Live Without Pain

A New Theory on What's Wrong with You, and How to Fix it.

Uncovers overlooked contributors to:

Wear and tear
Back and knee pain
Muscle weakness
Stiffness
Low energy
Stress injuries
Sports performance
and more!

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acknowledgement

I wish to thank those patients who have graciously given permission for their experiences to be recorded on video for the enlightenment of sufferers everywhere.

a word of caution

The information presented in this book is based on the observations and professional opinions of the author. No individual should use the information in this book for self-diagnosis, treatment or justification in accepting or declining or providing any therapy for any health problems or diseases. The application of the advice herein is at the reader's own discretion and risk. Any individual not willing or able to accept the risks involved in their own actions, should first seek advice from a qualified healthcare provider before starting or changing any treatment. The author shall have neither liability nor responsibility to any person or entity with respect to loss, damage, or injury caused or alleged to be caused either directly or indirectly by the information contained in this book.

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dedicated

to Janie

contents

foreword

It was Simon King's greatest critic. I met Simon for the first time across a lecture theatre, demanding he "show me the evidence" and to explain where the objectivity was in his so called *testing* of the patient. I thought, "If I'd paid all this money to see a sham artist rant on about his delusions of grandeur, I may as well get my money's worth!"

Curiosity had led me to his seminar, as I am sure curiosity has led you to open this book, but I held little hope for the content of what he was about to tell me. I was practising successfully, and had my fair share of patients who claimed I had transformed their lives with chiropractic, but I still knew there were some patients I just simply could not get better, no matter what I tried. It was this very reason that had led me to bother attending. My view regarding the worth of the seminar was dubious to say the least as I knew what I was about to be shown, muscles becoming somehow immediately stronger after some magical intervention. My background of two science degrees with a master's had given me a quality which I will be eternally grateful for – a free thinking, critical mind and Mr King was about to be at its mercy.

Then he showed me a short video that has changed the way I look upon healthcare ever since. Not of a fastidious experiment but one of a real life case, one with a real significance, a life changing significance. It was of a woman so weak that it took her shaking body 10 seconds and all her might to lift just one of her legs up into the air. Yet without him even touching her she was able to immediately find the strength she had lacked for many years by simply altering her proprioceptive feedback. There before my eyes was the magic and the strength increase I had expected to

see, but not in the manner I had expected. Where was my placebo argument? If a placebo effect was going to happen surely the exploratory spinal surgery she had four years before would have been a stronger intervention. Where was my precious examiner reliability argument? He had not even touched her, and gravity definitely had not changed. But maybe she wanted to believe she was ill and this problem was in her head? Maybe she had a disorder than meant she would have elected to have the investigative spinal surgery - this was unlikely. More unlikely still, that eight years later the same patient would testify on the *Tonight* program on national television to being instantly cured.

Then I had a feeling that not many of us experience often, the feeling that instantly things would never quite be the same. I shut up and did what science had taught me to do first and foremost – I impartially observed.

To this day I am still observing, to be honest my scientific process into investigating proprioceptive medicine is likely to never progress further and if it did it would probably be poor science. This is not due to the theory, rather due to the paucity of large numbers of people investigating proprioceptive medicine. Knowledge bases are hard to come by quickly. But where I can find proprioceptive interference and remove it from a patient's life, the patient has never failed to improve. For instance, if you were walking around with a stone in your shoe and it was causing you to limp this would be proprioceptive interference. Now faced with treatment for your limping pain, would you rather take a pain killer with scientific backing and side effects and continue to walk on the stone, or would you remove the stone – a process with no research funded by drug profits but that permanently treats the cause of your pain with no side effects. I hear the reader ask, "Why then haven't I heard of this before if its oh so simple?" and that is because if you don't know how to look for the stones you won't find them easily.

The only thing slowing the spread of proprioceptive medicine is unscientific arrogant scepticism.

Even when asked if I would like to write this foreword I was sceptical, worrying about what others would think of me supporting such an unorthodox treatment. But if those people choose to be objective, and keep asking questions and testing those questions they will themselves come to the incontrovertible truth that Simon has a big point that should make scientists and everyone interested in their health, wonder critically and with excitement!

Rob Marshall
Chiropractor,
Bath UK

introduction

is this book for you?

