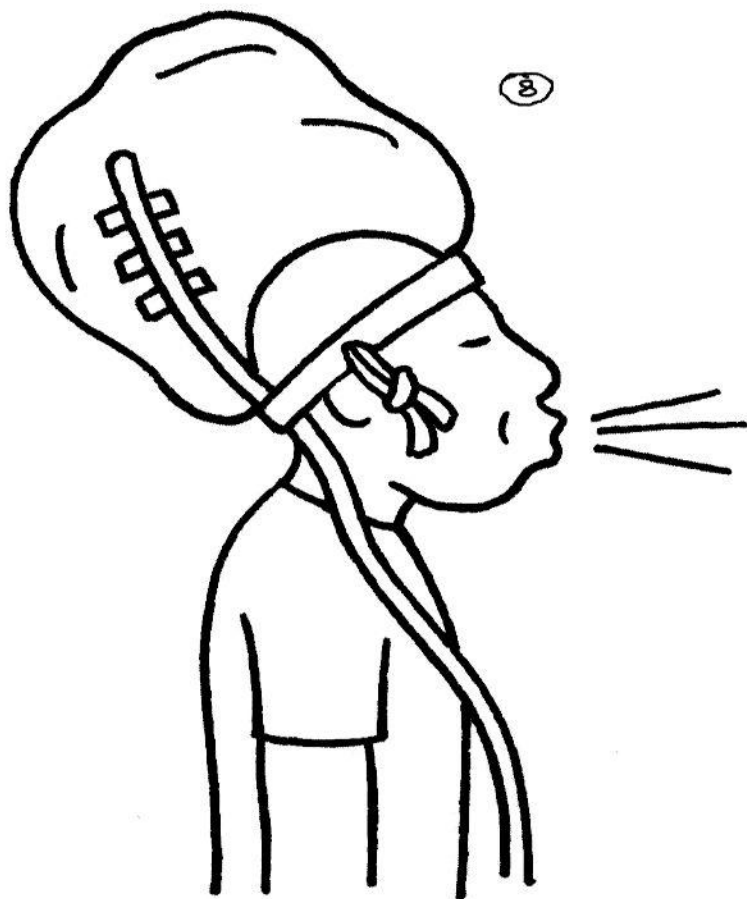
Diagram 6: Place the elasticated hood on the head as if it were a shower cap. The elasticated edge is on the forehead at the front of the head, and at the neck at the back of the head. Any long, loose hair is tied back in case it gets in the way. 'Scrunch up' the bag with both hands, pressing all the air out of it until flat against the head.

Diagram 7: Open the gas flow so there is a steady, gentle, but clearly audible flow of helium. Wait until it has inflated the bag. Note that

the bag is not covering the face at this stage.

(Well before you do this, or connect the tubing, experiment *briefly* with the helium tap, just by switching it on and off again very quickly. Both to make sure it is not too stiff but also to accustom yourself to the gas flow. This will be part of your 'dress rehearsal' – not just before you use the helium for self-deliverance.)

(Diagrams 8, 9 & 10): Exhale forcibly, then pull the hood



down swiftly. Breathe normally. Death will occur minutes later (consciousness is lost in anything from 20 to 90 seconds).



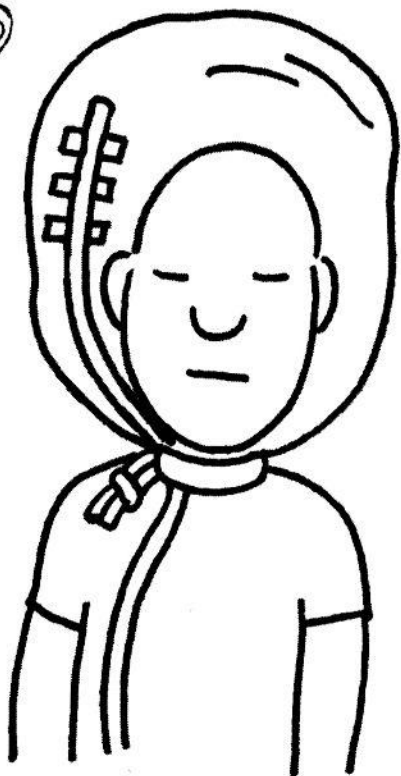
Fitting the tubing: Attach the longish piece of tubing to the inside of the bag. It needs to be a metre or two long — sufficient to comfortably reach the helium tank at the side of the armchair, or the T-connector. The width of the tubing is about 10 mm. It helps to turn the bag inside out while fixing the tubing

in place. In the UK, poly tubing is most easily obtained in person from a home-brew shop (such as Edina Homebrew, 14 Elgin Terrace, Edinburgh EH7 5NW. Their web address is www.edinahomebrewshop.co.uk, although it may not be not ideal for Internet ordering). Addresses of suppliers are both numerous and frequently changing, but as a further example, one member wrote in after a workshop with her 'shopping' successes: "Helium tank (disposable) from Click4 Limited via Internet (£32 for tank); PVC tubing (3/8 inch bore x 1/16 inch width) from Hardware Shed Ltd via Amazon.co.uk (£1 for 3 metres). This size of tubing fits the Click4 Ltd tank

exactly. Bag: made from pack of turkey roasting bags bought from Lakeland, Micropore from Boots, and elastic and toggles bought from local haberdashers. The bags may be the most expensive after the helium – one person paid £8 for a pack of 50.

Individual shops may not always have the correct size of tubing in stock, so you may need to shop around or modify the gas nozzle (see *adjusting helium tank nozzle width*, below). Buy your helium tank *first* so you have an idea of the correct width of tubing. If in doubt, buy more than one sort of

10



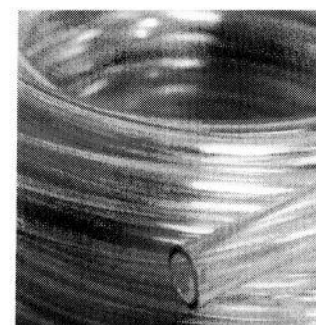
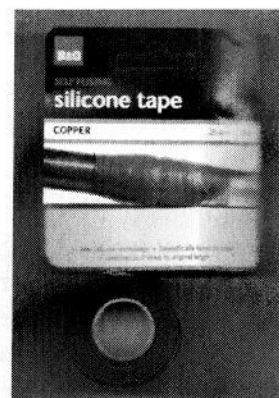
tubing. You will need between three and five metres if you are using two tanks.

Adjusting helium tank nozzle width

If you buy an expensive ready-made helium hood, say from the GLADD Group, it comes with tubing of the correct size to fit most disposable helium tanks. If you are making your own, you may find it harder

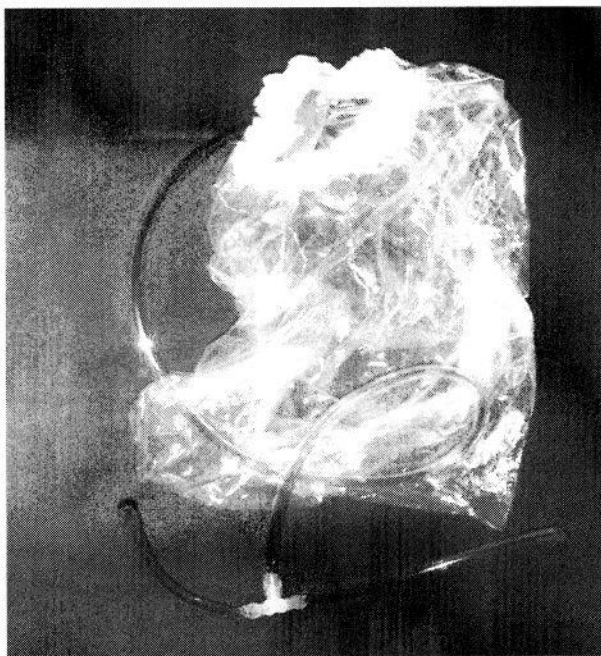
to get the exact fit. The larger B&Q superstores, as well as home-brew shops specialising in materials for making beer and wine at home, sell a size often referred to as 12.5mm. This provides a looser fit which needs adjustment. To make the fit tight when there is a discrepancy between the nozzle size and the internal diameter of your poly-tubing, you will need some 'self-fusing silicone tape.' This is available from B&Q stores and plumbers' supply shops. If you can get '10mm' tubing, this is the best. But 12.5mm provides a good fit if you increase the nozzle width with self-fusing silicone tape. This tape is typically used to fix leaky pipes. It is not sticky, but bonds to itself. Cut a few inches of silicone tape from the roll. If it's the wider 25mm-wide tape, cut it in half lengthways first so it is not much more than 10mm wide. Stretching the tape slightly as you use it, wind it around the metal nozzle of the helium tank. Try your 12.5mm tubing and see if it is a good fit. Further secure your tubing with a hose clip or some duct tape.

Quoting precise differences in tube widths might be useful for the technically minded (if all suppliers measured in the same way) but less useful if you do not have a micrometer, or you



If your tubing is not a perfect fit, you can adjust the width of the nozzle to fit the tubing using self-fusing silicon tape, as used by plumbers.

happen to be dealing with a home brew shop that judges tubing by looking at it with the naked eye. Which is why we suggest, buy what looks close until you get a good fit. If you need to make a slight adjustment, silicone tape works a treat. If the tubing is a bit too tight, some (not all) tubing can be softened slightly by running it under hot water first.



Example of a ready-made helium hood kit (Gladd bag)

Other third-party products

Exit members are maybe unlikely to need these items. A bag is easy to make yourself, and flow control, over and above just opening a tap, can be readily adjusted using a tap turner of the type considered presently. But a Gladd Bag (address below) is very serviceable if you don't wish to make your own. The new address replaces that of the old suppliers (who have retired)

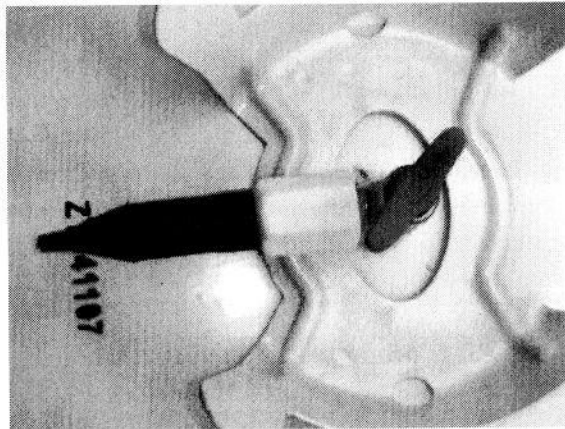
but the cost is quite considerable for a piece of kit you can easily make yourself. Another talked-about product is the Flow Control Kit, but we would point out to anyone thinking of buying both that the sizes have on occasion not been compatible. You would need to adjust the size of the tail outlet on the Flow Control Kit to make it fit the poly tubing that comes with the Gladd bag. The Flow Control Kit has been engineered to be used with a much narrower tube. You can adjust the outlet size with self-bonding silicone tape. Or buy nebuliser tubing – which does fit the 'kit.' Death by helium inhalation is essentially a simple business, and while the Gladd bag gives an option for someone say, who might have extremely arthritic hands, the Flow Control Kit, in the opinion of this author, is an unnecessary addition. Impressively expensive products will appeal to some, but readers are advised not to be dazzled or intimidated by technology and information overload. (To keep things in perspective, read the *Simplicity Itself* section, below.)

If you want a ready-made helium hood (Gladd bag), these are currently available (at the time of writing) from: GLADD Group, 3755 Avocado Blvd # 166, La Mesa, CA 91941 USA. It is an elasticated bag for use with helium and with tubing attached (ready to connect to two helium tanks). The \$60 USD charge includes postage and discreet packaging but does not include helium. The tubing is the correct size to fit directly onto the helium outlet (once the balloon valve has been unscrewed and removed). The Gladd bag complies with this book's recommended size (see below).

The Flow-Control Kit is promoted by an Australian group which also uses the 'Exit' name ('Exit International') and which causes some confusion in view of its occasional high profile activities in the UK. Exit International has also run

workshops from time to time in the UK, although the feedback is that they are not as extensive as Exit's full-day and two-day interactive workshops. Many of Exit International's workshops have been cancelled at the last moment due to local complaints and venues withdrawing permission. While this may or may not have certain political value, it does not directly help those who need the information. For this reason, Exit's workshops, in contrast, are low-profile and advertised almost solely via its membership rather than the newspapers. Exit International is not connected to Exit ('Exit' as referred to in this book, based in Edinburgh, Scotland, and pioneers of self-deliverance manuals from 1980 onwards). Exit International have however contributed strongly to keeping the issue of euthanasia in the public spotlight.

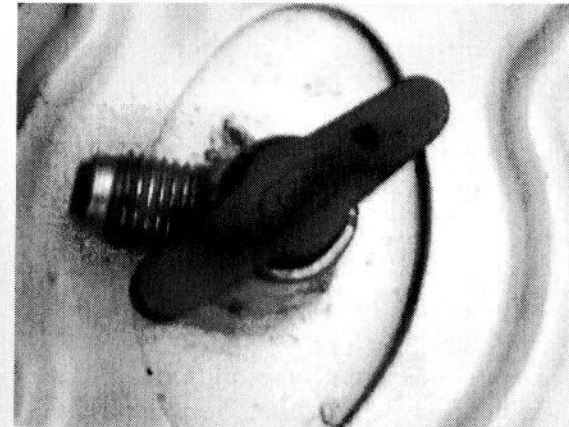
Bag sizes for helium When looking at the size of bag used, a few points are worthy of consideration. Some organisations have recommended a largish one of 36" length; whereas the one used in Exit workshops (and also recommended in other manuals as well as indicated in Exit's magazine), is smaller – about 24".



Preparing the helium tank (I).
Unscrew and remove the nozzle attached to the gas outlet

The bag size is relevant to the size of the person's head, so it is more scientific just to say one that fits comfortably over one's head rather

than being overly specific (unless one was to provide a chart of head measurements vs bag measurements - which I think would be a bit silly in the extreme!) The argument in favour of a larger bag is that any remaining carbon dioxide will be diluted faster with the larger amount of helium present. This might be a minimal consideration if using the favoured 'scrunch method' as we call it (collapsing the bag and filling it with helium before pulling it down). But consider how this works in practice. We see a lot of people dress-rehearsing the 'scrunch' in the workshops. They mostly do it quite well – and without a mirror! – but if one were to start with a larger bag, there is also more air to expel. You would see people scrunching most of the air out but unaware that they had just pushed some of it to the side of the bag. The addition of tubing inside the bag makes it harder to 'scrunch' - particularly if it is a longer bag with even more tubing going up to the top. A bag that is 50% longer (36" instead of 24"), holds much more than 50% more air. With the smaller bag, most of the volume is taken up by the person's head! So although the bigger bag is only 50% bigger, it holds maybe several times as much air or gas once it is on.



Preparing the helium tank (II): With the nozzle removed, tubing can be fitted to the bare metal outlet

An advantage of the smaller bag is it fills much quicker and needs less gas to fill it. Gas flow is not a problem if adjusting

the gas manually so you can hear the flow. You even have the option of turning it up to fill the bag and then reducing the flow slightly before pulling the bag down. While we recommend the scrunch method as the most favoured option, even if you used a small bag (without the scrunch) and turned the gas flow up swiftly, it would be full of just helium within two or three seconds. Just the same amount of time it would take to fill a couple of balloons at most. The simplest way of adjusting the gas flow, should you want to, is with a prong-type tap-turner.

Adjusting gas flow If you have a bit of arthritis in your hands, you may already be familiar with 'tap-turners.' These are gadgets sold by mobility aids shops to make it easier to turn household taps which are a bit stiff. But dozens of people trying them in Exit Workshops have shown that they are equally useful for everyone when it comes to adjusting the flow on a helium tank. (There are some illustrations of the two types described here as suitable at the end of this chapter.) On most of the disposable helium tanks we have come across, both the 30 and 50 balloon size, a very tiny adjustment of the tap makes a very large adjustment to the flow of helium. A typical helium tank emits a very strong jet of gas if opened fully. Enough to blow up a skirt from the far side of a ballroom! This is far too much for our purposes. Using a tap turner gives easy, precise control over the gas flow, so that you can quickly and easily adjust it to give a strong but steady, gentle flow. Get to know the flow rate by briefly turning the tap on and off once or twice. In choosing a tap turner, not all devices are equally suitable. You need the sort that has a large number of metal or plastic protrusions. They are usually called 'Swedish Tap Turners.' Some suppliers worldwide of suitable 'Swedish Tap-Turners' include: Whistling Tortoise (Tel 0131 225 6365, 42a Hamilton Place, Edinburgh EH3 5AX). It has a

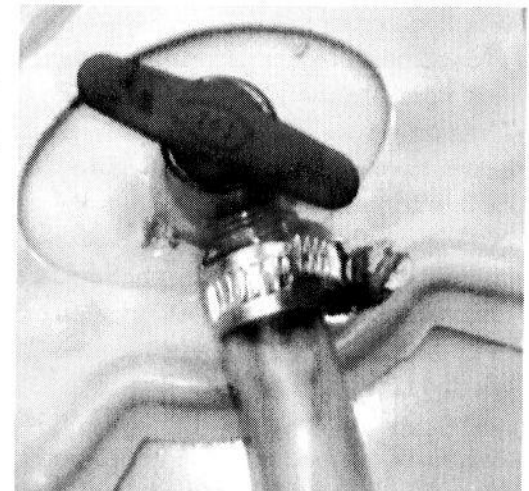
handy loop that you can use for attaching it to your wrist if you wish. Email them at info@whistlingtortoise.co.uk (www.whistlingtortoise.co.uk). This 'Swedish tap turner' can also be obtained in the USA by phone or online from: Megamedics - www.megamedics.com (800) 646-2680, or Medical Products Direct.

A slightly different Swedish Tap Turner is available from Help the Aged (Product Code: 105246) £14.94 Tel: 0800 169 1609. This one was a second choice by workshop participants. The handle isn't quite so comfortable to use, but still works fine for the purpose.

Obtaining helium

Helium can be obtained from any party balloon supplier. It is sold as part of a party balloon kit. Helium, being lighter than air, is used to inflate balloons so that they float. Most of the suppliers are mail order, but we have also obtained a

helium balloon kit from Clintons Cards on the high street.



Preparing the helium tank (III). Showing the poly tubing fitted to the outlet. In the diagram, a hose clip has been used for added security. You could also use duct tape wound around the tubing and base of the tap to prevent it slipping off when moving it about.

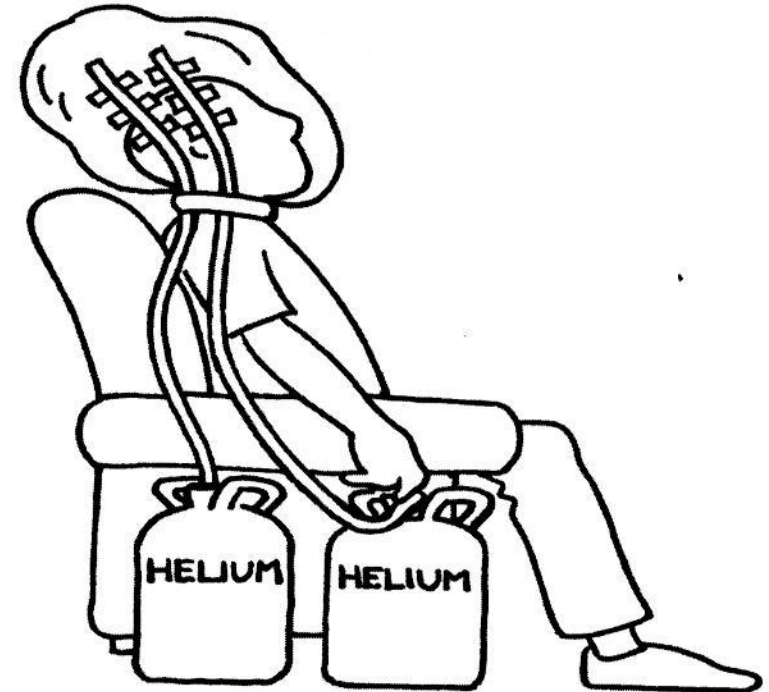
The tank is very lightweight – it can easily be lifted with one hand. The larger tank is about 18”, as is the box it usually arrives in. Here are some suppliers (correct at time of going to press):

1. NotJustBalloons £34.99 + £8 courier (50 balloons size)
01304 812501 www.notjustballoons.co.uk
2. shop.click4warehouse.co.uk £22.57 Delivery (ex. VAT):
£6.04
VAT @ 15%: £4.29 Total: £32.90
3. Partyrama www.partyrama.co.uk
E-Mail sales@partyrama.co.uk Tel 0870 0420 165
Gas for 50 x 9” balloons
£27.95 7-day delivery £3.75; 2-day delivery £6.95

When you order helium, there are two main choices. Disposable and non-disposable. Small and large. We recommend you only purchase the DISPOSABLE, and LARGE canister(s). The non-disposable ones are problematic. They tend to be heavy, have a nozzle that you will need strong equipment to modify for use, and the supplier will also ask you when they can collect the empty tank! None of these companies are connected to Exit or any right-to-die interests, so some discretion is advised. As one workshop participant mentioned, “I guess I’ll have a party at some time anyway, so I think I’ll get two tanks.”

Although not essential, many people do decide to get two tanks. This is an added precaution in the unlikely event that one of the jets should get stuck or fail when in use. If you are going to use two tanks, either connect the bag to a T-connector, which you can buy from B&Q, (as in the diagram at the end of this chapter), or tape tubing from both tanks to the inside of your helium hood.

Storing helium discreetly One of the downsides of helium is that it requires a certain amount of equipment that is less than discreet if living with in-laws, for instance. A participant at one of workshop had devised a method of overcoming this, and we include it in case it is useful for other readers. Instead of connecting up the tanks and tubing in advance, nimble-fingered readers might want to consider practice runs in putting it together on the spot. You could keep the helium in



the boxes they arrived in, together with the balloons. Tubing (one length ready to connect to each tank) can be cut to length and kept with a wine-making kit. Roasting bags could be used for the odd Sunday lunch!

Urban myths exposed

Helium balloon kits are mass produced. There is not much variation or much that can go wrong. Helium is an inert gas and doesn't 'go off.' But are you getting pure helium? Apart from any trade description, there is little motive for manufacturers to pollute a successful product. Says campaigner Derek Humphry: "This false rumour about mixing oxygen into helium tanks keeps coming up. I think the opponents to choices in dying start the rumour so as to upset people's plans. The manufacture of helium in disposable tanks is a multi-million dollar international business, so diluting it would be hugely expensive for them, and would also mean it could not be used for industrial purposes. Therefore the helium as sold today is effective for whatever purpose it is needed." Another common, but unfounded, worry is the idea of being 'gassed.' In fact, breathing helium feels the same as breathing air. There is no choking or sensation of gasping for air. Helium is breathed normally. Only the brain notices the difference as the absent oxygen content causes it to cease functioning. Get used to opening and closing the valve (briefly – unless you have a spare tank) so a gentle steady supply can be released. When you hear a light, steady noise, you've got it right. Unconsciousness occurs generally within a minute but can be anything from ten or twenty seconds to ninety seconds or even a couple of minutes. Death follows a few minutes afterwards.

Simplicity itself

The following (true) story is repeated here not as an ideal example to imitate, but as reassurance for anyone that feels that the 'ideal methods' are just getting far too complex! Many things in this book take minutes to demonstrate but longer to explain. Here is how one man used helium as an emergency exit without any advance preparation. This is a back-to-basics

painless death. No fancy taps, tubes, special bags. No recipes or technical expertise.

A 64-year-old German man books a hotel room in Switzerland for one night. The following noon, the management forces open the door, which was locked from inside. The man is lying dead on the small single bed. A bag is over his head, held in place by the bag's plastic ribbon drawstring and a rubber band. A safety pin has been used to pull it tight around the neck. A small bottle of helium stands on a table. It wasn't connected to the bag.

He had simply held the bag with the opening downwards while he filled it with helium (which is lighter than air and rises), then carried it away from the source of the gas and put it over his head. It demonstrates that no direct connection between the plastic bag and the gas bottle is essential. And also that a large amount of helium is not really required.

The case was reported in the American Journal of Forensic Medicine and Pathology (*Schon C, Ketterer T*). It is one of the simplest of helium deaths on record. Whilst it might be very nice to have a large tank or two of helium, proper tubing, perhaps connected with a t-junction, and a nicely customised bag with the elastic fitted into a neat hem, it is hardly essential. All that is needed is enough helium for a few minutes until the breathing ceases. Once the bag is fixed round the neck with an average seal, the gas isn't going to go anywhere. The same gas can repeatedly be breathed in and out. A bag full of helium, exhale fully before putting it on, then swiftly secure it around the neck. I think I'd maybe want to practice a few times with the rubber bands or whatever I was using to hold it in place.

In this case, the man used a garbage bag (17 litre size – not very big). It was the sort that has a couple of plastic ribbons for tying the bag. (These are commonly available from large stores such as some B&Qs – look for packs of ‘Clear Storage Bags with Drawstring.’) The ribbons can be a bit fiddly to tie shut, so he had just pulled them tight and secured them with a safety pin. The helium tank was rented from a local party balloon shop.

The ‘right-to-die’ movement sometimes (rightly) accuses the medical profession of ‘medicalising death.’ Putting a simple, personal business into the hands of the ‘experts’ who are the ‘only ones knowledgeable enough to cope.’ But it is also too easy to put the process of self-deliverance into the hands of another group of experts. The right-to-die societies (Exit included!) that teach you the ‘best’ way.

Admittedly, we can try to help people avoid pitfalls. But this book tries to familiarise you with principles first and foremost. Does it matter whether you are the sort of person that likes a highly technical approach? Or whether you are a down-to-earth personality that just ‘gets on with it.’? And remember that the best laid plans can go astray. Perhaps you have your helium kit all ready. Sitting in the cupboard for when the time comes. But you find yourself abroad when things take a sudden and unmistakable turn for the worse. Hopefully you can still improvise! At the very least, the example of this man in a Swiss hotel room is a reassuring thought to all of us who worry about tiny details, one tank or two, and might panic if we don’t have the ‘recommended’ equipment to hand. If he could do it, so could you.

If people can't follow instructions, or the instructions don't exactly fit circumstances, then it can all be in vain. The style

Exit has found most practical in the UK workshops is to familiarize participants with the principles (by letting them dress-rehearse various approaches); critique the application of the principles; but then empower them by making sure they are practically adept with more than one way (ie both different ways with helium, and different self-deliverance methods). This allows for the fact that their circumstances and capabilities near death may be very different from when they put most of the preparation in. Not to mention different learning approaches that people may have. The various ‘do-it-my-way’ methods are an excellent foundation and learning tool. This example in Switzerland shows how someone can readily adapt knowledge to circumstances that arise.

Helium autopsies – is helium detectable?

Helium has long been thought undetectable after the event. It is an inert gas and so does not react with any other elements or compounds within the body. Death results from lack of oxygen in the brain, not from the presence of helium. Researchers Ogden and Wooten, for instance, described it as a “potentially undetectable cause of death,” and said that, “Helium inhalation can easily be concealed when interested parties remove or alter evidence.” Other researchers, Schön and Ketterer worded their paper slightly more cautiously, saying that helium, “leaves only seldom externally visible marks or pathomorphological findings on the body. If the plastic bag and other auxiliary means are removed by another person, the forensic death investigation of cause and manner of death may be very difficult.” This is particularly appealing for someone who, for whatever reason, does not want suicide to be generally known as the cause of death, and has a willing helper prepared to (illegally) remove the evidence.

Although these researchers highlighted valuable case studies, their hypotheses are flawed and assume too much. Schön and Ketterer reported the case of a 64-year-old man who achieved suicidal asphyxiation by inhaling helium inside a plastic bag. He probably followed the instructions described in an article about committing suicide written by a medical practitioner from Zürich. Observing cases is one thing. Making generalised assumptions, however reasonable they seem, can be misleading.

There are two main ways that have surfaced for detecting whether a person committed suicide using helium. One is circumstantial. The other is by means of very careful autopsy as special autopsy techniques and devices are required for collection of the gas from the lungs. Authors Grassberger and Krauskopf suggested that, "Because of the diagnostic obstacles involved, it is necessary to rely on good death-scene investigation for situational evidence when the body is discovered." They reported three cases of suicidal asphyxiation with helium gas that were examined at the Department of Forensic Medicine Vienna within three months in 2006. In all three cases, autopsy was unrewarding from the point of view of gross pathology.

A successful toxicological analysis was however reported in Forensic Science International. In this report, initially the autopsy did not show any specific findings nor did the routine toxicological analysis reveal significant information regarding the cause of death.

They describe the procedure: "During autopsy both lungs were subsequently collected in a plastic box filled with water. The box was covered with a lid, leaving as little air as possible in the box. The box was turned upside down, and using a

syringe fitted with a T-piece, the residual air was sucked out of the box and discarded. Then long and thick metal needles were pierced into the side of the box to manipulate the lung and press out the gas. The gas volumes escaping from the lung were collected with the syringe from one corner of the box and were pressed into a headspace vial which had been filled with water and crimped closely before."

A volunteer was then used to get an impression of the helium concentrations in the lungs from breathing pure helium. The volunteer simply exhaled deeply and inhaled pure helium once. Part of the exhaled gas was then collected and analysed. Analysing helium presence needs a variation from the usual method where helium is also used as the displacement gas. To analyse the samples of helium, nitrogen was used as a displacement gas. Chromatograms for the gas sample under investigation and the negative control case were taken. Inhalation of helium before death was thus proved. A helium-enriched, oxygen deficient atmosphere could therefore be assumed as the cause of death.

What can be learned from this? Helium death is not easily detectable. It leaves little or no trace. But determined pathologists going to extreme lengths could perhaps ascertain it by the methods described.

Perhaps we can draw this chapter to a close by relating the moving story of Michael Bateman, who described his wife's passing in the *Exit Newsletter*:

"My wife, Margaret had lived in pain and lack of mobility for many years, being bed-bound and totally dependent upon others for the last three. The medical profession has been less than useless and simply made matters worse. As I myself

became ill and unable to care for her, she could not bear an indeterminate future in a nursing home. So she decided that the time had finally come to end her own life as the only way out of her suffering.

