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Extract from Get off the sofa: A prescription for a healthier life by Andrew Curran ISBN: 9781845904456

IT WAS A QUIET DAY
FOR SELF-DESTRUCTIVE BEHAVIOUR
IN BOLTON.

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Preface

Writing this book is my present to me. For years I have watched people in their millions inflict more illness and suffering on themselves than any war has ever done. Both as a practising doctor and as a simple observer of the Saturday afternoon crowds that throng the centre of most cities, I have watched suffering on a scale that is beyond apocalyptic. For years at a time I have been distressed to the core of my being. Sometimes I have watched with indifference. Most of the time I have been nearly inchoate with rage at the blind stupidity of what I am seeing. What is this biblical plague, this monstrosity of suffering? Self-inflicted illness. The fat guy smoking a cigarette. The thin woman flayed raw by alcohol. The kid jamming another fat-laden time bomb into its face. The millions and millions of couch potatoes who haven't done a minute's decent exercise since they passed puberty. So what happens to all these millions upon millions of people? Nothing for most of the time. They are just the same as all their friends and their relatives and, God help us, far too many of the health professionals that look after them.

But then it all changes. Sometimes suddenly – a heart attack, stroke, cancer. Life changing, irrevocable events that stuff their lives and the lives of everyone around them. Or not so suddenly – the slow suffocation of emphysema, the long autumn of health related unemployment, the desperate loneliness of congestive cardiac failure. And that doesn't half wreck the lives of everyone around them.

Is it preventable? Not all of it, no. Some diseases just happen even with the best will in the world. But is a large part of it preventable? Yes, absolutely.

So what's my point? Ignorance. All this unimaginably vast ocean of suffering is to a greater or lesser extent ignorance. A result of poverty – the poverty of knowledge. The *information* is out there, no doubt of that. There are vast rain forests worth of health information to deal with the ignorance. But it's

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pretty dry stuff by and large. Boffins writing for boffins, or worse, health professionals patronising lay people in politically correct jargonese.

So this book, this indulgence of mine, is my contribution to accessibility. If you don't like plain English, don't read it. If you aren't prepared to apply it to yourself and take responsibility for your own health, don't read it. It isn't a book full of references and science. It's just a book about being healthy.

I hope you enjoy it.

DR ANDREW CURRAN

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Chapter 1

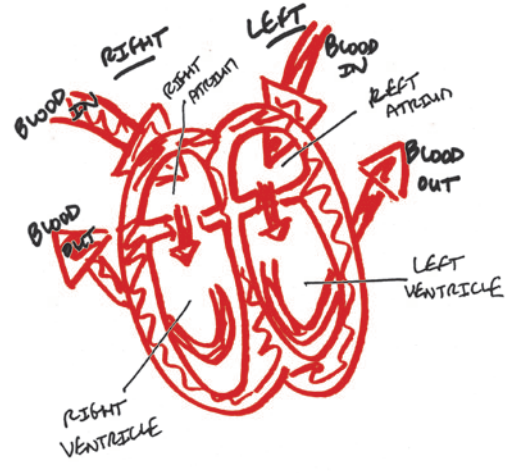
Your Heart

In each chapter I am going to tell you about a system in your body. First I'm going to tell you how it works. Then I'm going to tell you how to look after it. Then I'm going to tell you how to wreck it. Simples.

What Does Your Heart Do?

The heart is a pump. Nothing more and nothing less. Just a pump.

It is not where love resides nor is it the repository of your emotions. That is just so much Walt Disney. Blood flows into the heart from a great big vein called the *vena cava* (coming from the body) on the right and another huge vein called the *pulmonary vein* (coming from the lungs) on the left. It keeps flowing until the big pumping chambers, the *ventricles,* are nearly full. Then the two atria contract and force the last little bit of blood into the ventricles through the *mitral valve* on the left and the *tricuspid valve* on the right. This fills the ventricles right to the top. Once they are full, the ventricles contract. The ventricles (unlike the atria) have really thick, strong walls.



IT WASN'T THAT GOOD LOOKING BUT, HEY, IT WAS JUST A PUMP.

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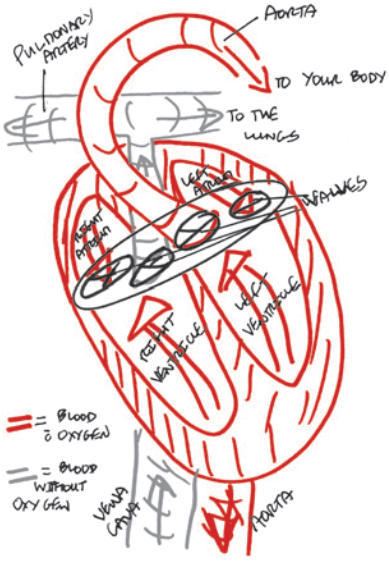
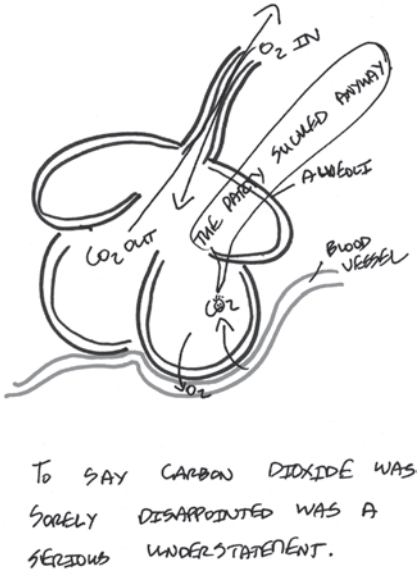
Their contraction slams the mitral and tricuspid valves shut and forces the blood out through the *pulmonary valve* into the lungs on the right and through the *aortic valve* into the body on the left.



When you are resting this happens 60–80 times a minute. When you are taking what your body finds to be heavy exercise this can happen as often as 200 times a minute.

So there you have it. A simple four chamber, parallel flow pump.

So what happens to all that blood? Blood from the right ventricle is pumped out into the lungs, or rather into the blood vessels that direct blood to the correct places in the lungs. Those 'correct places' are called the *alveoli*. They are the air spaces in your lungs where you get rid of a gas called carbon dioxide (which is a poison if you have too much of it in your blood) and take in oxygen (which you need to stay alive) – you probably knew that! The blood flows on through the lungs (now full of oxygen and having got rid of its carbon dioxide) and back to the left side of your heart. From there it is pumped out into your body. This is a pretty impressive bit of pumping. You have miles and miles of blood vessels in your body estimated at between 50,000 and 100,000 miles. The left side of your heart not only gets enough pressure going to force your blood



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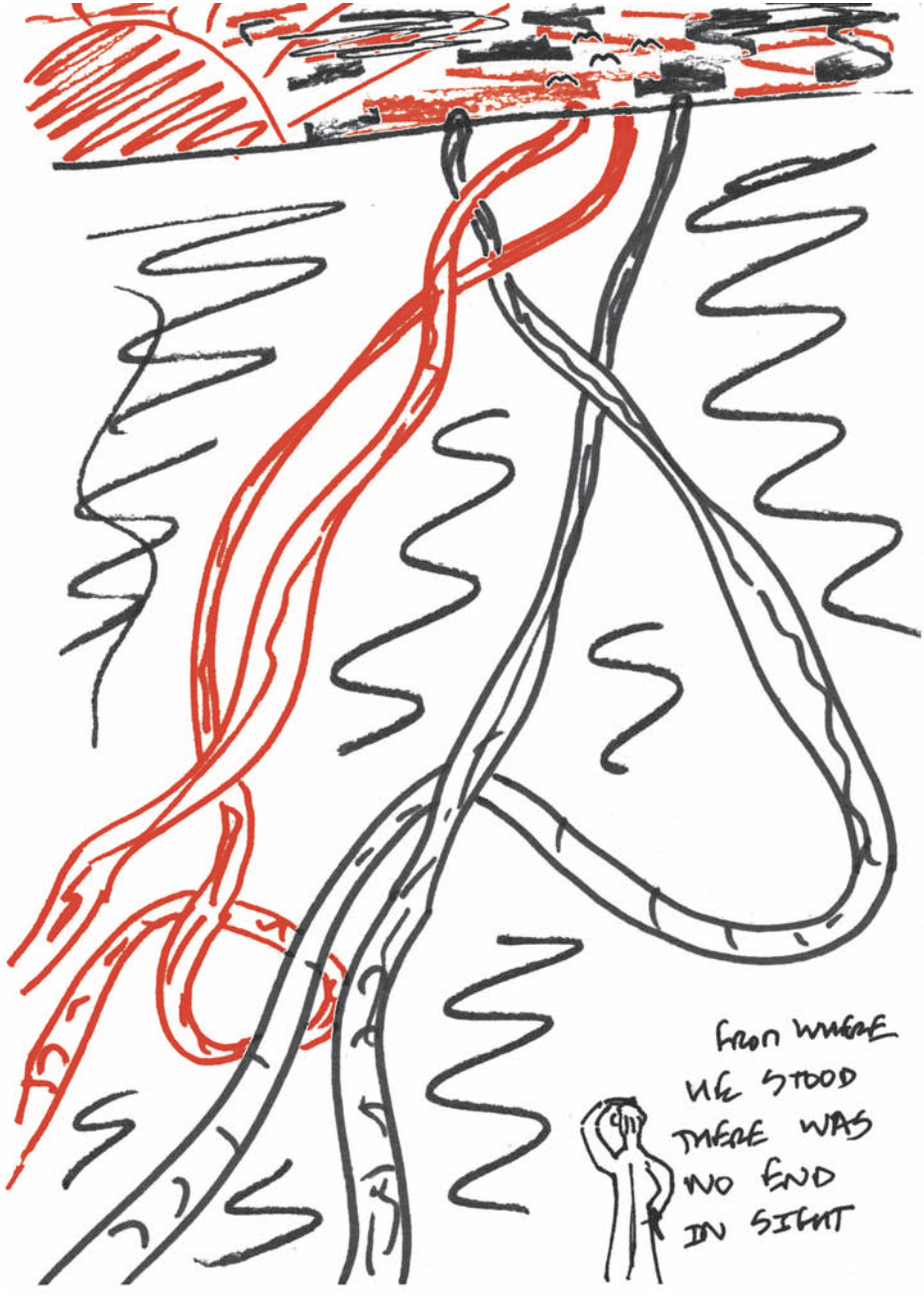

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out through all those miles of blood vessels, but it keeps enough of a pressure head up to get it all the way back to the right side of your heart. Once it reaches there, off it goes again into the lungs to start the whole process all over.

Out there in your body the blood gives up its precious cargo of oxygen to your cells so they can do all the work they have to do. It also picks up all that poisonous carbon dioxide to carry it back to your lungs to get rid of it.

But blood doesn't just do that.