Pain is a necessary and important part of life.

Without emotional pain, how would we know joy and happiness?

Without physical pain, how would we avoid hurting ourselves?

This book is not about abolishing all pain. If that is your goal, you should probably invest in a morphine drip.

This book will explain simple and sensible strategies for ridding yourself of prolonged, persistent, or reoccurring pain that you have likely never heard of and probably would never think of.

In learning to live without pain, you will also learn how to build a strong and robust body without exercise; a body that is far less likely to be injured, and, in the unfortunate event that you are injured, will help you make a full and speedy recovery.

Removing the Cause

Pain is a warning sign; a flashing red light telling us to stop and find a remedy or solution to the problem. If we ignore or hide the cause of the pain, the problem will likely get worse.

This book is not about managing pain. It's about helping you find and remove the causes of your ailments.

The answers in this book will probably surprise you because they have to do with things we take for granted, like our jewellery and dental work.

Jewellery and metal dental work have the ability to harm us in a way never described before and therefore they have an important but not exclusive part in our search for the origins of pain.

This book is also not about 'the power of the mind' or 'positive thinking' or 'energy flow'. In fact, this book will be a huge relief to the millions of people who have blamed themselves for not being able to get better. Their bodies did not have the capacity to recover, no matter how well they ate, how much they thought good thoughts, or how often they exercised.

Everything you will read in these pages relates to known anatomy and physiology, and, if you are willing to follow the reasoning, will lead you to inescapable conclusions about the things you can do to create and maintain a fully functioning and immensely adaptable body—even if it has already sustained some physical damage.

The Cost of Ignorance

In the twenty-first century, modern medicine is struggling. Hospitals are crammed with technology, scientific journals are overflowing with research, drugs are dispensed by the truckload, and millions of us visit doctors every day. Yet, injury and illness are as mysterious and unpredictable as ever.

There have been many successes. We can keep people alive longer and treat many once untreatable conditions, but the process of restoring and maintaining health is left mostly to chance and good fortune. The cost of our ignorance is staggering, both in financial and human terms.

In 2005, the US spent $2 trillion on health care, equivalent to $6,700 per person (roughly £3,350), which was 16% of the Gross Domestic Product (GDP). Expenditures are projected to rise to 20% of GDP by 2115.[1] In the UK, the National Health Service (NHS) spends about £1,500 per person.

Worse still, as spending on medicine increases, so does demand. In other words, the more sick people we treat, the more sick people there are to treat.

Modern medicine's answer to sickness is more treatment—which would be fine if everyone had a thorn in their foot and their treatment consisted of removing the thorn. In that case, the cause is known, the cause is removed, and the patient makes a full recovery.

Unfortunately, most medical treatments do nothing of the sort. They only ever set out to ease the symptoms, almost invariably meaning that the underlying disease process continues, and will require more treatment later.

'We Don't Have a Clue'

As a chiropractor, I function very much like a family doctor. Chiropractors see patients without referral and are expected to be able to diagnose appropriately and refer if necessary. To qualify with primary care status, the university I attended insisted we complete as many hours as a medical student in the basic sciences of anatomy, physiology, neurology, microbiology, histology, pathology, and radiology.

The more I learned about modern medicine, in college and in constant study since, the more concerned I became about how little 'we' (modern medicine) actually know about the causes of illness and injury.

Most patients would be horrified if they knew the truth about the gaps in their doctor's knowledge. This is not a criticism of their doctor. All doctors learn well what science and medicine has to teach them, but what they never learned (because no one has yet discovered it) was how to work out and fix the underlying cause of the problem.

In fact, pick up any medical textbook and you will see that around 90% of all named diseases have the same cause. It's a mysterious thing called 'aetiology unknown'—a fancy way of saying, 'We don't have a clue'.

Doctors generally accept that they don't know the real cause of… well, nearly everything, although they would never admit it in case public confidence was undermined. This makes it acceptable, even reasonable, to believe that western medicine must be content with managing symptoms.

A New Theory

In May 2000, after fourteen years in chiropractic practice, I had an idea.

The idea became a new theory of health and disease, so elegant and simple, I couldn't believe that no one had thought of it before. However, as far as I know, this is the first time it has been described.