“We had already decided that helium was the way to go and had obtained all the necessary equipment some time before. With some further adaptations on the tank valves and some help from me she was able actually to turn the taps herself. Margaret filmed her suicide note, telling the world why she was doing it, and actually filmed the start of the process to show that she managed to turn the taps herself. From then on, the whole process was amazingly quick and painless, and I will be eternally grateful for that.

“After the publication of the DPP guidelines as to when they would prosecute or not for assisting a suicide, I did not hide my involvement nor any other aspect of the suicide. This would appear, currently, to mean that it is not in the public interest to prosecute me, although this may still change. Immediately after the event I was arrested and kept in police cells overnight, every member of the family and many friends were questioned both that day and night and over the following weeks. My house was stripped of any possible evidence, filing cabinets, computers, cameras, papers, etc. and my life was brought to a halt. Even now, 2 months on, I have received little back from the police, only pleading with them has obtained just the minimum to keep going, but without insurance, bank information and the like, things are getting left that should be sorted.

“We still don't even have the full autopsy report which I hear has evidence of my wife's illness. The police recognised that we, as a family, were placed in an intolerable position and

were suitably sympathetic at a personal level, but their procedures do not cater for this situation and they had to follow what is essentially a murder enquiry.

“I hope that my story will help others to understand the likely persecutions that they will go through, when all they have done is help a loved one to a desired and peaceful end. However, the burden should not be placed upon family and friends, there should be official, medical processes in place, which of course requires a change in the law and a change in attitudes from those who pontificate from the comfort of good health and a cosy life.” *Michael Bateman, Exit Newsletter 30(1)*

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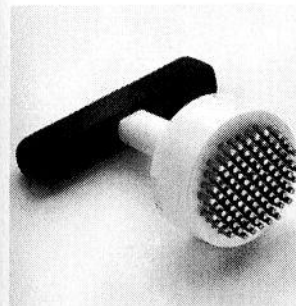
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Extra information – you may want to read the sections on asphyxia in the *Appendix* to get an even fuller understanding of the physical process.



Swedish tap-turners are an excellent way of adjusting the gas flow carefully



He searched for his accustomed fear of death and could not find it.

Leo Tolstoy

Strange it's always the living, that fear the idea of the dead.
Goodbye.

Roy Harper

Compression

Story (tourniquet method) – ratchet tie-down – other variations (continuous looping; suspension) – finding the carotid arteries – extra safety using a bag – what you need – main features – general description – what is the evidence for compression? – further cases from the medical literature – how quickly does it work? – are there any unpleasant side-effects? – checklist – references

Main features

Compression provides a simple method of ending one's life that is not dependent on having previously-acquired equipment or drugs to hand. Properly done, there is little or no discomfort and it can be performed without arousing too much unwanted attention. The ease with which it can be achieved makes it suitable both as a mainstay method, but particularly for emergencies if one becomes confined to a nursing home or hospital bed.

Concerns over the possible survival of the brain stem (which have occasionally been documented in rare non-suicidal compression cases involving healthy young subjects) have prompted greater emphasis on using a plastic bag in conjunction with this method. A small bag, such as that described for helium (a large roasting bag) is suitable. No other preparation is needed, and such a bag is small enough to be folded discreetly or even used to hold toiletries and so avoid suspicion. The only other implements are material with which to make a tourniquet and some sort of rod with which to tighten it. Such things can be found impromptu or kept with one at all times.

There are a number of variations on the 'compression technique' depending on personal preferences and availability of equipment. Marjorie's story illustrates the Tourniquet Method (which is the most common method in this category). The other major variation is the Ratchet Tie-Down, which is explained in detail afterwards. All the various compression methods involve compression of the carotid arteries without interrupting the breathing.

Marjorie's story

It had happened quite unexpectedly. What had seemed like a routine trip to hospital suddenly developed into something serious. They would do everything they can, but Marjorie was not expected to recover. Her careful plans to make sure the end was at a time of her choosing were not going quite as expected. In hospital, she had no access to pills or helium. She lay awake for a couple of nights making her plans, going over all the possible materials and making her choice. It didn't take too much to ask the nurse to bring her handbag for her so she could get one or two small items. She wanted her mirror and



Pathology photograph of a suicide using tourniquet compression

her lipstick, but most importantly she knew that in the inside zipped compartment were a pair of stockings. She had also managed to hide a spoon from dinnertime – a good metal spoon, proper cutlery, not like the stuff you got in some of the places she had been in.

Marjorie made sure her 'implements' were in a place where she could get at them easily, without making any noise that would attract attention, and not somewhere the nurse might find them and wonder what on earth this quiet little lady was going to do with them. She waited until the early hours of the morning when the ward was quietest until she made her move. Under the cover of the bedclothes, she made her preparations. This was where all the dress-rehearsals would now come in handy! If she hadn't practiced many times beforehand when she was fit and healthy, working it all out now may well have been beyond her: but she knew what she was doing. Taking one of the stockings, she knotted it loosely but comfortably around her neck. She wanted to allow about three or four inches when the loop was pulled and the elastic of the stocking was at its full stretch. Too much and the



Close up of the tourniquet in the previous photograph

process would be cumbersome. Too little and the stocking would be uncomfortable even before she started. She tied it in a good knot that couldn't slip – a 'reef knot' I believe they called it, she reminded herself.

She remembered the many times she had practiced the technique, using her thigh at first so she could see what she was doing. If you started with the stocking looped around your thigh, one end in each hand, then knotted it – right over left and tuck it under, that was the natural way to do it. The second knot, the one that made it so it wouldn't come undone, started the opposite way: it went, left over right and tuck it under. (If you did two 'rights over lefts', you ended up with a 'granny knot' or slipknot.)

Carefully she positioned the loop around her neck so it was high up, well above where a man's Adam's apple would be. She knew that having it low on the neck would cause discomfort, since pressure lower down would compress the windpipe, and this was not her intention. Marjorie decided to slip part of the pillowcase under the loop as well – not strictly necessary, but when the nylon was tightened it could dig in to the skin a bit so might as well make it comfy with some padding. Next she slipped the spoon between her neck and the nylon of the stocking. Then she tightened the nylon loop as if tightening a tourniquet or turning the hands of a clock. In the practice sessions she had used a variety of implements that came to hand, some were a bit longer, some the length of a spoon. She had experimented turning the spoon in one direction and then the other to see which suited her best. After several turns she could feel it was quite tight – not far to go now. The spoon would not unwind itself – it tended to catch on the jaw or collarbone – but Marjorie would be lying down so there was also the bed there and she could be sure

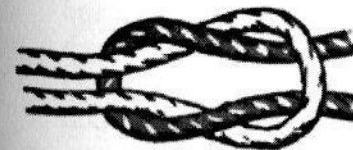
that, once the desired pressure had been achieved, it would remain.

Marjorie spent a few minutes lying quietly and pausing. Once more, she warmly reviewed all the wonderful things she had enjoyed in her life. She thought of her loved ones, and the sealed letter she had placed in her bag addressed to them, making sure they knew she was ending her life in the way she wanted, and that it was her decision alone, her wish.

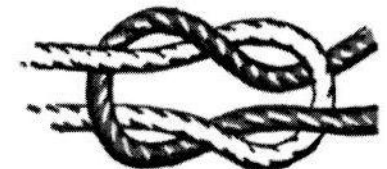
As a final double safety measure, she unfolded the large roasting bag she had kept in her purse. She loosened the tourniquet slightly, just enough to be able to tuck in the edges of the bag. Slipping the bag over her head she knew this was her fond farewell to the world. She tucked it in securely all around the tourniquet.

Then she tightened the tourniquet some more until the woozy feeling started to come over her. One more turn. The pressure was compressing the carotid arteries. Marjorie lay on her side, inclined downwards, breathing calmly as she fainted. No fresh blood reached her brain. Five minutes later, Marjorie was dead.

Note: most recorded examples of suicidal compression follow the pattern just described but without the addition of a plastic bag. The bag is simply an extra safeguard – anoxia is caused by the tightening of the tourniquet. Unconsciousness and death follows. In very rare cases, it might be possible for the



Reef knot (correct)



Granny knot (wrong)

Diagrams showing the correct and incorrect way of tying a knot that doesn't slip

brain stem (not the brain) to survive with the tourniquet alone, so the bag is recommended as an extra safeguard. A senior neurologist has suggested that, "death from carotid occlusion alone usually results from brain swelling and herniation that destroys the brainstem. It is not clear whether the pathophysiology of strangulation is simply one of asphyxia that would cause damage to both brain and brainstem or of carotid occlusion that might affect only supratentorial structures." Using a bag ensures that there is no possibility of survival in any sense.

Ratchet Tie-Down

The ratchet tie-down is a main variation on this method. What Marjorie achieved with a handmade tourniquet is here achieved with an easy-to-obtain, inexpensive piece of equipment. Some people find the ratchet off-putting. You can skip this section if you wish.

You might want to purchase one and familiarise yourself with it before deciding if it is to be one of your methods of choice. You will find them at various retail stores such as those that stock materials for home improvements or car accessories. The usual purpose is for such things as securing luggage on a car roof rack or holding items securely on garage walls; the load stays secure because the webbing tightens and stays locked in place with every pull, until you release it by pushing the thumb lever.

Some people find working the ratchet tie-down comes quite naturally and also like the aesthetic appeal (it looks nice and neat once in place) – others find it quite the opposite and even distasteful. In the workshops, persons who have already used them for ordinary purposes, were naturally inclined to physical work involving ratchets, and more men than women, pre-

ferred them. Those who had difficulty working them initially also seemed less inclined to favour them. Although it comes with full instructions, some may find it awkward to use or worry about operating the release mechanism once the tie-down is in place.



An example of a suitable 'hookless' ratchet tie-down

There are two main types of ratchet tie-down – ones with a hook and ones without. The only type that you are interested in is the one without (see illustration). It is possible to place the loop from the ratchet tie-down around the upper part of the neck, tightening with the ratchet until the carotid arteries are compressed sufficiently for the blood supply to the brain to be interrupted (without interrupting the breathing). This results in loss of consciousness followed by death.

It is very important to familiarise yourself with the way the ratchet tie-down works before placing it around your neck. **The thumb release mechanism generally needs a bit of practice. Read the instructions on the box and experiment with strapping down luggage or using it on your thigh (where you can see what you are doing and remove it easily).**

Only practice with the ratchet on your neck if you are extremely confident that you can operate the mechanism easily and release it when required. If possible, do your dress rehearsal with a trusted friend, and keep a pair of scissors handy just in case it gets stuck or you can't operate the release mechanism once the ratchet is in place.

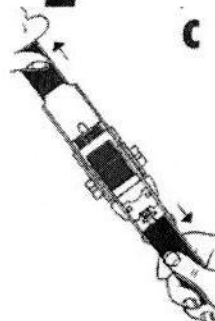
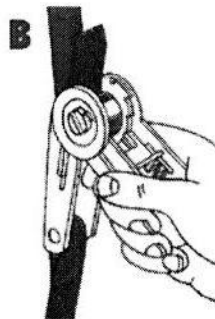
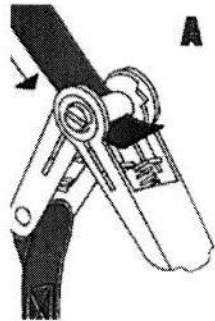
Some people will find that, once fitted, the ratchet tie-down is more aesthetically pleasing than many other methods. The webbing material is also comfortable against the neck and generally will not necessitate additional padding.

Using ratchet tie-downs

The ratchet tie-down is simply a mechanical refinement of the tourniquet method that appeals to a small number of people. Trim off excess strapping – only about a metre is needed. Then thread the strapping: it is a bit like threading the film in an old-fashioned camera. Practice on your thigh for dress rehearsals, and especially practice undoing the ratchet, which is much harder than loosening it.

Step by step:

- Work the handles until the slot is exposed on the centre spindle.
- With the handles in a 'V'-shape, feed a few inches of the free end of the strap through the centre of the spindle (A). This part is like threading a bobbin or



- camera sprocket. Insert the strap from the top of the 'V' shape.
- Crank the handle to secure the strap (two or more layers of strap must be wound around ratchet reel for a secure hold.) See diagram (B).
- Tighten as needed by cranking the handles a few turns.

To release the ratchet:

- Compress the spring release bars and open the handle 180° until it clicks. (You can still release the strapping if it won't open to 180° but it may require more effort.)
- Firmly pull apart each side of the secured strap (C).
- Compress the spring release bar again and return to the start position.

Other variations on the compression method:

Successful suicides have been recorded in the medical literature with two other methods – continuous looping and suspension.

a) Continuous looping means simply passing a cord around the neck quickly with many turns, using a material that doesn't slip. Nylon coated cords, for instance, tend to slip, whereas many cords (such as traditional string) create a certain amount of friction. Simple knots with some of the turns may help. Once the cord has been wrapped tightly around the upper part of the neck it tends not to slip and, if there is sufficient pressure to occlude the arteries, death results. This variation is only recommended in an emergency (for instance if no other materials were available). You need to be agile enough to wrap the cord quite quickly for a lot of turns. For comfort, some padding is desirable, especially if using thin cord or string. A number of deaths have been recorded where a person has

simply had time to wrap stockings around the neck and tie them at the nape of the neck.

b) Suspension is a gentle method that has been recorded frequently in the medical literature. It does not require suspension of the whole body (as in hanging) but simply uses the weight of the upper body to apply pressure via a large loop or strap to the carotid arteries. For instance, *Bhardwaj and Rautji* cite a case of a male, “. . . suspended . . . with his feet touching the ground.” The loop can be attached to any fixed object such as a door handle, hook, ceiling fan, stair rail or kitchen bar. The loop is placed around the neck in such a way that, by slumping forward (facing the floor), pressure is placed on the carotid arteries. The carotid arteries are compressed with as little as seven pounds of pressure (the jugular veins with even less – about four and a half pounds). This varies greatly between individuals, but is quite small, which is why a sitting or semi-reclining position is sufficient. A massive 33 pounds of pressure, in contrast, is needed to compress the airway. Suspension does not require much knowledge and can be accomplished even by invalids.

How to find the carotid arteries

This is usually quite easy (but don't worry if you can't find them!) The instructions from St John's Ambulance suggest: “With the head tilted back, feel for the Adam's apple with two fingers. Slide your fingers back towards you into the gap between the Adam's apple and the strap muscle [the easily identifiable muscle running up the side of the neck from the shoulder blade to the hinge of the jaw] and feel for the carotid pulse.” You are feeling under the jaw bone at the front/side of the neck. Use the pads of the fingers rather than fingertips or thumbs. Some people have a stronger (or more apparent) pulse here than others. In workshops, most, but not all,

participants were able to identify the carotid artery successfully. Knowing where it is will make it easier to understand what you are going to accomplish when you compress it with the ligature, but don't worry if you can't feel the pulse.

Making extra sure – using a bag for safety

Some people will use compression as a last resort when no other method is available to them. The tourniquet alone stops oxygen reaching the brain, resulting in permanent unconsciousness. A resultant swelling in the brain usually also destroys the brain stem (located at the base of the brain, controlling automatic functions even into permanent vegetative state). Yet in exceptional cases the brain stem could survive. There are reported cases of strangulation in healthy people where the brain stem has survived and the person remained permanently unconscious in PVS. So a sensible additional precaution might be to place a small to medium bag over the head and slipped under the tourniquet or tie-down. This will ensure breathing stops and even the brain stem cannot survive. The roasting bags used in the helium chapter for making helium hoods are quite sufficient. Further research is needed to understand why documented cases of suicidal compression without any bag have clearly resulted in death rather than PVS. But meanwhile the additional safeguard seems both sensible and very little trouble.

Experiments by many people and on several occasions in the workshops have demonstrated that there is plenty of time to apply the tourniquet after placing the bag over one's head. (Note these were done in the safety of company!) No feelings of stuffiness or discomfort were experienced. Practice applying the tourniquet swiftly and safely before experimenting using a small bag. The whole dress rehearsal should be done very quickly at this stage. It is highly unlikely that a person

would get 'stuck' or pass out accidentally, but we very strongly recommend that you do such a dress rehearsal in the company of a trusted friend or partner for safety's sake. Place the knotted loop over the head. Some people, especially if they have a very wide head and a very narrow neck, may find it easier to tie the loop once it is around the neck instead of beforehand. Learn how to make a secure knot blindfold when tying the ends of your strip of material together to form your loop. Even without the bag, you probably need to do this at some point as the angle means you can't judge the distance and appropriate place for the knot without a mirror. Have a pair of scissors to hand for safety – the loop is quite loose, but might not be loose enough to pull over your head again. Once the loop is tied loosely around your neck, practice inserting the stick and tightening it quickly like the hands of a clock – to the point where it catches on your jaw or shoulder, not to the point where it makes you dizzy. Then take the stick out and place it nearby. Put the roasting bag over the head and tuck it in all the way around under the tourniquet. Insert your stick and turn it swiftly till it can catch. The whole procedure takes less than half a minute.

When it comes to do the procedure for real, the only difference is an extra turn or two to ensure you go dizzy and pass out. This will occur before you run out of oxygen if you are using a plastic bag as well.

The compression method is particularly suited for unforeseen circumstances, such as hospitalisation. When in such a desperate 'emergency' situation, detailed fine tuning may seem superfluous. Additional use of a plastic bag may even be so difficult that the benefits seem to outweigh the burdens. In an emergency situation where you have very few choices left, choose the least worst option.

What you need

For the tourniquet method:

- Only household equipment is needed although any of the following may come in useful:
- Stockings, bowtie, rope, flex, window sash-cord or webbing. The type of material used in a ratchet tie-down is quite adaptable and can be purchased easily (you can use almost anything from which you can make a tourniquet loop – be inventive!) Note that some neckties tend to be 'stretchy' and are less than suitable; stockings, on the other hand, will only stretch so far. For the workshops, we used many materials, but especially rufflette. This can be purchased from John Lewis' or haberdashers (it's used for trimming curtains). You need a width of about 25mm. A very narrow width can be uncomfortable and a very wide strip will be difficult to twist effectively when you insert the stick.
- Padding. If you want to obtain one, a foam cervical collar or a section cut from one (buy on the Internet from medical suppliers) is excellent, but almost any padding will do.
- A plastic bag if desired. Large roasting bags (the very large size) are a good choice.
- Mixing spoon, large pen, sturdy artist's brush, or similar (anything which you can use as a rod, your 'stick' to turn the tourniquet).

Although favourite materials can be obtained in advance (and especially for practice purposes), suitable implements can be found in most situations and environments with a minimum of fuss or trouble. You might even want to make an occasional habit of looking round a new room or environment and thinking, "What would I use?"

Choosing a bag

Most people will use the largest size of roasting bag available. Try it on for size when you get home just to make sure. It needs to be long enough so you will be able to tuck the edges under the tourniquet of your choice. Apart from that, it is not really critical.

For the ratchet tie-down method:

- A ratchet tie down, the sort without hooks
- A bag for extra safety, as above.

General description of what happens

Pressure is applied by one of a number of means such that the arteries and veins in the neck that supply blood to and from the brain are compressed though without enough pressure to compress the windpipe (In the classic judo 'choke' for instance, which uses the same principle, pressure is often achieved by pulling cross-wise on the lapels). Without a fresh supply of oxygenated blood, the brain then dies within a few minutes. (Allow 20 minutes however to ensure you will not be disturbed.) As with other methods of starving the brain of oxygen, interruption early on could lead to brain damage.

What is the evidence for compression?

The evidence for compression comes from three main sources. Firstly, in the medical literature, many cases have been reported although it is far less common than other methods of asphyxia. For instance, one study found that suicides by means of ligature compression in Berlin occurred about once a year. Nineteen cases over a period of 20 years were reported by *Maxeiner & Bockholdt (2003)*. Similarly in a

study of asphyxial deaths in Turkey, ligature deaths accounted for less than three per cent (*Azmak, 2006*).

Secondly, in the academic literature concerning sexual deviance, many cases of auto-erotic asphyxiation are known. This seems strange at first, but they are relevant inasmuch as the same technique is employed, compressing arteries to stop oxygen to the brain, although with entirely different intentions. One partner applies pressure to the other's neck to obtain a 'high' by partial stopping of oxygen to the brain, or self-induced compressions for the same purpose. Fatalities occur when the pressure is continued for too long. The quantity of documented cases enables greater study of the physical process by which anoxia is achieved painlessly.

Thirdly, the technique used by martial arts experts (and for some time the police) of applying pressure to an opponent is well understood. The 'lateral vascular neck restraint' (or 'sleeper hold') was once a widely taught choke in law enforcement, performed from behind by putting an arm around the neck with the crook of the elbow over the midline of the neck. By pinching the arm together while assisting with the free hand, the carotid arteries and jugular veins would be compressed on both sides of the neck. Correctly applied, this caused unconsciousness without putting any pressure on the airway. In 1981, a class action suit was brought against the City of Los Angeles over fatalities connected with carotid artery control holds. Whereas judo practitioners are expert at not continuing the choke long enough to cause death, police were generally less skilled.

Inexpert application of a choke hold is also believed to have caused cardiac arrest, particularly in someone with underlying heart disease (there is some evidence showing that a reflex

action alone from pressure to the vagus nerve can cause death in this manner). *Prablow*, for instance, makes mention of the 'carotid body,' a specialised group of cells within the wall of the carotid artery that, when stimulated, can result in significant changes in heart rhythm and rate, as well as blood pressure.

A 'blood choke,' or carotid restraint, specifically refers to a chokehold that compresses one or both carotid arteries and/or the jugular veins without compressing the airway, causing a hypoxic condition in the brain. Regardless of who the opponent is, a well applied blood choke leads to unconsciousness in 4-10 seconds, and if released, the subject usually regains consciousness in double the time the choke was applied after he had blacked out (e.g. a choke applied for fifteen seconds after the person passed out results in the person regaining consciousness 30 seconds later). Applied for longer, they are lethal. In ordinary language, a person passes out when the brain doesn't receive oxygen. If the deprivation is continued, death results. Compressing the arteries requires a fraction of the pressure to compress the airway in the throat. This is also seen in the difference between traditional manual strangulation and properly applied blood chokes. The latter require little physical strength, and can be applied successfully by a comparatively weak person. There are many cinematic depictions if you want to visualise the difference. Old James Bond movies will have the secret agent or the villain simply applying fingertip pressure to points on the neck until the victim faints and slides to the floor. Similarly the Japanese film *In the Realm of the Senses* depicts erotic asphyxiation between lovers – the pressure applied to the neck generally stopping short of unpleasant. It is not more pressure that is needed to cause death – simply a longer time period. (For those considering these films, the Japanese movie is a tasteful, critically

acclaimed and award winning film – but it is also very sexually explicit.)

Finally there are well-documented cases of 'choking game' deaths. These involve youths seeking a brief euphoric state caused by cerebral hypoxia (see, for instance, *Toblin et al, 2008*, who recorded 82 deaths of this kind in the USA).

It was first brought to the author's attention by judo practitioners writing in saying how it was 'the simplest form of suicide' and explaining the technique of judo holds that can be readily adapted for self-inflicted, painless asphyxiation. But it was only during work for his Masters degree at Glasgow University that a pathologist alerted him to the high incidence in the pathology literature, conveniently disguised. As one police surgeon writes (Henry, 1966), "The confusion and embarrassment felt by a person discovering a body who has died through sexual asphyxia is likely to be considerable. Attempts may be made to disguise the nature of the death to medical attendants and to investigating police officers." A review of published studies soon confirmed both the prevalence and method used. The number of reported and well-documented cases is now huge.

Some further cases from the medical literature

1. A woman aged 73 was lying full length on the floor of a bedroom, which she shared with another patient in a nursing home. The bed clothing had been thrown back in a manner consistent with getting out of bed. There were no signs of any struggle. She was dressed in a nightgown and a brown stocking was round her neck; the fellow of a pair was seen suspended over the head of the bed. The stocking was applied with a half-

knot at the nape on the first turn and with another half-knot at the front of the neck. The first turn was tight, but the second, although close to the first, was easily released. There were no other signs of violence, but a little bleeding, which produced a small stain 1 in. in its diameter, had occurred from the nose; the stain was directly below her nose. Her face and neck, above the ligature, were congested and of purple colour. Bleeding had occurred beneath the conjunctivae [eyelids], but petechial haemorrhages [pinpoint haemorrhages often found in asphyxia] were not seen in the skin of the forehead and face. The tongue protruded, but was not bitten; she had dentures, but these were on her bedside table.

2. In one case, however, a 53-year-old man succeeded . . . He wrapped twine around his neck 35 times, tied a knot and tightened it. He then bent forward on his knees with his head down, which increased his neck circumference, and thus, pressure from the twine; this is the posture in which he was found. Since this is an unusual position, the police were initially suspicious. However, there was no internal damage to the fairly delicate anatomical structures in the neck, a fact consistent with suicide, but not murder.
3. A 70-year-old-man was found dead in his room, a piece of belt-like cloth wrapped around the neck, knotted, and tightened by a walking stick. He was found lying on the bed, with his feet touching the floor. His hand was still on the walking stick which was seemingly used by him for a tourniquet effect. This case study included photographs of the deceased with the tourniquet still in place, reported in the

American Journal of Forensic Medical Pathology
(Atilgan, 2010).

There are many more case histories, often with ingenious variations. Additionally, the case histories in autoerotic asphyxiation show examples of unintentional death. Most involved males, although one study (Byard *et al* 1993) looked at differences where women were involved, particularly noting how neck padding had been used to avoid chafing. There is no need to go into too much graphic detail (the sample of literature quoted at the end of the chapter will provide the necessary documentation for the serious researcher). All the cases involve a degree of neck compression, a few with the addition of a plastic bag. One particular amusing case (amusing of course except for the deceased and those who knew him) is perhaps worthy of mention to give the gentle reader an idea. The man in question had rigged a complex system of pulleys to apply pressure to the neck, compressing the arteries and producing a 'high' whilst indulging in solitary sexual activity. To tighten the ligature, but not to a deadly degree, he had attached the pulley to a garden lawnmower. A stake in the lawn prevented the power lawnmower from going too far. Except it rained, and the stake came loose . . .

How quickly does it work?

Like helium, compression works by starving the brain of oxygen and takes no more than a few minutes. Occasionally fatal cardiac arrest can be triggered at the same time. This is due to 'reflex vagal inhibition' – a mechanism that may sometimes leap into action as the vagus nerve in the neck is depressed, particularly in the elderly or if there is some underlying heart disease. Studies using an apparatus causing rapid carotid occlusion and quoted by *Oehmichen et al* demonstrated loss of consciousness in seven seconds.

Are there any unpleasant side effects?

There may be slight discomfort from the pressure on the neck, though this is not enough to interfere with breathing. As the blood supply to the brain is interrupted, there is a sense of dizziness or fainting, followed by unconsciousness and death. Judo practitioners have described their experience of losing consciousness from compression-technique judo holds as 'quite pleasant', like controlled fainting. This tallies with the reports of brief euphoric state caused by cerebral hypoxia in studies of youths playing the 'choking game.' Photographs of persons who have ended their life by compression, such as those reproduced in this chapter and in other studies (such as Di Nunno, Constantinides et al, *Self-Strangulation – An Uncommon but Not Unprecedented Suicide Method*) show the deceased peacefully at rest with the ligature in place. The difference in length between the tightened ligature and the uncompressed neck is quite small – for instance a tightened ligature of 30cm on a neck of 35cm.

Checklist:

- You need two or three items: something you can make a strong loop with, and something you can use to tighten the tourniquet. Make a list of suitable household items. Even get into the habit of looking around or imagining yourself in other situations such as hotels, nursing homes, or on holiday – what would you be able to use in an emergency? You will find there are types of material that are more comfortable, but stockings are fairly easy to obtain at any hour of the day or night (for instance, from 24-hour petrol stations). People have used belts, suspenders, shoelaces, scarves, handkerchiefs, neckties, shirtsleeves, pantlegs, and undershirts, among many other things. Shop around for a suitable roasting bag or similar.

- If using an elasticized material (such as stockings or tights), make the loop the size you want when the material is at its maximum stretch.
- A fraction of the pressure that would compress the windpipe is needed to compress the carotid arteries (these supply oxygenated blood to the brain). Avoid placing pressure on the windpipe though by keeping the loop higher around the neck rather than lower down. Padding may be used for extra comfort – find out by experimenting with different loops and see which ones are comfortable without padding (don't cut into the skin) or which ones need padding.
- Practice making the tourniquet on your thigh first, rather than your neck. This allows you to see what you are doing. Make sure you can do the knot easily.
- When you come to practice the tourniquet around your neck, maybe have a pair of scissors handy to cut the practice stocking (or cord) should you need to.
- A wooden kitchen spoon is excellent for practice. Try turning it until you can feel the pressure (but not causing you to feel dizzy or faint). See how it catches on the collar bone or jaw. Decide if turning it in one direction or the other feels to work better for you.
- The tourniquet 'lever' can be placed at any point, but at the side and towards the front of the neck is perhaps easiest and most comfortable – and also positioned well to catch on chin or collar bone. (Do experiment – it is the quickest way to understand it!)
- The pressure needed for self-deliverance is the same pressure that is needed to cause you to become dizzy and faint, so exercise due caution during your dress rehearsals.
- Remember, keep the tourniquet high up on the neck to minimize uncomfortable pressure on the windpipe and maximise pressure on the carotids.

- Make sure the knot is secure and does not slip.
- Ensure the fitted loop is sufficiently distant from the neck (about two or three inches) to allow the 'stick' (pen, spoon, etc) to be inserted and turned. You need to be able to turn the stick like the hands of a clock to tighten the tourniquet.
- Ensure the loop isn't *too* big. Otherwise you will end up turning it for a long time to make it tight enough. By the time you feel the pressure on your neck, the twists in the loop will have become very unwieldy.
- Practice until you can do it comfortably, effectively and safely. Practice very carefully at first, especially if practicing on one's own. You can go almost to the 'dizzy point' and no further.
- You do not have to tighten the tourniquet to a dangerous degree in dress rehearsals. The loop will acquire a natural tension so you can experience the stick catching against the jaw or shoulder-blade.
- Everyone's physical dimensions are individual, so experiment. For some people turning it clockwise will be best, for others anti-clockwise. If you have a very pronounced jaw, it will catch differently. But it works for everyone and there is nothing very complicated about it. This whole chapter is describing a process that can be demonstrated in a matter of seconds.
- If you want to experience the 'dizzy point' when you are practicing alone, simply apply pressure at the pulse points, as explained (in the event of fainting, your hands fall away so you are not in danger). This is *not* recommended as a regular practice though. If you are in poor health, exceptional care is needed so as not to trigger the vagal reflex and you should *not* go as far as making yourself dizzy in a dress rehearsal.