It is after all the most precious fluid in your body. As an adult you have about 5 litres of the stuff. Actually it's mostly water with bits and pieces floating in it. Dissolved in the water are all the salts (like sodium and potassium) and a whole pile of what are called trace elements like selenium and zinc which are essential to maintain the health of your cells. Floating in the water (as opposed to being dissolved in it) are lots of other things. Proteins hang out there. These range from simple proteins like antibodies (which are the guided missiles of your immune system) to complex beautifully structured protein moieties like the complement system, a collection of proteins that are crucial to getting your blood to clot. But even bigger things float around in your blood. Red blood cells are bi-concave discs that are responsible for carrying oxygen around the body. They contain haemoglobin, an über-specialist protein that actually carries an iron molecule wrapped in its coils. There are the white blood cells, mindless aggressors that target and destroy any foreign proteins they find, like bacteria

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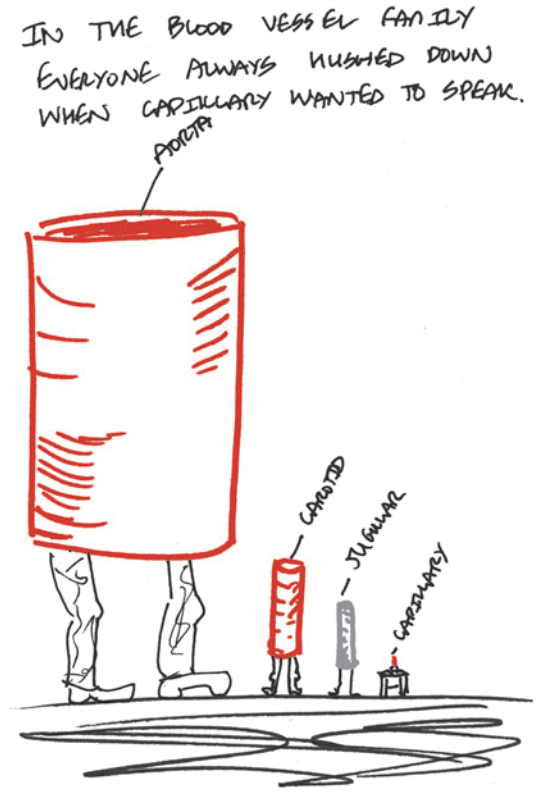
and viruses. And finally there are all the rich variety of cell foods and building blocks like dextrose and amino acids and fatty acids. It's a real wonderland your blood.

Blood vessels also come in a variety of sizes.

There are the huge arteries of the thorax, the aorta and its subsidiaries like the subclavians, the carotids, the mesenterics and their kin. Vast veins carry the slow flow of deoxygenated blood back to the heart, the biggest of which is the venae cavae fed by the femorals, the renal and the hepatic veins to name but a few. Once into your tissues the arteries get gradually smaller until they end up as the tiny capillaries networked through all your organs to supply food and oxygen to even the fartherest away of your cells, and to pick up the poisons and waste products they are exuding.



These tiny capillaries then gradually join together to form bigger and bigger veins until they disgorge their cargo of blood into the massive venae cavae.

Blood vessel walls are very special as well. They have to be smooth but tough – able to withstand the constant pounding of your heart's beating. They have a wonderfully slick inner lining, the *endothelium* (*endo* just means 'inside' and *thelium* means 'skin'). Wrapped around this is a layer of connective tissue and wrapped around that are variable degrees of muscle wall, depending on how

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much pressure that particular artery has to withstand (veins are very low pressure vessels and therefore don't need a muscle coat). The tiny capillaries don't have any of this. They just have single cell thick walls. This allows all the good stuff in the blood (like oxygen and sugar) to get out of the capillary and into the cell, and all the bad things the cell has been producing to get into the blood so it can be taken away and got rid of.

So your blood has a lot of stuff to do.

And your heart is the pump that keeps it all flowing to the right places and in the right direction.

The entire system is called the *cardiovascular system* (*cardio* means 'heart' and *vascular* means 'the blood vessels').

How Do I Look After My Heart?

Looking after your heart and blood vessels is probably one of the most important things you can do with your life. After all no oxygen and foodstuffs to your cells and, no big surprise, your cells get sick. If there is a really poor supply of oxygen and foodstuffs to your cells they don't just get sick, they die. This is a bad thing (obviously). It isn't just getting oxygen and foodstuffs to your cells though. As I mentioned above, you also have to get rid of the poisons that your cells are manufacturing – the carbon dioxide and all the other plethora of bad stuff that normal cell metabolism produces. (*Metabolism* means the work the cell does on growing and staying healthy. It also means the stuff that specialist cells like liver and kidney cells do to keep your entire body healthy.)

So let's take the cardiovascular system as a whole as it is a completely interdependent structure. The question is therefore:

'How do I look after my cardiovascular system?'

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Keeping your cardiovascular system healthy and strong comes down to three main things:

Exercise it.

Feed it properly.

Don't poison it (I'll deal with this in the section on wrecking it).

Exercise

Shock horror from all you couch potatoes. Hands thrown up all you IT keyboard thumpers. Sorry to disappoint. Watching Steven Seagal or a good game of footie or trashing an opposition player on *Team Fortress 2* may be stimulating and exciting but *it is not exercise*. It is perhaps one of the great tragedies of the human condition that exercise (like going to the toilet) cannot be indulged in vicariously.

You have to get up and actually do it!

Before I talk more about the specifics of exercise let's deal with a couple of urban myths.

Urban Myth 1

Exercise can only support weight loss. *It is not an effective way to lose weight*. Here is the maths: get on an exercise bike. Work at your peak heart rate for 25 minutes. Look at the calories burnt on the little dial on the machine. It will say somewhere around 300 calories burnt. Fantastic you say to yourself.

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You jump off the cycle machine, rush to the changing room, shower off the sweat. In the car going home that burger from McDonald's is just what you need. After all you have earned it. All that sweat and exercise. And 300 calories burnt off! Fantastic. You order your Big Mac. You bite into it. Tastes good? Tastes *fantastic*. It contains 490 calories. Bummer! You just put back in the calories you had burnt off and then added 190 more.

Try something else. Go on. Something really healthy.

A crispy chicken and bacon salad? Why not. Oops! 320 calories. Stuck all the calories back in and added 20 more. So something liquid instead. A coffee can't have that many calories. So you order your caffè latte prepared with whole milk. Swig it down. YUM! Sorry. 260 calories. A caffè mocha? 400 calories.

So exercise is not a good way of losing weight.

It may have some effect in reducing appetite because it increases things called endorphins in the brain. But really when you do the maths it is pretty useless as a way of losing weight.

Urban Myth 2

Twenty minutes exercise three times a week is enough. Actually no it isn't. It is certainly a place to start if you haven't exercised for a while. And it may do some good. But if you really want to look after your cardiovascular system, and especially your heart, you should take moderate to strenuous exercise for 45 minutes to an hour at least three times a week and preferably four to five times a week – *and you should keep doing this for your whole life*!

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There are entire legions of octogenarians in countries like the United States who are still working out four to five times per week. I would say that the guidelines most governments issue are rather less than this. But they don't want to put you off. They want to get you started. This is a good thing. But for your own sake don't settle for the ordinary. That's what they are asking you to do. Be extraordinary instead. Honestly, it's much healthier.

Why exercise at all?

Well, your heart is a muscle the same as any other muscle. To make muscles fit you exercise them. Another simple bit of maths. The resting heart rate is about 60–80 beats per minute depending on how fit you are. Double that to 120–160 and, hey presto, your heart muscle is working twice as hard. Keep that going for 45 minutes and your heart muscle has had a pretty good workout. Also, and very interestingly, exercise increases your body's production of a type of fat called *high density lipoprotein* (HDL). This is a good thing as it helps lower cholesterol levels in the blood. And that slows down the narrowing of your arteries that is called *atherosclerosis*. I'm going to talk a lot more about this below under 'How Do I Wreck My Cardiovascular System?' so just accept this in the meantime.

So what is physical fitness?

It's such a commonly used word but it's a bit hard to define. In fact it is so hard to define that the President's Council on Fitness, Sports, and Nutrition (a group sponsored by the United States Government) refused to give a simple definition. Instead they said that 'physical fitness is a state of well-being with low risk of premature health problems and energy to participate in a variety of physical activities'. Cool! So does that apply to you?

A general purpose fitness programme must address the following six essentials if it is to be considered complete:

- Cardiovascular fitness
- Flexibility training

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- Strength training
- Muscular endurance
- Body composition
- General skill training.

People often don't exercise because they don't enjoy it. That is of course a very fair comment. The bottom line is though that you will enjoy chronic ill health a lot less than taking regular exercise. Your choice.

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Diet

Oh no! Here we go again. Well yes. I'm not trying to make believe that being healthy is easy. It just isn't. It takes work and dedication. It takes time – time that can be hard to find in busy life schedules. Diet however is easy. You eat every day; most people eat three times a day. And eating is already part of your normal schedule. So what you eat offers a very real and doable way of looking after your health.

Body mass index (BMI) is often quoted by health people. What does it mean and why do you need to know about it? It's very simple really. People come in lots of different heights and sizes – tall thin people, tall fat people, short thin people, medium sized fat people and so on. You get the idea. BMI was developed as a way of allowing anyone to get an idea of the optimum weight for them as an individual. Basically it's a measure of body fat. You take your height and multiply it by itself. Then divide the result by your weight. You have to keep the measurements in the same type of unit (i.e. your height in inches divided by your weight in pounds or your height in metres and your weight in kilogrammes).

BMI isn't perfect.

It is inclined to overestimate body fat in athletes and people with a muscular build. It underestimates body fat in older people and those who have lost muscle mass. To make it a bit more accurate measure your waist circumference as well. Then look at the table in Appendix 1. Where do you fit in terms of risk?

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AS AN UNUSUALLY TALL FAT PERSON LIFE WASN'T ALWAYS EASY FOR RUPERT.

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So what should you eat?

There is so much advice out there it is nearly impossible to work it out. So take my advice. Don't bother. Keep it simple. Eat normal food from normal shops but think about what you are eating. The system I personally prefer is the glycaemic index (GI). This approach is best understood by reading a book called *The South Beach Diet* by Arthur Agatston. In short, it was developed with the help of considerable expertise by a cardiologist in the United States – South Beach, Miami to be precise. It looks at normal ordinary food and tells you whether it is likely to cause weight problems or help them. You can get the book from any major bookseller. Give it a read.

Throw away all the fads and quick fixes and expensive alternatives.

Apply your mind. Start looking at food differently. Enjoy. Make it your habit of eating, not something you do for three weeks in the New Year to get rid of your Christmas blubber.

This approach is called *low calorie/high nutrient* eating.

There is now a lot of evidence to suggest that it is directly associated with increased life span – and good quality increased life span at that. (Living for years longer and feeling awful every moment of every day isn't, in my opinion, a sensible goal. If you are going to live well past three score years and ten make sure they are good, happy years.) I will have to admit to personal

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bias here. I have been eating a low calorie/high nutrient diet for six years now. I'm still a bit overweight (average BMI 27 – I put it down to my muscles!) but I do genuinely feel good most of the time. Scarcely hard scientific evidence but it works for me.