Basically, this theory says that nearly all injury, pain, and disease come from toxicity or deficiency of chemistry, emotions, or proprioception.

Most of us understand chemical toxicity and deficiency. We know that if we swallow a poisonous substance like bleach or petrol, our health will be harmed; and we know that if we go without protein, water, or vitamin C, we will become sick through nutrient deficiency.

Emotionally, it is also easy to recognise that we might become unwell if we are deprived of certain emotions like love, respect, and tenderness; or because we have too many toxic emotions like hate, anger, and depression.

But it is the third, and less well known, source of toxicity and deficiency that is the main focus of this book—proprioception.

'Body Position Sense'

Doctors will tell you that proprioception (pro-pree-o-sep'-shun) is the medical term for 'body position sense'. Proprioception is the reason you know, without looking, where your arm is. Proprioception lets you walk across a dark room. Proprioception allows you to catch a bowling ball or a tennis ball with equal control, even if you are blindfolded.

What doctors won't tell you (because no one told them) is that proprioception is much, much more than just a sense of body position. It is an essential component of the complex processing we use to move our bodies and interact with our environment. Essentially, it controls our ability to get through each day uninjured.

My theory is that there are certain 'ordinary' things that can interfere with the way in which we sense our environment. I have come to believe that alterations to our normal sensory input, especially from our sense of touch, interfere with our reflexes, and, if the interference persists, can leave us vulnerable to weakness, illness, chronic injury, and pain. (I'll be explaining

exactly why this is true in Section I.)

I had the theory. Now I needed some tough cases to test it on.

First Test Case

The very next week, a patient came to see me who was to change my life.

Lesley—a cheerful, friendly woman in her late forties—had obvious difficulty walking, and struggled simply to get out of a chair. Her main complaint was back pain, although she also had pins and needles, shortness of breath, and a heavy leadlike feeling, especially in her hands. Her back pain was so severe that she had undergone exploratory spinal surgery four years earlier. The surgeons had found nothing, sewed her up, and sent her home.

As part of my examination, I asked her to lift her right leg off the table. With much shaking, grunting, and groaning, she eventually edged her leg to vertical, and then limply dropped it again. Her other leg fared no better. The short distance from horizontal to vertical took ten seconds.

While this was extraordinary, her other muscles were just as bad. She was so weak, she could not step down from a chair without falling to the floor. She told me that one of her favourite hobbies was horse riding, but she could no longer ride since it was impossible for her to get off the horse without collapsing on the ground—a very painful experience unless she happened to land on a pile of straw.

In all my training and fourteen years in practice, I had never encountered this before. Such extreme weakness is usually only seen with serious neurological diseases. In addition to running all the normal orthopaedic and neurological tests, I did what I could to rule out hysteria, multiple sclerosis, motor neuron disease and a few other conditions. Lesley's condition did not seem to fit any classical diagnosis, a fact which relieved me since all the neurological diseases have extremely poor outcomes and very few useful treatments. Besides, what I needed was an explanation, not a diagnosis.

At that stage, I had no idea what was wrong with her, but I welcomed the opportunity to test my new theory, a theory built upon finding the causes of muscle weakness.

If my theory was right, I had to be able to cure Lesley, not just treat her.

Cured!

Fortunately, cured she was—dramatically, quickly, and completely.

For years, she had been unable to lift her leg more than eight inches off the ground while standing. Overnight, she was able to hold her foot above shoulder height with her knee straight. After her treatment, it took her less than one second to raise her leg from horizontal to vertical. She did endless sit-ups when none were possible before. Her other symptoms gradually subsided, and she made a full recovery.

Eight years later, she tells me that she has just played 56 games of tennis in two days, plus she has a full schedule of piano lessons for her eager students.

Why? How?

All I did was arrange for a dentist to remove two of her gold crowns—crowns that, from a dental point of view, were perfectly okay, inert, and worth a lot of money. Clearly, however, something was wrong with the gold that her dentist, doctor, and everyone else had thought was perfectly harmless. (Read more about Lesley in Chapter 9.)

Trying to Fail

Of course, one case does not a theory make. Since that time, it has been my mission to disprove my theory. So far, I have not succeeded. Thousands of patients have been helped to cure their health problems by the information contained in this book.