- It is not necessary to be able to find a pulse for the technique to work. Some people's pulse is more pronounced than in others.

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A friend, reflecting on the time her cancer had been diagnosed as terminal, said, "Being terminal just meant that at last I acknowledged that death was real. It did not mean that I would die in six months or even die before the doctor who had just given me the prognosis. It simply meant that I acknowledged that I would die at all."

From Who Dies by Stephen Levine

We have gazed too long at the stars together to be afraid of
the night.

On the tomb of a Christian astronomer, written by his partner

I am too tired
To move on, or to mind the paths travelled.
Where I find moonlight and gentle breezes,
I shall unload, lay down, and rest in peace.

Helen Chen

Drugs

Introduction – main features – using chloroquine – general description – myths about chloroquine – what is the evidence for chloroquine? – how quickly does it work? – are there any unpleasant side-effects? – obtaining chloroquine – anti-nausea drugs – obtaining sleeping tablets – shelf-life of drugs and buying drugs abroad – Mexico – buying drugs on the Internet – the best way to take tablets – what you need – preparation and method – barbiturates and other drugs – checklist – references

Introduction

Often when people think about drugs for suicide their attention turns to one of two main groups. Attempted suicides are common with the highly available but highly unsuitable drug paracetamol (known in the US as acetaminophen). Paracetamol is likely to cause very painful yet non-fatal internal organ damage. More educated persons, and members of right-to-die organisations, sometimes go on a (often fruitless) quest for what they believe is a perfect drug. They spend much time and energy writing letters to find out if barbiturates are available in Mexico or through the Internet, oblivious both to the dangers of such a quest and to the reality – which is that suitable drugs can usually be obtained fairly easily at home.

If, because of your medical condition, you happen to have a good supply of barbiturates, these can be ideal on their own (see later this chapter). Otherwise there is one drug on which there is more accumulated evidence for its use in suicide than any other, but it is a drug which must only be used with great care and in combination with a specific range of other drugs. That drug is chloroquine.

Main features

In the US a prescription is needed, but in most other countries chloroquine is available without prescription (see later in this chapter for ways of obtaining chloroquine). This makes it attractive as a 'drugs only' method as long as you also have (or can obtain) enough suitable sleeping tablets to ensure a deep sleep. Chloroquine is not a gentle drug however. A person using chloroquine needs to be confident of completing the procedure effectively and not vomiting the large amount of drugs ingested.

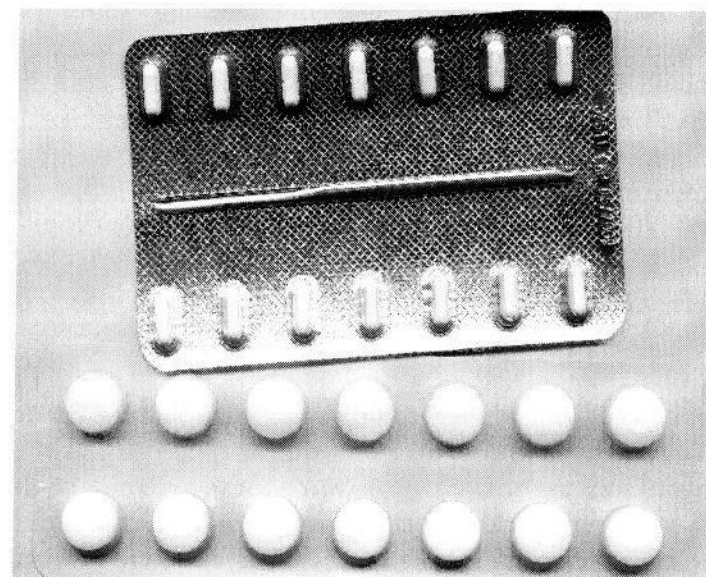
Using chloroquine

Although chloroquine ingested in sufficient doses is undoubtedly fatal, a proportion of people (about one in five) experience side-effects, therefore a suitable sedative is needed in conjunction with the chloroquine. A further concern is that a large group of sedatives – benzodiazepines – interact with chloroquine and are even used as a standard hospital treatment for chloroquine overdose, so the choice of sedative is important.

Benzodiazepines – the drugs generally to *avoid* in combination with chloroquine if possible – include temazepam (although this is one of the drugs of choice for use with plastic bags – see next chapter). Most benzodiazepines end in '-azepam' and so are readily identifiable. These include nitrazepam (Mogadon), diazepam (Valium), flurazepam (Dalmane), loprazolam, lormetazepam, and temazepam (Restoril, Normison). In the preceding list, I have given some of the *brand* names in brackets. These change from time to time and vary from country to country. If in doubt, examine the packaging or literature enclosed with the drug to find out the *generic* ingredient. This is the chemical name of the drug and

does not vary. Some of these drugs are also prescribed for anxiety.

So what sedative is suitable for use with chloroquine? The most obvious drug of choice is zolpidem (known in the US as Ambien). If you obtain zolpidem in the UK, it may be packaged as zolpidem or have the brand name *Stilnoct* added. A very important point is that zolpidem tablets are tiny, making them easy to swallow (and they doesn't interfere with chloroquine). It is a prescription drug for sleep disorders, but widely prescribed and so relatively easy to obtain. Certain other sleeping drugs are also fine in combination with chloroquine *though preferably not benzodiazepines such as temazepam*. However, if you only have benzodiazepines, the statistics do indicate that if you have managed to ingest sufficient chloro-



Comparative size of zolpidem (top) and temazepam (bottom)

quine, no amount of benzodiazepine will interfere with a fatal outcome.

A similar sounding drug but one that should emphatically not be used with chloroquine is zopiclone. Great confusion, with tragic consequences, resulted when one translator of *Departing Drugs* added their own recommendation without the permission of the authors – to use zopiclone with chloroquine. This didn't come to light for a long time as Exit failed to monitor closely the translated copies of its book being sold in the Netherlands. The illegal copies have since been withdrawn. A group of authors calling themselves the Wozz Foundation (in: *Humane Self-Chosen Death, 2006* – see: *Guide to Suicide Guides*, this volume), correctly claimed that chloroquine and zopiclone is a combination to be avoided. They incorrectly claimed (alongside some graphic examples of distressing deaths) that the authors of *Departing Drugs* ever recommended it. *Wozz* also claimed that benzodiazepines are not an antidote to the lethal effect of chloroquine on the heart and that their use in treating chloroquine poisoning is to suppress muscular contractions and epileptic seizures. While they clearly have the latter effect, suggesting they do not alter the effect on the heart is contrary to both mainstream and specialist sources which very specifically note the effect of benzodiazepines on cardiotoxicity in chloroquine poisoning.

Methods of suicide using drugs alone, other than the chloroquine method, tend to rely on drugs that are very hard to obtain (such as barbiturates), have a poor success rate, or else have very serious side effects either before death occurs or in the event of failure. Some (such as tricyclics) are not only increasingly hard to obtain but require detailed consideration as to whether they are suitable for a particular individual. As these drugs collectively form a tiny area of suitably dignified

means of death, they will be considered towards the end of this chapter.

General description – chloroquine & sedatives

An anti-nausea drug is taken some time before the main drugs. A large dose of chloroquine is taken (about 50 pills) followed by enough of the appropriate sleeping tablets to ensure deep sleep. (If drugs other than chloroquine are used, an anti-nausea drug is still required.)

Myths about chloroquine

There are a number of myths about chloroquine frequently banded about, so it is necessary to address them directly.

Myths about chloroquine (1): a failed attempt can result in blindness

This is a common objection, often suggested by doctors who have a passing, inadequate knowledge of chloroquine. They have learnt that chloroquine can cause blindness in toxic doses. This is true, but leaves out the essential factors: chloroquine is only known to cause permanent blindness when there is long-term overdose, not a single overdose. Any visual disturbances are considered reversible with an acute (one-off) overdose. This is known from a large number of reputable studies, such as those published by the World Health Organisation and the Toxicology Management Review (see appendix). What is worth stressing however, is that chloroquine is a very dangerous drug and not suitable for the faint-hearted. Recovery from a failed attempt (compared to a failed attempt with a plastic bag) could potentially be very distressing.

Myths about chloroquine (2): are any sleeping pills suitable?

This is also untrue and widely recognised now following the revelations in the book *Departing Drugs* and publication of *The Chloroquine Controversy* (which is reprinted in the appendix). Before that, some organisations, even with medical advisors, had suggested using chloroquine with benzodiazepine -type sleeping drugs. True, if you ingest enough chloroquine there is very little that can be done to prevent death, even with medical treatment; but it makes little sense to take the standard antidote (benzodiazepine) with the drug chloroquine itself. Following publication of *The Chloroquine Controversy*, organisations that had previously recommended the use of benzodiazepines with chloroquine withdrew their publications, in some cases replacing them with *Departing Drugs*. But concern over chloroquine (and lack of understanding) has in many cases not persuaded many right-to-die societies to re-introduce chloroquine among their recommended methods (with appropriate cautionary advice about benzodiazepines). This is regrettable, but with the increasing popularity of helium as a method is less important than in the past.

The original recommendation for chloroquine (without the precautions over benzodiazepines) came from doctors. Similarly, the concerns over chloroquine and blindness have also come from doctors. In both cases doctors have spoken from inadequate knowledge and their advice was accepted simply because they were doctors. One should remember that doctors are expert in the use of drugs to heal, not in their use for suicide. Similarly, doctors that practice euthanasia are expert in the specific drugs they use, but often less accurate elsewhere unless they have done their research. Doctors do, however, tend to be quick to acknowledge flaws in their beliefs, as they have done when we have presented them with

peer-examined, scientific data and published proof. Many authors on self-deliverance, like the proverbial doctor, encourage an almost religious acceptance that what they say is gospel. This book takes no such attitude and encourages readers to sceptically examine *every* recommendation, particularly in any absence of supporting data. *Five Last Acts*, whether in the main body or the Appendix, includes many references so you can verify and have scientific confidence in our written assertions.

Remember that drugs like benzodiazepines can remain in the system for a while – for several days after taking them. If you have been taking them for any other reasons, it may be advisable to allow time for them to completely leave the body.

What is the evidence for chloroquine?

Chloroquine has a long history and has been routinely provided to armed forces stationed abroad. Given that suicides among this group of the population are noted rapidly, there is a remarkable amount of data in the medical literature on suicide by means of chloroquine – more so than with any other drug studied. See the *appendix* for some of the many medical sources on death by chloroquine.

How quickly does it work?

The time varies, but several uninterrupted hours should be set aside. As it is normally taken with sleeping tablets, unconsciousness ensues quickly (in cases where sleeping tablets are not taken, unconsciousness often occurs within half an hour, but sleeping tablets are very strongly recommended in case it does not!)

Are there any unpleasant side-effects?

Very possibly – at least if appropriate sleeping tablets are not taken. Of the various side-effects, the most serious is extreme hyperactivity and convulsions, which affects one in five people taking a chloroquine overdose without sleeping tablets. Therefore, although it is a reliable method of suicide, it should really only be considered in combination with suitable sleeping tablets. In the case of a failed attempt, there may be some persistent side-effects, including disturbances to vision, but not permanent ones.

Obtaining chloroquine

Chloroquine is commonly dispensed as an anti-malarial. This means it is available from any chemist (for instance in the UK) without prescription but at the discretion of the pharmacist. The chemist may ask where you are going. Anti-malarials are used for travel to most parts of Africa, the hot parts of South America, Central America, and South-East Asia. The chemist will probably also enquire as to how long you are going for. Working out the exact number of tablets needed against malaria uses a formula that includes a period before and after travel as well as weekly dose while you are away, so the chemist will expect you to state a time period rather than a number of tablets. Some people will ask for sufficient for their whole family travelling together. People who are stockpiling the drug for use in self-deliverance will often visit several chemists to ensure a sufficient supply. If you really are planning on getting drugs to prevent malaria, you may want to look into it more carefully for that purpose (mosquitoes have developed resistance to chloroquine as many areas). Sometimes a chemist will suggest more modern or area-specific drugs, but I usually say I prefer chloroquine as it doesn't upset my system. The main brand names of chloroquine are Nivaquine and Avloclor. Sometimes they come in foil packs and

sometimes loose. The most common size is 200 or 250mg. Fifty of this strength of pill is recommended. Less will probably do, but this is a dosage that no-one has survived, out of many hundreds of suicides.

Anti-nausea drugs

If you are taking a large number of tablets, the stomach's immediate reaction will be to try to vomit them up, therefore you need an anti-nausea drug (sometimes called an anti-emetic or anti-sickness or travel-sickness drug) to control and prevent any nausea and vomiting. There are many adequate ones available over the counter, or you can use a prescription drug such as metaclopramide or prochlorperazine. If you buy them over the Internet, take some reasonable precautions (such as testing the prescribed dosage when you are feeling nauseous). Although the usual precautions apply (see *Buying drugs on the Internet*, below), as most of these drugs are quite cheap there is not the same motivation to sell counterfeits.

One thing to be aware of with anti-nausea drugs is that some of them cause drowsiness. This is particularly true with some of the antihistamine preparations. Unless you are specifically using the drug to cause sleepiness, check the details carefully. There are too many to list, but antihistamines fall into two categories, those that also cause severe drowsiness and those that do not (or cause less drowsiness). Ask the pharmacist (and also check the notes on the packet when you buy them) or your doctor. Try the normal dosage recommended for travel-sickness or other genuine medicinal reason and see if you feel drowsy. Hyocine is an anti-nausea drug that is also available as a patch applied to the skin rather than as a tablet. It may cause some drowsiness though. Not all anti-nausea drugs are used for travel-sickness. Metoclopramide, for instance, is ineffective for tummy upsets caused by travel so

won't be offered for that purpose. (Metoclopramide is the anti-nausea drug of choice in Dutch euthanasia.)

It has been pointed out that some anti-emetics focus on upset stomach whereas some, for travel sickness, act on the brain's balance receptors. Therefore a favoured recommendation and easily available is an over-the-counter drug called Motilium (generic name: domperidone).

The exact choice and number of anti-nausea drugs is far less crucial than using common sense. Ideally you would take an initial dose a couple of hours before the self-deliverance drugs and a further dose about twenty minutes before taking lethal drugs. You would increase the normal dose slightly, but not excessively.

Anti-nausea drugs are also routinely prescribed for certain conditions, as part of advanced palliative care, and commonly in patients with advanced cancer.

Obtaining sleeping tablets such as zolpidem (Ambien)

When will a doctor prescribe these sleeping tablets? Not just because you fancy some, that's for sure! Your doctor is responsible for your 'whole being' health so this means that if he or she is convinced that your *sleeping problems are interfering with a normal life* then a prescription can be justified. For instance, if your lack of normal sleep means you cannot perform your job properly or it is interfering with a normal social life. Sleeping tablets are usually prescribed on a short term basis (they can't be taken on a daily basis for a long period as their effect wears off or they become addictive). Sometimes if your doctor trusts you to use drugs sensibly and not too often, a more regular small amount may be pre-

scribed. Prescribing will normally follow the 'least medication needed' option, which goes something along these lines –

1. Serious sleep problem.
2. Doctor suggests lifestyle changes or occasional use of over-the-counter medication.
3. Patient tries this *for a month or so* and reports back that sleeplessness is still a serious problem. (Each stage requires a certain amount of time to give it a proper chance of working, so can rarely be skipped.)
4. Doctor prescribes a mild sleeping tablet such as zopiclone for occasional use. (Note the similar spelling: zopiclone is a markedly different drug to zolpidem.)
5. After maybe a couple of months, the patient reports back that it has some effect but does not really work that well at providing reliable sleep, and/or there are unpleasant side-effects such as upsetting the system in some way. zopiclone, for instance, can sometimes cause mood changes or daytime clumsiness or daytime restlessness.
6. Doctor prescribes zolpidem or the (benzodiazepine drug) temazepam (also called Restoril), possibly in the lowest dose. Although temazepam tablets tend to be a bit bigger than zolpidem tablets, they are quite suitable for the plastic bag method.
7. Repeat of stage (5), at which point doctor prescribes different drug (zolpidem or temazepam) or a different dosage.

Another reason sleeping tablets are prescribed is for long-haul travel. If I am flying a considerable distance and have to give a lecture shortly afterwards, it is important I get a good sleep on the plane. I generally ask my doctor for a small number of sleeping tablets and indicate any that, from experience, I find ineffective or unpleasant!

Zolpidem usually comes in tablets of 5mg or 10mg. Temazepam tablets and capsules vary. In the UK, Temazepam is available in 10mg and 20mg doses (which are very roughly equivalent to the 5mg and 10mg zolpidem strengths). It costs the NHS roughly twice as much as temazepam, but is still an inexpensive drug.

Zolpidem is an excellent drug of choice in combination with the plastic bag. It can also be used with chloroquine. Temazepam is not strongly recommended with chloroquine but is an adequate drug for use with the plastic bag method.

Buying chloroquine – a reader’s experience

An Exit member who attended a workshop bought some chloroquine afterwards and then wrote in to the Exit Newsletter recounting her experience:

“I bought 120 tablets of chloroquine (Avloclor) with no difficulty. First, I consulted the reputable travel health website www.fitfortravel.scot.nhs.uk (run by NHS Scotland) and looked at the malaria map for a number of countries and what anti-malaria drugs would routinely be prescribed for them. I discovered that northern and southern (not central) India and Central Asia fit the bill because chloroquine is the drug of choice for these areas. (If you choose India, you are recommended to take chloroquine and proguanil, so more compli-

cated.) Central Asia is subject to malaria from May to October only.

“I simply went to three chemists and said I was going on a tour of Central Asia for two weeks in late September. I went to a couple of Boots and neither asked any further questions, although one did ask me to complete a form to say I had been advised to take chloroquine. I also went to a small independent chemist who asked which countries I was going to in Central Asia. I listed Armenia, Azerbaijan and Kyrgyzstan. This chemist obligingly showed me his crib sheet of malaria countries and recommended drugs, and all countries in Central Asia – apart from Kazakhstan – are deemed to require chloroquine from May to October (even though most tourist sites are in cities, which are all malaria-free!) If I had been asked for any more detail, I would have said I was going to visit Mount Ararat in Armenia, which is a tourist highlight and which is definitely in a malaria area.

“The rules for chloroquine are that you take two tablets a week for one week before the visit, during the visit, and for four weeks afterwards. So I said I was going to Central Asia with my husband for two weeks. This meant I would need more than one pack for the two of us (ie. fourteen pills each; packs of twenty tablets) and would be given two packs by each chemist. Tablets cost £2.50 per pack at the local chemist and £4.30 per pack at Boots!”

Note: Boots is a leading UK chemist shop and has sometimes been known to ask people to sign a disclaimer form for you to acknowledge they have given you advice for this product.

Buying drugs abroad and shelf-life of drugs

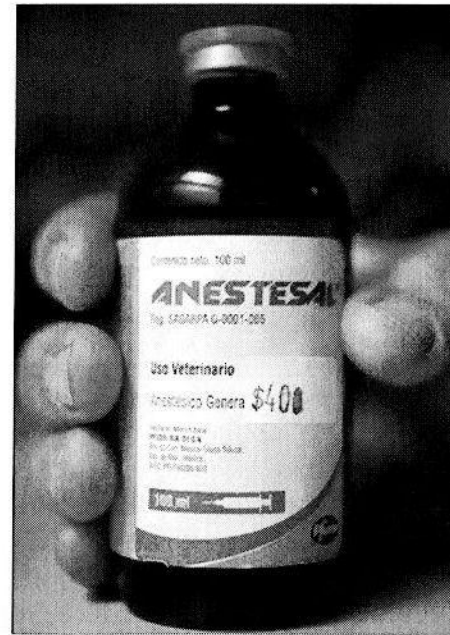
Some people get stuck on the idea that they can find the perfect chemist somewhere abroad, maybe Mexico, and get their dream prescription. The logic of spending much time, effort and money on such a quest seems dubious. Firstly, it is usually relatively easy to get the usable drugs in your home country where you know they are genuine and in good condition and where you are not breaking any laws. We do not recommend you go abroad especially to look for prescription drugs. But if you do buy drugs abroad, some common sense observations will help you determine their worth.

You need to know that they are genuine and secondly that they have been stored in suitable conditions. Many pharmacies in hot climates will keep main drug supplies in a specially air-conditioned room – some will not. Drugs sold in foil packs are less likely to have deteriorated than those that are not, and tablets/pills are more resistant to deterioration than capsules. Tablets are hard, compacted, whereas capsules are soft and more easily affected by external conditions. Generic drugs may be just as good as branded ones or they may (in poorly controlled countries) be weaker. I've seen accompanying small print that said where the actual drug was not available a suitable 'substitute' would have been used in manufacture. Even if it appears branded this is not a cast-iron guarantee of authenticity: there is a large black market in counterfeit drugs, even down to the packaging.

When it comes to sleeping pills, if you believe you have a genuine product, you can test them in the normal way – to see if a normal dose will give you a good night's sleep, and also (as a precaution) find out how many you need to get eight hours sleep in daylight hours. Obviously most drugs other than sleeping tablets cannot be tested in this way. (One doctor,

Philip Nitschke of Exit International, an organisation unconnected to Exit, also sells a kit for testing barbiturates purchased in this way. <http://www.exitinternational.net/>).

Another common but largely unfounded worry about whether drugs have been affected by storage after the shelf-life or 'use by' date.



Example of Mexican Veterinary Nembutal

Here is a quotation from the Wall Street Journal:

“The expiration date, required in several countries, specifies the date the manufacturer guarantees the full potency and safety of a drug. Most medications are potent and safe after the expiration date. A study conducted by the U.S. Food and Drug Administration covered over 100 drugs, prescription

and over-the-counter. The results showed that about 90% of them were safe and effective as far as 15 years past their expiration date. Joel Davis, a former FDA expiration-date compliance chief, said that with a handful of exceptions - notably nitroglycerin, insulin and some liquid antibiotics - most expired drugs are probably effective.” (Cohen, 2000)

Testing drugs is a very expensive business. Most people who obtain drugs for medicinal reasons will renew them or use them within a relatively short space of time, so there is no need for drug companies to test them for many, many years. This does not mean they suddenly become useless, merely that they have not been tested. In the case of tablets, if they have been kept in dry conditions at a reasonable temperature, it is unlikely that they will deteriorate for a very long time. For chloroquine, just get new ones every few years or so (or if you live in the US, whenever you travel outside). For sleeping tablets, if you have kept them for a long time, test them with the 'estimating dosages' experiment. If you get a good eight hours sleep in the day time with, say, two, then just multiply that number by ten for use with a plastic bag or chloroquine.

There are reliable stories of persons travelling to Mexico and buying barbiturates over the counter by asking for the veterinary brand names and saying it is for 'putting down their pets', then bringing them home and using them without getting caught on the way. Previously it was reported that you might easily walk into a doctor's office, pay a consultation fee of around \$50, and then complain of serious insomnia and ask for a prescription of Nembutal or Seconal, saying it was the only sleep-aid that would work while you are travelling in a hot country. It is clear that such opportunities change frequently and that might be much harder to do now. Barbiturates are highly controlled substances and possession of them without a legal prescription is a serious offence. I am aware of people who obtained veterinary barbiturate just a few months ago in Mexico: but by the time you read this book, will that option have become more difficult as well? The barbiturate commonly used both in animal euthanasia and in the Netherlands for voluntary euthanasia is Nembutal (the generic name for which is pentobarbital, a short-acting barbiturate). The

usual dose of Nembutal prescribed for assisted suicide in Oregon is 9gms, whereas Dignitas in Switzerland prescribes 12 gms. If you are caught at customs, the likelihood is that the drugs will be confiscated and you will face a very serious charge. Think twice before breaking the law. Apart from anything else, if you are caught you may face a situation where it is almost impossible to put any plans for self-deliverance into action. For those who feel undeterred by these considerations, the following should be considered. Once again, I am not advocating breaking the law at all. But knowing the facts may help dissuade you, or at least put you in a position to decide one way or the other.

- Two bottles of (liquid) veterinary Nembutal would be needed.
- A single bottle contains 6gms in 100ml of elixir. (A size that fits easily in your hand.)
- They are not expensive – probably no more than £20-£30.
- American dollars can usually be used in Mexican border towns.
- Many people make short excursions to do tourist shopping across the border in Mexico from the U.S.
- The language in Mexico is Spanish, but some very basic English may often be understood in border towns.
- Do you really think you are good at avoiding suspicion? In the 'Vetinaria' chemists? And when going through Customs?
- Trade names on the bottle include Anestesal, Sedal-Vet, Pentobarbital Injectable, Sedalphorte, Barbitol, Sedal-pharma.
- It is illegal to take it out of the country.

- It is illegal to take it through the U.S. when completing your flight home and U.S. Border Controls may be especially hard.
- It is highly illegal to bring narcotics into the U.K.
- Posting Nembutal home probably incurs an even greater risk of detection at Customs.
- Possible sentences could include a jail term of several years or a heavy four-figure fine.
- If you are very ill, consider whether you will be able to drink two bottles unaided.
- Without knocking them over?
- When Nembutal in liquid form is drunk, an antiemetic (anti-sickness) drug should also be swallowed approximately 30 minutes before the lethal overdose. This is done because large concentrated doses of pentobarbital may cause vomiting.
- What is your back up plan if no nembutal is obtained?
- Chemists selling the drug frequently cease to do so. It may even take an extra day or two in Mexico to look for other suppliers..

Buying drugs on the Internet

Similar concerns apply as buying from abroad. Regulations (such as which drugs can be mailed from which countries to which countries) change from time to time, as do web addresses. There are many reputable firms online and also many involved with counterfeit drugs or simple fraud. While you may find some useful drugs online but we do not recommend it as a primary route. You will not be able to buy prohibited drugs such as barbiturates legally on the Internet. There are many cases of people online charging anything from ten to a hundred times the cost of veterinary Nembutal from Mexico. And many cases of people being defrauded with non-

genuine materials. Even if you do manage to buy controlled drugs such as barbiturates over the Internet or by mail, you are still committing a very serious and punishable offence. A recent article in *The Economist* magazine noted that crooks are growing ever more technologically sophisticated. Some can even counterfeit the holograms on packets that are meant to reassure customers that pills are genuine.

Gulp or grind? – the best way to take tablets

How do you usually take tablets? Some people gulp them down with barely a sip of water. Some people like a slug of whisky, and some almost half a pint of water. Some people can take several at once, and some will struggle over one. Your ability to swallow tablets may also vary according to how you feel or other factors. No-one has yet invented a simple and reliably painless 'one-tablet solution' for self-deliverance. Most tablets are quite bitter tasting. The degree of difficulty swallowing sufficient of the drugs concerned can be factor determining how suitable this method is for you. Remember it may change once you are very ill.

To overcome the worry about swallowing tablets, many people will grind them up and then mix them with something like apple sauce or chocolate pudding. These are two of the more popular foodstuffs to hide the taste, but bear in mind they are unlikely to mask it entirely. Grinding tablets up also has the advantage that they will be absorbed slightly quicker once in the stomach. If you plan to grind them up, a small mortar and pestle from a kitchen accessories shop will make the job easier. Or a 'pill crusher' which can be found in some healthfood stores and chemists. A sensible amount of sauce or pudding is enough to mix the tablets but not too much. If it is more than a few spoonfuls you may start to feel sleepy before you have finished swallowing the tablets.

An alcoholic drink to wash them down is quite acceptable. Alcohol increases the effect of many sleeping drugs but can also irritate the stomach. The general rule is to drink alcohol if you feel inclined to do so, but not vastly more than you would usually. Stick to your usual tippie or increase it slightly. Don't go to great excess, especially with a form that you generally avoid. Whisky, for instance, disagrees with my digestion whereas I can enjoy wine without an upset stomach. Let your body be your guide, as it varies greatly from person to person. Understand also that antacids can slow the rate of absorption of chloroquine and so should be avoided.

What you need

For a drugs-only self-deliverance:

- A lethal quantity of drugs.
- A handful of anti-nausea tablets.
- A mortar and pestle for grinding up drugs (helpful, not essential). A coffee grinder could conceivably be used.
- Apple sauce or something to mix the drugs with (helpful, not essential). Partly melted ice-cream or sorbet (about half a cupful) is an option, possibly sweetened with honey. Milk products are generally avoided as they slow absorption, but a *little* milk may help to line the stomach just enough to decrease irritation. A little food should be just as effective – something light, such as toast. Generally you do not want to have too much in your stomach.
- Undisturbed time – at least several hours.

For using drugs with a plastic bag for self-deliverance, please see the *plastic bags* chapter)

Preparation and method

Firstly you might want to estimate how high on your preference list this method is, and your next most preferred method. After stockpiling sufficient drugs, get an idea of how easy or difficult it will be for you to swallow them. Sleeping tablets can work quite quickly – will you have the time and ability to swallow all that you need? If you want to know exactly *how* bitter-tasting the drug is, try just one tablet with the apple sauce and taste it as part of a dress rehearsal. If and when the time comes, you will need to act decisively and quickly, so estimate your own ability to swallow all the drugs effectively.

Next, go over in your mind the exact scenario, several times. Plan your timetable. The order in which the drugs should be taken is anti-nausea drugs, followed by a gap to let them work, then the chloroquine, then the sleeping drugs immediately afterwards or at least within a few minutes.

Make sure everything is arranged, notes written, the place warm and comfortable, *before* you start. You will probably unplug the phone and disconnect the doorbell. If in a hotel, you have left the *Do Not Disturb* sign up.

When taking sleeping tablets, especial care must be taken to ensure the full amount intended is consumed swiftly. There have been cases of failed suicides where the person fell asleep before finishing swallowing the drugs.