MARMADUKE HAD NEVER BEEN AFRAID OF HEIGHTS.

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So what is a healthy diet?

Most healthy diets include fruits, vegetables, fish and whole grains, and limit unhealthy fats. (These are fats that are *saturated*. This is actually a descriptive scientific term. Simply put these are the fats you find in foods like cheeses, full fat dairy products, cream, processed meats, fatty or fried takeaway foods, etc.) I will discuss why they are unhealthy in the next section. A typical healthy diet that has been in the news a lot over the past few years is the Mediterranean Diet, so called because it is the diet people are inclined to eat in the countries around the Mediterranean (see Appendix 2). It is thought to lower the risk of heart disease. It contains among other things healthy fats (these include *monounsaturated fats*, such as olive oil, and *polyunsaturated fats*, which contain linolenic acid – a type of omega-3 fatty acid. Omega-3 fatty acids reduce the levels of dangerous fats in the blood and may actually improve the health of your blood vessels).

And what else do the Mediterranean peoples do?

They drink wine. Red wine. Fantastic! Eat like royalty and drink scrumptious alcohol. Well, up to a point. There are lots of people who eat a Mediterranean diet and drop dead of being overweight and heart disease. There is always too much of a good thing. So this section on diet is really more to get you to think rather than to try to lay down hard and fast rules. As with everything, if you find what suits you and it keeps your weight within a healthy range and contains healthy choices of foodstuffs, then you are optimising your chances of a long and high quality life as far as your physical health is concerned.

Stick that in the mix with a good strong exercise routine and you're starting to put together ... the recipe for a tremendous life.

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Emotional health

Now I want to move slightly outside the normal health discussions. I want to consider happiness or, to be more technical, *emotional intelligence* and your heart's health. Emotional intelligence has been increasingly creeping into the general consciousness. Credit for this has to go to Daniel Goleman and researchers such as Peter Salovey, John D. Mayer, David Caruso and Reuven Bar-On. The definition that I use is:

> the awareness of one's own emotions, the awareness of other people's emotions, and the ability to work with those two things constructively.

Now I am not going to launch into a detailed discussion about this fascinating topic. I introduce it into the picture because considering the health of your heart under the simplicity of exercise and diet is, on my opinion, an insufficient discourse.

I would be the first to say that this is what could only be described as a field of research in the very early stages of development. However allow me to quote from Michael Bernet at the 68th Annual Meeting of the Eastern Psychological Association in a lecture on 'Emotional Health, Emotional Intelligence and Physical Health':

> Subjects (N=1000+) showed three distinct patterns of attention to 'somats' (a new coinage), the minute and subtle changes of bodily sensations that constitute the prompts to emotions. Those who displayed a rapid, integrated and effortless awareness of somats were found to enjoy greater mental health, contentment and social warmth than those who ruminated ineffectually about their somats or who interposed logic and reasoning between somats and response. Integrated and effortless attention to somats correlated with past therapeutic experience, especially when these encourage the therapisand to attend to subtle somatic cues. It is speculated that rapid, integrated awareness of somats permits rapid, effortless and appropriate correction of values, beliefs and behaviors, leading to optimal intra-personal and

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> inter-personal functioning, hallmarks of 'emotional health' and 'emotional intelligence.' It is further speculated that impediments in the inability to attend rapidly and effortlessly to the somats impede the body's natural abilities to respond rapidly and correctively to changes that mark the onset of physical dis-order and dis-ease; it would therefore appear possible to train patients to be more resistant to diseases and to show improved healing and recovery.

Put simply Bernet is arguing that:

> the more emotional health you have then
> the more physical health you will have.

As a neurobiologist I find this a compelling theory. Your emotional brain is directly connected to your survival brain. Your survival brain controls everything to do with your body's physical health. Ergo healthy emotional brain equals, by and large, healthy survival brain.

Since 1997 the evidence in favour of this conclusion has gradually increased. A core group of researchers has demonstrated that positive emotional states are associated with healthier patterns of response in both cardiovascular activity and the immune system (Herbert and Cohen, 1993). Negative mood or unpleasant emotional experiences increase the propensity of individuals to indulge in unhealthy habits such as smoking (Brandon, 1994), drinking (Cooper et al., 1995) and eating fatty foods (Salovey, 2001). There are lots more papers in the literature. None of it is conclusive but it seems to make good sense to me that health includes emotional health, not just physical and intellectual health. Mind, body and soul, if you like, where 'soul' is the psycho-emotional self.

It is beyond the scope of this book to explore how to increase your emotional health. However there are a substantial number of books out there to help and support you. I always recommend M. Scott Peck's book *Further Along the Road Less Traveled* as an excellent starting point. But the path to emotional health is as varied as the people walking on it. Some walk it alone

through reading or experience or both. Some are supported by lovers, family, counsellors, therapists, friends.

What's your path going to be?

Neurobiologically emotional intelligence is about letting your primitive emotional brain (the *amygdala* of which you have two, one in each hemisphere) feel all the passions, all the rich tapestry of emotions from love through hate, from jealousy through compassion, from anger to love. To fully experience those feelings. To then contain them within your higher cortex. To peruse honestly your feelings within that higher cortex. And then to make *choices about how you act*. In short: Stop, Think, Act, Reflect – STAR. Practise this enough and you will develop emotional intelligence. After all enlightenment is simply the continuous awareness of all your emotions as they happen. Everyone can become more enlightened than they are at the moment. Especially you.

How Do I Wreck My Cardiovascular System?

Good news for all you lazy people out there. The heart and the cardiovascular system are really easy to wreck. All you have to do is:

- Take no exercise
- Eat high fat food – lots
- Be fat
- Smoke
- Drink too much alcohol
- Take piles of drugs.

Dead easy really. And it's even better. If you only do some of the above a little you can still wreck your heart over years of life. It all gradually

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RUDOLPHO THOUGHT IT WAS PROBABLY A QUICKER WAY TO WRECK HIS HEART THAN ALL THAT NON-EXERCISE, DRINK, DRUGS AND FAT THING.

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builds up. The 20-year-old who doesn't really take much exercise, parties like mad, smokes and eats convenience food all the time gradually can turn into the overweight, unfit, coughing 30-year-old with a partner and a couple of kids. Who can without any real effort become the overweight, very unfit, unhappy, frustrated, alcohol drinking 40-year-old. Who with even less effort can become the fat, pasty faced, constantly angry, moaning, hide bound, dyspeptic 50-year-old. Who dies 10 to 20 years before his or her time of a plethora of preventable diseases. Whose last years on earth are of even worse quality than the four decades he or she took to turn their body into a pathology case, though a pretty boring pathology case. The diseases of self-indulgence and poor (or absent) self-control are really only of interest to the person who has inflicted them on themselves. In our society they are pretty cut and dried for everyone else. Just sit for ten minutes in the middle of any city centre on a Saturday afternoon. See how many healthy people you can spot. I mean properly healthy. Bright eyed. Open faced. Happy. There aren't very many of them.

So where do you fit in to the above? Everyone can improve their health from where it is at the moment. You can. Think mind, body, spirit. Which one of them is perfectly healthy in you? I think of it as a target. Living, just being alive, builds barriers to health in the rings of the target. I believe that we should strive to dissolve those barriers. Keep the body fit, the mind active and the soul happy and you have significantly increased your chances of a long and high quality life. And the fact is that's what you deserve. When you were born your body was robust, healthy, strong. How is it now? What has living done to build up barriers to health in your mind, your body, your soul?

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ENLIGHTENMENT HAD BEEN EASY. IT WAS GETTING THE WEIGHT OFF THAT WAS PROVING IMPOSSIBLE.

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So let's think about those barriers and the cardiovascular system. What do all those excesses do to your heart and blood vessels?

Take No Exercise

I've already covered this to a large extent. Don't exercise and your heart muscle is never getting a workout. Gradually it will become less and less able to do its job, though this can take decades. But it is your life I am talking about. I presume you want decades of high quality existence, not decades of gradually slipping into a life of restriction imposed by your lack of cardiovascular fitness?

Eat High Fat Foods – Lots

This is a great wheeze if you want to accelerate the disease process in your cardiovascular system. The trick is saturated fats. Unsaturated fats are pretty good for you. It's the saturated ones that really wreck your heart and blood vessels. Saturated fats are called that because they are crammed to the edges with hydrogen atoms. Not a bad thing you might think. The reason they can get so many hydrogen atoms in is because they have no double bonds (this is a form of connection between two carbon atoms which is the other thing that saturated fats are crammed with).

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But remember: FAT IS ESSENTIAL FOR THE BODY!

It provides so-called essential fatty acids (these can't be made by your body so you have to eat them). These are *linoleic* and *linolenic* acid, which are critical in controlling inflammation, blood clotting and brain development. Fats also bring the fat-soluble vitamins A, D, E and K into the body. And you certainly need these. Fats also have any number of essential functions in your body. They are required to lubricate body surfaces, they make up parts of cell walls, take part in the formation of steroid hormones and they are a form of energy storage. All pretty important to your health. In fact fat is so important to your health that most health experts suggest that at least 30% of your daily nutritional intake should be made up of fats and oils!

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Saturated fats are found in animal products like butter, cheese, whole milk, ice cream, cream and fatty meats. They are also found in some vegetable oils (which is sort of a surprise) like coconut, palm and palm kernel oils. You should aim to have *at the most* about 10% of your dietary intake as saturated fats.

Unsaturated fats are called monounsaturated (olive and canola oil) and poly-unsaturated (fish, safflower, sunflower, corn and soybean oils).

There are also *trans-fatty acids*. These are found in fried foods, commercial baked goods (doughnuts, cookies and crackers), processed foods and margarines. Trans-fatty acids are not a good thing. They raise *low-density lipoproteins* (LDL) levels (bad) and lower *high-density lipoproteins* (HDL) levels (even worse).

And it is these two components that are the crux as to why some fats are good for you and some bad (although it is about how much of each you eat). Getting these two lipoproteins in the right balance in your blood is critical for your health. Too much LDL and too little HDL and you substantially increase your chances of having a heart attack or a stroke.

So what are these two lipoproteins? They are actually both types of a substance called *cholesterol*. Now usually when cholesterol is mentioned there is a general grabbing of wooden stakes and silver bullets and other such implements to ward off evil and wicked things. This is just completely the wrong approach. Cholesterol is a critical component of your body. You must have cholesterol to stay healthy. It is found in the steroid hormones, which include the sex hormones (oestrogen and progesterone in women and testosterone in men). They also include *cortisol* (essential for a multitude of health-giving reactions in the body) and *aldosterone* (essential for regulating salt and water levels in your body). When you are in sunlight your body uses cholesterol to make vitamin D. And finally cholesterol is part of bile, that green liquid produced by your liver, which helps you absorb fats and those essential fatty acids and fat soluble vitamins into your body. So it's pretty crucial for your health.

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So how about HDL and LDL cholesterol?