But that is not to say that every patient has been cured.

New ideas are not for everyone. Some cannot afford the treatment they need. Others believe another approach might suit them better. Patients find their own way and practitioners are not infallible. Allowances need to be made for the whims of human nature, but the theory, when used properly, has never failed me or the patients who choose to understand it.

Basic Science

The basic science behind the theory has been known to medicine for at least forty years (the knowledge is already in most anatomy and physiology

textbooks), yet, somehow, doctors have overlooked its significance.

This oversight is understandable given the culture of modern medicine, obsessed as it is with the chemistry of the body. A pervasive belief in the use of drugs to treat illness and control symptoms has led directly to the health system we have today, a system that is extremely effective at treating acute illness and trauma, but expensive and inefficient when dealing with chronic disease and functional illness (i.e., illness caused by a lack of health).

My original theory has now developed into a system of diagnosis and treatment I call ***proprioceptive medicine.*** A substantial part of proprioceptive medicine involves establishing normal reflexes within the nervous system by removing those things that upset, modify, and inhibit reflexes. And—though at first it sounds absurd—I have found that the main culprits are the gold and silver jewellery and the dental work we value so highly.

Optimising Health

Proprioceptive medicine is a holistic and completely natural health care paradigm based, as mentioned before, on known anatomy and physiology. Like many 'alternative' (drug-free) medicines, its role is to optimise the health of an individual patient, not treat a disease which may be common to many patients.

The study of proprioception gives practitioners and patients an additional set of tools to understand and remedy many of the factors that interfere with wellness. It is especially useful to help those millions of patients who don't respond to nutritional, chemical, physical or emotional therapies.

Although most patients have never heard of it, proprioception is not something I made up. Proprioception has been an important part of human and animal function for millions of years. What is new is the realisation that understanding proprioception can improve your health and the health of your friends and family. Once you understand proprioception, you will be able to live longer and be healthier, free of most pain and disability.

Changing one's proprioception can do miracles, but it can't do the impossible. It won't replace an amputated leg or instantly heal a fracture. It will, I hope, give you the understanding you need to optimise your health and make the body you have work as well as it can. Most people are amazed

at how great they can feel when their body is free from proprioceptive interference.

The theory of proprioceptive medicine makes perfect sense, and is based on known science, but the conclusions reached are so new, they have not yet been 'scientifically' tested. Some references to published studies are included, but finding many published articles on this subject is difficult because … well, the subject didn't exist until now.

It will take many years to complete the scientific studies needed to prove or disprove this theory, but, ***since none of the treatment methods are harmful and most are reversible, I see no reason to withhold this information until larger tests are completed. Doctors and patients can use this knowledge, now, without fear of harmful side effects.***

Learning Through Observation

The theory of proprioceptive medicine is based on scientific knowledge and careful observation. Still, learning through observation will be challenging to those who have been taught to rely only on statistics and publications in peer-reviewed journals. However, as we shall see in Section I, statistics and medical science have never, and will never, help any individual who seeks a cure for their particular problem.

Patients, of course, live in the real world. They don't want a treatment that is 30% better than a placebo; they just want to get better.

Although every doctor is trained to rely only on clinical trials and statistics, major advances in medicine hardly ever come via evidence; they come through careful observation, research, and study. (So you can see them for yourself, many of my patients have generously agreed to allow their cases to be recorded on video, then placed online and on CD. See **www.live-without-pain.com** for enough material for several lifetimes of research.)

Is This For You?

If you have the ability to think clearly and observe impartially, this book is for you.

We all make health care choices based on our existing knowledge and on the

advice of experts. With the new knowledge in this book, you will be able to take better care of yourself, and, hopefully, need far less medical attention.

As you read, you will be justifiably filled with scepticism, and I suggest you keep a healthy dose of this most useful of emotions, but not so much as to dismiss the information out of hand, or you may miss some pieces that could change your life significantly.

You probably already know that every new idea goes through three stages. First, it is ridiculed; then, it is violently opposed; and, finally, it is accepted as self-evident. You may decide to wait until the knowledge of this theory is widely accepted, or you may decide to be adventurous and become what advertisers call an 'early adopter'.