Other drugs – barbiturates

If you have access to barbiturates then these are normally sufficient to induce sleep and death quite safely on their own. Anti-nausea medication is still required, as mentioned above, and you need to pay particular attention to making sure you swallow sufficient of the drugs swiftly so that you do not pass

out before finishing them. Sleep is normally followed by respiratory depression and death. Beyond that, there are a few considerations as follows:

Although death will normally occur within a few hours, in rare cases it may take longer. Cases of persons being alive (in a coma) up to four days before dying have been recorded. Certainly the precautions against being disturbed should allow for this. The use of a plastic bag in addition can securely avoid this drawn out possibility.

There are three broad categories of barbiturate according to their duration of action in therapeutic doses. Long-acting barbiturates include barbital and phenobarbital (Veronal, Luminal, Gardenal). Medium-acting barbiturates include butobarbital/secbutobarbital, mephobarbital, amylobarbital (Soneryl, Butisol, Meberal, Amytal). Short-acting barbiturates include pentobarbital, quinalbarbital/secobarbital (Nembutal, Seconal). Tuinal is a mixture of amylobarbital and secobarbital. While this classification is helpful for therapeutic purposes, shortness of action is not equated with lack of toxicity. Long-acting barbiturates have caused the most fatal poisonings, but some authorities believe the short-acting ones lead to a deeper coma. If given a choice, the short-acting ones or a combination of both seem overall preferable. Pentobarbitone (pentobarbital) is used for euthanasia in the Netherlands. In practice, their availability is so scarce that it is a case of using what you have or, if you are not sure if you have sufficient, using them to cause deep sleep in combination with a plastic bag or chloroquine. Much more can be written on this, but with barbiturates being so hard to obtain it would seem to be overloading the reader with unusable information.

A minimum recommended lethal dose is 60 capsules of 100mg Seconal or Nembutal. The usual three or four anti-nausea pills are taken half an hour to twenty minutes beforehand. It is also best, if possible, to take a beta blocker with the anti-nausea pills, such as three tablets of 80mg Inderal (propranolol hydrochloride). This reduces the blood pressure and makes the system immune to adrenalin. Although the 6 grams recommended above may be optimal, more may be desirable if your stomach can stand them, and death has frequently been recorded with as little as 3 grams of butobarbital. In the Netherlands, 10 grams (100 x 100mg) of pentobarbital is used, and even then a secondary drug (delivered by injection) is the norm.

In Britain, all barbiturates are classified as Controlled Drugs. Preparations containing secobarbital (quinalbarbitone) are in schedule 2 of the Misuse of Drugs regulations along with cocaine. Receipt and supply must be recorded in the Controlled Drugs Register. Barbiturates are also controlled as Class B drugs under the *Misuse of Drugs Act*. Doctors can still prescribe them and patients take them, but unauthorised possession or supply is an offence. Maximum penalty is five years imprisonment and a fine for possession, and fourteen years imprisonment and a fine for supply. If prepared for injection, barbiturates are regarded as Class A drugs with even more severe penalties.

If a suicide attempt with barbiturates fails, there may be some lingering disorientation but no seriously disturbing long-term effects.

Alcohol greatly increases the effect of barbiturates. A reasonably large amount is a good idea – as long as you don't take so much that it makes you vomit. This varies from

person to person, so know your usual alcohol intake (or the amount you can drink without vomiting).

Other drugs – Orphenadrine, Propoxyphene, Tricyclics

These have been listed in *Departing Drugs* or *Beyond Final Exit* and are sometimes acceptable drugs. Compared to the main methods described in this book, they are no longer drugs of choice. They will be considered briefly.

Orphenadrine

Orphenadrine is prescribed for a variety of conditions including Parkinsonism and as a muscle relaxant. Three grams (30 times 100mg tablets) is considered reliably lethal. Side-effects are potentially very serious though, including hallucinations and possible seizures. It is best avoided unless you feel you do not have other options. If you do use it, be sure to use plain tablets, ground up, *not* orphenadrine compounds.

Propoxyphene (and Dextropropoxyphene)

This painkiller drug is less widely available now. Many forms available were combinations with drugs such as paracetamol or aspirin, which have very serious side-effects in failed overdose. It was considered a suitable drug for use in combination with the plastic bag (or with other sedatives) but is being withdrawn in most countries. Seizures are also a possible side-effect.

Tricyclics

Tricyclics are a class of anti-depressants. They are sometimes prescribed less than before, as the newer SSRIs (anti-depressants like Prozac) are considered to have a lower side-effects profile – in other words, side-effects don't include possible death. Prozac (fluoxetine) is considered by some studies to increase the lethal effect of the tricyclics if taken in

combination. Alcohol or barbiturates increase the toxicity. Some studies have suggested diazepam increases the toxicity of amitriptyline. Of all the tricyclics, amitriptyline is generally the most useful in self-deliverance.

But tricyclics are a complex area for use in self-deliverance. Some are highly sedating and some less so. Those with *sedative properties* include amitriptyline, clomipramine, dosulepin (dothiepin), mianserin, trazodone and trimipramine.

The *less sedating* ones include imipramine, lofepramine and nortriptyline.

If you have sedative tricyclics (ones from the first list), especially if you have amitriptyline, they may be considered a suitable sedative if you take precautions. Firstly, if you have been taking them for a therapeutic reason, you need to stay off them for a few weeks to ensure you have not become acclimatised to them. Then, a few weeks before using them for self-deliverance, you need to do the *Estimating Dosages* experiment to see if a small dose knocks you out for several hours of daytime sleep. With this amount as a base increase your planned self-deliverance dose by a factor of ten if you are using them with the plastic bag. Individual reaction to tricyclics varies.

Although there are numerous cases of suicide with tricyclics alone, there are so many variables that they cannot be confidently recommended as a stand-alone self-deliverance drug.

Other drugs not mentioned so far

There are many drugs that can kill you, but very few that can do so reliably and painlessly. There are also drugs on which

there is insufficient information to make a recommendation one way or the other.

Checklist

- If you are using chloroquine, do you have suitable (preferably non-benzodiazepine) sleeping tablets to take with it?
- Do you understand the dangers associated with various drug-orientated methods of self-deliverance?
- Have you taken into account your ability to swallow the required amounts of drugs, either in tablet form or crushed up? Do you have an alternative method should you one day be in a condition that eating and swallowing is slow and difficult?
- Have you made suitable arrangements not to be disturbed?
- If in doubt about any of the aspects of your drugs-only plan, have you considered using a plastic bag as an additional safeguard?

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For an authoritative list of further references to articles on chloroquine from the medical press, see the chloroquine section in the appendix of this book.

Forgive yourself before you die. Then forgive others.

Morrie Schwartz, American educator and writer (1916 - 1995)

Against you I will fling myself unvanquished and unyielding,
O Death!

Epitaph of Virginia Woolf

Plastic bags

Story – what you need – main features – general description – what is the evidence for plastic bags? – how quickly does it work? – are there any unpleasant side-effects? – checklist – references & diagrams

Jennie's story

Jennie drew her life to a close using one of the most traditional of methods – sedatives and a plastic bag. The sedatives weren't the cause of her death, but they were sufficient to ensure she was deeply unconscious when the oxygen in the bag was exhausted. Everything was planned carefully and she had practiced the 'dry-run' on many occasions – she would place a couple of rubber bands around her neck then slip the bag over the top of her head and tuck the ends in underneath the bands. It was a large bag to give the drugs time to be fully effective. She had experimented with several variations – two bags inside each other, a large garden garbage bag, one of those 'compression' bags used for storing clothes (she had cut the seal off to make it easier to tuck under the rubber bands) – in fact whenever she was out shopping she was always on the look-out for suitable bags. She used two rubber bands in case one broke. They were the right size, fitting quite snug around her neck without being in the slightest uncomfortable.

The bag she had settled on was see-through plastic. This was nice. It let the light through as well as looking less unpleasant to whoever would eventually find her. Everything was arranged. She had her anti-sickness pills ready to be taken twenty minutes or so beforehand, then the sedatives that she would take immediately before arranging the bag (putting the bag on

quickly before they started to make her feel drowsy). She also had a book of Keats, her favourite poetry, to hand, and a CD of Beethoven's 2nd symphony which she would listen to while making the preparations and leave playing as she 'went under.'

Jennie's 'kit' that she had put together over the years also included a wide-brimmed hat and a painter's mask. Some of the literature suggested them to keep the plastic of the bag from being sucked against the face; but she found with the bag she had chosen it was not necessary – the plastic material was quite heavy and, when she shook the bag to get lots of air inside prior to putting it over her head, it didn't seem to fall against her face even after several minutes. Practicing with the bag but without the sedatives was quite safe – you never became drowsy and could take the bag off long before the air got hot and difficult to breathe (that would take up to half an hour at least).

Jennie lived with her son. Under English law, no-one could be in the house at the same time that she made her 'exit' so she was careful to make sure he was going to be out for a good few hours. Her son was sympathetic to his Mum's beliefs and understood her tact and why she wanted to make it clear to everyone that this would be her act, without anyone's help or assistance. When he had left, she also unplugged the phone, removed the batteries from the doorbell, and did a last mental check to make sure no visitors were expected.

The amounts of drugs were carefully laid out. She had used the 'estimating dosages' routine (see *Frequently Asked Questions*) and avoided taking any of the drugs for medicinal purposes for some months so her body was not accustomed to them at all (in other words, she didn't have an acquired tolerance that sometimes occurs with frequent dosaging).

Jennie knew she could relax until the last minute and that then she had to act swiftly. Once she started taking the sleeping tablets, all the preparations had to be completed quickly before they started taking effect. As an extra precaution, she had taken some anti-nausea pills a couple of hours ago. She ground up her sleeping tablets ready to be mixed with some chocolate pudding. She left her farewell note where it would be easily found. She hadn't eaten all day, wanting to keep her stomach fairly empty. Now she treated herself to a small meal – some toast and croissants – and took another dose of anti-nausea tablets, just over twice the therapeutic amount. They were the sort that did not make you overly drowsy, but she could still feel the effect. Fortunately she was well rehearsed.

With an eye on the clock, Jennie waited about twenty five minutes for the anti-nausea pills to be absorbed. She switched her music on. Then she mixed the ground-up tablets with the pudding. She placed the rubber bands around her neck before downing the mixture in a few spoonfuls, washing it down with a glass of champagne she had placed nearby. Without pausing (the sleeping tablets could start to work within half a minute!) she slipped the bag over her head and tucked it securely under the rubber bands, checking all the way round so she knew it was a good seal. She sat back in her comfortable armchair and had time to pick up her Keats. It was a large print volume and she could see the lines clearly through the plastic bag.

But this is human life: the war, the deeds,
The disappointment, the anxiety,
Imagination's struggles, far and nigh,
All human; bearing in themselves this good,
That they are still the air, the subtle food,
To make us feel existence, and to shew
How quiet death is.

How does it work?

Very soon after taking the sleeping tablets and quickly donning a plastic bag, the person falls into a progressively deeper sleep. The air in the bag is gradually 'used up' – the lungs remove oxygen from the air with each inward breath. That oxygen is transferred to the blood which in turn keeps the brain alive. The outward breath contains a higher proportion of carbon dioxide and eventually the air in the bag contains insufficient oxygen to oxygenate the blood and keep the brain alive (anoxia). The process is hastened by the build up of carbon dioxide, which is toxic in higher concentrations. When the entire brain ceases to function, all the automatic processes of the body also stop: death occurs.

Drugs to use with plastic bags

Any sleeping drug of your choice that is effective. This can be from over-the-counter drugs, if they work for you, to the stronger ones obtainable on prescription or sometimes via the Internet. Test them with the *Estimating Dosages* routine. For a fuller description of various options and approaches to obtain them, please review the *Drugs* chapter.

What you need

- A suitable bag. The preferred size is shown in the diagrams, but you may select a smaller one as long as you are aware of the difference this presents.
- A couple of elastic bands.
- Sufficient sleeping tablets to put you in a deep sleep.
- Some anti-nausea tablets.
- Lots of practice putting the bag on!
- Other options include a wide brimmed hat or painter's mask to keep the bag away from your face. Many people

will find these unnecessary, but you will be able to tell during your dress-rehearsals if your bag has a tendency to fall against the face.

Main features

The plastic-bag-plus-drugs method is historically the most established method of self-deliverance that is still used today. It is a 'safe' method in the sense that if a person doesn't get it quite right, the worst that is likely to happen (unless they are disturbed) is that they wake up with one hell of a hangover. It requires relatively little in the way of equipment or know-how. Some people find the plastic bag method unaesthetic.

General description

It is important to understand the mechanics of the 'plastic bag method' to avoid errors. It is a good method, but many failures have also been reported. Failures can usually be explained by the wrong size of bag being used, or occasionally the wrong type of plastic.

The use of sedatives is not just to cause sleep, but a sufficiently deep sleep for you to be immobilised. Otherwise it is quite possible that you will tear the bag off in your sleep. You know how most people toss and turn occasionally in bed at night? If something (such as the bed quilt) falls over the face and makes it too hot to breathe comfortably, you will probably move or push it off without waking up – it is an automatic reaction to carbon dioxide.

As the air in the bag is used up (similar to when you get 'hot and stuffy' under the bed covers), what happens is that the percentage of carbon dioxide in the air is increased as a result of exhalation. One of the side-effects of breathing a higher

concentration of carbon dioxide is hyperventilation – an increase in the depth and rate of breathing – and you easily become more physical as a result.

Without putting too fine a point on it, it is easy enough to calculate the given amount of air in a bag and roughly how long it will last. Although they vary slightly from one individual to another, we also know the amount of time that sleeping drugs take, firstly to put you to sleep (which is very quick) but also, more importantly, how long it takes before you are immobilised and not going to thrash about a lot.

Early self-deliverance manuals recommended a medium to small sized plastic bag. Although there are many successes with such a bag, we know from the calculations just described that the volume of air in a medium sized bag is insufficient to allow time for the drugs to immobilise you. Which is why there are many cases of people ‘waking up’ and wondering how the bag got torn off.

Off course, if this happens to you, you will probably not have anything more serious to deal with physically as a result of the failed attempt than a bad hangover, but psychologically the experience can be traumatic and frustrating. To avoid this, find a larger bag – no need to measure it, but the picture is a good guide. When you are sitting with the bag on, then if it comes down to your knees (in sitting position) then that is a good size. Give it a good shake before you put it on (to fill it with air) and you will have about an hour of comfortable breathing before the oxygen runs out – which is plenty of time for the drugs to work fully.

When the oxygen runs quite low, insufficient oxygen will go into the blood, which means not enough oxygen gets to the

brain. Deprived of oxygen for a few minutes, the brain shuts down and then death occurs.

Using a *larger* bag represents the safest course, but some people will choose a medium sized one because it is more comfortable or easier to use or they just prefer it in some way. If it is quite sturdy there should be no problem, but armed with the full facts you can now make your own choice.

We’ll look at the details of obtaining and using the best sized bag later in this chapter. The ideal bag size can be determined roughly like this. With you seated in an armchair and the bag over your head and secured around the neck: does the other end of the bag reach down more or less to your lap? If it does, that is an ideal size when we are talking about a ‘large bag.’ This rough approximation is based on a rectangular bag. Some bags, such as those sometimes used for storing clothing, may be square-shaped, so you can allow for the difference. When in use, the bag should be full of air, but size is not rocket-science and you shouldn’t worry unduly over an inch or two.

In some cases where people have been suffering intensely, a *small* bag has successfully been used. This is not the pleasantest way to go, but there is a trade off between how desperate the circumstances are and any further discomfort that can be tolerated. Using a small bag is straightforward death by suffocation. Some tranquillisers might be taken to ease the unpleasant sensations in such a case. Persons using a small bag (rather than bag + drugs) can potentially reduce the time and discomfort very considerably by combining it with a compression tourniquet (see the chapter on compression).

Try out as many different bags as you can in a dress rehearsal. Not when you are sick, but when you are well, so you can

make your mind up which one to use well in advance should the need ever arise. Bags with very thick plastic require a bit more manual dexterity to position. If the bag is quite thin, you might want to use two bags, one inside the other. You could even make or obtain a customised bag with a velcro strip for fastening it around the neck. You want to know how to get it on with ease (when you are adding rubber bands to keep it in place, a bit of practice comes in handy.) Remember the sleeping tablets may work very quickly, so there is no time for fumbling.

To summarise:

- A small bag is ok for emergency but will cause feelings of discomfort if the drugs have not taken effect (combine with compression instead).
- A medium bag is popular, but there is a chance you might thrash about in your sleep, possibly even tearing the bag.
- A larger bag (see diagram) may be harder to manipulate (if it is thicker plastic) but ensures you are in a deep sleep as oxygen runs out, so when done properly is more foolproof than using a medium sized bag.

Note: the above considerations apply for the drugs+bag method. The helium method, in contrast, uses a small bag.

If you are unable to get anything else, over-the-counter sleeping drugs (available in most countries) can be used, but a safer option is modern prescription-only sleeping tablets such as zolpidem (Also called Stilnoct. In the US they are called Ambien). Over-the-counter sleeping medications often contain the antihistamine diphenhydramine – their effectiveness is lower than prescription drugs and may also vary over time.

Zolpidem is fast-acting and also has the advantage of usually being supplied in a very small tablet, which makes it easier if you are swallowing quite a quantity. (n.b.: zolpidem is rarely lethal in itself: it is taken as a drug to put you in a deep sleep so that you will not experience any gasping for breath when the oxygen in the bag is used up.)

It has sometimes been possible to buy zolpidem on the Internet without a prescription. If you do so, beware that there is a burgeoning market in counterfeit or substandard drugs on the Web and you should be careful about sources; and also test a small quantity properly before relying on them for self-deliverance. Does one or two put you to sleep properly in the daytime (in other words, when you wouldn't normally just drift off)?

Most people will obtain zolpidem from their doctor and simply stockpile it. For more advice on obtaining zolpidem, see the 'obtaining sleeping tablets' section in the previous chapter on Drugs.

What is the evidence for plastic bags?

Use of plastic bags for suicide is long-established and attested to by police reports, newspaper reports, medical journal reports, eye-witness accounts and so on. The science involved is fairly straightforward.

What is the evidence against plastic bags?

The reason for failures with plastic bags are now fairly well established. The evidence comes largely from reports of right-to-die societies by people who have failed. Exit received a number of such reports and the Dutch right-to-die society told the authors of *Departing Drugs* of many failed attempts. This led to further research. Scientific calculations (as well as descrip-

tions of failures) showed that some failures were due to too small a bag. In these cases, a person's oxygen supply ran low while they were asleep but before the drug had put them in a sufficiently deep sleep. A small number of failures could not be attributed to this cause. Collaboration with the physics department of a major university brought to light that some plastics are oxygen-porous. These plastics are not generally employed in the type of bags used in suicide, but are hard for the user to identify.

How quickly does it work?

With the type of bag in the illustrations, up to a little over one hour. A smaller bag will mean less time, but increases the (small but harmless) risk of failure. Once the oxygen supply has been fully depleted, the brain shuts down in a matter of minutes and death occurs.

Are there any unpleasant side-effects?

Not really. A good-sized bag will overcome any worries about hotness, or stuffiness.

Myths about plastic bags (1): the plastic bag method is foolproof

Actually there are many failures with plastic bags. I once spoke to a man who had failed six times before getting our literature and understanding how to do it in a way that minimizes failure. Exit similarly has many reports of failures from other countries. The slightly reassuring factor is that failure with the plastic bag does not generally lead to any serious complications (other than the trauma of having failed after such a momentous decision). You can try again. But it is helpful to understand how things can go wrong and so minimize the chance of failure.

Myths about plastic bags (2): any reasonable plastic bag will do

The most common culprit of failure is too small a bag – a 'medium' sized bag. This can result in lack of oxygen and hyperventilation (a reflex action involving an increase in the depth, rate, and duration of breathing which, in this case, is triggered by carbon dioxide build-up). This can happen even when the person is asleep. If it happens too early, and the person is not so deeply asleep as to be incapable of reflex action such as struggling, they will often tear the bag off in their sleep, eventually waking up hours later and wondering how on earth it happened. This is not to say there have not been many successful suicides with a medium sized bag; but if you want to avoid this particular danger a larger bag means the carbon dioxide poisoning (which causes the hyperventilation) does not occur until later on. By this time the sleeping tablets have put the person in a *deep* sleep so no movement is possible.

Finding a suitably large bag can present difficulties, especially if you want a large one made of clear or semi-opaque plastic. A brand that particularly caught our attention was a range called Poly-Lina clear storage bags (1500mm x 900mm in packs of ten.) These are available from some B&Q stores and can be easily adapted. If your local store doesn't seem to have them, try phoning round. You can identify them by the barcode which is 5 010234 773903. The barcode remains the same even if you find them through another supplier (such as Amazon). These bags are quite thin and easy to handle. Some other bags, even though they are an ideal size, are often made of thick plastic. This can prove unwieldy if you are trying to tuck the edges under rubber bands positioned around your neck. To get round this, adjust the size of the opening. You can do this by sealing off part of the width using masking tape

or similar. If you shorten the section of bag that you are sealing off, this will leave a narrower 'neck' that can fit over your the head and be tucked into the rubber bands.

Of the thicker semi-clear bag, one of the early favourites at workshops were bags sold as large compression sacks at Lakeland. These are storage bags made for putting seasonal clothes or bed-linen in, or for travel. After filling the bag, pressure is applied to squeeze the air out through a seal at the neck of the bag, resulting in a smaller overall size for storage. If you use one of these compression sacks, check the size is large enough, then cut off the seal and adapt it in the way described above.

Fill the bag with air!

This rather obvious point is too easily overlooked. The idea of having a big bag is that it holds sufficient air to sustain you until the drugs place you in a very deep sleep. But a flat bag contains no air. A flat bag that you just put over your head contains a bit of air. Give the bag a shake before putting it on so as to fill it up with air.

Plastic bags are not 100% (but 98 or 99% is close)

Plastic bags and drugs, correctly used, are a reliable way of achieving self-deliverance. In the tiny number of cases that go wrong after correct preparations, the drugs are such that one will simply wake up feeling rather hung-over. But why should even a tiny percentage fail if the correct bag size has been used with the correct drugs? The most likely culprit, though rare, is 'the wrong type of plastic'. Some plastics are oxygen-permeable, which means that, over a period of time, oxygen particles can seep through the bag, and possibly in sufficient quantities to maintain life. This accounts for those cases where a person wakes up hours later, head still inside the bag, and the

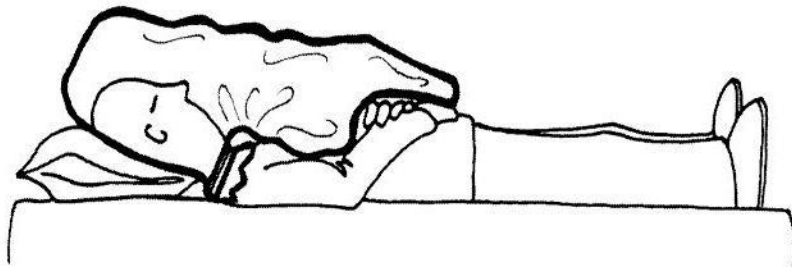
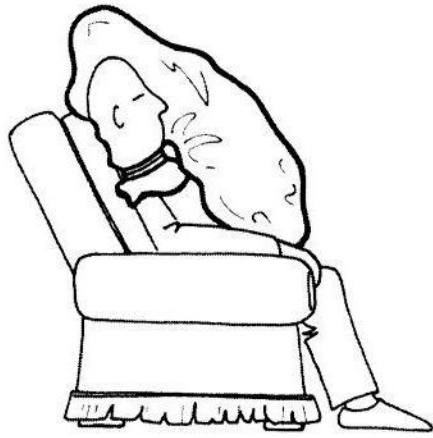
bag intact and in place. To a non-physicist, this sounds so surreal that it was a long time before cross-disciplinary investigations revealed this fact about certain plastics. Permeability can now be understood by anyone with access to books on physics such as those listed in the appendix (see the end of the references list in the section *Finding the Truth about Plastic Bags*). The number of bags affected is small. With this method, unlike some methods, one can simply live to fight another day. But although plastic is supposed to have an identifying mark, in practice such marks are often not present. So it is almost impossible to guard against – but fortunately rare enough not to worry about.

Checklist

- Have you practiced thoroughly?
- Have you got everything in place so that you have the minimum to do once the sleeping tablets have been consumed?
- Have you made sure you won't be disturbed?

Diagrams show two alternative relaxed and comfortable postures for using the plastic bag. In the first one, the person is in an ideal armchair, leaning back, and the chair is such that falling out of it is unlikely. The size of the bag in the diagram is a good indication of the ideal size when using a 'larger' bag.

A lying down position is the next best option.



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- Please see also the articles in the *Appendix* for a list of references.

She did say towards the end: 'Dying's hard work, you know, you have to do it on your own. Dad can't help, mother and father are no use either.' She died during the night while her son, who was keeping vigil, was making a cup of coffee.

From a case study in *A hastened death by self-denial of food and drink*, by Boudewijn Chabot

I am ready to meet my Maker. Whether my Maker is prepared for the great ordeal of meeting me is another matter.

Sir Winston Churchill

There is a dignity in dying that doctors should not dare to deny.

Anon

Starvation and other means

Overview of methods so far – starvation – main requirements – best approach – detox practices – how long does it take – are there any unpleasant side-effects? – main features – other means - firearms – jumping/drowning – charcoal tents, carbon monoxide and exhausts – hypothermia – methods not recommended – checklist – references

In the last four chapters we've explored the main methods of self-deliverance. For enduring peace of mind, I recommend that you are thoroughly familiar with at least two or three of them. There are many other methods, but most rely on drugs that are difficult to obtain, or are unreliable, or carry a high danger of increased suffering in the event of a failed attempt. Importantly, you can rarely predict with certainty your situation near the end of life, so you may have to make your choices according to circumstances.

Under Helium, we looked at a method that is entirely free of discomfort and suitable in most situations where you have the freedom to put the equipment together in advance, store it securely, and have access to it when the time comes.

Under Compression, we looked at a set of simple methods that have minor discomfort at the most and can be used in a wide variety of situations, including hospitals and nursing homes, when you maybe don't have the freedom to get hold of drugs or equipment.

Under Drugs, we dispelled myths about chloroquine and sleeping tablets, as well as looking at the main other drugs of interest, as stand-alone drugs or for use with a plastic bag.

Under Plastic Bags, we cast an intense spotlight on the variations, showing the different reliability and comfort factors.

In this chapter we will look at methods – especially starvation – that are significant enough to be of interest to a proportion of readers and that, correctly used, can also result in a good death. They give you another string to your bow in addition to the methods of the preceding chapters. As with all methods, our aim is to separate fact from fiction, and remove the myths that can obscure a proper, safe understanding of how to go about things. For a fuller examination of very unsuitable methods (which is beyond the scope of this book), I respectfully refer readers to Geo Stone's excellent study, *Suicide and Assisted Suicide (1999)*, which examines lesser known methods quite clinically.

Starvation

By starvation I mean cessation of eating and drinking, voluntary refusal of food and liquid, fasting and dehydration, or a number of other descriptions. We are talking about food *and* water, and ensuring that it is a voluntary choice throughout by the person concerned. But for the sake of brevity, we'll call it starvation, in recognition of the physical process in which the body is starved of sustenance in the form of food, nutrients and liquids.

Of all last acts, there is probably no better example of how individual the choice of method is than starvation. It is not just about wanting to do it and having access to some pills or

equipment. It will be possible for some individuals and not others. It may be physically unsuitable for you. It may be unsuitable on account of your situation in relation to those close to you and how that will develop. It might be unsuitable based on the degree of perfectly lawful cooperation your doctor is willing to provide. It may be unsuitable if you have no-one to provide comfort care. Starvation looks simple. It is not. Yet performed successfully it has much to recommend it.

In studies conducted in Oregon and the Netherlands, nurses reported little or no suffering and pain. But these results are of patients in carefully monitored situations. Attempting it unaided, and in a country less sympathetic to aid-in-dying, can bring all sorts of problems. Recent UK newspaper told of two distressing deaths by starvation after being 'advised' – rather irresponsibly in this author's opinion, to use it as a method by a right-to-die society. Extensive preparation and fine tuning are required. Undertaking it without due preparation and resources can be very distressing. (Case studies reported by *Chabot, 2008*, have expanded many of the comfort care provisions which were examined at shorter length in the earlier edition of this book.)

Do you recall the early suggestion when you started reading this volume? Imagine your death as perfectly as possible – and then imagine possible complications and how you would handle them. In the case of starvation, the 'complications' are highly likely and must be planned for responsibly and ahead of time. Let's go through the method and the complications so you can see what is involved. It is not the easiest way to end one's life, but it is very possible if done properly.

The road to a peaceful death by this method is not only narrow, but after a certain period there is no turning back.

Unlike the other methods, death is not achieved in a matter of minutes or hours. So the emotional strain placed on carers is great, as is the strain on the dying person to manage what they are going through.

The time taken can be approximately two weeks. You will stop food first of all, cleanse the system, then reduce liquids to zero. Someone will need to be on hand to look after you as you get too weak to look after yourself. Starvation has the attraction of seeming more 'natural' to some persons. A passive process, rather than actively using drugs or mechanical means to end one's life. One expires gently. And although the presence of relatives during the process may be a strain, it might also be an attraction, especially to UK residents for whom the ambiguous assisted suicide law (on whether being with someone may involve an illegal act) does not apply with starvation (unless the relatives were denying food and drink to the person dying, in which case different, more stringent laws would apply).

The complications to be handled fall into three categories:

- *Nursing needs.* These involve care of the mouth so that it doesn't dry out completely. Although not 'medical,' there is more to it than there sounds. Advance planning, acquiring and testing various forms of mouth hydration are strongly recommended unless one has a specialist nurse on hand who is familiar with all the options. If blisters and scabs are allowed to develop, they may get to the stage where they are difficult or even impossible to treat.
- *Medical needs.* Conditions commonly medicated include sleeplessness, anxiety, occasionally breathlessness, and pain. Some of these can be self-medicated if one has a suitable supply of the necessary drugs, but GP or hospice support is strongly recommended.