Remember LDL is 'bad' and HDL is 'good'. Basically LDL cholesterol can get stuck in the walls of your blood vessels if you have too much of it in your blood. As this continues over time your blood vessels get clogged up (a bit like a sink drain that is full of rotting foodstuffs). This makes it more difficult for your blood to flow through. And finally your blood vessels will get completely clogged up and bang! – the cells downstream from the blockage die. And you will have a heart attack or a stroke or a gangrenous leg. Bad news.

Now HDL cholesterol is a good guy. It flows around in the bloodstream along with the LDL cholesterol but it actually picks up extra LDL cholesterol from your blood and takes it back to the liver where it can be got rid of safely. HDL cholesterol may also act as an *antioxidant*, a very special chemical in your body, which prevents damage to cells. Pretty good.

So you need to have the right ratio of LDL to HDL cholesterol.

To work this out you will need to have a blood test taken by your doctor. It's a very good thing to do because if your LDL to HDL ratio is going the wrong way you can do lots to increase your HDL cholesterol and reduce your LDL cholesterol. Your doctor can advise you on this but basically quitting smoking, losing weight, taking regular exercise, lowering your carbohydrate and fat intake and a healthy diet will all move your LDL to HDL ratio in the right direction.

Bad news if you are trying to wreck your heart and cardiovascular system. If you really want to do that it's very easy. Just do the opposite. Sit around all day eating food that is high in saturated fats and carbohydrate, take no exercise, none at all. Drink way too much. Oh, and as a final straw it's really good to smoke at least 40 fags a day.

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Smoke

So how does smoking wreck your cardiovascular system?

Smoking is probably unique in human vices in that cigarettes are entirely poisonous. There is absolutely nothing good in cigarettes. Nothing. Not even a little bit. Which is pretty amazing and really good news for those of you trying to wreck your health. Just smoke. It's the perfect health destroyer. Easy to use. Simple to carry around. Available all the time. Fantastic. Bit expensive nowadays. Bit hard to get your fix in public places now but, hey, just stay at home. Camp on the sofa with your fags and your fatty food and your alcohol. Great! In no time flat you can be as unhealthy as you want.

So let's have a look at those lovely cigarettes and see what they have in them that is so good at destroying health.

The first thing they contain is *nicotine*. Actually most of this is burnt to atoms before it gets anywhere near your body. But lots does get through. Nicotine crosses from the lungs into the blood. There it binds to sockets on the cell walls called receptors. In the brain (and elsewhere) this releases a feel-good neurochemical called *dopamine*. Makes you feel good certainly, but it is this release of dopamine that makes cigarette smoking addictive. While you are sitting there in a fog of nicotine induced pleasure, the cunning little devil is making sure you do it again. And again. And again. It's called addiction and neurobiologically it's exactly the same addiction that alcoholics and drug addicts have. Bummer.

So what else does nicotine get up to?

As you suck it in and as it is spread through your body by the blood picking it up in your lungs, nicotine is raising your blood pressure, increasing your heart rate and narrowing your arteries. Not good.

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How long does nicotine sit around in your body doing harm?

After one cigarette nicotine will be present in your body for anything up to six hours. However because most smokers smoke several times during the day the nicotine from the first fag of the day is still there by the time you have your second. Which is still there by the time you have your third. And so on. Basically you keep topping up the nicotine so it never gets washed out of your body. So it's always there doing harm.

And finally nicotine is known to cause impotency.

So you add it together. Fat, lazy, lots of alcohol, high fat diet and you smoke. Congratulations. You have collected the grand prize for strongest death wish of the decade. And the likely death you'll have will probably be a gradual decline in health and quality of life. Years and years to enjoy all your hard work. And impotent as well.

So what else does that big inhalation of smoke contain?

What other little gems of destruction? Some of the most potent carcinogens known to human kind are part of the package. And these poisons don't just sit in the lungs either. Like nicotine they are absorbed by the blood and sent off scurrying round your body. They get themselves lodged in your organs. In fact smoking increases substantially the risk of most cancers but especially cancers of the lung, larynx, oesophagus, pancreas, kidney, bladder and cervix. That, it has to be said, is an awful lot of cancer.

Those poisons also do less dramatic but just as serious damage to your lung tissues. They eat away at the cells in your lungs and produce the conditions of *emphysema* (where your lungs get full of holes and stop working properly so you suffocate slowly to death over about 15 years) and *chronic obstructive airway disease* (what used to be called *chronic bronchitis* – you know, blue in the face and keeps coughing up great mouthfuls of pus. Lovely).

And finally pregnancy. Smoking during pregnancy doesn't just stuff your health it also stuffs the health of your unborn baby. That's a nice thing to

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do to it, isn't it? It substantially increases the risk of miscarriage and foetal growth retardation. If that wasn't enough smoking during pregnancy can actually kill the baby or induce preterm birth. And hey, he or she didn't ask to have you as a mummy.

So at all levels smoking is just a bad thing to do unless you want to wreck your health. In which case get a good 60 a day into your lungs and you will be well on your way to an early and probably pretty nasty death. Actually you don't even have to be that extreme. Even one fag a day increases your chance of an early death. So if you only want to put minimal effort into wrecking your health just a handful of fags a day and you will succeed in turning yourself into a health statistic. Well done!

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Drink Too Much Alcohol

Yes indeedy. Drink like a fish. Drink like six fish. Alcohol. Luverly, scrummy alcohol. Knock a few down your neck before you even leave the house. Then drown what you already drank with buckets more. Great stuff!

Definitely a night you won't remember.

Well, except for the vomit all over your nice new clothes. And the awful headache. And that really grubby feeling in your mouth.

But what are you doing to your cardiovascular system?

Well, if you drink lots for a long time you gradually poison the muscle of your heart with the alcohol. This is a bad thing and is called *cardiomyopathy* (this just means 'disease of the heart muscle'). If you get this you pretty much are going to die, though usually fairly slowly. Your heart gets bigger and bigger in your chest and is less and less able to do its job (i.e. pumping your blood around your body). Finally it just gives up and you die.

So, you say, I only get slammed at weekends. That's different isn't it? Well, yes, you clever thing, it is different. This time you wreck your heart through a different disease – hardening of the arteries or *atherosclerosis*. I have already discussed this above under diet. It's where your blood vessels get narrower and narrower until finally your blood can't get through. Then you have a heart attack or a stroke, or sometimes both.

And for those of you determined to wreck your health there is some really good news. Drinking more than three units of alcohol a day as a woman (a generous glass of red wine) or four units for men (a pint and a third of beer) makes you significantly more likely to develop the risk factors for cardiovascular disease.

So all good news for the health wreckers.

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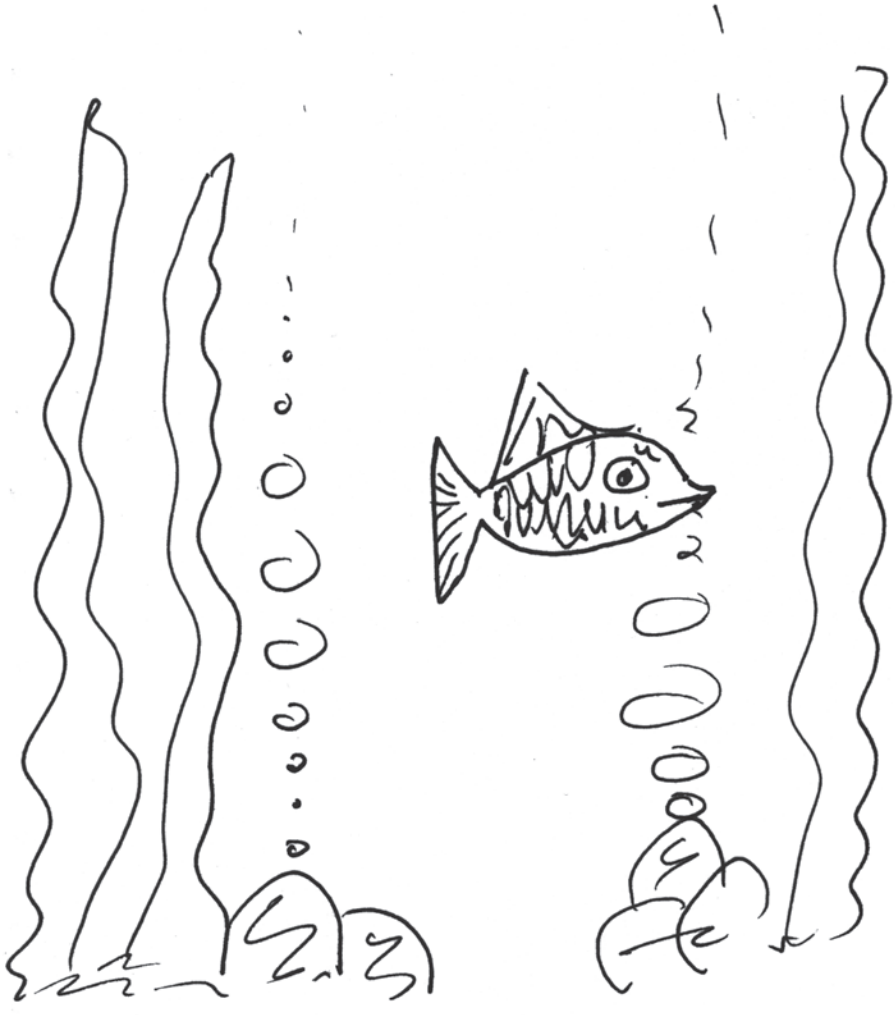

VERONICA DIDN'T UNDERSTAND ALL THIS FISHIEST STUFF. AFTER ALL TO HER IT WAS LIKE AIR.

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So what's the bad news?
Can some alcohol actually be good for you?

Actually it seems that it can. One or two drinks a few times a week makes it much less likely that you will suffer from heart disease. Nobody knows exactly why this should be the case but, hey, for you health wreckers out there it's good to know that you need a bit of dedication to really ruin your health.

Take Piles of Drugs

Yes. Here it is. The final part of the definitive guide in how to destroy your heart and blood vessels. Good old illegal substances.

Let's take **COCAINE**. White powder. Stick it up your nose (or any other mucous membrane), smoke it, inject it, doesn't matter. Straight into the bloodstream. Straight to the brain and all your other organs. It's a stimulant. Drives everything faster and harder than it really should go. Not a good thing. It can stop the heart dead (and then you will be dead also) by driving it so hard it goes into an *arrhythmia* (this means an abnormal heart rate). Arrhythmic hearts can't do their job very well. So your blood stops being pumped round your body. Result? You die. To add insult to injury cocaine also narrows your coronary arteries (these are the blood vessels that keep the heart alive), makes your heart muscle dilate (the cardiomyopathy that I mentioned under alcohol), causes high blood pressure, stroke ... I could go on and on.

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METHAMPHETAMINE. Good old crystal meth. Another stimulant. What does it do as it floods your blood system? High blood pressure, heart attacks, strokes.

HEROIN. The milk of the hippy culture. So what does it do to your cardiovascular system? The list is long and distinguished. Blood clots, infections of the heart valves, strokes, HIV infection, lots of bad things.