One of the great benefits of the ideas in this book is that, as noted before, they are extremely safe and fully reversible, so you can always go back to the way you are now, if you want to.

How much this new theory will impact your life will depend on how sick you are and how much your life is affected by proprioceptive insult. These things you will have to find out for yourself, but, if you follow the steps in this book, it will not take you long to find out, it will not cost you a lot to find out, and—remember—you can go back to the way you've always been if you choose. ***You have nothing to lose and so much to gain.***

In health, as in life, it's the things we don't know that have the most potential to harm us. Forewarned is forearmed, the saying goes. If my discoveries help you avoid pain, injury, depression, and misery, then my purpose will have been fulfilled.

Time to Trust in Nature

The time for proprioceptive medicine is approaching. The twenty-first century is already bringing new understanding in the field of neurology—of which proprioception is a part—and, hopefully, the focus of our healthcare will move away from our chemistry and on to our function. Function that is mostly controlled by our nervous system.

The brain contains 100 billion neurons, each with an average of 7,000 connections to other neurons. Your doctor trying to find the cause of your

problem with a blood test is like your mechanic trying to find out what is wrong with your car by putting a drop of oil under a microscope. Your body is so much more than the chemistry of your blood.

As society realises that it can no longer afford technological medicine, the tide may well turn back to Nature. We will start to realise that Nature cannot be made to fit the plans of humankind; rather, humankind has to learn the plans of Nature.

Although I hope that, in fifty years, natural and proprioceptive medicine will have overtaken drug-based medicine, there are powerful forces in place to ensure society's continued reliance on expensive symptom fixes.

These forces, which start with multinational drug companies and filter through every part of society and the media, will do everything possible to denounce, ridicule, and ban natural medicine in favour of high-tech orthodoxy.

Their chief weapon is fear. Their argument is that you are defenceless against all manner of disease, and your best hope is technology.

My experience has been that it is safer to take the opposite view. I believe your best defence is a deep trust in Nature and the power of the human body.

I hope that this information finds the people it can help—people like you, who want an alternative to drugs and surgery and who are prepared to take control of their health so they may live long, full, and pain-free lives.

Enjoy.

Section I

The Illness of Modern Medicine

chapter 1
treating the symptoms

Theories of disease tend to reflect the beliefs of the society in which they exist.

The ancient Greeks thought the world was made of four elements: Fire, Air, Water, and Earth. When they came to study disease, they found four corresponding humours—Blood, Phlegm, Yellow Bile, and Black Bile—as well as four qualities—Warmth, Dryness, Coldness, and Moisture. An imbalance in the humours would require treatments dictated by the qualities.

The Ancient Chinese saw balance in Nature. They observed that night followed day, light followed dark, down followed up, out followed in, and death followed life; for every thing, there was an opposite. They called the balance of opposites Yin and Yang, and viewed this balance as dynamic, interchanging, and variable. From this understanding, they developed acupuncture, a system of medicine which has survived 5,000 years.

In medieval times, the Church was the ultimate authority on all matters spiritual, astrological, physical, and medical. Although natural medicine was widely practised, with herbal remedies being most commonly used, the Church taught that disease could be sent by God as punishment for sin. Since religious theories dominated medical ones, repentance and pilgrimage were often prescribed as cures. The practice of dissection was discouraged by the Church until the sixteenth century because it was thought to be disrespectful to God.

Ignorance

Theories are only necessary in the presence of ignorance. They develop in response to the unknown, to help us make sense of what we cannot know, and would rather not trust to belief.

Even when they are wrong, many theories become so culturally entrenched that not to accept them becomes an act of heresy. Over the years, thousands of people have been persecuted, punished, and even killed for not accepting current medical 'wisdom'. Yet medical wisdom changes as society's view of the world changes.

What do we in the west see as we look at our world? For much of the nineteenth and twentieth centuries, we saw advancement and prosperity through domination and control of our environment via science, warfare, technology, and consumerism. Recently, we have begun to see the terrible environmental cost of that approach to a living and interdependent ecosystem. Yet, we continue to believe that this approach will help us with our health.

A War Against Disease?

If we believe we are in a war against disease, we are going to demand to be defended by a powerful army. In the western world, the biggest medical guns are drugs and surgery. Modern western medicine likes to think that it is winning the war. Yet, the more we spend and the more we attack and the more we research, the more disease and disability results.