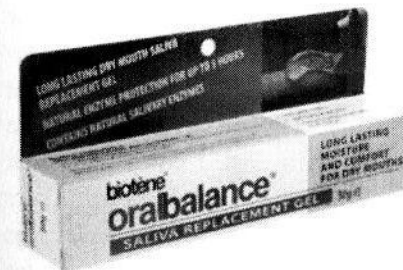
- *Emotional needs.* These are perhaps the most challenging, even with all-round prior agreement, and the main reason when people change their mind. You are not 'here today, gone tomorrow.' So your loved ones may have the sensation of watching you wither away. If it becomes too difficult for them, the urge will be to stop putting them through such trauma. This is probably best addressed by open discussions.

Let's look at each of these in some detail.

Nursing needs – Mouthcare and mouth hydration

The mucous membranes of the lips and mouth are quite sensitive. They become easily damaged as liquid intake ceases and must be cared for properly. Much of the research and preparation can be done by the person themselves. Providing the comfort during the period of self-deliverance then becomes simple care that could be arranged by relatives, but expert help may be needed in some cases. Good mouth care should be commenced beforehand. A soft toothbrush should be available for care as the self-deliverance progresses (children's toothpaste is less

abrasive than the usual sort.). The sort of aids that are also helpful include a nebuliser, which is a device usually used to administer medication in the form of a mist inhaled into the lungs, and of which there are many different kinds. A hand-



Example of saliva-replacement gel

held atomiser performs a similar function. They can be used to moisten the mouth without supplying the body with liquids (as

a drink would). There are mouth sprays and saliva substitutes, and the person planning a self-deliverance through this method can have a dress rehearsal by desisting from liquids for a few days and finding out which saliva replacement products work best in their particular case, both for comfort and for avoiding the sensation of thirst brought on by a dry mouth.

Saliva-gel can be placed on a piece of gauze and rubbed on the gums and roof of the mouth. Some people like a sugar-free gum. Eye-gel and nasal sprays are good to have on hand in case one feels a need for them, and Vaseline can be used on the lips. A humidifier might be placed near the bed to counteract any dryness in the atmosphere. To prevent fungal infections in the mouth, a gauze soaked in alcohol-free chlorhexidine solution can be used on the gums and tongue.

A glass of water should always be available by the bedside in case the patient decides to break his or her cessation of liquid intake. Simply stopping food without stopping liquids will mean the process takes much longer, but some people may prefer that, perhaps slowly reducing the amount of liquid to about half a glass or 50cc of water before the end of the first week. But another use of liquid is control of lucidity. Drowsiness will set in after a few days of ceasing liquids. This can be controlled to an extent – for instance, if one wants to be more lucid for periods spent talking with loved ones. A small amount of water intake – say half a cup or less – will likely cause some of the urea (which is causing the drowsiness) to be excreted. Although it prolongs the dying process, it may be desirable for some last quality moments with relatives, for instance. A Macmillan nurse will be able to advise should oral care become very problematic.

Medical needs – alleviating any pain and symptoms

In some cases of self-deliverance through starvation, little medication has been needed, or else it has been possible to obtain beforehand the medications most likely to be needed. Most of the well documented successful cases however have been in countries where one would not expect such formal opposition to the idea of ending one's own life. For example, paracetamol to control pain and discomfort, temazepam for anxiety and to help with sleeplessness. But there have also been cases where more elaborate procedures were called for – carefully increased high-dose morphine and subcutaneous Midazolam and other specialised medications that the patient is less likely to have been able to obtain routinely on prescription.

Emotional needs – continuous sharing

The largest reported reason for persons abandoning their attempted self-deliverance, both in Dutch and American studies, is not wanting to cause distress to loved ones (who cannot bear to watch the process). In some Asian communities or traditions, a person planning to die will leave their family and go elsewhere – almost as if going to meet death halfway – and in some cases receive appropriate care. This would be almost unthinkable in the West. Maybe for an afternoon – but not for a period of weeks (or even the ten to fourteen day average). For this reason, it is essential that the persons closest to you, if you seek to go along this road, are as fully aware of the process and its ups and downs as you are. This is not a case of a quick 'reassuring chat' – they need to know details of the complications that may occur. Just as doctors and specialist nursing should be available if needed, even more so is the need for those closest to you to understand what is happening, how it will happen, and how they will handle their feelings. If it comes to a battle of wills where you

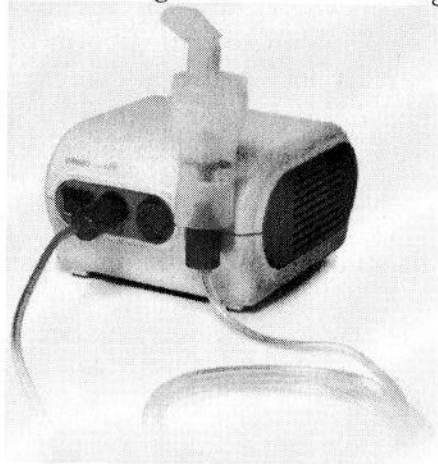
try to exert your wish to die over them, you may find it is a battle for which you lose the taste. Whereas the other four methods discussed have you in complete control, here there is more of an alternation. For instance, succumbing to the dying process but then exerting a controlled will to delay it a little longer to have quality time (as discussed above regarding water intake and lucidity). A good relationship with the doctor is required so that there is understanding and a sense of working together – not simply fulfilling legal requirements to give you pain relief.

You might also wish to give some thought to carrying on normal needs. For instance, it is possible to wash your hair in bed. *Batiste* make a shampoo that you can spray on your hair, leave for a few minutes, and brush out. Small details like looking one's best, even if one is as haggard as Gandhi, can be important in one's dying days.

Main requirements

A careful review of the literature (see *Appendix*) indicates that the main requirements are threefold:

- A physical check-up by a qualified medical practitioner to make sure you do not have either a body type or existing prognosis that is likely to lead to complications; together with careful preparations on your part, researching mouth



A nebuliser can provide a fine mist

care products and maybe even finding (or hiring) a special mattress.

- Nursing and possibly medical care, both for providing comfort care and to initiate emergency action if unbearable complications occur; ideally one should have not just a supply of suitable medications that might be required, but a cooperative doctor or palliative care nurse who can tailor them to your condition or provide other ones as your situation progresses. The most common are medications to control sleeplessness, anxiety, pain, confusion or extreme discomfort, although some or all may not be required in any particular case.
- A considerable amount of will-power. Both yours and in the people who will be close to you in your final days, so you can work together to achieve dignified death.

What is the best way to approach self-deliverance through starvation and dehydration?

First of all, get a good idea of what is involved, especially the dangers. You can do this by careful reading of the appendix on starvation in this book. Next you might consider the variety of circumstances that could trigger such a decision. In some terminal illnesses (including many cancers), the body will naturally start to shut down and the desire for food and water will become less. Drastic reduction of food and water in such circumstances may speed up an inevitable process. A medical examination may also reveal if underlying illnesses or conditions may precipitate other problems.

Next, ask yourself how strong is your will-power. When you first stop eating, your desire for food will probably be very strong. After three days it will probably be very small. Following a 'detox' practice (see below) will give you a better understanding of how your body reacts to foods and liquids. It will

enable you to better plan a healthy diet beforehand, and a sensible reduction that maintains essential nutrients and avoids strong foods (such as red meat) that place a greater strain on the body. You can also discover for yourself if carbohydrates increase 'food withdrawal' and a sense of hunger if stopped (which might encourage you to avoid them as you approach the point where you embark on your self-deliverance.)

Before starting your fast in earnest you might also want to take a mild laxative to help cleanse the colon – any food left lying inside can cause problems later on.

You might want to go to further lengths. An anti decubitus mattress is a mattress often used in combination with your normal mattress. Its special structure is designed to spread your weight evenly and so prevent bed-sores. A bed-pan or incontinence pads may be useful options. Unless those close to you have some familiarity with the dying process, you might want to discuss ways of sharing some understanding on such points. We tend to shield ourselves from dying. Except for nurses and others who know about such things first hand, reality can come as a shock. Regarding equipment, the British Red Cross may be a useful source of help – you can look up your local branch in the phone directory.

A 'detox' practice

You might like to experiment with this by doing a controlled health-fast – the sort of thing yoga practitioners recommend – and the sort of 'detox' that is also encouraged at many health retreats. Many people will approach a detox fast by consuming only fruit and vegetable foods, while eliminating caffeine, tobacco, alcohol and sugar. Work up to a full day when you drink only fruit juice. The hunger pangs are strongest at first, especially if you are used to a diet of three meals a day with

lots of red meat. After 36 hours (a full day plus the night-time each side) you may feel more in control of your hunger. The full details of controlled fasting-for-health are beyond the scope of this book and you may wish to look into it further before attempting more than a one-day fast. There is no direct correlation between 'detox' fasts and fasts-to-the-death, but it will give you an idea of some of the territory.

Fasting to death – how long does it take?

On the basis of reports by nurses, patients in hospice care who voluntarily choose to refuse food and fluids usually die a 'good' death within two weeks after stopping food and fluids. A Jain woman reported in the media after fasting to death in India also fasted for two weeks.

Are there any unpleasant side-effects?

Yes – but not in all cases. The precautions listed under *Main Requirements* (above) are to minimise the risk of unpleasant side effects – either by alerting the person to their likelihood in his or her particular case or having the facilities on hand to cope. Weakness, blindness and internal organ failure are among extreme possibilities. Many people may consider the first two bearable, especially with a carer on hand, but internal organ failure can be extremely painful. Again, a carer with at least basic medical knowledge can, in such circumstances, arrange emergency medical treatment if required. In cases where there is no internal organ failure, a carer can play a major part in reducing serious discomfort. Ice chips to moisten the lips, being moved to avoid bed sores (when too weak to move oneself), and other comfort-care measures are necessary for any Westerner contemplating death through refusing food and water.

Main features

Fasting to death has a certain lifestyle attraction. It is perhaps the only 'passive' method of intentionally ending one's life and has an appeal, whether aesthetic or to accord with a person's beliefs, over the more active methods. In certain instances it has not been regarded as 'suicide' and avoids the stigma that some people attach to that word. Legally, it probably allows both a person to be present (in jurisdictions such as England, presence at a suicide could normally be construed as criminally aiding and abetting) or palliative care to be administered during the process. An advantage is that it cannot be done impulsively and is seen not to be done impulsively. It requires a great deal of will-power and is not suitable for all personalities or body types.

Some other equivocal methods of self-deliverance:

Use of firearms

Most right-to-die activists and researchers, largely because of the inherent violence and the disagreeable nature of others later finding a body with gunshot wounds to the head, have shunned the idea of using firearms for suicide. Suicide by means of a firearm is not without other problems, but as it is a not uncommon method it should perhaps be considered in passing, especially as it has a high success rate.

Suicide by using a gun is more prevalent in countries where guns are easily available or else where the person has ready access to a gun because of profession (as is the case, for instance, with farmers or military personnel). Across the US, firearms are used in approximately 60% of all suicide deaths. Failure (which is not uncommon) results in devastating injury. Many intended suicides by gunshot leave the person alive but

brain-damaged. Placing it to the temple risks the skull changing the bullet's trajectory. The gun must be powerful enough for the attempt to succeed. Placing the barrel in the mouth pointing upwards towards the brain is the most reliable. This results in penetrating the telencephalon (cerebrum). Care must be taken not to lean forward – failures have been attributed to leaning forward at the last minute or to jerking the gun as it fires – and so altering the path of the bullet. If you buy a gun for the purpose, be sure to practice with it first. The one time the present author used a gun (on a firing range), he was surprised by the amount of recoil, even though he was expecting it.

A main consideration in using a firearm successfully would be having some knowledge, experience or training with firearms. Other considerations include minimising the upset to others by appropriate choice of location (cleaning body tissue off walls and ceilings is a particularly gruesome task.) It is incorrect to assume someone is always immediately incapacitated, or unable to inflict more than one gunshot upon themselves. In one documented case in Australia, a man committed suicide after repeated attempts. He first shot himself in the chest with a pump action shotgun. The load passed through the chest without hitting a rib, and went out the other side. He then walked fifteen meters, reloaded, leaned the shotgun against his throat, and shot his throat and part of his jaw. Breathing through this gunshot-inflicted tracheotomy, he reloaded, walked 136 meters to a hill slope, lay down on the slope, held the gun against his chest with his hands and operated the trigger with his toes for a final shot that managed to kill him.

Jumping and/or drowning

The Hong Kong JC Centre for Suicide Research and Prevention reported jumping from heights to be the most common

method of suicide in that city (1998-2008). The question of consideration to others mentioned previously applies doubly. Cleaning up the mess will be an unpleasant task. Persons witnessing the death may be traumatised. If jumping from a building, there is the danger that someone might be killed when you fall on them. People also underestimate the height of buildings needed for a successful suicide. There are cases of people surviving (although totally paralysed) after jumping from as many as six stories. Jumping from ten stories or more is 100% successful. High cliffs stand a better chance of success if there is no chance of the fall being broken on the way. Jumping in front of trains is not only traumatic for the driver, but has a high failure rate (about 50 per cent), with people being pushed underneath and sustaining terrible injuries. One study (Moore & Robertson, 1999) identified 51 survivors of jumping and firearms suicide attempts. Of those that jumped (31 out of 51), the estimated average height from which the subjects jumped (and lived with terrible injuries to tell the tale) was 25 feet. There is also a suggestion that people jump from high buildings 'as it is more convenient.' Madelyn Gould, a clinical psychologist, told ABC News (Friedman, *Inside the Mind of a Suicide Jumper*) that "In New York City, jumping is certainly more common than in other places because we have high buildings . . . Usually the method is chosen because it's accessible."

Of those jumping from a height into water from bridges, the strength of the water flow and the height both make a difference. Most suicides from the Golden Gate Bridge in California (250 feet above water) are successful: only about one per cent are not. The average speed upon hitting the water is estimated at 75 miles per hour. In one study of survivors (Rosen 1975), most blacked out before hitting the water, and all reported the experience as pleasant (although two sustained fairly serious

injuries). The height of the Golden Gate and similar bridges (and perhaps the location which some see as romantic) form a different scenario to many attempted suicides by jumping and drowning.

Persons jumping from much lesser heights into water may have a very different experience. In the Thames of London some are washed ashore to survive, sometimes after suffering irreversible brain damage. On average over 50 people lose their lives in the Thames each year and about 80% of these are by suicide according to police reports. The impact with the water following a jump from even a low bridge may expel air from the lungs. Clothing may provide some buoyancy initially due to air being trapped inside it but gradually this will be lost. The impact on entry from even a moderate height into water may expel most of the trapped air unless the clothing is waterproof with good neck and wrist seals. Police reports regularly speak of unconscious or semi-conscious casualties floating in the water within five minutes of entry. The movement of water around a bridge often produces eddies that can pin a victim to the legs of the bridge (above or below the waterline) or suck her or him in under it. Fresh water is faster than sea water due to absorption via the alveolar membranes.

Drowning is not a strongly recommended method and may be quite unpleasant. But some people are attracted to it. Most Golden Gate Bridge suicides are unconscious before they hit the water. Spasms are typical when drowning and strong alcohol intake beforehand are likely to reduce unpleasantness of side effects. Alcohol may affect the cardiovascular response to submersion. Drowning in an older person may trigger a heart attack. Ice-cold water will trigger different bodily reactions to warm water, but these don't as yet provide hard or fast evidence of the preferability of one over the other.

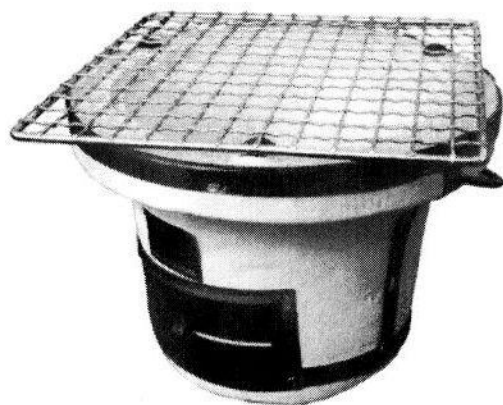
Charcoal tents, carbon monoxide and exhausts

Before catalytic converters (which reduce the emission of carbon monoxide) were fitted to cars, this was a popular form of suicide. A hosepipe was run from the exhaust into a semi-closed window and the car kept running, usually in a locked garage. Carbon monoxide (not to be confused with carbon dioxide – a gas which we exhale when breathing) is tasteless and odourless. Its toxicity stems from the fact that it drives oxygen out of the red cells of the blood and thus deprives the body and brain of its normal supply of oxygen. A concentration of even one per cent in the air can lead to death. The

greater the concentration, the faster death occurs (it can be anything from a minute to two hours). Failed attempts result in varying degrees of brain damage.

One woman I spoke to still has recurrent memory loss a result of a failed attempt many years ago. One study suggests that a person's lifespan can also be reduced due to damage to the heart muscle.

If you have the mechanical knowledge to remove the catalytic converter from your car, and you have a reliable enough engine that won't cut out, it is still a possible method. Just be aware of the serious dangers if it goes wrong (the motor



charcoal burner

cutting out or you being discovered and 'rescued'). Bear in mind you are probably breaking the law by removing the converter. In the UK, if your car was registered after 1st August 1992 you must have the converter present and working for the MoT. Previously registered cars can have the converter permanently removed.

Another method gained popularity in Japan after 1998. Charcoal briquettes (the sort used in barbecue grills or stoves) burnt within an enclosed area, such as a small sealed room, tent, or car, produce large amounts of carbon monoxide. In a typical scenario, the windows of a rented van are sealed with vinyl tape from the inside, and four charcoal stoves placed on the floor. Charcoal burner heaters can be purchased online or from garden and patio accessory shops. The combustion produces carbon monoxide which rapidly decreases the ability of blood to deliver oxygen to the body, eventually resulting in death. Although painless, it can endanger persons entering the closed space, and if the self-deliverer is interrupted they may recover but with permanent brain damage. In November 1998, a middle-aged woman in Hong Kong committed suicide using this method inside her small, sealed bedroom. She is thought to have invented it using her chemical engineering background. After details of her suicide were widely publicised in the media, many others attempted and succeeded in committing suicide in this way. Within two months, charcoal-burning had become the third major method of suicide in Hong Kong. Charcoal-burning suicide accounted for 1.7% of Hong Kong suicides in 1998 and 10.1% in 1999. By 2001, it had surpassed hanging as the second most-common method of suicide in Hong Kong (second only to jumping), and accounted for about 25% of all suicide deaths. Interestingly, the method is not strongly associated either with right-to-die adherents or the mentally ill, and a lack of parallel decreases in

suicides rates using older methods with the rise of charcoal burning suicides suggests people are not using it 'in preference' to another method. Charcoal-burning suicides have since spread to mainland China, Taiwan and Japan but are rare in the West.

Hypothermia

Death from exposure to cold has only a moderate success rate. It requires *reliably* cold temperatures over a sufficient period for death to occur. Failure can produce severe and lasting injury. Some drugs, such as barbiturates, chlorpromazine and even paracetamol (acetaminophen/Tylenol) accentuate symptoms of hypothermia. Immersion in cold water causes loss of body heat at a much faster rate than air at the same temperature. Hypothermia is relatively painless but has potentially dire consequences if interrupted (for instance if someone spots and rescues you). It can be as quick as half an hour in freezing cold water or a couple of hours on land. Wearing little clothing helps, and fat people will take longer to die than thin people. Some sedatives are desirable. The amount of time needed varies considerably but several hours are needed. Uncomfortable if not painful, the main danger is rescue or a warming of weather conditions.

Methods not recommended

Slitting one's wrists is not as reliable method as it is sometimes portrayed in the movies. A *Guardian* newspaper interview with the paramedics who attended the alleged suicide of David Kelly says, "Over the years they have raced to the scenes of dozens of attempted suicides in which somebody has cut their wrists. In only one case has the victim been successful." Finding a suitable artery requires greater knowledge of anatomy than most people possess. Usual attempts tend to sever the surface veins. These veins are neither particularly large nor

carry as much pressure as the arteries, and so such cuts are often not life-threatening. They can clot before a fatal quantity of blood is lost. If you were intent on trying this method, one of the easier arteries to sever is the radial artery, which is fairly near the surface and where the wrist and thumb come together (feel for the pulse there). Failure may result in simply severing the flexor tendons. Doing it in a bath of warm water can help prevent clotting, as might four to eight aspirin an hour beforehand. A local anaesthetic spray could be used to make it easier (It will probably be rather painful). It might be an idea to cut both the wrists and ankles. But cutting has a very low success rate.

Poisonous plants—although there are a number of plants that are reliably poisonous, they are not reliably lethal or free of very unpleasant side-effects. Various sorts of hemlock are undoubtedly poisonous, but the side-effects differ markedly from the tale of the supposedly peaceful death enjoyed by Plato. See the separate chapter for details.

Checklist

- The methods in this chapter all carry a certain risk. Have you fully understood the risks and how to cope with them?
- Have you acquainted yourself thoroughly with several of the main methods from previous chapters?
- If you are reasonably healthy at the moment, have you looked ahead and considered the various situations which you may find yourself in?
- Have you prioritised your methods yet also know enough methods to be adaptable to changing or unexpected circumstances?

References n.b.: For extensive references about starvation please see Appendix.

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Appendixes

My aim in the body of this book has been to make the text readable enough to convey the necessary knowledge to anyone. Some of the research behind the conclusions however, is more technical, and needs to be included for reference, or to cast aside worries about whether the information is reliable. We would urge every reader to investigate methods for themselves. Do not believe something just because a doctor or campaigner said it was so or a famous speaker on euthanasia proclaimed it successful. The methods in *Five Last Acts* and our conclusions about them are well-researched but, on the above advice, it makes good sense to verify that for yourself!

These appendixes present ideas from a slightly different angle. You can take the references and follow them up in any good medical library, such as the ones attached to larger universities. You can search toxicology manuals, such as Martindale's, to find out more about specific drugs. Bear in mind, at this point, that drug companies test drugs for their *therapeutic* purposes only. If the manufacturers (or toxicology* manuals, or doctors – who are also trained in therapeutic use of drugs but rarely in their use in suicide) say such-and-such a dose can be fatal, that is exactly what they mean – not that it necessarily *will* be fatal! The information they provide may offer clues but their aim is at odds somewhat with ours. A further (and in many ways better) approach is to look at statistics on successful and unsuccessful suicides. If you investigate chloroquine, for instance, you will find a wealth of data available. (Anecdotal evidence also has a place, but mostly suggestive – especially when it contains reports of failures: several drugs and certain ways of using plastic bags have been discovered to be flawed by following up the leads from failed attempts.) Eventually

there comes a reasonable cut-off point where, with a given method or drug, no-one survives. Anyone can research this – you do not need a medical degree, but you need the patience to understand the terminology so you clearly follow what is being said. If you are doing serious research, after you follow your conclusions to a logical result, it is worth having them reviewed by an expert in that field who is qualified to assess the hypotheses in case you have missed something.

Information on new methods has been published in the *Exit Newsletter* (formerly *Voluntary Euthanasia Society of Scotland Newsletter*) or in *Beyond Final Exit*, the companion book to our 1993 manual *Departing Drugs*. Ordering back copies is not only time-consuming and expensive but for ease of reference the articles need to be gathered together in one place. In addition to background material based on the workshops, these appendixes therefore also includes reprints of key articles, updated where appropriate.

I was sometimes asked why I have not just updated *Departing Drugs*. If you are interested, I recommend you obtain the original. There is no need for an update: some of the drug names have changed (but that can easily be ascertained by looking at the box and referring to the generic, or chemical, name of a drug); more importantly, knowledge of viable methods has grown and, rather than overload the reader with an encyclopaedic account of every possibility, I have distilled the essential methods in this volume to take this into account.

**A guide to what is meant by 'Lethal Dose' in toxicology literature is given in Crouch B, Toxicological Issues with Drugs Used to End Life. In: Battin M & Lipman A, (eds) Drug Use in Assisted Suicide and Euthanasia, Pharmaceutical Products Press 1966, 21-214:*

"The majority of lethality data come from toxicity studies performed in laboratory animals that are conducted during preclinical trials or from case

reports. The Lethal Dose₅₀ (LD₅₀) is an experimentally derived dose that causes death in 50% of a sample of animals which receive the agent. . . . Extrapolation of LD₅₀ data from animal research to estimate the lethal dose in humans is problematic. Humans may have marked differences from animals in the absorption, distribution, metabolism and excretion of the substances.

What is asphyxia?

Understanding asphyxia helps us understand several of the five 'Last Acts'.

It maybe helps to consider asphyxia in some of the following terms.

Asphyxia is a process (rather than an event) that involves cutting off oxygen from brain by:

- Interference with breathing (e.g. suffocation with a pillow, drowning, hanging, or pressure on the chest or larynx)
- Removal of oxygen from the air (e.g. by inert gas such as helium or the 'plastic bag + drugs method')
- Preventing oxygenated blood from reaching the brain (e.g. pressure on the carotid arteries – compression method) and/or
- Preventing oxygenated blood from entering the brain (e.g. pressure on jugular veins which prevents exit of used (de-oxygenated) blood – compression method)

It explains how, in different ways, the plastic bag, compression and helium all cause death. Many other methods of death can be attributed to asphyxia – such as drowning or car exhausts, but the ones listed in the main part of the book are the ones with least risk and with little or no discomfort.

A more detailed explanation of asphyxia is given by *Prahlow*:

“The term *asphyxia* literally means *without a pulse*, but the more common and accepted definition means *without oxygen*. More precisely, it refers to a lack of tissue oxygenation (delivery of oxygen to the body's cells). Clinically, the term *hypoxia* refers to the lack of oxygen. Anything that results in lack of tissue oxygenation could be considered an asphyxial process. If this definition is taken to the extreme, then all sorts of other mechanisms of death actually incorporate an asphyxial component. For example, if a traumatic injury results in extensive bleeding, the lack of blood, which functions to deliver oxygen to tissues, leads to the lack of tissue oxygenation with eventual death.”

Prahlow goes on, however, to limit his discussion to the types of cases that 'are traditionally considered asphyxial in nature,' these being suffocation, where there is a failure of oxygen to reach the blood, strangulation or compression of the neck, and thirdly chemical asphyxia, where poisoning prevents tissues from using the available oxygen (which happens, for instance, with carbon monoxide). Cyanide, in a variety of chemical forms, is also a deadly poison that acts as a cellular asphyxiant, though a very unpleasant one. (When cyanide has been ingested, a frequent autopsy finding is haemorrhage of the lining of the stomach.)

The term 'environmental suffocation' is sometimes used when oxygen is lacking or has been physically displaced from the environment, as occurs in altitude mountaineering or the use of helium in self deliverance. Oxygen is normally present in the air at about 21 per cent. When it drops to around twelve to fifteen per cent, dizziness is apparent. When the oxygen content drops to about six to eight per cent, unconsciousness occurs, although rapid treatment can still prevent death. At less

than six per cent, death occurs in six to eight minutes. At a mere two to three per cent, *Oehmichen et al* (quoting earlier research) suggest that death occurs in 45 seconds. With the helium method, the oxygen content of the air breathed is reduced almost to zero within a few seconds.

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Please see individual chapters for more references

Asphyxia and the 'right-to-die'

Helium, carbon monoxide generators, 'de-breathers', the 'COgen' self-deliverance device and self-asphyxiation in various forms have all hit the news repeatedly in recent years. This chapter examines some of the methods hitting the headlines and asks are they trends, or simply 'trendy' and media-grabbing?

In 1995 *Exit* Research Associate Cheryl Smith published a groundbreaking article, Carbon Monoxide for Self-Deliverance, in *Beyond Final Exit*¹. The volume also included a chapter on nitrogen and other inert gases and mentioned helium. Since then, hardly a year has gone by without proclamations about new 'suicide machines', most of which rely on some device to ensure that the person committing suicide dies (within minutes) of asphyxiation² by inhaling increased volumes of carbon monoxide or helium. When one of the most popular books on self-deliverance, *Final Exit*³ by Derek Humphry, went into a third edition, a noticeable addition was a chapter on helium.

Carbon monoxide

Carbon monoxide^{4,5} is a highly poisonous gas and has long been used for causing death. In Greek and Roman times it was used for executions. In high concentrations it causes death within minutes. Before natural gas, it was the component that allowed people to die by putting their head in an unlit gas oven. Until catalytic converters arrived, it was the component of car exhaust that enabled suicide by car fumes. More recently, Dr Kevorkian used cylinders of carbon monoxide attached to a gas mask (available at military surplus or medical supply stores) and a hose. A gas mask is not essential – any relatively enclosed space will do (such as a tent, or a tube tent

as sold quite cheaply at outdoor adventure shops for emergency use). Even cylinders are not essential – quite fortunately as they are not that easy to buy. A popular method in the East is the use of hibachi or charcoal burners (or any other carbon based fuel). Which brings us to some of the drawbacks: If you fill an area with carbon monoxide, that may also be poisonous to anyone finding you. If you leave something burning, it might end up causing damage by fire – even damaging the means of deliverance if you use a tube tent. The main danger of this (and all) asphyxia methods however is the possibility of brain damage if the process is interrupted due to intervention, running out of gas, or tearing or removing the gas mask, plastic bag or tent while unconscious. This can be minimised by using a high concentration of the gas, which causes most rapid loss of consciousness but, as with any method of self-deliverance, the dangers are to be taken seriously – injuries include dementia, psychosis, paralysis, cortical blindness, memory deficits and parkinsonism; the latter two are the most common.

Carbon monoxide has limited uses in medicine and in metallurgy and I found six UK suppliers on the Internet (using a 'Google' search), but given the concerns about carbon monoxide poisoning it is likely that any would-be purchaser would need to convince the supplier that they had a bona fide trade use in mind.

Notwithstanding these problems, there is plenty of room for experimentation. A standard laboratory method for producing carbon monoxide for instance is by using concentrated sulphuric acid to dehydrate formic acid.⁶ Philip Nitschke is an Australian campaigner who, like *Exit* here in the UK, has run self-deliverance workshops. He has put much time into trying to develop a carbon monoxide generator or 'COgen' as he

terms it. Nitschke's prototype device replaced the rather unaesthetic gas mask with nasal prongs such as are often used to deliver oxygen in hospitals and which, unfortunately, also mix the inhaled gas with air).