MARIJUANA. Heart attacks. Rather counter-intuitive given that the effects of dope are relaxant. But there you go. The risk of having a heart attack is increased nearly five times in the hour after smoking dope.

ECSTASY. The club drug par excellence. In 2004 13.8% of American's older than 12 had tried the stuff. It does however raise your blood pressure and reduces the pumping ability of your heart. Not a good combination if you also happen to be on a 14 hour dance marathon.

ANABOLIC STEROIDS. I so want to tell you about this. After all, you may say, that's what all those hyper fit athletes take. And they must be healthy, right? Wrong actually. Anabolic steroids build muscle mass. But while they are sneaking about your body doing that they are also lowering your HDL (good) cholesterol, raising your blood pressure, causing blood clots and making your heart get too big. All in all this is a wicked combination of effects designed to wreck your health terminally.

WOW! What can I say? That is the end of this chapter. More knowledge than you can shake a stick at. Lots of good things to do to your heart and blood vessels. Lots of bad things to do to your heart and blood vessels. You make the choice.

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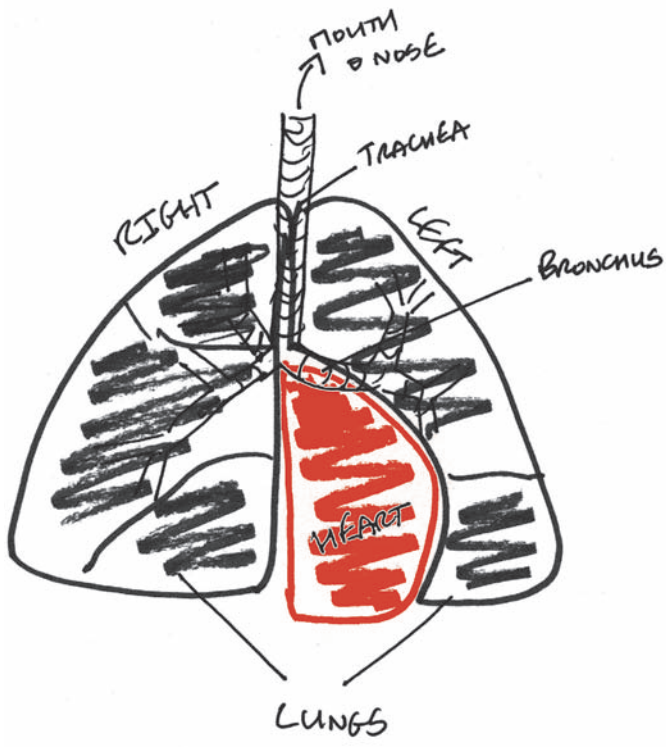
Chapter 2

Your Lungs

So. Your lungs. In your chest (obviously). Wrapped around your heart on both sides. Encased by your rib cage. Connected to the outside through your voice box and out through your mouth and nose. Fascinatingly complex your lungs. They are made up of millions and millions of little air sacs called *alveoli*. These air sacs are truly tiny but because there are so many of them they contain up to 7 litres of air (9 litres in a very few people) when you take a really deep breath.



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HE DIDN'T KNOW WHY HE WAS HOLDING HIS BREATH. IT JUST SEEMED LIKE A GOOD IDEA.

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What Do Your Lungs Do?

Their job is to keep you alive by collecting oxygen from the air you breathe in. Oxygen is essential to your life. It is so important that:

> within two minutes of your oxygen being cut off you will start dying and if you don't get oxygen pretty quick within four to five minutes you will be dead.

Very scary thought. So what does oxygen do and why is it so important to your continuing health?

Oxygen is the chemical that allows your cells to produce energy. This energy is what keeps your cells, and therefore you, alive. Energy is made in your cells by a chemical reaction called *oxidative phosphorylation*. (Not as complicated as it sounds. It basically means adding oxygen and phosphate to a special molecule called *adenosine* so that your cells can use it like your car uses petrol.) This makes a compound called *adenosine triphosphate* (ATP) which is basically the fuel that your cells run on. Your cells burn up ATP at an alarming rate. They need a steady supply of oxygen all the time so they can make ATP to stay healthy.

So you have to have your lungs to get the oxygen into your body so your cells can make the fuel ATP so you can stay alive and healthy.

So far so good. But your lungs don't just bring oxygen into the body. They also get rid of poisons, especially a substance called *carbon dioxide* (which just means a carbon molecule with two oxygen molecules attached). This substance is produced by your cells when they are burning up energy. Too much carbon dioxide is poisonous. Carbon dioxide is usually a gas but when it is carried in your blood most of it is actually dissolved into the water that makes up so much of your blood (in this state it is a chemical called *bicarbonate*). However when your blood reaches your lungs the bicarbonate turns back into the gas carbon dioxide. This leaks across the cell membranes in the

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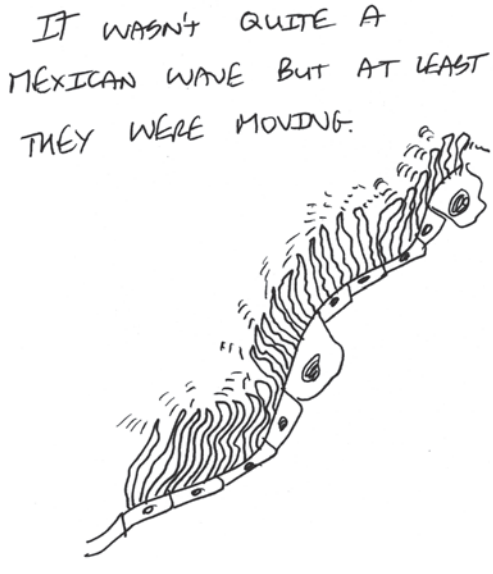
blood vessel walls and into your alveoli. When you breathe out this carbon dioxide (or CO_2) is exhaled into the air around you.

You already know all about the effect of too much carbon dioxide in your blood. When you hold your breath after a short time (usually 20–40 seconds) you start to get an overwhelming urge to take a breath. This is the carbon dioxide building up in your blood. This increased level of CO_2 is picked up by special receptors in your blood vessels and your brain. These receptors carry urgent messages to your breathing centre (which is in the base of your brain) and tell it to take a breath – quickly! You take a breath, the CO_2 is washed out of your blood into your lungs, the level drops in your blood and, hey presto, you feel relaxed again.

So your lungs breathe in oxygen to keep your cells healthy by providing them with energy and they breathe out poisons, especially carbon dioxide, which have been produced by your cells using energy. Pretty neat.

Your lungs do other things as well.



Lining your lungs are trillions of tiny hairs. But these are very special hairs. These are called *cilia* and, unlike the hair on your head, they can actually move (which would be pretty cool if it was the hair on your head). They move in a steady beating fashion always pushing stuff that's on them up towards the outside world (in this case your throat and mouth). The 'stuff' that's on them is mucous, good old slimy, yucky mucous. But this mucous (like all mucous) is actually extremely important to your health. Mucous is a protection for surfaces in your body that are exposed to the air. Not

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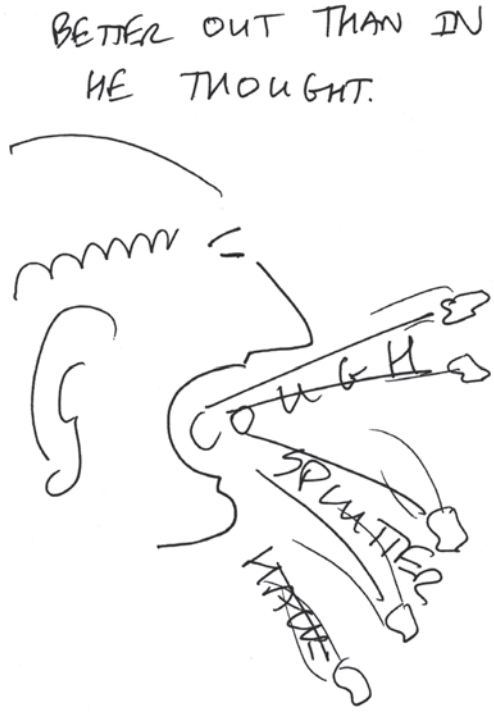
only does it keep them moist and healthy but it contains antibacterial agents (*mucins, lactoferrin, lysozyme* and *lactoperoxidase*) that kill bugs landing in your lungs. It also (especially in the lungs) acts like fly paper and catches dirt and bacteria and all sorts of micro particles as they try to get down into your lungs. Because the cilia are beating always upwards, those particles and bugs and whatever else is carried relentlessly up towards your throat and mouth until – cough, splutter, hack – you cough them out in your spit. Fairly revolting but essential to the health of your lungs.



Mucous isn't all good though.

It's pretty sticky stuff. When you take a deep breath out millions of your alveoli collapse and their walls touch. This would be bad news if you only had mucous in your lungs because the walls would stick together and you

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would never be able to take another breath. All your alveoli would be distorted. Believe it or not if you only had mucous on the walls of your alveoli you wouldn't be able to create enough pressure to open them up again.

But your lungs have another very special substance to prevent this from happening.

This is called *surfactant*. Its job is to make sure that the mucous in your lungs isn't so sticky that your alveolar walls get glued together. It is made by special cells that sit in the lining of the tubes that lead to your alveoli. These cells are called *pneumocytes*. Their job is to pump out surfactant to keep your airways open and functioning properly.

There are lots of other things in your lungs to help keep you healthy.

There are millions of white blood cells. These are part of your immune system and they are there to mop up bacteria and viruses and the like. Sometimes this defence system goes wrong however. When this happens they overreact to particles coming into the lungs (like dog dandruff and dust mites). This is called an *allergy* and it is a cause of the lung disease *asthma*.

So it is a good thing to look after your lungs.

How To Look After Your Lungs

Lungs are a bit like your heart. They love to be exercised. And also, like your heart, they like it lots when you DON'T POISON THEM!

Healthy lungs need to do lots of breathing. The actual act of breathing in and out keeps your lungs fit and strong. Fortunately, breathing is second nature to all of us. You take about 15–20 breaths every minute. Do the maths – that's nearly 20,000 breaths a day. And you do that for your whole life. So if you live to 70 you will have taken 735,840,000 breaths. They particularly like

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good hard breathing such as when you take strong exercise. So give them a good workout three or four times a week.

So other than breathing to keep healthy (bit obvious really) how else can you keep your lungs healthy? Funnily enough eating the right foods is very important to lung health. When you breathe in all that oxygen in the air (air is 21% oxygen) a lot of it gets turned into a very deadly poison called *superoxide*. Superoxide radicals are very damaging to your lungs (and other tissues where they are produced). To mop them up you need to eat foods that have lots of what are called *antioxidants*. Foods that have lots of antioxidants are fruits and vegetables – but they should be fresh *not* processed. Fresh fruit and veg are bunged with antioxidants like vitamins A, C and E. Tomatoes are particularly great for your lungs. Some British researchers found that people who eat tomatoes (or tomato sauce, etc.) three times a week have improved lung function and have less 'wheeziness'. Good news indeed. Another bit of good news is that drinking wine, especially white wine, seems to help your lungs. However getting completely plastered four times a week is a really bad thing – so use your common sense!