Cancer, heart disease, diabetes, and iatrogenic illness (ailments induced by a physician) top the list of our most destructive diseases, and all are on the increase. This begs the question: if what we are doing isn't working, is more of the same the answer?

The allure of medical science is very strong. Almost every day some new advance is heralded as the latest breakthrough in the treatment of this disease or that condition, no matter how tenuous the link or insignificant the result for patients may be. In medicine, hope springs eternal. We want to believe in modern medicine, technology, and science. Many patients continue to believe in modern medicine even though doing so may cost them their lives.

According to a careful analysis of the best available evidence, more than 750,000 people die each year in the US because they believe in modern medicine and accept the diagnosis, misdiagnosis, and treatment given them by their doctors.[2] ***That is six jumbo jets falling out of the sky every day.*** This figure includes 106,000 adverse drug reactions (from drugs given properly in hospitals) and 98,000 medical errors. Another 2.2 million people experience severe reactions to drugs. These figures are conservative. When trained observers observe drug-related events and errors first-hand, rates are more than twice as high as the ones reported by investigation of the records. Naturally, these figures do not include the millions of people who died of a named disease or organ failure, while being treated for that disease with drugs or surgery.

The Successes of Western Medicine

If your life needs saving, orthodox western medicine is second to none. If you fall off a cliff or have a major car accident, you definitely want your symptoms treated. If you are lucky, your condition—and, in some cases, your life—will be managed by professionals with the training and experience to take over where your body has failed.

At these times, we give well-deserved thanks to the doctors who administer modern medicine. Lifesaving surgery, technology, and pharmaceuticals mean it is possible to survive previously catastrophic injuries and illness.

Western medicine is successful in trauma care because it manages signs and symptoms effectively. In times of crisis, symptoms such as low blood pressure, blood loss, and raised intracranial (within the skull) pressure need to be controlled as quickly as possible.

The Symptom Isn't the Problem

Medical experts tend to operate from the paradigm of intensive care, where symptoms have to be managed and body systems controlled. They have taught us to expect a pill for every ill, that surgery cures, that doctors have the answer, and specialists know best.

If, however, your life is not in danger, managing symptoms is a recipe for long-term disability and ill health. Whenever symptoms are managed but

the underlying cause is not eliminated, the disease process will continue, and those symptoms—or worse—will reappear, sometimes in a different form.

Patients then find themselves on the receiving end of the symptom-chasing merry-go-round, often taking drugs to manage the symptoms caused by drugs they didn't really need in the first place.

Understandably, many people want a quick 'fix'. They 'have' a symptom or an ailment, and they want the symptom to go away. The pharmaceutical industry responds with pills for diseases and diseases for pills.

For depression, you take an antidepressant; for inflammation, an anti-inflammatory; pain needs a painkiller and infection an antibiotic; and so on. It's so obvious and all too easy.

If your tonsils swell, we take them out; if your gall bladder packs up, we remove it; if your hip wears out, we can give you a new one; if your heart gives way—why, we can give you a second-hand one. These are the miracles of modern medicine we see every night on our televisions and come to expect, even see as our right.

The idea that the symptom is the problem is clearly ridiculous. If your gall bladder is removed, you lose the ability to have a gall bladder attack, but the reason your gall bladder failed is still with you. If you take an antibiotic, the infection may clear up but your immunity will be the same or worse as when you acquired the infection. If you take an antidepressant, you may feel better, but only until you need to take the next tablet.

Symptoms Are Your Friend

Controlling symptoms is one of the most destructive exercises in assisted self-delusion ever invented. Under the guise of 'treatment', managing symptoms removes the desire for, and often the possibility of, a full recovery because it hides the effects of the problem without removing the source.

Symptoms are never the problem in illness, and managing or hiding the symptoms is never the answer. Nobody takes a pill if they cut themselves. We all know from experience that our body has the ability to heal the cut, and medical intervention is only necessary if there is too much tissue damage.

Likewise, our bodies have the ability to gobble up bacteria, fight viruses, vomit poison, regulate temperature, and handle the countless thousands of stresses we encounter every day.