Helium

Helium is a colourless odourless gas which is not combustible. As helium is less dense than nitrogen, breathing of a mixture of 80 per cent helium and 20 per cent oxygen requires less effort than breathing air. Such mixtures have been used in patients with acute obstructions of the respiratory tract. Mixtures of helium and oxygen are used by divers or other workers working under high pressure to prevent the development of caisson disease (decompression sickness, or 'the bends'). Breathing helium speeds up the vocal pattern and increases vocal pitch. Death by breathing helium is caused by displacing the oxygen that the brain needs to stay alive. Unlike carbon dioxide, it does not cause hyperventilation (rapid breathing) and the associated discomfort.

One of the great advantages of helium over carbon monoxide as a means of self-deliverance is that it is easily available. Party balloon kits, available by mail order, include canisters of helium.⁷ An ever increasing number of successful suicides are being reported using this method. The helium tank is connected to a hose, the other end of which is firmly attached by tape to the inside of a medium sized plastic bag. Tranquillisers or sleeping tablets (and anti-emetics) may be taken beforehand for added comfort, as described in detail earlier.

As with other forms of asphyxia, interruption may result in permanent brain damage so, although the method is relatively straightforward, care would obviously be needed.

Footnotes

1. Beyond Final Exit is no longer in print, but key articles have been republished in Exit Newsletters.
2. Asphyxiation is commonly associated with suffocation or choking - but it simply means a loss of oxygen to the brain and so covers a wide range of methods, not all of them necessarily uncomfortable.
3. See subsection on helium. The helium bag technique is also explained in a chapter of Final Exit 3rd edition, by Derek Humphry, which is obtainable through any good bookstore.
4. See also separate section in the chapter on starvation and other means, this volume.
5. Not to be confused with carbon dioxide, which is the gas we exhale and which has very different properties.
6. $\text{HCOOH} > \text{CO} + \text{H}_2\text{O}$.
7. At the time of writing, UK suppliers of helium balloon kits that can be found on the Internet include: Imagination Creative Balloons, 3, Dunkerly Street, Oldham, OL4 2AX, England (Tel/Fax: +44 (0)161 626 8734 Internet: www.flowermill.co.uk/balloons Email: balloons@flowermill.co.uk) who offer a helium tank ("Each helium tank will fill approximately 40-50 9" latex balloons") for £42 plus £9.95 for postage and packing; or Icarus Limited, Broadgate House, Church Street, Deeping St. James, Peterborough, PE6 8HD England, tel: +44 [0]1778 347609 or www.connected.org.uk/icarus/index.html or email them at enquiries@icarusballoons.co.uk They offer three different sizes of helium canister.

Finding the truth about plastic bags

Numerous press reports, both before and after the first 'self-deliverance' manuals appeared in 1980¹, have ensured that plastic bags have long been known as a method sometimes used in suicide. The exact practicalities have been debated at greater length in various books since², but there remains concern over some details, especially in the light of reported failures with the method.

The aim of this article is to assemble some of the pertinent issues and scientific theory and act as a focus for developing thought on this method of self-deliverance. Feedback is encouraged.³

Popularity

Plastic bags, combined with drugs, are often seen as the method of choice,⁴ yet the pitfalls are considerable. On the other hand, some people view bags as unaesthetic or undignified – these factors come down to personal preference or other methods being ruled out for one reason or another. Large plastic bags are seen as a device for suicide when accompanied by ingestion of drugs. (Small bags have been used for suicide when combined with various gases, mostly helium,⁵ and involve altogether different considerations.) Not *always* reliably, they have been used as a suicide device with non-lethal drugs.

On paper it seems easy: a terminally ill person secures a plastic bag over her head, nods off with the help of an appropriate dosage of prescription barbiturates, and dies in her sleep from asphyxiation due to lack of oxygen. To a desperately suffering individual, this will

often seem like a comfort and a realistic option. In fact it is much more complicated.⁶

General methodology and reactions in use

The recommended method with step-by-step instructions is detailed in *Departing Drugs*,⁷ as well as this book, but an overview of the process follows for our current purpose. To live, we need oxygen. When we lose the availability of oxygen we asphyxiate ('suffocate'). Common methods of asphyxia include drowning, strangulation and obstructed airways. Asphyxia can also be caused by the absence of oxygen in an environment where we are free to breathe, such as inside a plastic bag (while technically suffocation, this does not necessarily mean that there will be the reactions commonly associated with suffocation, such as struggling – the large amount of nitrogen remaining in the plastic bag allows breathing to continue). We produce carbon dioxide (CO₂) as a waste product. It is a colourless and odourless gas, acidic in taste in concentrations above ten per cent. The body is very sensitive to high levels of CO₂ and when they are present involuntary reactions will normally include an increased rate of breathing and may include panic. You can try this with an ordinary plastic bag over your head. In a minute or two you will become very conscious that you need to breathe fresh air. Even though you have yet to experience oxygen deprivation, your body has become aware of high levels of CO₂ and is automatically alerting you to seek fresher air. As the effect increases, you will hyperventilate (breathe more quickly with increasing depth and duration).

The most important physiological effect of carbon dioxide is to stimulate the respiratory centre.⁸ The stimulation is pronounced at levels of five per cent and above.⁹ As much as 30 per cent may be tolerated for some time provided the oxygen

supply is adequate.¹⁰ Oxygen deprivation begins when oxygen levels have fallen to twelve per cent, and the symptoms of headache and rapid breathing become severe when it falls to eight per cent. Unconsciousness and death do not occur until the oxygen is down to five per cent, "unless the patient makes strenuous exercise, in which case death may come when there is still eight per cent oxygen."¹¹

One correspondent, after a failed suicide, wrote, "After everything was done I felt like removing the bags again because I couldn't stand the hot plastic sticking at my nose each time I took a breath."¹² Suggestions for overcoming this minor problem have included a wide-brimmed hat or a spray-painter's mask.

Failures

The Scottish euthanasia society (*Exit*, formerly Voluntary Euthanasia Society of Scotland or Scottish Exit) has received many letters over the years detailing failure in the use of plastic bags for suicide, though far fewer since we issued detailed instructions in *Departing Drugs*. One man said he had attempted, and failed, seven times. A typical letter read: "I put the bags on again, because I wanted to succeed, and then I don't remember anything any more. Subconsciously I must have removed them again, because the following morning I woke up dizzily." Anecdotal evidence conveyed by the Dutch euthanasia society also indicated an alarmingly high failure rate with plastic bags. Some documented cases of failure with plastic bags are additionally recorded in the literature.¹³

The type of plastic used, the size of the bag, the type of drugs, drug dosages, varying metabolisms and medical conditions, and the failure of an assistant to realise that the patient was not in fact dead¹⁴, have all been cited as possible causes. Oversensi-

tivity to carbon dioxide levels in the body's breathing control system can cause sleep apnea (a temporary inability to breathe) in some people with heart failure. Enhanced sensitivity could destabilise breathing during sleep. Normally, carbon dioxide levels rise during sleep, causing breathing to increase slightly to eliminate the excess carbon dioxide. Even among many normal people, if carbon dioxide levels fall too low (as they can during hyperventilation), breathing stops until the levels return to normal. In patients with an oversensitivity to changes in carbon dioxide levels however, rising levels during sleep stimulate an exaggerated response in the form of hyperventilation. Hyperventilation then drives carbon dioxide levels below the threshold where breathing ceases, causing sleep apnea. The result is periodic breathing with recurring cycles of apnea and hyperventilation.¹⁵

Types of plastic

Plastic bags, even those that seem 'airtight', have both myriads of tiny holes¹⁶ and a degree of permeability to oxygen.¹⁷ The 'permeability coefficient' is the constant relating the rate of transfer of a diffusing substance (such as oxygen) through a unit area of a film or sheet of a given thickness to the concentrations of the substance on either side of the sheet.¹⁸ While the permeability of bags used in attempted suicide is probably small, it cannot be ruled out as negligible. The chemical structure of the plastic is the main factor affecting permeability, although physical factors, such as density, thickness and elements in the manufacture may all influence the degree to which oxygen can permeate the bag and so extend the dying process. Low-density polythene may allow more than seven times as many oxygen molecules through its surface than high-density polythene. PVC allows substantially less.¹⁹

Sizes of bags, drug dosages and types of drugs

The recommendations as to size of bag in *Departing Drugs*²⁰ and this book are based on logical arguments relating to the time taken for drugs to immobilise the patient; as opposed to merely putting the patient to sleep. It is not difficult to calculate, from a given volume of air in a bag of a certain size, and the average amount of air breathed in a minute, how long the oxygen portion of the air in the bag will last. The calculations can be checked by experimentation (non-harmful) where an observer looks for first signs of cyanosis (a bluish-purple discolouration of the skin resulting from a deficiency of oxygen in the blood, which may first manifest itself in the fingertips).²¹ The speed of action of drugs can also be estimated – not with precision, but with sufficient accuracy to make a broad judgement. The stages of drug action can include a) deep sleep, b) immobility and c) death. If asphyxiation begins before stage (b) has been reached, then the patient may struggle violently, even though asleep. In some cases the patient tears through the bag(s) or effects removal. If the drugs used prove insufficient to cause death then the patient in most cases eventually awakes, with or without additional severe damage depending largely on the drugs taken. In earlier self-deliverance manuals it was only thought necessary to use drugs to put one into a sleep so the plastic bag could have its effect – nowadays we know that additional precautions are desirable: namely, that the bag should be large enough to allow the drugs ample time both to put the patient to sleep and to produce a degree of immobility, and that the drugs in themselves (if possible, though not essential) should be of a more lethal variety.

An exception to the usual recommendations about the size and use of plastic bags has been pointed out in the case of people who are very desperate and so wanting something very

quick even at the expense of a short period of discomfort. In this situation it has been suggested that a very small bag can be used so as to minimize the amount of time before oxygen runs out. This method, while having its advantages, does not have the dignity of the more elaborate methods recommended in various manuals.²²

Advantages of plastic bags

Whether to disguise the cause of death by having an assistant remove the bag afterwards, or for other reasons, the fact that plastic bag suicide in itself leaves little trace of the cause of death sometimes makes it attractive.

Analysis of the autopsy findings showed no specific features for this method of suicide. In particular, petechiae,²³ which are often considered a marker of asphyxia, were present in only a small minority of cases (3%). Furthermore, the scene investigation rarely revealed specific features, other than the plastic bag in place. Thus, if the plastic bag were removed after death, the cause and manner of death would be obscure.²⁴

Drugs of most sorts are prone to a certain percentage of failures and the plastic bag provides a back-up mechanism to help guarantee success in self-deliverance. Of the drugs where lethality is better documented, many are almost impossible to obtain by most people or else require very careful use to avoid mishap.²⁵

Unlike drugs and firearms, plastic bags are, however, easily available.

Disadvantages of plastic bags

Over-reliance on plastic bags as a principal mechanism for achieving death, failure to obtain a suitable bag²⁶ and possible premature removal of the bag are all disadvantages. The successful deployment of a plastic bag in suicide needs either luck or careful planning. Development of physician-assisted suicide with appropriate safeguards²⁷ will, hopefully, in the longer term, make such deliberations and dilemmas redundant.

References

1. An early history of self-deliverance guides was published as: Docker C, "A Guide to Suicide Guides" in: Smith C, Docker C, Hofsess J, Dunn B, "Beyond Final Exit" Right to Die Society of Canada 1995, an updated edition of which appears later in this volume.
2. Principal, detailed descriptions are found in:
 - i) Docker C, Smith C, (North American title:) *Departing Drugs: An international guidebook to self-deliverance for the terminally ill*. UK title: *Supplement to How to Die With Dignity – Departing Drugs*. 1993, Voluntary Euthanasia Society of Scotland. North American edition published by The Right to Die Society of Canada.
 - ii) Humphry D, "Self-deliverance from an end-stage terminal illness by use of a plastic bag" 1993 ERGO! pamphlet.
 - iii) Humphry D, "Final Exit" 2nd edition, revised and updated, Dell Paperbacks 1996.
3. Feedback should be sent to the author, not necessarily for publication, c/o Exit, 17 Hart Street, Edinburgh UK. Personal experiences as well as scientific data and published accounts are all welcomed.
4. See for instance, Colin Brewer's article "Darkness at Midnight", VESS Newsletter Sept 1987.
5. Or occasionally to facilitate death by lethal gases. A Northern Californian man, attempting to follow the deaths of the "Heaven's Gate" cult suicide victims, placed a bag over his head and inserted a propane hose under the bag and turned on the gas. (Nando.net, Assoc. Press 1997). See also: Avis S, Archibald T, Asphyxial suicide by propane inhalation and plastic bag suffocation, *J Forensic Sci*. 1994 Jan;39(1):253-6.
6. John Pridonoff, former Director of Hemlock USA, "Meyer Case Exposes Problems With Use of Plastic Bag", *Hemlock Timelines* Nov-Dec 1994:5.
7. *Supra*. A not-for-profit booklet available from Exit. Applications can be made by approved members of right to die societies of at least three

months' standing together with acceptable documentary proof and appropriate payment in Sterling currency or by credit card. (The simplest method is just to join Exit. Please note that at the time of writing, the London-based society, Dignity in Dying, will *not* supply the required proof, as they feel this could implicate them in a suicide.)

8. Hamilton and Hardy's *Industrial Toxicology* 4th edition Asher J Finkel 1983, pp.154-155.

9. The composition of air at sea level is 78.08 per cent nitrogen, 20.95 per cent oxygen, 0.93 per cent argon and 0.03 per cent carbon dioxide.

10. *Supra*, Hamilton and Hardy.

11. *Ibid*.

12. Letter from abroad received at the Office of the Voluntary Euthanasia Society of Scotland.

13. Ogden, R, *Euthanasia, Assisted Suicide and AIDS*, 1994 Peroglyphics Publishing p.83. See also: Jamison S, *When Drugs Fail: Assisted Death and Not-So-Lethal Drugs*. In: Battin M, Lipman A, (eds), *Drug Use in Assisted Suicide and Euthanasia*, 1996 Hawarth Press.

14. This is not as uncommon as it might sound. One particularly dramatic account can be found in Holtby M, *Assisted Suicide – Gone Wrong*, Colorado's AIDS Newsletter, Resolute! April 1995.

15. Javaheri S, A Mechanism of Central Sleep Apnea in Patients with Heart Failure, *New England Journal of Medicine* 341(13) September 1999.

16. Correspondence from Glasgow University, December 1995.

17. Pauly S, Permeability and Diffusion Data. In: Brandrup J, Immergut E, Grulke E, et al, *Polymer Handbook* 3rd edition, John Wiley & Sons 1989. I am indebted to Professor Whitehead of the Science Faculty at Glasgow University for bringing this to my attention.

18. *Ibid*, Pauly, p.435-436. The permeability coefficient equals P in the equation $F=P(C_1-C_2)/L$ where F is the rate of transfer, L is the thickness of the sheet and C is the concentration(s) of the substance. The values of P can vary widely depending on the particular gas/polymer being considered. This for oxygen, values vary from 1.3×10^{-18} for polyvinylidene chloride (a barrier polymer) to $205\,000 \times 10^{-18}$ for silicone rubber. Most plastic bags are made of low-density polyethylene (polythene).

19. *Ibid*, pp.435-449.

20. *Supra* pp.20-21.

21. Experiments of the International Drugs Consensus Working Party, 10th November 1993, Edinburgh.

22. Humphry D, Self-deliverance from an end-stage terminal illness by use of a plastic bag, *ERGO!*, 1993. Humphry himself puts forward this method as an alternative for extreme cases.

23. Petechiae are minute discoloured spots on the surface of the skin caused by underlying ruptured blood vessels.

24. Haddix T, Harruff R, Reay D, Haglund W, Asphyxial suicides using plastic bags, *American Journal of Forensic Med Pathol* 1996 Dec;17(4):308-11.

25. Barbiturates are very difficult to obtain for most people in most countries. Certain over-the-counter anti-malarials, documented in *Departing Drugs*, are difficult to obtain in the USA, and in any case require careful combination with suitable sedatives.

26. This article is not recommending any particular type of bag. It tries to set out the criteria and facts on which readers can make intelligent decisions. Some readers have written to us about the customised 'Exit' bag mentioned in an addendum to *Beyond Final Exit*, which, in spite of the name, had no direct connection with Exit. The chapter on the that particular exit bag was inserted by the book's editor and without the permission of the book's principle authors.

27. See the model approach in *VESS Newsletter* Vol.19 No.4 by Prof. S.A.M. McLean for a considered approach to legal reform.

Note that information on permeability and diffusion in plastics can also be found in *Polymer Handbook*, by Brandrup E, Immergut E, Grulke E et al (Eds.); Wiley, New York, 1999. The relevant chapter is: by Pauly, S, *Permeability and Diffusion Data* (pp VI 435-449)

The chloroquine controversy

CG Docker & CK Smith

This is a reprint of the ground-breaking article from the April 1993 VESS Newsletter and from Beyond Final Exit and is reprinted here for reference. Readers please note that chloroquine is not readily available in the United States, but otherwise the article contains the necessary scientific information regarding the use of this drug, which requires considerable care and deliberation. Opinions on the use of benzodiazepines continue to fluctuate, although this article seems clear enough in delineating the evidence (as opposed to opinions).

No universally accepted authority on self-deliverance euthanatics currently exists. Doctors are not trained on this aspect of drugs and the drug companies' interest, like that of medical schools and medical practice, relates only to therapeutic effects. While toxicologists may be able to determine the minimal lethal dose of a drug, they cannot necessarily indicate possible side-effects that might make the drug unsuitable, in some or most cases, as a euthanatic. The drugs involved in physician aid-in-dying, a procedure used in the Netherlands, may not be applicable in cases of self-deliverance. In addition, findings of doctors who have prescribed lethal drugs have not been published, due to restrictive public opposition or illegality.

At least two right-to die societies have advocated the use of chloroquine as a euthanatic,^{6,10,26} one of these especially in combination with other drugs.⁶ The German society, DGHS, has advocated the use of chloroquine for self-deliverance since 1983.⁶ Members of the World Federation of Right-to-Die Societies generally have been sceptical of this use of chloroquine. Widely differing opinions and conclusions have been reached, yet no supportive documentation, to our knowledge, has been put forth to justify them.

In an attempt to encourage further dialogue in a logical manner, we first considered three areas:

- i) physiological effects of chloroquine overdose and speed of onset, from published data (theoretical),
- ii) observed evidence from case studies (clinical), and
- ii) patterns or popularity of use in suicide (sociological).

We obtained data on theoretical aspects by examining some forty published papers from 1964 to 1991, as well as established reference works. Some of these contained no relevant data – e.g., certain papers looked exclusively at long-term therapeutic use. We avoided extrapolation and paraphrased as little as possible. We approached clinical aspects by review of papers that included detailed case studies and we also sought unpublished information on case studies of intentional suicide from the German right-to-die society (DGHS). Our research indicated that chloroquine has been, and still is, a popular suicide agent in several parts of the world – e.g. Africa,¹⁴ Papua New Guinea²⁸ and Germany.²⁷ This sociological factor seemed to warrant serious attention, although other considerations, such as distressing side-effects, are of more importance. We visited the staff at DGHS, the German right-to-die society, to learn from their extensive practical experience with the use of chloroquine. Our findings are not final or absolute, and we invite input from any interested parties who have other relevant data that will further discussion on this issue.

What evidence is there to suggest that chloroquine can be lethal?

Eleven of the twenty-seven sources reviewed specifically state that chloroquine can be lethal^{2,3,5,7,11,14,15,16,19,24,26} and, one of these, *Toxicology Management Review* (TMR), reports that,

according to published studies, the mortality rate is among the highest in clinical toxicology.¹⁴ Some rare cases of survival following ingestion of large amounts have been reported when prompt, aggressive treatment had been undertaken,^{2,5,26} although according to TMR the higher the dose the greater the likelihood of death.¹⁴ While "1.5g (20mg/kg body weight)"²⁴ is the generally accepted minimal toxic dose, a recent (1991) report in *Intensive Care Medicine* pointed out that "ingestion of more than 5g chloroquine is usually reported to be fatal without effective treatment".¹¹

Chloroquine is described as a potent myocardial poison⁷ that is rapidly absorbed from the gastrointestinal tract.²⁶ Although the drug is slowly excreted,²⁸ toxic effects rarely last more than 24 hours.²⁶ The drug depresses the heart and lowers the blood pressure by dilating blood vessels distant from the heart.⁷ Death is caused by failure of the heart to contract, complicated by a slow and abnormal heartbeat,⁷ with eventual cardiorespiratory arrest.⁵ At least one study on the effects of chloroquine poisoning on the heart indicated that a person's weight is more relevant than age to the toxicity of the drug.⁷

One problem with some of the papers that we studied was the inconsistent use of the term chloroquine. As a letter to the *New England Journal of Medicine* points out, failure to differentiate between the base equivalent of chloroquine and the entire salt would hinder calculations of the projected amount needed to produce death.²⁰ Chloroquine base 100mg approximately equals chloroquine sulphate 136mg or chloroquine phosphate 161mg.¹⁹ Tablets commonly prescribed in Britain contain 250mg of the phosphate (approx 155 base), or 200mg of the sulphate (approx 150 base). In the United States they generally contain 250mg of the

phosphate (approx 155 base), or 500mg of phosphate (approx 310 base).

How quickly does chloroquine take effect?

Case studies vary, with death occurring in less than an hour¹⁶ to up to twelve hours⁵ after ingestion. The studies indicated that a greater number of deaths occurred in two to three hours^{14,5} or less.¹⁶ One author stated that "the absence of cardiac effects 4 – 6 hours after ingestion makes survival likely."²² DGHS literature suggests that death from chloroquine overdose occurs in 12-24 hours.⁶

What evidence suggests unpleasant side-effects can occur with chloroquine?

Possible side-effects include both unpleasant symptoms that might be experienced before death (or coma leading to death) and serious long-term symptoms that might occur in the case of a failed suicide.

The published reports discuss a wide variety of side-effects that may be caused by chloroquine. The most common of these are respiratory difficulty, drowsiness, and cardiovascular symptoms including low blood pressure, low potassium in the blood and abnormal heartbeat.¹⁴ Other common symptoms include gastrointestinal problems,^{3,5,16,19,28} hyperexcitability,^{16,22,28} convulsions,^{3,7,14,16,22,26} difficulty in breathing,^{5,16,22,24} headache,^{3,19} slurred speech,^{5,16,22} coma,^{3,22} and visual difficulties.^{1,4,14,19,21,26} Interestingly, some individuals may have no symptoms until suffering cardiac arrest.²⁴ Gastrointestinal problems, including nausea and vomiting, can interfere with ingestion. Chloroquine has a bitter taste⁴ which can exacerbate the problem. According to DGHS, these symptoms, which could weaken the effect of the lethal dosages, may be alleviated by taking a few tablets of an anti-

emetic an hour in advance.⁶ In one case of hyperexcitability, the patient became wild and struggling and four persons were required to restrain him.¹⁶

Regarding long-term effects, opponents of the use of chloroquine as a euthanasic drug have raised concerns about the potential for blindness resulting from a failed chloroquine suicide attempt. This concern may have come about as a result of knowing that quinine may, in fact, cause blindness when taken in toxic doses.^{1,14} TMR, however, cites a number of authorities, including the *Bulletin of the World Health Organisation*, in asserting that "Blindness in acute chloroquine intoxication is always transient and recovers without sequelae, in contrast to the retinopathy following long-term chloroquine therapy".¹⁴ One study of long-term use of chloroquine indicated that withdrawal of treatment caused a reversal of side-effects.⁹ The possibility of brain damage after a failed suicide attempt is also of concern. We found only one case in the literature of a survivor exhibiting evidence of brain damage.¹⁷ Unfortunately, there was no indication as to whether the damage was long-term or permanent. Conversely, one documented case discussed a patient who took a very high overdose of chloroquine with no related medical problems one year later.²

What evidence suggests interactions between chloroquine and other substances?

Evidence suggests that the cardiotoxicity of chloroquine might be decreased by the concomitant administration of diazepam.^{14,19} In fact, diazepam is considered to be a treatment for chloroquine overdose, and may significantly decrease the mortality rate.²⁴ Several authors noted that patients who had taken diazepam along with as much as 5g chloroquine showed no clinical symptoms of chloroquine

poisoning.^{14,24} Milk products, antacids, and kaolin decrease the absorption of drugs, including chloroquine.^{6,12,19} On the other hand, cimetidine may increase the effects of chloroquine,¹⁸ and although chloroquine is not soluble in alcohol,¹⁹ alcohol may nevertheless have a synergistic effect.¹⁶ Cardio-toxicity is also influenced by the degree of pre-existing heart disease.³

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Toxic plants

(Being a preliminary review of some poisonous plants with relation to their possible use in rational suicide)

Many authorities have stated that plants are not a particularly peaceful or reliable means of ending one's life, yet right-to-die societies get frequent enquiries about the toxicity and suitability of various plants. Folklore, while containing a grain of truth, has possibly fuelled belief in the potency of plants even to the modern day. I propose to briefly outline the plants of most common interest and their effects, in the hope that this short article will persuade all but the most dedicated plant-lover to use more readily available, more reliable, and less unpleasant methods of auto-euthanasia than that offered by plants. Anyone seriously wishing to use the plants listed below, having read of the unpleasant effects involved, will need some knowledge of plants in order to correctly identify the plants in question: therefore I will omit any detailed descriptions of their appearances (these can be found in the references at the end).

Unless you obtain a drug from a plant under laboratory conditions, you have little control and don't really know what you're getting. The fact that many drugs are derived from plants doesn't indicate that the same effect can be achieved by boiling up the raw materials! Alkaloids and glycosides are amongst the most important chemicals found in plants that can have a lethal effect. When poisonous plants are eaten, the mouth, stomach and then the rest of the digestive system are often the first parts of the body to be affected. The nervous system is then frequently attacked. Fatalities may occur due to heart failure.

Autumn Crocus (*Colchicum autumnale*)

Autumn Crocus is a popular garden plant, although it appears in the wild in some damp meadows and woods. It has long, tubular, purple or white flowers. Poisonous alkaloids are present in all parts of the plant, but more concentrated in the underground stem and the seeds. The toxicity also remains after drying. Initial symptoms may be delayed several hours and include burning sensations, diarrhoea, difficulty in swallowing, abdominal pain and nausea. Large amounts might cause collapse, convulsions, paralysis and death.

Deadly Nightshade (*Atropa belladonna*)

All parts of the Deadly Nightshade plant (but particularly the berries) contain a variable mixture of hyoscamine, hyoscyne and atropine. Cases of poisoning have been known, for instance, when the leafy part has been cooked and eaten as a vegetable or the berries stewed as a dessert. Symptoms develop within a few hours and may include dry mouth, flushing, rapid pulse, possibly difficulty in breathing, constipation, hallucinations, convulsions and coma. Death may follow in 6-24 hours. Woody Nightshade is sometimes mistaken for deadly nightshade, though less poisonous. The name nightshade is similarly applied to a variety of other plants in various countries.

False Hellebore / White Hellebore (*Veratrum species*)

This plant should not be confused with true hellebores. False Hellebore is much more poisonous, especially in the rootstock and leaves. Symptoms may include a burning sensation in the mouth and throat, abdominal pain, vomiting, diarrhoea, muscular twitching and cramps. In more severe cases there may be slow pulse, difficulty in breathing, coldness, trembling, collapse and death.

Foxglove (*Digitalis purpurea*)

Foxglove is a common ornamental flowering plant, used in medicine for its digitalis. It contains glycosides such as digitalin and digitalin that are potentially lethal; due to the vomiting that the plant induces however, these are rarely fatal. The plant may be boiled, dried or stored without affecting the toxicity. It has a bitter taste. Toxic symptoms may result from drinking tea prepared with the leaves or from eating the leaves or flowers. Symptoms include nausea, vomiting, abdominal pain, diarrhoea, headache and slow irregular pulse. In severe cases there are visual disturbances, trembling, convulsions, delirium and hallucinations. The name probably means Folks' Glove (i.e. Fairies' Glove). In Scotland, its names have included Bloody Fingers and Dead-Men's-Bells, and the German name Fingerhut (thimble) is said to have inspired the botanist and physician Leonard Fuchs in 1542 to employ the Latin adjective digitalis as the designation of the plant. Foxglove tea used to be an "old wives'" remedy for dropsy.

Hemlock (*Conium maculatum*)

The common hemlock is well known in folklore. Several dangerous alkaloids are present in the plant but much of the toxicity is lost in drying. A number of people have died after eating the plant. It exudes a fetid smell, resembling that of mice, and has a bitter taste. Symptoms can appear between fifteen minutes and two hours. According to authorities, burning and dryness of the mouth is followed by muscular weakness leading to paralysis that eventually affects the breathing; vomiting, diarrhoea, convulsions and loss of consciousness and death may follow. All this differs from the reassuring tale of Socrates offered by Plato. Crito supposedly told Socrates to simply walk about until his legs felt heavy and then to lie down: Plato then describes how cold and numbness spread peacefully from Socrates' feet upwards. The romantic

notion was reinforced by the poet Keats, who wrote: "A drowsy numbness pains My sense, as though of hemlock I had drunk." The toxicity of Hemlock varies greatly according to the conditions under which it is grown and the season or stage of growth at which it is gathered. The mature plant is the most toxic, and should be gathered during the flowering period, or later on when the fruits are fully grown. The wild plant growing in exposed situations is said to be more potent than garden-grown samples, and more potent in dry warm summers than in those which are dull and moist.

Hemlock Water Dropwort (*Oenanthe crocata*)

Hemlock Water Dropwort has leaves that are similar to those of celery and with a similar odour. The flowers have a wine-like scent. Oenanthotoxin is found in all parts of the plant, especially the roots, where its concentration is highest in winter and early spring. These roots have a pleasant taste, similar to parsnip. The toxin remains largely active in the dried plant or after cooking. However, the poisonous juice which exudes from the cut surface of the root deteriorates and loses its toxicity on exposure to air, changing colour from yellow to brown. The plant is poisonous, frequently fatally, even in small doses. Symptoms develop within an hour or two and include nausea, excessive production of saliva, repeated vomiting, diarrhoea, profuse sweating, and weakness of the legs; loss of consciousness and convulsions may occur before death. The plant is also known as Dead Men's Fingers.