Very interestingly it's also a good idea to cut back on eating cured meats. In adults 45 years and older, frequent consumption of cured meats has been associated with decreased lung function and increased risk for chronic obstructive pulmonary disease (COPD). No idea why but fascinating.

So much for what you eat to look after your lungs. What else can you do?

Not surprisingly keeping your house clean is a good thing. It cuts down the amount of dust and bugs you are breathing in and that helps your lungs. (Obviously this is also about moderation. Some dust and bugs is very normal and in fact probably healthy for your lungs. Once again it's the 'too much' that you need to avoid.)

Emotional health also seems to be an area that is being shown to be important in the health of your lungs. People who are optimistic have better lung function and a slower rate of lung function decline than pessimists (Kubzansky et al., 2002)! So be happy and live better. (Obviously it's not as simple

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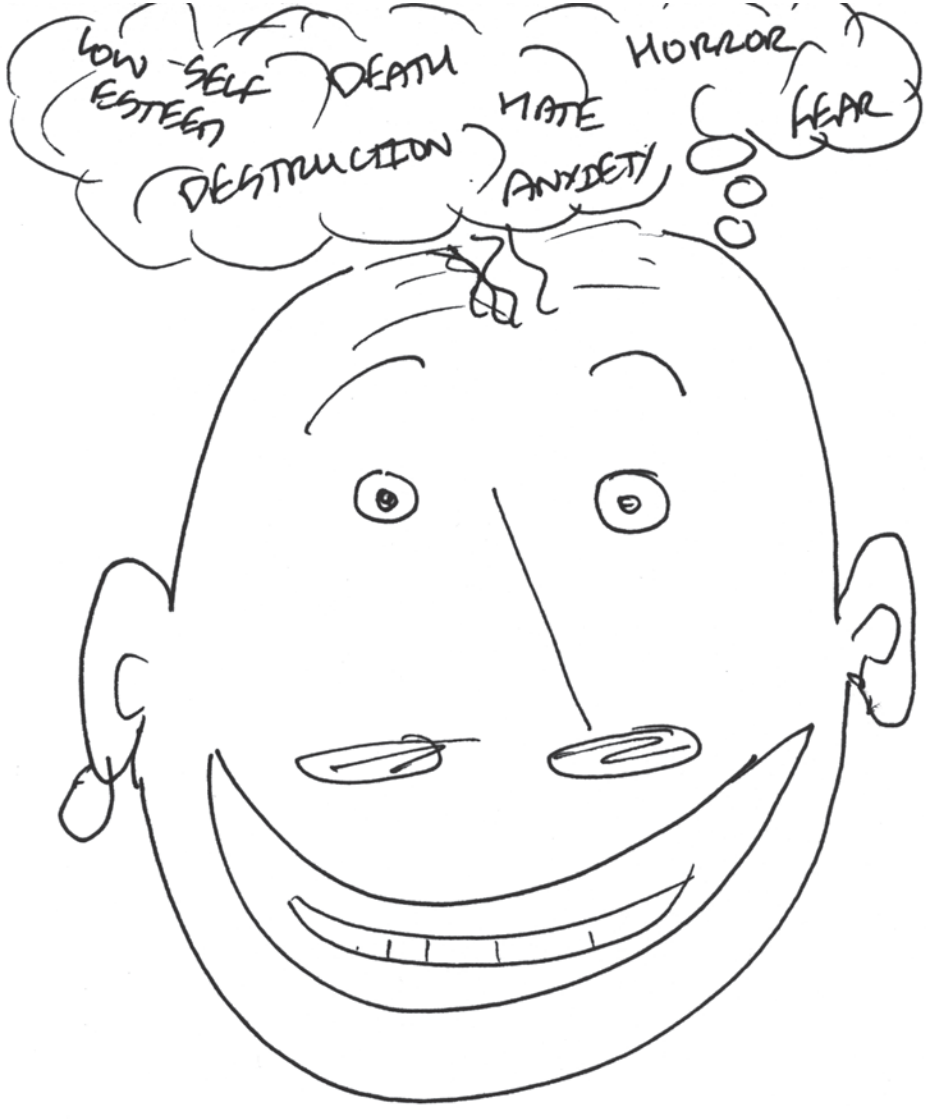

CLARENCE HAD ALWAYS BEEN TOLD TO WEAR A HAPPY FACE.

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as that. 'Being happy' is a *very* complex philosophy. After all one should only *be* happy because you *are* happy. Don't pretend. Not very emotionally intelligent!)

And finally if you do smoke stop. Now. Not tomorrow or in the next minute – NOW! If you stop smoking *now* your lung function can be starting to improve within as little as six weeks. Within the next ten years your lungs will have returned almost completely to the state they were in before you started smoking. AND THAT IS A GOOD THING! Honestly.

How To Wreck Your Lungs

So how easy is it to trash your lungs? Actually really easy. No effort at all.

- Smoke
- Take no exercise
- Eat the wrong foods
- Live in a dirty home.

Smoking

You already know lots about smoking. Lots and lots. For example, you know that smoking makes your breath, your clothes, your hair, your skin and your home smell of stale tobacco. Which is fine if you are a smoker. You won't notice. But to everyone else it smells awful, a bit like boiled cabbage mixed with some sort of sewer effluent. Pretty nasty.

You probably don't realize this next little gem but if you smoke your sense of taste and smell will be dulled. Fact is you haven't tasted food properly for years!

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You know that smoking is expensive. In fact it costs you a fortune (20 fags costs about £5. Smoke one pack a day every day all the time and it costs you £1,825 a year. That's a holiday or the down payment on a good car or a pile of nights out).

It's not only the cost of the fags that will clean out your pocket. Insurance companies will charge you more for your life insurance.

Another little fact about the cost of smoking that you may not know. Lots of employers know that smokers are more likely to take sick leave than non-smokers. In fact more than 34 million working days (1% of total) are lost each year in the UK because of smoking related sick leave. That's an awful lot and very expensive for employers. It makes them less likely to give you a job. Though they won't tell you that. You just won't get offered the job no matter how well your interview went.

As most people now are not smokers and find the smell of smoke revolting you may be putting potential friendships and romances at risk. (Smoking really is *not* the attractive thing that cigarette advertisers portray!)

But this list of factors are not really health wrecking. If that is your aim (and if you smoke that *is* your aim) then smoking is probably one of the best choices out there. It is once again the number one short cut to wrecking your health – in this instance your lungs. Why is smoking so good at wrecking your lungs (apart from the fact it is your lungs that breathe in the smoke in the first place)? What is in cigarette smoke that is so nasty? Well, the list is long and *very* distinguished.

The first thing to think about is that smoking is the most important preventable source of illness and death.

That is a really big statement. 'Preventable' (for those that still don't get it) means it is *something you do to yourself*. Not anyone else. You have not

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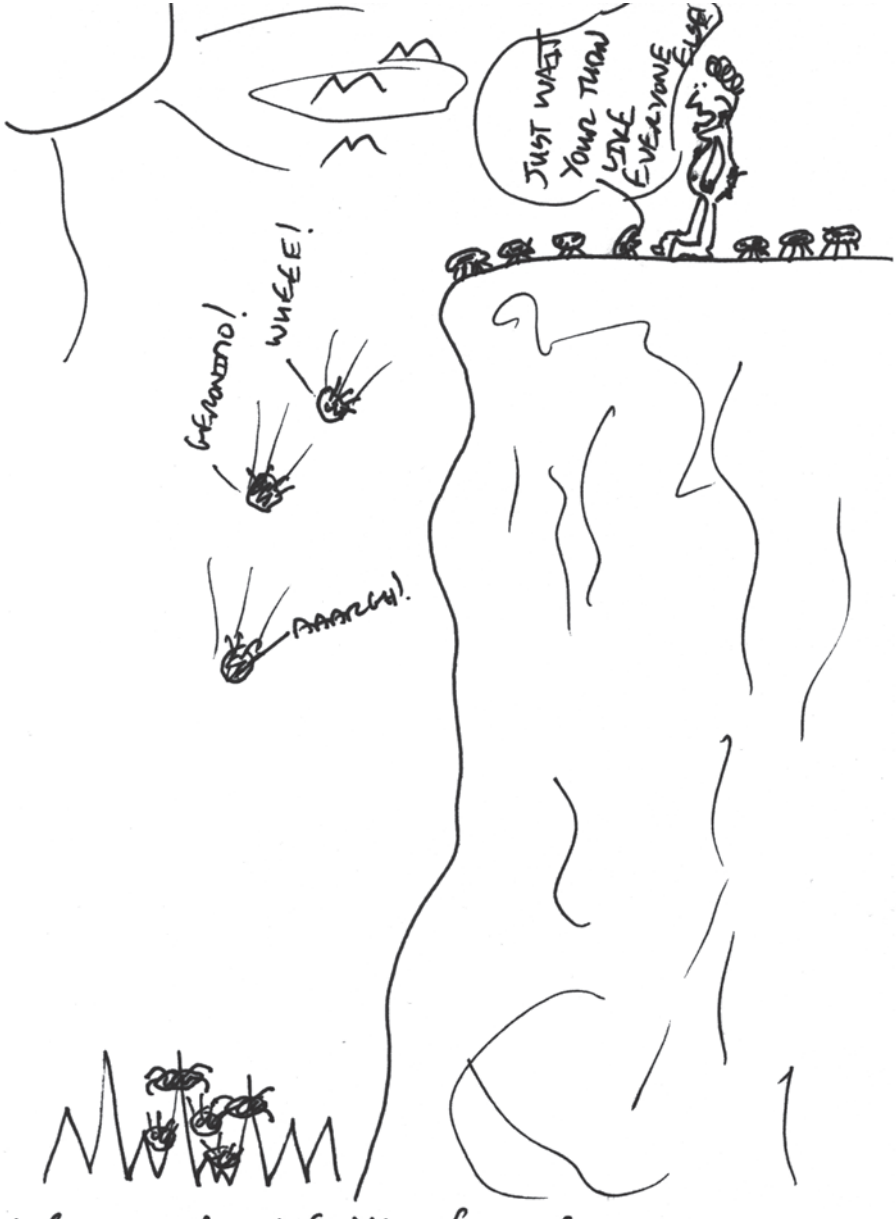

HENRY KNEW HE HAD EVOLVED FOR A REASON.

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been forced to smoke. *You have chosen to smoke*. That puts you on about a par with a lemming. Well done! You have a brain containing approximately 150 billion nerve cells and trillions of connections and you have reduced your survival ability to that of a small furry rodent with a death wish! You should be immensely proud of yourself. You are obviously an expert in wrecking the health of your lungs. And remember, when you were born your lungs (like every other part of your body) were in perfect health.

So let's get back to what is in cigarette smoke that is so awful.