Symptoms are your friend. Symptoms tell you that your body is coping with a stress. Can you have symptoms and still be healthy? Sure.

A fever is the body's normal reaction to an infection. A raised temperature activates the immune system and helps to kill off bacteria and viruses. You might feel sick if you have a temperature, but, if you have an infection and your body is responding to the infection, then you are healthy, not sick.

Vomiting is a normal reaction to the ingestion of a poison. If you are vomiting, you are getting rid of food that should not be in your body. This is a normal, healthy reaction, and, hopefully, you learn from the experience and treat that substance with caution in the future.

Pain is a sign of tissue damage and inflammation. It is a normal response that is extremely useful as a measurement of healing. The worse the damage, the worse the pain.

A poison or an infection only becomes an 'illness' when our body is unable to raise its temperature or induce vomiting. Fever and vomiting and pain are the body's normal responses to the threats of infection, poison, and injury.

How the Body Copes

In fact, all symptoms can be seen as a manifestation of the body trying to cope with a threat to its well-being. Even if the symptoms last months or years, the body may still be capable of getting better once the threat has been identified and removed. Only removal of the threat or challenge will lead to a permanent cure.

If you take drugs to reduce a fever, stop vomiting, lower your insulin levels, lower your blood pressure, or stop your diarrhoea, you may buy some short-term relief, but you lose the opportunity to find out the real cause of your illness, leaving you with a long-term reliance on the drug. The only time it might be sensible or useful to treat a symptom with drugs is when you know the cause for certain and your body just needs time to take care of it or to get the right treatment, as in pain relief for a toothache or a broken leg.

Symptoms are a poor guide to health status. You can be ill for a long time without any symptoms. Your body will cope with years of abuse before finally throwing in the towel.

Did the gall bladder that put you in hospital last week magically fill with stones in the previous five minutes? Did the arthritis that has destroyed your hip come on overnight? Has the slipped disc just happened, or have you had warning signs for the last twenty years?

Groups of symptoms and signs (signs are just objectively measurable symptoms) are given a label called a diagnosis.

Unfortunately, most patients have a useless diagnosis. With the greatest respect to the doctor or specialist who gave them the diagnosis, unless the condition is life threatening, the diagnosis is probably useless and could be harmful.

Diagnoses become useless when they give no clue as to the cause of the condition. Without an understanding of the cause, treatment will be doomed to failure no matter how well intentioned, scientific, or widely practised it is. For a diagnosis to be useful—by which I mean, produce a lasting cure—it must explain why we are ill, not just describe what is wrong with us.

'Having' a 'Thing'

Frankly, diagnoses that do not explain why a specific patient has a specific problem should be made illegal, and the people making them prosecuted. Nothing would assist the healing of humankind more than the honest admission of doctors that they actually don't know what is wrong nor how to fix it. At least, then, society would not have to deal with the unknown after-effects of treatments that were always doomed to eventual failure.

On the plus side, patients often feel comforted by a diagnosis, even if they are no closer to a cure than before they received the diagnosis. A diagnosis makes their condition socially acceptable, even rewarding, if benefits or special treatment follow. Diagnosis removes fear of the unknown and transfers some of the responsibility for the condition to the person making the diagnosis. A diagnosis may even offer short-term benefit if an allopathic (i.e., used by western 'modern' medicine) treatment is given to ease the symptom.

While having a diagnosis of sciatica, asthma, arthritis, or migraine doesn't change these painful and disabling conditions, it does have a huge influence on the way they are perceived and subsequently treated.

We need to be careful of labels. Once we have a label, we 'have' a 'thing'. Many people think they 'have' arthritis or diabetes—as if these conditions were an overcoat or a pair of shoes. Maybe you 'have' a disease now; maybe you 'have' three or four. You may 'have' a broken leg, high blood pressure, anaemia, or glaucoma, but these diagnoses are descriptions of ***how you are, not what you have.***

Thinking of conditions as possessions seems to help us classify our problem. It's either disposable, like an old jacket, or something we will have to live with, like a mother-in-law.

Patients then seek the treatment that best fits their understanding of the problem. They 'shop' for a cure, certain that, if they could only pay enough, they would find the answer to their problem. They rely on technology to come up with a diagnosis, and then choose treatments that have been proven 'scientifically', even if the treatments are destructive, like drugs or surgery.