Henbane (*Hyoscamus niger*)

Henbane is a weed that grows on wasteland. It is an unpleasant tasting plant with poisonous seeds that have an action similar to deadly nightshade. Blurred vision and mental confusion may be followed by rapid heartbeat, staggering, extreme agitation, loss of speech, hallucinations, paralysis,

unconsciousness and death. The extract has been used medically as a sedative; country-folk once smoked the seeds and capsules as a remedy for toothache!

Mistletoe (*Viscum album*)

This parasitic plant has played a role in superstition even to the present day, though it is no longer generally attributed with sacred or medicinal properties. Mistletoe growing on lime or poplar trees is more poisonous than that growing on apple trees. The leaves and stem are the most poisonous, followed by the berries. It causes serious digestive disturbances. Reactions to mistletoe vary considerably, although fatalities are not unknown. The mistletoe has been revered in many cultures - mistletoe growing on oak especially so by the Druids.

Monkshood (*Aconitum napellus*)

Monkshood is a very poisonous plant containing aconitine and other alkaloids. Some of the toxins remain after drying or storage. Symptoms of poisoning develop in less than an hour. A burning sensation in the mouth and throat, coldness and sweating, are followed by general numbness, vomiting, diarrhoea, and abdominal pain. A slow pulse may develop, with eventual convulsions, coma and death, all within two hours.

Moonseed (*Menispermum canadense*)

Like the moon, moonseed has its bright and dark sides. On the bright side, this North American vine's roots furnished 19th century medicine with a drug that was not only an effective diuretic and laxative but was reportedly useful in treating a wide range of ailments from tuberculosis of the lymph glands in the neck to certain rheumatic and arthritic diseases. On the dark side, this plant produces poisonous blue-black berries that can easily be mistaken for wild grapes, and

there have been accidental deaths. Excessive doses bring on an extremely rapid pulse rate and severe vomiting and purging (Also known as Canada Moonseed and Texas Sarsaparilla.)

Oleander (*Nerium oleander*)

Oleander grows as a greenhouse plant and is native to southern Europe, though growing wild elsewhere in warm climates. All parts of the plant contain glycosides, and the toxicity remains after drying or boiling. Accidentally eating skewers of oleander wood has known to be fatal, as has herbal tea made from an infusion of the leaves. Chewing 8-10 seeds of the yellow oleander is commonly fatal and it has been used in India for suicide. The plant causes an immediate burning sensation in the mouth and a bitter taste. A few hours later, numbness of the tongue, abdominal pain, nausea, vomiting, diarrhoea, and rapid pulse follow. Visual disturbances develop and later on an irregular pulse and fall in blood-pressure can precede death.

Poison Ivy (*Hedera helix*)

All the parts of this wild, trailing/climbing evergreen have long been considered poisonous, yet treatment is rarely considered necessary. Full recovery usually occurs in a few days. The berries have a bitter, unpleasant taste causing a burning sensation in the mouth and throat. More serious symptoms are uncommon, but might include difficult breathing and even coma.

Thorn Apple (*Datura stramonium*)

This annual plant has a distinctive unpleasant odour, especially when bruised or crushed. The whole plant (but especially the flowers and seeds) contains hyoscamine, scopolamine and other toxins – the concentration of which varies with the stage of growth and environment. Drying or boiling does not affect

the toxicity. Most cases of poisoning have occurred whilst using the plant for its hallucinogenic properties. In Shakespeare's *Anthony & Cleopatra*, Cleopatra uses it in her wooing of Caesar. Symptoms include nausea, irregular heartbeat, hallucination, delirium, convulsions, coma and sometimes death. The nickname Jimsonweed originated from a poisoning that occurred amongst soldiers at Jamestown, USA, in 1676.

Water Hemlock/Cowbane (*Circuta virosa*/*Circuta maculata*/*Circuta douglasii*)

Circutoxin is present in all parts of this plant, particularly in the yellow juice of the underground parts. It remains active after the plant has been dried. Even a few bites of the plant can cause poisoning and death. Symptoms may start within half an hour. It causes a burning sensation in the mouth, profuse production of saliva, nausea, vomiting, flushing and dizziness. Muscular contractions and convulsions, accompanied by difficulty in breathing, are followed by death, often within a few hours of eating the plant. Reports of the lethal dose range from a whole root to 1 cm of the stem. The smell is that of celery and the taste of sweet potato or parsnip. Death is fairly rapid as a result of the violent neurotoxic effects. Water Hemlock was used by the Iroquois Indians to commit suicide.

Yew (*Taxus baccata*)

A mixture of alkaloids are present in all parts of the plant. The toxicity is not decreased in fallen branches or hedge trimmings. People have died after eating the leaves or fruits. The fruits are poisonous when the seeds inside them are chewed. Toxic alkaloids are released which can cause symptoms ranging from mild nausea and abdominal pain to coma and death. The latter may be preceded by lethargy, trembling, coldness and convulsions. The alkaloids are rapidly absorbed and interfere with the action of the heart. Surprisingly enough, the evergreen yew,

which lives to an immense age, has also been regarded through the ages as a symbol of everlasting life. The poisonous properties were known and referred to by classical writers such as Caesar, Virgil and Livy.

When we are reasonably fit and well, thinking of ingenious ways in which to achieve death may be an interesting intellectual exercise. For the person desperately seeking a way to end his or her own life now, reliability and freedom from further pain are the most important factors. Direct use of plants is not likely to satisfy either the criterion of reliability or that of freedom from further pain, and I urge readers to instead look to the methods described elsewhere in this book. Much more research is needed (research that will be particularly difficult to implement) before we can say that any of these plants definitely causes a peaceful death, or what sedatives would be effective in combination with them to achieve such an end. This chapter will have served its purpose if it helps to avoid, for some, what is no more than the roulette-wheel of possible death using poisonous plants and the unwarranted imposition of needless, further suffering.

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Fasting to death

The arguments on terminal fasting are fairly complex, as this chapter demonstrates. They have been summarised in the *Starvation* chapter earlier for general reading, but anyone seriously contemplating doing without food and water in order to end their life is strongly advised to investigate the facts in considerable detail. Admonitions concerning comfort care are included in the earlier chapter rather than repeated here.

Sitting quietly one day, a month before his 100th birthday, Scott Nearing (the American conservationist, peace activist, educator and writer) said: "I think I won't eat any more." It was 1983. The house, which he had had a hand in building himself, overlooked a quiet bay in Maine. Scott wanted the tranquillity of his life to be mirrored in his dying. For a month he drank fruit juice, then he decided he wanted only water. Lucid, and with no pain, pills, or professional nursing, he was in good spirits. Gradually, his breathing became fainter, as if he were detaching himself. He spoke his last words and died so gracefully that his death inspired a book: as a testament of his passing from one who was with him. (Readers of the earlier chapter may wish to note that Nearing was a vegetarian.)

Compare this passing with a very different one . . .

Another filling came loose. The choking sputter as the prisoner spat it out hurt his ulcerated throat. The conditions first experienced after a fortnight of fasting were much worse. Six weeks into his hunger strike, the IRA prisoner couldn't move his gaze properly without turning his head. He was light-headed and kept vomiting. Later his speech became slurred and his vision failed. Eventually he was going to die - like nine others who starved themselves to death in 1981 in the Maze Prison of Northern Ireland.

Finally we have yet another real life scenario . . .

The crowds gathered. Some took photographs. Jinen-dra Varni, the Jain scholar, sat cross-legged as the throngs gazed in awe. He has taken a vow of terminal fast and had gradually cut back on solids, then on liquids. There seemed little evidence of any pain or even hunger pangs. Varni abstained from water on alternate days until May 23, 1983 when he gave it up altogether. Reclining onto his side and exuding a tremendous peace and calm, he died the following day.

Different deaths. Different contexts. Different experiences. Why do some people die a horrible death without food and water and others experience an almost idyllic departure? Reports show little consensus. Before considering it as a method of self-deliverance, this article seeks to establish the known facts about starvation (or fasting) and dehydration.

The right-to-die debate, as it affects patients and physicians, has taken a new turn recently in terms of rights, duties and cooperation. Abstinence from food and drink, as a means to willed, voluntary death, has been put forward as a solution to a particular legal and moral stalemate that has persisted between patients and doctors, right-to-die proponents and 'pro-lifers'. For we see that:

. . . educating chronically ill and terminally ill patients about the feasibility of patient refusal of hydration and nutrition (PRHN) can empower them to control their own destiny without requiring physicians to reject the taboos on PAS [physician-assisted suicide] and VAE [voluntary active euthanasia] that have existed for millennia.¹

This proposal, which seems to many an attractive one, is beleaguered with apparently conflicting evidence about the painlessness of such a course of action. One of the aims in here is to summarise and hopefully bring some cohesion out of widely disparate claims.

In 1993, the International Drugs Consensus Working Party's² comment on fasting as a means of self-deliverance was:

This method is extremely slow, taking two weeks or more.³ ... As a traditional method, it was practiced by the American Indians. Unpleasant medical complications may set in before death occurs. A little liquid should be taken to moisten the mouth and prevent painful dehydration.⁴

The recommendation seems to discourage fasting as a method of self-deliverance while nevertheless admitting that it has sometimes been successfully employed. Let us expand on and explore the known facts about fasting and dehydration. My tentative conclusion is that it may be a viable method for suitable individuals, but the evidence suggests that, without medical examination of the person undergoing the fast to ascertain suitability, and the provision of palliative care for alleviation of troubling symptoms, it may be an uncertain course for an individual to embark on, especially when suitable drugs for self-deliverance can be obtained without too much difficulty in most countries and so provide an alternative route to dying in dignity.⁵

A principal feature of fasting however, is that it potentially allows the active cooperation of the health care team. Except in limited parts of Continental Europe, or potentially in Oregon USA under Measure 16, medical assistance in acceler-

ating dying is outlawed, but fasting and dehydration, almost through a legal technicality, allow active participation without active medication. Patients have the right to refuse life-support systems, such as forced feeding by gastric tubes and intravenous drips of expensive nutrient solutions. They also have the right to palliative care.⁶

The moral agendas and societal attitudes which underlie such shaky legal divides are nowhere more evident than in the dilemma facing doctors who feel vocationally devoted to curing or comfort care but not to being an active assistant in the death of a patient. Thus:

... there is no disagreement that physicians are morally and legally prohibited from overruling the rational refusal of therapy by a competent patient even when they know that death will result. There is also no disagreement that physicians are allowed to provide appropriate treatment for the pain and suffering that may accompany such refusals.⁷

It is hardly surprising, however, that even in Britain or the United States where medical law is widely disseminated, confusion should arise in the minds of health care workers. Although a competent patient can refuse nutrition and hydration, the incompetent patient may not be afforded the same option. Lord Musthill, for instance, noted that: ... in 20 out of 39 American states which have legislated in favour of 'living wills' the legislation specifically excludes termination of life by the withdrawal of nourishment and hydration.⁸

In one study:

75 per cent of physicians surveyed objected to the idea of withdrawing intravenous fluids. This is understandable given the widespread emphasis in medical education on acting, on doing something, however futile, even if no real good is brought about for the patient.⁹

This reluctance to permit death to occur by withdrawing fluids is reinforced by popular images of what 'good doctors' do: paradoxically, ignorance of the law may involve breaking it in the false belief that one is staying on the right side of it:

The symbolic power of 'giving a cup of water to a thirsty person' is almost overwhelming. How much greater is the symbolic power of food and water intervention when nothing else we can do will actually help the dying patient? . . . It must be frankly acknowledged that one reason physicians might use for ordering nutrition for the dying is to avoid a lawsuit . . . Nevertheless, using the dying patient to protect oneself is a violation of the principle of beneficence upon which medicine rests. It is also a violation of the implied or explicit contract with patients through which the physician must act to care for their best interests.¹⁰

For a doctor trained in medicine, rather than ethics and the law, the number of situations requiring virtuosity of approach is almost overwhelming:

Ethical dilemmas in the field of hydration and nutrition cover a wide spectrum, from dehydration due to dysphagia of various aetiologies, through terminal cancer with intestinal obstruction, to the persistent vegetative, state, terminal Alzheimer's disease patients

who are unable to eat, and patients with anorexia nervosa or elderly depressives who deliberately refuse nourishment to the point of self-annihilation.¹¹

. . . not to mention the rational self-deliverance of someone who has decided to end their own interminable and unrelievable suffering.

Full awareness of the law is necessary before physicians will be persuaded to embrace such an idea.

When death results from lack of hydration and nutrition, it is less plausible to say that the death was caused by the disease process - thus someone must be assigned responsibility for the patient's death and physicians wish to avoid this responsibility. Physicians who recognize that patients have the authority to refuse any treatment, including hydration and nutrition, are more likely to avoid unjustified feelings of responsibility for their deaths.¹²

The issue has been further complicated by ignorance as to the therapeutic value, if any, of nutrition or hydration in terminal care, and reliance on possibly erroneous assumptions.¹³ A more scientific rationale has been forwarded by Thomasma et al, who concluded:

Our policy rests on an argument that there is a morally relevant difference about chronic illness, debilitation, and terminal illness that permits us to treat the patients suffering from these assaults on bodily integrity differently than we would other patients. This morally significant difference lies in the ratio between contemplated intervention and possible benefit. The

only medically secure treatment for a dying patient is comfort. That is the only way medicine can benefit such persons. We have argued that nutrition and fluids are optional treatments on this basis.¹⁴

The goal, or good of the patient, has often been obscured by the immediate medical contingency. Medicine has become enraptured of itself, and dilemmas are solved by what is medically correct rather than what is correct for the patient. Most of the problems connected with voluntary euthanasia, living wills and self-deliverance arise because of this excessively medicalized introversion that has the effect of marginalising the patient. Beneficent paternalism often occurs when the patient is enervated, incapacitated or confused as a result of disease, leaving opportunity for the practitioner to combine medical evaluation and expertise with a sensitivity to the wishes, values and needs of the patient; dogmatic paternalism occurs with increasing frequency when the problem is seen only in the (increasingly complex) language of medical science, and with an ear to medical science for the answer. The lure of professional challenge calls for the best answer - but with little regard to what the patient might reasonably conceive to be best. Even objective standards are easily ignored when there has been a failure to ask the right questions. As Pearlman discovered:

Questionnaires of clinician beliefs and chart reviews of patients receiving tube feedings indicate that 'medical indications' without major regard for patient comfort or a patient-centered evaluation of benefits to burdens are a major factor in these decisions.¹⁵

To examine the underlying issues, which include not only medical and physiological problems but ethical and cultural

challenges that are themselves surrounded by controversy, it is first necessary, as Justice Butler-Sloss said, to rid ourselves of the emotional overtones and emotive language which do not assist in elucidating the profound questions which require to be answered.¹⁶ The paucity of reliable material and the inadequacy of rigorous research in this area, together with an overdose of popular but possibly erroneous sentiment, has been highlighted by Printz:

In the literature, the issue of medical hydration and nutrition in the dying patient remains one of the underexplored areas of medicine. Articles objectively dealing with this issue are scarce, and documented research on comfort in dying patients is even more scarce. Opinions about this emotionally laden subject, however, abound.¹⁷

Source material available is in widely differing contexts - differing academic theories and total fasting studies,¹⁸ hydration and nutrition studies in terminal patients,¹⁹ deaths connected with anorexia,²⁰ hunger strikers,²¹ isolated case studies of voluntary and willed death through fasting,²² famine victims,²³ and deaths through malnutrition during persecution and war.²⁴ All these areas are emotionally laden in differing ways, and the bias thus implied must be stripped away before any scientific examination of the facts can take place. Even provision of artificial nutrition and hydration to dying patients remains controversial, with opposite practices sometimes being implemented in hospices and hospitals;²⁵ the mechanisms of anorexia are poorly understood, often arousing irrational responses in the public who unsuccessfully try to differentiate between a mental illness and a physical need; case studies of mystics or unusual individuals who manage to fast to death in a peaceful, serene manner are viewed by right-to-

die enthusiasts as definitive rather than as the anecdotal descriptions which they tend to be; pictures of famine victims, with bloated bellies, give a graphic and horrifying picture of starvation and an emotional bias that links the supply of nutrition to a caring attitude - reinforced (rightly in this instance) by relief agencies such as Oxfam; macabre descriptions of the day-to-day deterioration of prisoners-of-war dying of malnutrition reinforce the idea that lack of food and water results in a very unpleasant death. It may perhaps be very easy, though somewhat disingenuous, to choose out-of-context, colourful, and ultimately specious examples to either support or oppose the notion of peaceful death through willed, voluntary fasting;²⁶ but such arguments should be viewed as dangerous, and the more responsible approach is to set out the benefits, burdens and precautions that seem advisable should any person decide against the more obvious methods of ending one's life and seriously contemplate fasting to achieve such an end.

To fast implies a willed action concerning one's own abstaining from food; starving, on the other hand may imply external circumstances forcing themselves on the individual, or, at least, the connotations of a painful condition or lingering death.²⁷

Although much of the physiology may be connected, there are great ethical and possibly other differences between fasting and starvation. Additionally, the differing emotive import of the two words makes it very necessary to avoid using the wrong terms. As Ahronheim (et al) said: "The cruelty and abandonment implied in the word 'starvation' are not relevant to the dying patient."²⁸ Physicians frequently regard fluids and food to be minimum standards of care for the dying.²⁹ Siegler said that, "For physicians, provision of ordinary means of comfort and care like food and water demonstrates our

personal, professional, and social commitment to the dying patient."³⁰

Dehydration is also a state which, for the purposes under discussion, requires definitional analysis. On the first level, it is frequently confused with thirst - a state which it may not, as this article will show, necessarily even parallel. Secondly, there are differing types of dehydration from a physiological viewpoint and, depending on the antecedent cause, the resulting symptomatology may be different.³¹

There is an important difference between being thirsty and being dehydrated. Thirst is an uncomfortable sensation experienced when the mouth is dry. Discomfort from dehydration may be entirely absent as long as the mouth is kept moist.

Various authors agree that there may be very different clinical syndromes for sodium depletion as opposed to pure water loss.³²

Normotraemic dehydration, characterised by normal sodium concentration, is a common disturbance of fluid balance and is usually not severe. It is caused when fluid loss and sodium loss occur in equal proportions, such as in mild vomiting and diarrhoea.

Hyponatraemic dehydration, characterised by low sodium concentration, results from depletion of both water and sodium but with salt loss predominating, or when salt and water are lost together but only water is replaced. Losses like this arise from the gut (for example, vomiting and diarrhoea) or from the kidneys (for example, overuse of loop diuretics,

diuresis caused by glucose osmosis or severe uraemia, or adrenal insufficiency).

Hypertraemic dehydration, with high sodium concentration, develops when water loss is greater than the loss of sodium and may occur when fluid intake is insufficient (for example, in unconscious patients with no fluid intake) and, rarely, with loss of normal thirst. It also results from increased fluid loss, such as that associated with vomiting and diarrhoea, from the skin and lungs in febrile patients, or the fluid loss caused by burns.³³

Sutcliffe notes that:

Dehydration in the terminally ill patient may present as a mixed disorder of salt and water loss and may be caused by normal water losses from the lungs, skin and kidneys, with failure to replace those losses, or there might be abnormal gastrointestinal or renal losses. Normonatraemic dehydration may also occur.³⁴

Early rapid weight loss, for instance, is primarily due to negative sodium balance.³⁵ It is perhaps desirable that, as with any other method of willed death, the subject becomes conversant with the process to understand probable effects, their causes, and how to manage them. It is also important to note these differences because some of the evidence presented here and elsewhere for fasting to death is based, in part, on observing terminal patients. We should be aware that different factors come into play and that terminally ill patients who stop taking food and water are in a rather different category to comparatively healthy people who decide on a terminal fast.³⁶

What evidence is there of unpleasant effects when intake of food and water ceases?

Many effects have been listed and observed. Kerndt et al include gout and urate nephrolithiasis, postural hypotension and cardiac arrhythmias,³⁷ and point out that, "The sense of well-being that may occur during short-term fasting is in contradistinction to that seen during prolonged periods of semi-starvation when mental lethargy, apathy and irritability are common."³⁸ Miller, in his observations on hunger-strikers notes:

The net result of these metabolic changes is that the person who consumes insufficient protein and calories will experience progressive loss of both muscle and fat. No body organ is spared. The skeletal muscles atrophy more rapidly than cardiac muscle or kidney, but as protein energy starvation continues, the heart and kidney lose mass progressively.³⁹

And goes on to explain:

Lymphatic tissues atrophy, causing impaired cell-mediated immunity and reduced bactericidal activity of polymorphonuclear leukocytes. There is an increased morbidity and mortality during common infections. Pneumonia is a common cause of death . . . metabolic rate is reduced, and hypothermia is common . . . On physical examination, there is a drawn appearance of the face, the temporal areas of the head are wasted. The intercostal spaces are fleshless, the skin hangs in folds on the wasted limbs. The skin flakes and loses pigmentation, as does the hair. The patient appears pale. He may be edematous. Skin and decubitus ulcers are common.⁴⁰

Sutcliffe lists the potential disadvantages of dehydration as including extreme electrolyte imbalance (eg acidosis), hypernatraemia, hypercalcaemia leading to apathy and depressive states ranging from lethargy to coma and confusion, and also neuromuscular irritability and twitching, hypovolaemia leading to falls, postural hypotension leading to increased risk of pressure sores, reduced skin perfusion leading to increased risk of pulmonary embolism and deep vein thrombosis, water deprivation leading to headaches, nausea and vomiting and muscle cramps, reduced urine output leading to dysuria and increased risk of urinary tract infection, reduced fluid leading to constipation and gastrointestinal tract pain and discomfort. He adds that clinical manifestations often associated with volume depletion include signs of circulatory insufficiency (such as reduced blood pressure, postural hypotension, cold peripheries, decreased cerebral perfusion), uraemia, hyponatraemia and haemoconcentration. Patients may experience dryness of the mouth and mucous membranes, diminished sweat, decreased skin turgor and neurological complications such as weakness, restlessness, confusion, coma and seizures. He tells us that nausea, vomiting, anorexia and taste loss have been noted in experimental subjects with hyponatraemic dehydration; but notes that these may be contributing causes rather than a result of that condition.⁴¹

Collaud affirms that symptoms rarely mentioned in the literature include nausea, muscular cramps and hunger.⁴² Keys et al. note that gastrointestinal disorders are prominent, such as diarrhoea, nonspecific dysentery, colic, flatulence, and a protruding abdomen, which, they say, are universally recognized symptoms of calorific undernutrition and have been observed wherever man's natural food supply has been seriously curtailed.⁴³ They also say that there is an increased sensitivity to cold,⁴⁴ and that numerous physiological changes

ensue with malnutrition which become progressively far reaching as the condition continues;⁴⁵ slow heart rate,⁴⁶ mild cyanosis, cold skin, increased circulatory time,⁴⁷ increased water consumption, salt hunger (subjects will consume several times normal quota of salt if available), edema,⁴⁸ depressed libido,⁴⁹ looking and feeling older,⁵⁰ greater accident proneness, diminishing of tendon reflexes, a sharpening of the senses with vision unlikely to deteriorate and hearing may becoming more acute - but with subjects tending to act dull and insensitive as though unaware of or incapable of feeling many of the ordinary stimuli of sound, sight or touch - are all further possible symptoms.⁵¹ Fainting, is common,⁵² and there is general weakness and reduced capacity for work.⁵³

Winick, in his book of observations in a Warsaw Ghetto, tells us that the skin becomes pale, dry and scaly,⁵⁴ and that initial complaints (on 800 calories a day, comprising 3g fat, 20-30g vegetable protein, and the rest carbohydrate; protein was of low quality and very deficient in certain vitamins and minerals, particularly A, D, K and E, calcium & iron) included thirst, polyuria and nocturia, dryness of the mouth, rapid weight loss, and constant craving for food.⁵⁵ The skin is easily traumatized,⁵⁶ and there is a sensitivity to the sun, readily resulting in redness, swelling, local hyperthermia and fever blisters; temperature response to diseases which usually produce a high fever, such as typhus, is blunted.⁵⁷

What evidence is there of beneficent symptoms (or lack of unpleasant symptoms) when intake of food and water ceases?

Keys et al. tell us that

... academic portraits of so-called classical deficiency diseases are idealizations or even rather unreal abstrac-

tions with regard to the actual finding where real malnutrition is endemic or epidemic. Moreover, there is material for argument against the idea of a progression from positive, nutritional health through sub-clinical deficiency to the full-blown disorder, in which the subclinical state is supposed to be characterised by vague malaise, fatigue, and so on. Some of the cases of amblyopia and ataxia developed with little or no premonitory change in the sense of well-being."⁵⁸

There is also a considerable amount of well-documented but apparently contradictory evidence, and possible reasons for such discrepancies will be examined presently. Firstly, however, let us examine some evidence of peaceful and dignified deaths by the method under consideration. While there are individual, anecdotal reports that seem to offer much hope, two principal sets of data I propose to draw attention to cover a) voluntary fasting by a particular religious sect and b) voluntary fasting in a hospital (or more usually hospice) setting; with this second category will also be grouped withdrawal of nutrition and hydration in competent patients. These groups, however, may be considered to some extent atypical. The former covers an ascetic and well controlled graduated fast by relatively healthy subjects; the second relates primarily to subjects who are mostly elderly, terminally ill and, most importantly, have access to adequate palliative care.

Voluntary fasting to death within a religious sub-group appears to be confined to the Terapantha order within the Jaina Digambara community,⁵⁹ where it is said that several well known cases occur every year.

The fast is described thus:

In early 1983 a prominent Jaina scholar and writer by the name of Jinendra Varni, then in his early eighties, although in reasonable health, decided that he wanted to fulfil his life's journey through a dignified yogic death (samadhimarana). On 12 April 1983 Varni formally withdrew from his worldly commitments and upon request received from the head preceptor of his order, with due acclamation for his courage, initiation into the vow of terminal fast (sellekhana). He had already reduced his food intake; now as each day went past he cut back on certain vegetables, milk, clarified butter, yoghurt, dried fruits, giving up something every day, but retaining small portions of boiled vegetables and sultanas for one meal of the day. Occasionally he would fast all day long, and break the fast with broth from a boiled vegetable. By the end of the month his fluid intake was reduced as well and gradually given up, with plain water remaining as his only intake, which too was set aside on alternate fast days. On 23 May water was given up altogether. Varni reclined with his body to one side during the last days but there was apparently no evidence of hunger pangs, pain of any other kind (particularly from by-now deteriorating internal organs), barring some coughs and discomfort while sitting upright owing to his frail frame; nor did he show any significant loss of attention and consciousness. On 24th May, exuding a tremendous peace and calm in his general demeanor, Varni closed over his eye-lids and breathed his last.⁶⁰

This reassuringly peaceful death is a far cry from the horrors of starvation recounted elsewhere. Glimmerings that death from starvation and/or dehydration may not be as horrific as often contemplated have filtered through in mainstream

medical literature for some time, probably starting with early fasting studies, through to observations in palliative care when hospice workers realized that artificial nutrition and hydration were not necessarily beneficial to terminally ill cancer patients, and finally in recent years amidst the right-to-die debate, advocacy of willed fasting as a means to legal self-deliverance combined with the palliative assistance of hospice care.

In the classic work by Keys et al. on starvation in 1950, it was pointed out that in total fasting studies the hunger sensation almost disappeared after a few days; that ketosis was a typical result of fasting but did not develop in semi-starvation; and that famine edema had never been reported in total starvation.⁶¹ In looking at comfort measures for the terminally ill, Billings went a stage further in noting: "... fluid depletion in dying patients should be regarded as a disorder with relatively benign symptoms. Successful treatment of the discomfort of thirst and a dry mouth generally does not require rehydration."⁶² By 1988, Printz had publicized the little known situation where:

... a hospice nurse in 1983 noted a correlation between comfort and lack of medical hydration. It appeared to her that terminally ill patients in end-stage dehydration experienced less discomfort than patients receiving medical hydration. The dehydration, resulting from lack of nasogastric or IV fluid, seemed to produce a natural anaesthetic effect, often allowing for a reduction in pain medications.⁶³

A study by Andrews and Levine published in 1989 showed widespread support among hospice workers for dehydration in some terminal patients:

Of the hospice nurses surveyed, 71 per cent agreed that dehydration reduces the incidence of vomiting, 73 per cent agreed that dehydrated patients rarely complain of thirst, 51 per cent reported that there is relief from choking and drowning sensations when fluids are discontinued, and 53 per cent agreed that dehydration can be beneficial for the dying patient. Also, 85 per cent of nurses surveyed disagreed with the need for hydration by IV and/or tube feeding when dehydrated patients have a dry mouth. Finally, 82 per cent of the nurses disagreed with the statement that dehydration is painful.⁶⁴

They concluded that, in contrast to the assumption of most health professionals, dehydration was not painful, and that it was therefore a viable alternative to facilitate a comfortable death.⁶⁵ Concerning the medical symptoms, they observed that: "With dehydration there is decreased urine output and less need for the bedpan, urinal, commode, or catheterization and fewer bed-wetting episodes. There is a decrease in gastrointestinal fluid with fewer bouts of vomiting. A reduction in pulmonary secretions is also seen with less coughing and congestion and a decrease in choking and drowning sensations. A reduction in the edematous layer around the tumor resulting in less pain may also occur."⁶⁶

In 1990, Ahronheim and Gqsnier concurred: "Withholding or withdrawing artificial feeding and hydration from debilitated patients does not result in gruesome, cruel or violent death."⁶⁷ Interestingly, ... deprivation of fluid rapidly results in further depression of consciousness and then coma and the experience does not appear to be painful. There is also some evidence that impaired thirst may occur naturally with advanced age or neurological impairment, and that there may be en-

ogenous production of substances producing natural analgesia.⁶⁸

Sutcliffe and Holmes listed some benefits of dehydration to the dying patient as: reduced urine output leading to reduced incontinence and a reduced need for catheterization; reduced gastro-intestinal fluids leading to reduced vomiting; reduced pulmonary secretions leading to reduced coughing and choking, reduced drowning sensation, and reduced use of tracheal suction; extreme electrolyte imbalance (eg acidosis, hypernatraemia, hypercalcaemia) and hypovolaemia, leading to analgesia due to states ranging from lethargy to coma; anaesthetic effect of ketone production in calorie deprivation leading to anaesthesia; increased production of opioid peptides in malnutrition and dehydration leading to analgesia.⁶⁹

Bernat *et al* also concluded that, "Scientific studies and anecdotal reports both suggest that dehydration and starvation in the seriously ill do not cause significant suffering" and that "... the overwhelming majority of hospice deaths resulting from lack of hydration and nutrition can be managed such that the patients remain comfortable." The consensus of experienced physicians and nurses was that terminally ill patients dying of dehydration or lack of nutrition do not suffer if treated, properly.⁷⁰

Miller and Albright also reported that death associated with dehydration or malnutrition was not perceived as painful.⁷¹

By 1993, a founding member of the Nutrition Society of Canada and former senior toxicologist at the *Bureau of Human Prescription Drugs, Health and Welfare* in Canada was quoted as saying that self-deliverance by starvation was reasonably fast and that it could be painless, or that therapeutic, non-toxic

doses of analgesics could be used if required for any reason to alleviate pain and discomfort.⁷²

Further studies showed specific differences with men and women, old and young, or thin and obese.