If you were to take some of that smoke you are breathing in and analyse it, you would find that it contains over 4,800 chemicals. That is a lot of chemicals. And the good news for those of you determined to wreck the health of your lungs (and the rest of your body) is that 69 of these chemicals are *known* to cause cancer. Fantastic! Death on a stick. Happy days indeed.

So what are all these chemicals?

Well, I am not going to go through all 4,800 of them. I may be a geek but that is way beyond the call of duty. Instead I am going to introduce you to the main players, the Brat Pack in your cigarette.

NUMBER 1 is of course that little old devil **NICOTINE**. Now nicotine is the main reason that you smoke. Because after nicotine is absorbed from your lungs into your blood and is carried to your brain and is taken in by your brain, it binds onto receptors in your brain and releases that good old joy neurochemical *dopamine*. And dopamine makes you feel real good. The downside is that you really like that feeling. It's so good to lay back, to chill, to just boogie down a little. And dopamine lets your brain learn to love that

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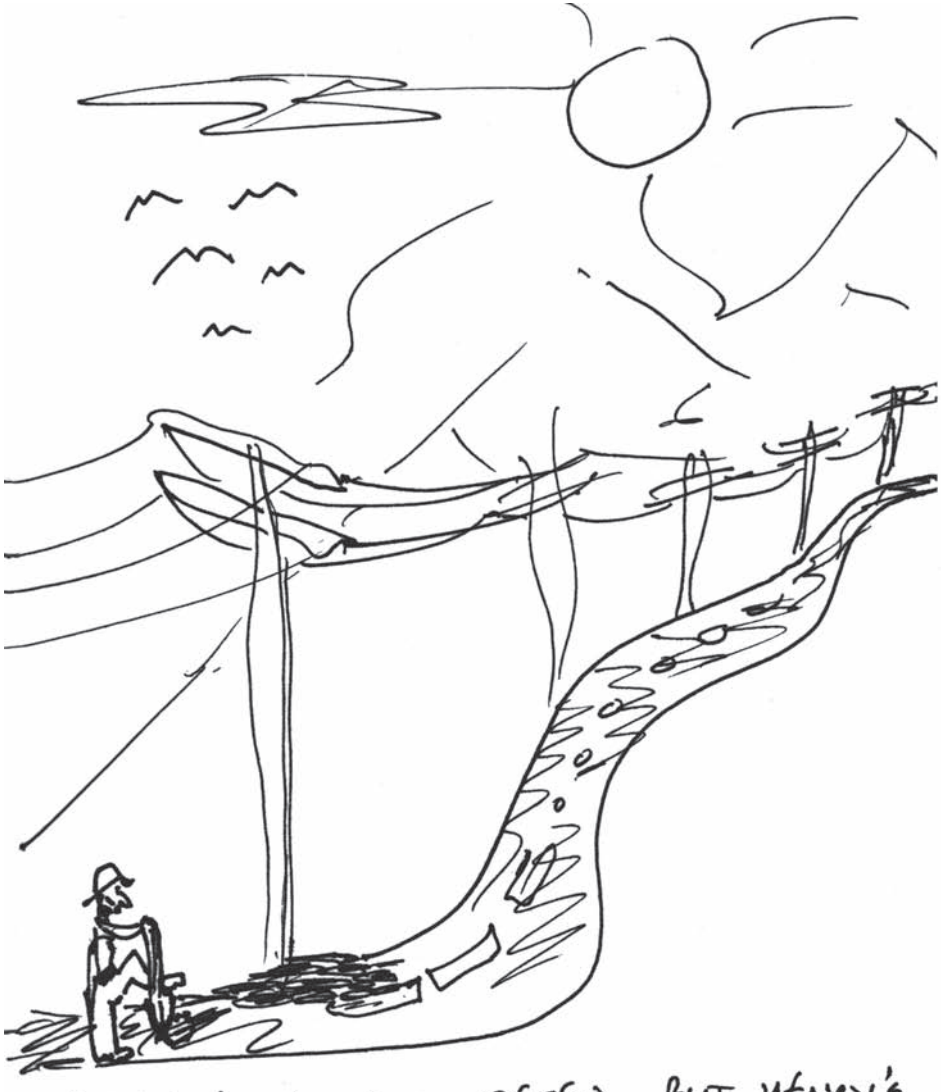

HE WASN'T LONELY OFTEN BUT HENRY'S JOB OF DIGGING UP THE TAR FOR ALL THOSE CIGARETTES LEFT HIM PLENTY OF TIME FOR THOUGHT.

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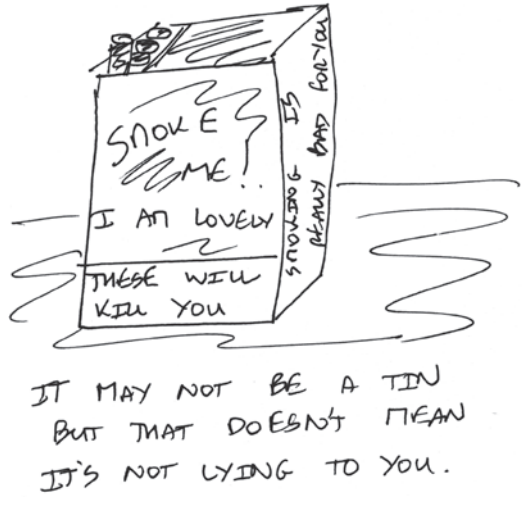
feeling. So your brain (or rather a very specific part of your brain called the *nucleus accumbens*) learns how to get that buzz again. LIGHT UP ANOTHER FAG. So you drag another lungful of smoke down. Suck it in. Soak it up. Feels good all over again as you dump another load of dopamine in your nucleus accumbens. Which makes you want to do it again. And again. And again. Do you know what is happening to you? You are becoming addicted in exactly the same way as drug addicts and alcoholics. And when the levels of nicotine in your blood start to fall between fags, your brain starts to feel uncomfortable, stretched, unhappy. (Classically smokers complain of craving, anxiety, restlessness, headaches, irritability, hunger and difficulty with concentration. Some result for people whose brain is actually normal. Some plan to self-inflict on yourself all those symptoms.) So you smoke another one. Well done! You are now an addict. And like all addicts you are well on the way to wrecking your health.

NUMBER 2 is **TAR**. Nothing clever about that. It is what it says on the tin.



Tar. As in thick gloopy muck which sticks to everything. And in the tar sticking all over the inside of your lungs and being released slowly and carefully into your bloodstream are all those chemicals I was talking about (if you ever

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see a smoker's lungs at operation or autopsy that is mostly what you see – thick, black, glutinous tar. It is pretty gross I can tell you). And lots of those chemicals have only one desire – to turn your nice, clean, previously healthy cells into cancer cells.

NUMBER 3 is **CARBON MONOXIDE**. The same carbon monoxide that comes out of your car's exhaust. So once again well done. Basically every time you light up you are sucking on the wrong end of your car's exhaust – with the engine running.

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VON WILKENSTEIN WASN'T A GREAT ARTIST BUT HE COULD CERTAINLY GET HIS MESSAGE ACROSS.

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Once it gets into your blood carbon monoxide interferes with your blood's ability to carry oxygen. Not only is this really bad for you but if you happen to have a new life in your womb, a little baby trying to grow into health, a little baby who hasn't asked anyone to be there and who has no choice in the matter, then your smoking is trashing the health of that unborn baby because your blood isn't carrying enough oxygen to his or her developing cells. Now you just moved up a notch. You aren't just wrecking your own health – you are wrecking the health of that little person in your tummy.

So those are the main players in the Brat Pack of nasties you are dumping into your lungs. The next question has to be:

What do they get up to once they are in your lungs and in your bloodstream?

Once again the list is long. Here are a few examples of how you are majoring on wrecking your health.

Success Number 1

LUNG CANCER. You know this. I don't need to tell you about this and smoking. What you might not know is that 30,000 people a year die in the UK from lung cancer every year. *More than eight in ten cases are directly related to smoking*.

Success Number 2

CHRONIC OBSTRUCTIVE AIRWAY DISEASE. Much nastier than lung cancer in many ways. Essentially you have damaged your lungs so much that you gradually suffocate to death over a period of years becoming less and less able to do anything. Also much commoner than lung cancer. Chronic obstructive airway disease kills about 25,000 people a year in the UK. *More than eight in ten cases are directly related to smoking*.

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Success Number 3

HEART DISEASE. A MAJOR killer. About 120,000 people die every year in the UK from this one. *About one in seven of these deaths are due to smoking.*

Success Number 4

OTHER CANCERS. So not only good old lung cancer. Cancers of just about every organ in your body are more likely if you smoke. Of particular note in this line-up are cancers of the mouth, nose, larynx, gullet (oesophagus), pancreas, bladder, cervix, blood (leukaemia) and kidney. An impressive list. Doesn't really leave much of your body if you lose this lot.

Success Number 5

YOUR CIRCULATION. All those chemicals I was talking about earlier? Well, they make a beeline for your blood vessels (among other places). They are energetic little chaps. These chemicals damage the lining of your blood vessels and also work hard to change the balance of fats in your blood. This allows them to deliver a double whammy to your blood vessels that increases the rate of *atheroma* (hardening of the arteries). This, of course, stuffs the health of not only your heart but also every other organ in your body up to and including your brain.

So smoking dramatically increases your chances of having a stroke, developing gangrene in your limbs, having a heart attack and, fascinatingly, of developing swellings in your arteries called *aneurysms*.

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These happy chappies are inclined to burst suddenly in sensitive areas like your brain and your tummy. And when that happens you either die or end up in deep, deep doo doo.

Success Number 6

IMPOTENCE AND FERTILITY. Smoking doesn't just restrict its damage to the blood vessels of your heart and liver and places like that. Smoking also damages the blood vessels to more, shall we say, sensitive organs. The longer you smoke the more likely it is that you will have problems getting and maintaining an erection. Not a good look when you are with your lover it has to be said. Not good at all. Not only that but your fertility will decline the longer you smoke.

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That's true of both males and females.
And females who smoke have a much earlier menopause.

Success Number 7

YOUR SKIN. Another organ that you don't really think of as being attacked by smoking is your skin.

It is the biggest organ you have. It has miles and miles of blood vessels.

And those blood vessels carry all those lovely poisons from your lungs to your skin. They are delighted to do it. It's their job. Once those poisons get to your skin they cause damage to the critical growth layers of your skin. The result? You start to get age lines early as your skin is gradually poisoned. It's a great success for those of you out to trash your health. By the time you are 40 you too can have the skin of an 80-year-old. Saggy bags under your eyes. Saggy cheeks. It's great. Combine that with erectile problems and you really have managed to turn yourself into the ultimate turn-off. A great success!

Success Number 8

PREEXISTING MEDICAL CONDITIONS. There is a list of conditions that smoking worsens. They are quite a mixed bag:

- Asthma
- Colds
- Flu
- Chest infections
- Tuberculosis
- Chronic rhinitis
- Diabetic retinopathy
- Hyperthyroidism

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- Multiple sclerosis
- Optic neuritis
- Crohn's disease.