In an experiment with healthy active elderly men (67 to 75 years old) and seven healthy young men (20 to 31 years old) it was found that the older men were less thirsty and drank less after water deprivation.⁷³

Why there should be such striking differences in comparisons with, say, prisoners of war, is largely a matter of speculation, but one can hypothesize that other, concurrent factors could play a very large part. For instance, Phillips *et al.* suggest that if water intake in the elderly is deficient in the face of physiological need, for example in diarrhoea or fever, it could lead to clinical dehydration requiring hospital treatment in addition to aggravating other conditions (eg, constipation or renal stone disease).⁷⁴

Keys *et al.* even note some possible geographical differences. Retrobulbar neuritis, spinal ataxia, burning feet ("acrodynia") with corneal changes, deafness, a myasthenic bulbar syndrome ("kubigassari") - these conditions, though not uncommon in the Orient, are exceedingly rare in modern Europe. The prevalence of nutritional neuropathies and of disorders of the mucocutaneous tissues is far greater in tropical and semitropical regions than in the temperate and subarctic zones, and any influence from racial factors may be ruled out on the basis of the experience with Europeans in the tropics and subtropics.⁷⁵

Other variations observed are: (Sutcliffe:) Thirst is often absent in hyponatraemic dehydration, as this symptom is

primarily provoked by a raised sodium concentration.⁷⁶ (Kerndt et al.) Lean persons become ketotic earlier than obese persons, and women become ketotic more rapidly than men;⁷⁷ . . . fasting ketosis develops more rapidly in women than in men . . . This sex difference, however, disappears with increasing body weight; and . . . little or no rise in hormone growth is seen after prolonged fasting in obese subjects.⁷⁸ (Symptoms of ketosis include drowsiness, headache and deep respiration.)

It is clear that some individuals have experienced a peaceful death as a result of stopping food and water. It is also clear that probably a greater number of these have been assisted with expert palliative care.⁷⁹

Bernat *et al.* go so far as to suggest:

A pact should be made with the patient that the physician will do his or her best to minimize suffering during the dying process and will remain available to comfort the patient by physical presence as well as skillful treatment of symptoms, including dyspnea, and dryness of the mouth.⁸⁰

As death from lack of nutrition alone is a potentially very lengthy process, a combination of ceasing nutrition and hydration by some method is likely to be a preferred course. This area undoubtedly needs much more research. While a peaceful death by this method seems feasible in some instances, without particularized medical advice and medical back-up, and/or until more is known about the process of self-deliverance through fasting, an isolated individual acting alone would appear to have greater assurance of success by means of drugs. Abstinence from food and drink as a means of accelerating death does however have the distinction of

being the only method at the present time in which all sides in the "right-to-die" debate may reach common agreement under the law.

Having tried to separate myth, misinformation and scare stories from well-documented evidence, it is still difficult to say that refraining from food and drink will guarantee a peaceful death. Someone wanting a 100 per cent foolproof method might consider it foolhardy to emulate Jinendra Varni. A young, obese woman who has never followed a healthy diet might be ill-advised to attempt total fasting even in the face of unrelievable distress or a lingering, terminal illness.

But this is an area where a personal medical advisor may be able to narrow the odds and, if things go wrong, keep you comfortable in your dying without violating any laws and thus being branded a criminal.

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Northern Ireland in 1981, after almost exactly 42 days of fasting, each person experienced a severe exacerbation of his condition. Muscle control of the eyes was lost, with rapid involuntary horizontal and vertical nystagmus. Continuous light-headedness and vomiting occurred. These symptoms persisted for four to five days, after which they ended, leaving the patient in a state of relative euphoria. Then speech became slurred, hearing diminished, vision failed, smell ceased. Death ensued. See also: Craig G, "On Withholding nutrition and hydration to the terminally ill: has palliative medicine gone too far?" *Journal of Medical Ethics* 1994; 20:139-143, p.140: Even a Bedu tribesman riding in the desert in cool weather can only survive for seven days without food or water. Also: Sherwood L, Parris E, "Starvation in Man" *New England Journal of Medicine* 1979; 282(12):668-675, p.671: . . . a fasting man need drink very little water, the water produced by metabolism approximating that lost in urine and that lost by evaporation from skin and lungs. Therefore, as long as he is in a temperate and humid environment, his water needs are minimal when he is starving. . . . Also: Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, *The Biology of Human Starvation I & II*, Minneapolis: University of Minnesota Press 1950, 1:14-15: With edema, the actual water content of the body may not rise, but it does not decrease in proportion to loss of tissue, so there is a relative increase in hydration, recognizable as a puffiness of the ankles and face (it may disappear in the final stages of starvation, and death occur in a dehydrated state.)

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12. Cook M, "The End of Life and the Goals of Medicine" *Archives of Internal-Medicine* 1993; 153:2718-2719; p.2718. Also: McCann R et al; "Comfort Care for Terminally Ill Patients" *Journal of the American Medical Association* 1994, 272(16):1263-1266, p:1263: ...it has been

established that legal rationale and precedent exist for respecting a patient's explicit wishes regarding nutrition and hydration. Moreover, there has been wide-spread, although not unanimous support from major religious groups that nutrition and hydration may at times be considered unnecessary form of therapy."

13. "It is argued that the reason dying patients should be given medical nutrition and hydration is that humans have a moral urge to feed the hungry and give drink to the thirsty . . . the assumption in the argument, that the dying must be hungry and thirsty, has not been proved. Indeed, as has been noted, the opposite is suspected by many who have worked closely with the dying." Printz L, "Terminal Dehydration, a Compassionate Treatment" *Archives of Internal Medicine* 1992; 152:697-700, 698. Also: Ahronheim J, Gasner M, "The Sloganism of Starvation" *Lancet* 1990; 335:278-279, 279: "Since the beginning of time, until very recently, people who grew too old, too disabled, too weak, or too sick to eat and drink died without a feeding tube in place. Although superimposed medical illness in such people can now be cured, it is logical to assume that rejection of food is a physiological component of the illness and the dying process."
14. Thomasma D, Micetich K, Steinecker P, "Continuance of Nutritional Care in the Terminally Ill Patient" *Critical Care Clinics* 1986; 2(1):61-71, p.69-70.
15. Pearlman R, "Forgoing Medical Nutrition and Hydration: An Area for Fine-tuning Clinical Skills" *Journal of General Internal Medicine* (Editorial) 1993; 8:225-227, p.225.
16. *Butler-Sloss LJ*, in: *Airedale NHS Trust v Bland* [1993] 1 All E.R. 821,842.
17. Printz L, "Terminal Dehydration, a Compassionate Treatment" *Archives of Internal Medicine* 1992; 152:697-700, 698.
18. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, *The Biology of Human Starvation I & II*, Minneapolis: University of Minnesota Press 1950, 1:29.
19. eg Miller R, Albright P, "What is the Role of Nutritional Support and Hydration in Terminal Cancer Patients?" *American Journal of Hospice Care* Nov/Dec 1989; 33-38. Burge F, "Dehydration Symptoms of Palliative Care Cancer Patients" *Journal of Pain and Symptom Management* 1993; 8(7):454-464. Lichter I, Hunt E, "The Last 48 Hours of Life" *Journal of Palliative Care* 1990; 6(4):7-15.
20. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, *The Biology of Human Starvation I & II*. Minneapolis: University of Minnesota Press 1950, II:971: Mortality directly attributable to anorexia nervosa is only something like 8 per cent.)

21. Miller W, "The Hunger-Striking Prisoner" *Journal of Prison & Jail Health* 1987; 6(1):40-61.
22. Albury N, *The Natural Death Handbook*. 1993 London: Virgin Books.
- Scott Nearing *Maine Times* June 28 1991. Eddy D, "A Conversation With My Mother" *Journal of the American Medical Association* 1994; 272(3):179-181. Bilimoria P, "A Report from India: The Jaina Ethic of Voluntary Death" *Bioethics* 1992; 6(4):331-355.
23. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, *The Biology of Human Starvation I & II*, Minneapolis: University of Minnesota Press 1950, 1:758-759.
24. Winick M, *Hunger Disease - Studies by the Jewish Physician in the Warsaw Ghetto* 1979, New York: John Wiley and Son, documents starvation until death. Hunger is divided by Winick (p.38) into three degrees: 1) depletion of fat reserves, 2) aging and withering of patient, 3) terminal cachexia.
25. Sutcliffe J, Holmes S, "Dehydration: Benefit or Burden to the Dying Patient?" *Journal of Advanced Nursing* 1994; 19:71-76, p.71: It appears that those dying from malignant disease in general hospitals are more likely to receive hydration therapies than those dying at home or in hospices. Haas F, "In the Patient's Best Interests? Dehydration in Dying Patients" *Professional Nurse* 1994; 10(2):82-87, p.82: In hospital settings, intravenous infusions are often given to dehydrated patients who are terminally ill, without any consideration of whether this is in their best interests. Cf. Andrews M, Levine A, "Dehydration in the Terminal Patient: Perception of Hospice Nurses" *American Journal of Hospice Care* Jan/Feb 1989, 31-34, p.31: "This study suggests that those hospice nurses who have observed terminal dehydration have a more positive perception of this state than those who have not."
26. Ahronheim J, Gasner M, "The Sloganism of Starvation" *Lancet* 1990; 335:278-279; 278: In *Brophy v New England Sinai Hosp, Inc*, a dissenting judge relied on discredited trial testimony and described the painful and gruesome death that would result from removing a feeding tube, telling of the desiccation of each organ in turn; in the event, the feeding tube was removed and the man (who was in PVS) died peacefully, yet the discredited description has been repeated in several other cases and even, almost word for word, on the influential TV program (*LA Law*).
27. The former is an intransitive verb, emphasizing the voluntariness of the action since it implies only the actions of the person fasting; etymologically and by common usage, it often implies a higher purpose, whether for strict religious observance or as a deep expression of grief. The latter can not only be a transitive verb, but its etymology and connotations suggest dying

- horribly and contemptibly. *Oxford English Dictionary*; Skeats W, *A Concise Etymological Dictionary of the English Language*; Oxford: Clarendon Press 1951; pp. 180 & 516. For a fuller comparison of fasting and starvation see: *Encyclopaedia Britannica*, 11th edition, Cambridge: University Press 1910; 10:193-198. Note also: Bilimoria P, "A Report from India: The Jaina Ethic of Voluntary Death" *Bioethics* 1992; 6(4):331-355, p.334: The determination made and the ethical prescription adopted to terminate one's life is known as "voluntarily-embraced death" (*prayopavesana* and more commonly as *santhara*). The practice more usually . . . involves undertaking an extended fast, ie a graduated withdrawal from the urges of life and desisting from intake of solids, fibrous substances and fluids up to the moment of death . . . *Sallekhana* or terminal fast is intended to result in a peaceful passing away of the encumbent (*santimarana*) or, in more ascetic terms, in a yogic or 'enlightened' death (*samadhi-marana*).
28. Ahronheim J, Gasner M; "The Sloganism of Starvation" *Lancet* 1990; 335:278-279, 279: See also: Derr P, "Why Food and Fluids Can Never Be Denied" *Hastings Center Report* 1986; 16(1):28-30.
29. Thomasma D, Micetich K, Steinecker P, "Continuance of Nutritional Care in the Terminally Ill Patient" *Critical Care Clinics* 1986; 2(1):61-71, p.61.
30. Siegler M, Schiedermayer D, "Should Fluid and Nutritional Support Be Withheld from Terminally Ill Patients? - Tube Feeding in Hospice Settings" *American Journal of Hospice Care* March/April 1987, 32-35, p.35.
31. Billings J, "Comfort Measures for the Terminally Ill: Is Dehydration Painful?" *Journal of the American Geriatrics Society* 1985; 33(11):808-810, p.808: Dehydration, defined here as a loss of normal body water, is a term that is often used imprecisely to describe conditions with differing causes, symptoms, and management.
32. *Ibid* p.808 Nadal et al., however, suggested the important notion that quite different clinical syndromes could be associated with two prototypical forms of dehydration: sodium depletion and pure water loss.
33. Sutcliffe J, "Terminal Dehydration" *Nursing Times* 1994; 90(6):60-63, 60-61; for all these definitions and descriptions.
34. *Ibid* p.61. Also note: Sodium depletion is . . . sometimes called volume depletion, a term that also is imprecise but that points to the prominence in this condition of signs of circulatory insufficiency. Billings J, "Comfort Measures for the Terminally Ill: Is Dehydration Painful?" *Journal of the American Geriatrics Society* 1985; 33(11):808-810, p.808.
35. Kerndt P, Naughton J, Driscoll C, Loxterkamp D, "Fasting: The History, Pathophysiology and Complications" *Western Journal of Medicine*

- 1982; 137:379-399,p.379. See also: Derr, P "Why Food and Fluids Can Never Be Denied" Hastings Center Report 1986; 16(1):28-30, p.29: A social decision to permit physicians or health care facilities to deny food and fluids to patients who are capable of receiving and utilizing them, directly attacks the very foundation of medicine as an ethical profession. For Derr, the patient's wish is no justification; and he goes on (p.30) to draw an analogy with a patient who desires a botched hernia repair with massive postoperative morbidity . . . Another commentator draws a differing view: "No matter how simple, inexpensive, readily available, noninvasive and common the procedure, if it does not offer substantial hope of benefit to the patient, he has no moral obligation to undergo it, nor the physician to provide it, nor the judge to order it." Paris J, "When Burdens of Feeding Outweigh Benefits" Hastings Center Report 1986; 16(1):30-32; p.32.
36. Printz L, "Is Withholding Hydration a Valid Comfort measure in the Terminally Ill?" Geriatrics 1988, 43(1 1):84-88, p.86: "The symptoms of dying patients who are not undergoing medical hydration and nutrition are more difficult to evaluate than the laboratory data. The range of sensations, other than those of the primary disease, which have been reported vary from no distress and possible analgesia to lethargy, weakness, dry mouth, thirst, restlessness and nausea."
37. Kerndt P, Naughton J; Driscoll C, Loxterkamp D, "Fasting: The History, Pathophysiology and Complications" Western Journal of Medicine 1982; 137:379-399, p.379.
38. Ibid p.398.
39. Miller W, "The Hunger-Striking Prisoner" Journal of Prison & Jail Health 1987; 6(1):40-61, .p.44.
40. Ibid.
41. Sutcliffe J, "Terminal Dehydration" Nursing Times 1994; 90(6):60-63.
42. Collaud T, Rapin H, "Dehydration in Dying Patients: Study with Physicians in French-Speaking Switzerland" Journal of Pain and Symptom Management 1991; 6(4):230-240, p.235.
43. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, The Biology of Human Starvation I & II, Minneapolis: University of Minnesota Press 1950, 1:587.
44. Ibid 1:45.
45. Ibid 1:575.
46. Ibid 1:576.
47. Ibid 1:577.
48. Ibid 1:577-578.
49. Ibid 1:578.
50. Ibid 1:579.

51. Ibid I:581.
52. Ibid 1:635.
53. Ibid at I, Chapter 34.
54. Winick M (ed), Hunger Disease: Studies by the Jewish Physicians in the Warsaw Ghetto, New York: John Wiley & Son 1979, p.38.
55. Ibid p.37.
56. Ibid p.38. .
57. Ibid p.39.
58. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, The Biology of Human Starvation I & 11, Minneapolis: University of Minnesota Press 1950, 1:583.
59. Bilimoria P, "A Report from India: The Jaina Ethic of Voluntary Death" Bioethics 1992; 6(4):331-355, p.338.
60. Ibid p.335.
61. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, The Biology of Human Starvation I & 11, Minneapolis: University of Minnesota Press 1950, 1:29.
62. Billings J; "Comfort Measures for the Terminally Ill: Is Dehydration Painful?" Journal of the American, Geriatrics Society 1985; 33(11):808-810, p.809.
63. Printz L, "Is Withholding Hydration a Valid Comfort measure in the Terminally Ill?" Geriatrics 1988, 43(11):84-88, p.84.
64. Andrews M, Levine A, "Dehydration in the Terminal Patient: Perception of Hospice Nurses" American Journal of Hospice Care Jan/Feb 1989, 31-34, p.32. (This study sent questionnaires to a total of 127 hospice programs - 41 in New Jersey and .86 in Pennsylvania.)
65. Ibid p.34.
66. Ibid p.31.
67. Ahronheim J, Gasner M, "The Sloganism of Starvation" Lancet 1990; 335:278-279,279.
68. Ibid p.278.
69. Sutcliffe J, Holmes S, "Dehydration: Benefit or Burden to the Dying Patient?" Journal of Advanced Nursing 1994; 19:71-76, p.72.
70. Bernat J, Gert B, Mogielnicki R, "Patient Refusal of Hydration and Nutrition" Archives of Internal Medicine 1993; 153:2723-2728,, p.2725-6.
71. Miller R, Albright P, "What is the Role of Nutritional Support and Hydration in Terminal Cancer Patients?" American Journal of Hospice Care Nov/Dec 1989; 33-38, p.35.
72. Frederick G, "An Easy Alternative to Assisted Suicide" Globe and Mail 23 Sep 1993 p.A 19.

73. Phillips P, Rolls B, Ledingham J, Forsling M, Morton J, Crowe M, Wollner L, "Reduced Thirst after Water Deprivation in Healthy Elderly Men" *New England Journal of Medicine* 1984; 311(12):753-759, p.757: A thirst deficit in the elderly subjects, as compared with the young controls, was indicated by their remarkable lack of thirst and discomfort after 24 hours of water deprivation.
74. *Ibid* p.757-758.
75. Keys A, Brozek J, Henschel A, Mickelsen O, Taylor H, *The Biology of Human Starvation I & II*, Minneapolis: University of Minnesota Press 1950, 1:583-4.
76. Sutcliffe J, "Terminal Dehydration" *Nursing Times* 1994; 90(6):60-63,p.60-61.
77. Kerndt P, Naughton J, Driscoll C, Loxterkamp D, "Fasting: The History, Pathophysiology and Complications" *Western Journal of Medicine* 1982; 137:379-399, p.396.
78. *Ibid* p.388.
79. Printz L, "Terminal Dehydration, a Compassionate Treatment" *Archives, of Internal Medicine* 1992; 152:697-700, 700(Table 2): Dry mouth can be palliated by offering frequent sips of cold water: no treatment is required for other symptoms of analgesia, lethargy and weakness. Also: Printz L, "Is Withholding Hydration a Valid Comfort Measure in the Terminally Ill?" *Geriatrics* 1988, 43(11):84-88, p.85: Thirst and dry mouth can be readily relieved with crushed ice or sips of fluids. Nausea can be treated with antiemetics. Also: Lichter I, Hunt E, "The Last 48 Hours of Life" *Journal of Palliative Care* 1990; 6(4):7-15, p.12: Thirst is rarely a problem, and careful mouth hygiene prevents dryness of the mouth which may otherwise be a source of discomfort. Small quantities of fluids can usually be administered by dropper, and ice may be given to suck. In this way the patient can be kept comfortable. Also: Bernat J, Gert B, Mogielnicki R, "Patient Refusal, of Hydration and Nutrition" *Archives of Internal Medicine* 1993; 153:2723-2728, p.2726: Clinical experience with severely ill patients suggests that the major symptom of dry mouth can be relieved by ice chips, methyl cellulose, artificial saliva, or small sips of water insufficient to reverse progressive dehydration. While these are relatively simple palliative measures, the availability of adequate pain-relief or more aggressive palliation will be an important safeguard, especially in the final days.
80. Bernat J, Gert B, Mogielnicki R, "Patient Refusal of Hydration and Nutrition" *Archives of Internal Medicine* 1993; 153:2723-2728, p.2727.

Responses to criticism

On the use of zopiclone with chloroquine:

It was alleged by *Wozz* that the authors of *Departing Drugs* had recommended the use of zopiclone as a suitable sleeping drug to be taken for self-deliverance in combination with chloroquine.⁸⁸ A case of a person using this combination and experiencing a painful death was quoted.

Response: The quotation was inaccurate and misleading. The authors of *Departing Drugs* had never made such a recommendation. It transpired that the allegation was based on a version of *Departing Drugs* which the Dutch society (NVVE – of which one of the *Wozz* authors is an honorary member), had reissued in their own version and with unauthorised text. NVVE had made the recommendation to use zopiclone with chloroquine, not the authors of *Departing Drugs*.

On the use of benzodiazepines with chloroquine:

The *Wozz* authors⁸⁹ criticised the *Exit/Departing Drugs* claim that benzodiazepines are not the best choice of sleeping drug for use with chloroquine.

“Diazepam is indeed used to counteract chloroquine poisoning. But this does not allow us to conclude that diazepam is an antidote to the lethal effect of chloroquine on the heart. Tests on animals have confirmed this. Also on theoretical grounds diazepam would not be expected to prevent cardiac arrest brought on by chloroquine. In our view, diazepam has been used by

⁸⁸ Admiraal P, Chabot B, Ogden R, Rietveld A, Glerum J, *Guide to Humane Self-Chosen Death*, WOZZ Foundation, Macdonald 2006. Page 57-58.

⁸⁹ *Ibid*, p.56

clinicians in emergency cases against chloroquine poisoning because it suppresses muscular contractions and epileptic seizures. It is also exactly these contractions and seizures that one will want to suppress in the case of a chloroquine overdose for a humane self-chosen death.”⁹⁰

The *Wozz* authors go on to recommend a sleeping tablet combination comprising either a) barbiturate, or b) a combination of short + long-acting benzodiazepine⁹¹, irrespective of the fact that most of these drugs are almost impossible to obtain.

In support of the idea that benzodiazepines do not interfere with the lethal effect of chloroquine – an idea contrary to mainstream clinical practice – the authors curiously quote a retrospective study by *Demaziere et al*,⁹² yet that very study states:

“No statistically significant difference was found between either the control and diazepam groups or between subgroups, concerning the distribution of age, sex, amount of chloroquine supposed to have been ingested, delay in hospital admission and death rate. **However, there was a higher death rate in the asymptomatic subgroup not treated with diazepam than in the diazepam group.**”

⁹⁰ *Ibid*. pp.56-57.

⁹¹ *Ibid*, p.59

⁹² Demaziere J, Saissy JM, Vitris M, Seck M, Ndiaye M, Gaye M, Marcoux L. *Effects of diazepam on mortality from acute chloroquine poisoning*, *Ann Fr Anesth Reanim*. 1992;11(2):164-7.

Response:

Wozz quote two other old studies (out of the many, many studies available on chloroquine poisoning), but the findings are inconclusive. One, for instance, speaks of a number of treatments including diazepam and concludes that, "these elements, either singly or in combination, do not appear to have a truly antidotal effect in acute chloroquine poisoning."⁹³

A third speaks of a trial involving diazepam in the treatment of chloroquine poisoning involving less than 4g of chloroquine, well below the recommended dose for self-deliverance, and makes the conclusion that, "Diazepam, at the dose studied, does not appear to reverse the chloroquine-induced membrane-stabilising effect in acute moderately severe chloroquine intoxication,"⁹⁴ an observation which might be of rather limited relevance to the use of chloroquine in large doses.

It is clear that there is room for debate on the issue of diazepam's interaction with acute chloroquine overdose. Even the Wozz authors' claim that the theory is backed up by experiments with animals is strongly contested, especially if we examine more up-to-date material than that quoted by the Wozz authors. For instance, we find, "Studies in animals and humans suggest that early aggressive management of severe chloroquine intoxication has a cardioprotective effect and reduces the fatality rate."⁹⁵

⁹³ Clemessy L, Taboulet P, Hoffman R, Hantson P, Barriot P, Bismuth C, Baud F, *Treatment of acute chloroquine poisoning: a 5-year experience*, Crit Care Med. 1996 Jul;24(7):1189-95.

⁹⁴ Clemessy J, Angel G, Borron S, Ndiaye M, Le Brun F, Julien H, Galliot M, Vicaut E, Baud F, Therapeutic trial of diazepam versus placebo in acute chloroquine intoxications of moderate gravity.

⁹⁵ Brent J, *Critical care toxicology*, Mosby 2005, p.675.

And in enumerating the specific types of aggressive management, the author is quite clear:

"Diazepam (0.1–0.3mg/kg) given by slow intravenous injection, repeated as necessary, is effective at controlling convulsions. In addition, **diazepam at approximately 10 times higher doses has been reported to have a specific cardio-protective action in severe chloroquine poisoning.**"⁹⁶

Brent (above) goes into considerable detail and with considerable supporting evidence over the cardioprotective effect of diazepam and writing some fifteen years later than the journal studies quoted by Wozz. This suggests that Wozz's claim that, "Diazepam and the other benzodiazepines . . . are not an antidote to the lethal effect of chloroquine on the heart,"⁹⁷ must be viewed with considerable scepticism.

These studies querying the effect of diazepam on chloroquine toxicity have been well-known for many years, but the majority of modern authorities, like Brent, while admitting that the action is not completely understood, come down clearly on the side of the mainstream that concludes the opposite of the Wozz authors. As *Olson* states:

". . . diazepam has been reported to antagonise the cardiotoxic effect of chloroquine (the mechanism is unknown, but **diazepam may compete with chloroquine for fixation sites on cardiac cells.**"⁹⁸

⁹⁶ *Ibid.*

⁹⁷ Wozz, p.57.

⁹⁸ Olson K (ed), *Poisoning & Drug Overdose*, McGraw Hill 2007, pp.419-421.

Similarly a paper from Hammersmith Hospital and published in the British Medical Journal⁹⁹ had cited studies that diazepam increases the urinary excretion of chloroquine and went on to explain the effect as far as it is understood:

“The action of diazepam at central nervous system receptors may contribute to its beneficial effects in chloroquine poisoning, but there is increasing evidence that a specific action of diazepam at binding sites on heart muscle is important. These putative receptors on cardiac myocytes are quite distinct from diazepam receptors in the central nervous system, being γ -aminobutyric acid independent, and until recently had no known function. Benzodiazepine analogues at these receptors have been shown to shorten the duration of intracellular action potential in animal myocardium and may have anti-arrhythmic properties. Moreover, diazepam has been reported to reduce the concentration of chloroquine in rat cardiac muscle despite increasing blood concentrations.”

On the basis of leading theoretical analysis, practical results, current clinical practice, and combined weight of opinion, it would seem likely that the Wozz authors simply failed properly to understand the action of diazepam in chloroquine overdose.

On the risk of PVS from using the compression method without a plastic bag:

Pieter Admiraal, a Dutch anaesthetist, posted on the Right-to-die Digest¹⁰⁰ that the compression method was dangerous

⁹⁹ Meeran K, Jacobs M, Scott J, Mcneil N, Lynn W, Cohen J, Pusey C, Phillips J, et al., *Grand Rounds - Hammersmith-Hospital - Chloroquine Poisoning*. BMJ 1993, 307:49-50.

¹⁰⁰ An online news digest managed by Derek Humphry.

since the brain stem has its own blood supply and hence persistent vegetative state might result (a condition possible when brain death but not brain stem death has occurred) even when the brain had died from lack of oxygenated blood.

Response:

This has been documented in exceptional cases of *manual* strangulation, or the ‘choking game’ played by some children.¹⁰¹ None of the cases that I have been able to find in the literature that involve *ligature* strangulation involved PVS however, and it is necessary to ask the possible reasons for this while at the same time including all possible safety measures for persons using the method for self-deliverance. But the idea that the brainstem would simply carry on since it has its own blood supply is seriously flawed. As pointed out by one of the world’s leading neurologists,¹⁰² with carotid occlusion alone death usually results from brain swelling and herniation that destroys the brainstem (rather than the idea of brain death leaving the brainstem intact). Manual strangulation, for instance, often involves transient pressure on the neck, whereas pressure from a ligature would normally remain in place. This might suggest both a greater chance of serious oedema that would damage the brain stem, possible asphyxiation which would involve death of the brainstem, and continued obstruction of the venous return that would cause passive congestion of blood in the vessels within the brain.¹⁰³

¹⁰¹ See the chapter on Compression in this volume for an explanation of the choking game.

¹⁰² Posner J, private correspondence, September 2010.

¹⁰³ Hawley D, McClane G, Strack G, Violence: Recognition, Management, and Prevention, A Review of 300 Attempted Strangulation Cases - Part III: Injuries In Fatal Cases, *Journal of Emergency Medicine* 21(3), pp. 317–322, 2001.

Hawley et al list the mechanisms, the first three of which apply to ligature compression, as described in this manual:

- “1. Cardiac dysrhythmia may be provoked by pressure on the carotid artery nerve ganglion (carotid body reflex) causing cardiac arrest.
2. Pressure obstruction of the carotid arteries prevents blood flow to the brain.
3. Pressure on the jugular veins prevents venous blood return from the brain, gradually backing up blood in the brain resulting in unconsciousness, depressed respiration, and asphyxia.
4. Pressure obstruction of the larynx cuts off air flow to the lungs, producing asphyxia.”¹⁰⁴

Hawley et al reassuringly point out that, “the overall process is completely painless.”

The theoretical possibility of the brain stem surviving however should not be completely discounted until there is more evidence, even if it would seem that, however rare, it is more likely to occur in cases where a person has been ‘saved’ or the pressure on the neck has only been applied for a short time. For this reason, I have strengthened the recommendation to use a small plastic bag with the compression method. Workshops have indicated this causes no practical problem.

¹⁰⁴ *Ibid.* p.320