So even if you haven't managed to wreck your health by the things you have done to yourself, you can dramatically speed up the destructive abilities of these other diseases by smoking. Fantastic! Definitely a major own goal.

Success Number 9

POTENTIAL MEDICAL CONDITIONS. This is a list of those conditions that smoking increases the risk of developing. These are great health wreckers. They will make you suffer often for years and years:

- Optic neuropathy (where your eyesight gradually deteriorates)
- Cataract (where your eyesight gradually deteriorates)
- Macular degeneration (where your eyesight gradually deteriorates)
- Cryptogenic fibrosing alveolitis (where your lungs gradually close down and you suffocate to death over a period of years)
- Psoriasis (where your skin flakes off)
- Gum disease
- Tooth loss
- Osteoporosis (where your bones get really thin)
- Reynaud's phenomenon (where your hands get cold and blotchy and *very* painful).

So those are the major successes you can score against your own health by smoking.

But what about if you are protecting and sheltering another life?
What if you are pregnant or a parent of a child?
What if you have brought into the world another human life?

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These are not successes against your own health. In this case you are taking away health from someone who is looking to you to protect and nurture them. At no level is that an acceptable thing to do. At no level.

Smoking in Pregnancy

In your womb is a tiny new life. If you are more than 12 weeks pregnant then that little life is a perfectly formed human being. Perfect little fingers. A perfect little nose. A perfect little heart.

So what is your smoking doing to this
defenceless human lying in your womb?

Well, all those poisons that you are soaking your body in are all crossing rabidly into your placenta. They are infiltrating your baby's bloodstream. They are sneaking into your baby's cells and organs. They are also poisoning your placenta. The end result of this is that your smoking dramatically increases the chance of:

- You having a miscarriage.
- You bleeding during pregnancy (which if it is bad enough will not only kill your baby but may kill you as well).
- Having a placental abruption. (This is where the placenta peels off the wall of your womb. When this happens there is usually a huge haemorrhage from the placenta and from your womb. This usually either kills or irreparably damages your baby. It may also kill you.)
- Your baby being born prematurely. Not a good thing. Your baby is not usually ready to be born until he or she is at 37 weeks gestation (36 weeks from conception). Earlier than this and your baby is at increasing risk of a number of bad things like lung disease and brain haemorrhage).

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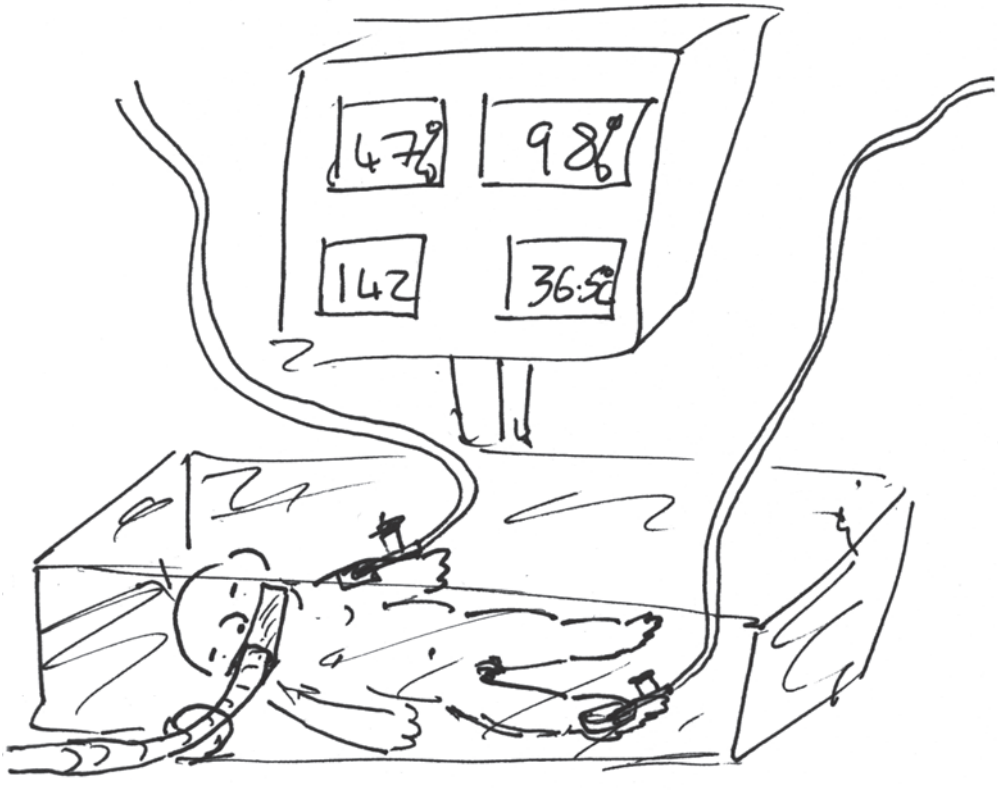

GIVEN THE CHOICE MCANDREW WOULD HAVE PREFERRED TO STAY IN HIS MUMMY'S WOMB UNTIL HE WAS READY TO BE BORN.

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- You having an ectopic pregnancy (where the baby grows in a place in your tummy outside your womb). Also a bad thing.

If you smoke during pregnancy you are also increasing the chances of your baby having:

- Low birth weight (not a good thing – your baby needs to be the right weight at birth to have his or her best chance of survival).
- Congenital defects (where your baby hasn't grown correctly in the womb).
- Stillbirth or death in the first week of life.
- Poorer long-term development and health of your child.

All because you smoked when your child was in your womb. Some gift!

Passive Smoking

When you are working so hard to wreck your own health by smoking you are also breathing out your smoke into the air around you. All the people close to you then get to breathe in what you have just breathed out. Full of all those poisons. All those poisons whose effects I have listed.

So what effects does your smoke have on other people?
People who don't smoke. Who don't want to smoke.
Who have actively chosen *not* to smoke.

The Effect on Your Children

Your children are inhaling your smoke. No option. No choice. They are living with you in your house. They have no choice because they are children. Your children.

- Your smoking makes them much more prone to asthma and ear, nose and chest infections. About 17,000 children under 5 in England and Wales are

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admitted to hospital each year due to illnesses caused by their parents smoking.

- Your smoking increases the risk of your child dying of cot death.
- Your smoking will make it more likely that your children will smoke when they are adults themselves.
- Your smoking is likely to make your child do less well at reading and reasoning skills than his or her friends.
- Your smoking will make your child much more likely to develop chronic obstructive airway disease.
- Your smoking will make it more likely that your child will develop lung cancer when he or she is an adult.

The Effect on Other Adults

Your smoking has dramatic effects on other adults around you. Your smoke will increase their risk of lung cancer and heart disease. This is particularly true if you smoke around them for long periods of time. Basically your partner. Good love gift lung cancer. Well done. Your tobacco smoke is also an irritant. It can make asthma and other conditions worse.

So smoking is the number one best way to wreck not only your health but also the health of others around you.

A resounding success for the health wreckers among you. Well done. A Congressional Medal of Honour for your efforts.

Take no exercise, eat the wrong foods and live in a dirty house have all been covered under how to look after your lungs.

Let's move on to the next major organ critical to your health – your liver.

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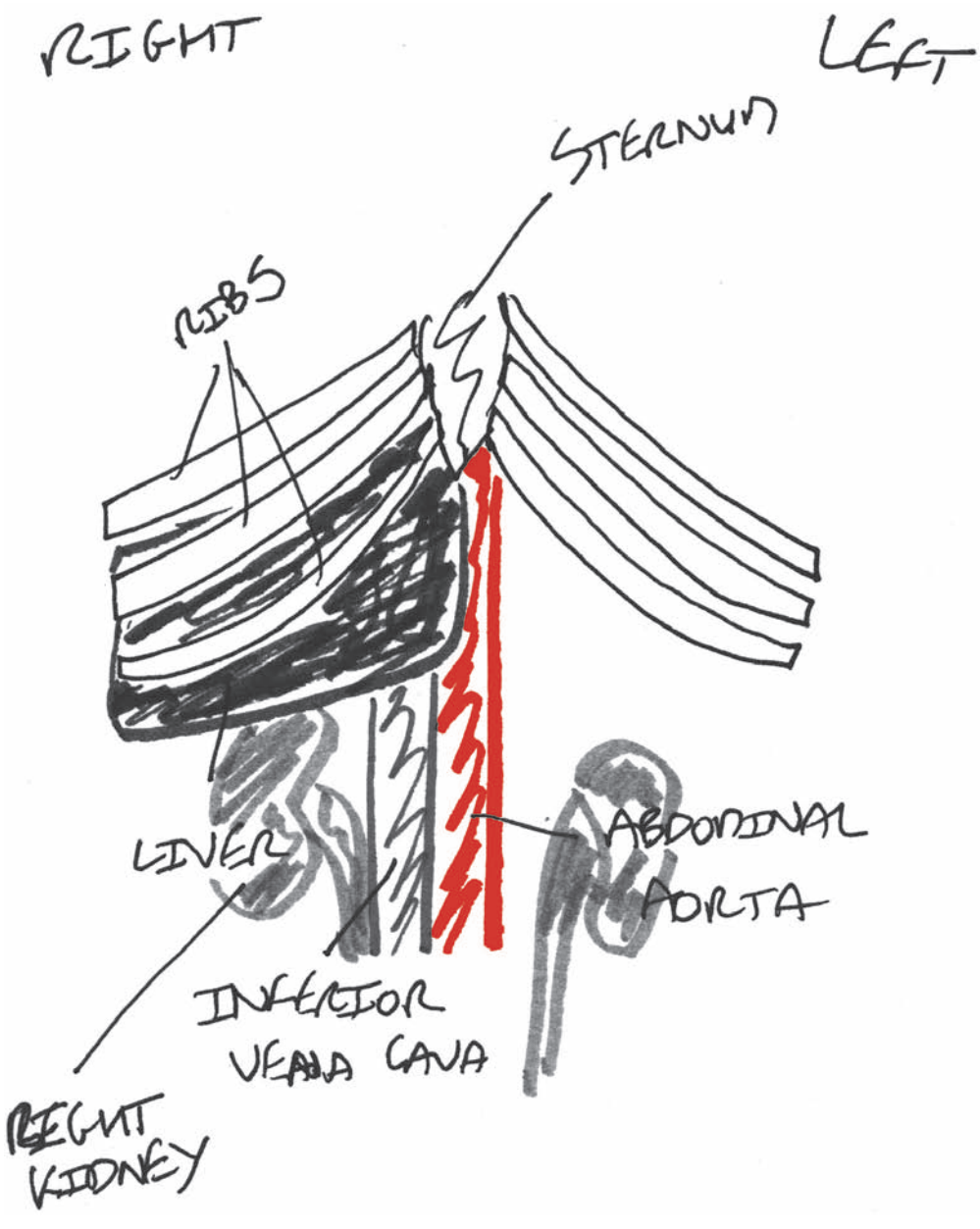

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