Disease or Description?

Many diagnoses are not even diseases at all.

Hypertension isn't a disease; it's a measurement. Hypertension doesn't cause high blood pressure; it's a name given to high blood pressure, which is a symptom (sign) people have when they can't get rid of fluid effectively.

Osteoporosis isn't a disease; it's just a description of the loss of calcium in our bones that we get if we don't eat or exercise correctly.

Pick up any medical textbook and you will find details on thousands of diseases, nearly all of which contain a variation on the words 'aetiology unknown'. Aetiology is cause. Although our collective ignorance is sometimes disguised with terms like 'essential' hypertension, 'idiopathic' purpura, or 'atypical' anaemia, the gaps in our understanding are disturbing.

No Answer

Ask anyone in modern medicine why you have a certain disease (or symptom) while your neighbour (partner, spouse, work colleague) does not, the odds are high that there will be no answer—for nearly any disease, for nearly any symptom.

If you dig long enough, the only logical conclusion will be that you suffered the disease or condition because of bad luck. That's it. ***In the twenty-first century, people get sick because of bad luck, a polite way of excusing our ignorance. We just don't know.***

Cause unknown: the multitrillion dollar question. According to the Centers for Disease Control and Prevention (US), the health care costs of people with chronic diseases account for more than 75% of the USA's $1.4 trillion (roughly £702 billion) medical costs, and chronic diseases account for 70% of all deaths.

We were told that germs caused disease. For over one hundred years, doctors and patients have clung to that theory, in spite of the fact that everyone is exposed to germs but only a few succumb to illness. Then a drug was found that 'cured' germ-caused disease, and, from then on, it was often assumed that drugs were the only legitimate treatment for any disease.

The truth is, modern medicine doesn't have a theory of disease.

Its practise is an eclectic mix of potentially dangerous treatments based on domination and control. Doctors are the defenders of the innocent against the rampaging armies of bacteria, viruses, cancer, heart disease, diabetes, AIDS, or whatever the latest threat turns out to be. Each condition is labelled and defined, so that the enemy appears to be known, and, therefore, the vast resources of modern medicine can be mustered to overcome it.

Unfortunately, the enemy might be known, but its cause never is. Two hundred years of scientific medicine have taught us an awful lot about what happens during disease, but next to nothing about its cause.

chapter 2

the false god of science

Why on earth don't we know the cause of the most common diseases? After all the research, all the technology, all the doctors, why hasn't anyone discovered the cause of anything except the deficiencies like scurvy and the toxicities like lead and mercury?

The closest modern medicine ever comes to a cure is identifying risk factors. Ask a medical doctor what causes diabetes, and he or she will rattle off an impressive list of 'risk factors'. But risk factors are not causes. Risk factors are scientific mumbo-jumbo for 'we don't know'.

High cholesterol doesn't cause heart attacks any more than speeding causes road deaths. Hitting something or someone causes road deaths. Smoking doesn't cause lung cancer. We all know people who have lived to their nineties, still smoking a pack a day.

Every year, hundreds of thousands of scientific articles are published, billions of dollars worth of research is funded, and trillions of dollars are spent on health care—and, still, no one can go to bed secure in the knowledge that they are not going to get sick tomorrow, next week, or next year.

We suffer the folly of modern medicine because we believe that scientific principles will bring us knowledge, truth, and wisdom. What we tend to get is fad, fashion, and uncontrolled population-based experiments.

Trusting in Science

The problem is not that medicine is unscientific. The problem is that the principles on which medical science are based are so foreign to most of us that we believe the conclusions of scientists. We trust them because they have data that we do not. Moreover, they are literate in the bible of science and we are not. Therefore, we seek them out to tell us 'the truth.'

In other words, our ignorance in the ways of research and statistics allows us to be misled by well-intentioned but opinionated and misinformed scientists.

Naturally we want to trust science and scientists. Science is the new religion. Just as in the Middle Ages—when people were put on trial for views that were different from the orthodox view, which was protected and maintained by those in authority who had the power to read the scriptures—to question the supremacy of science is heretical.

The argument is not whether or not science is a good thing; the argument is whether medical science is useful and serving humanity.

Searching for Cures

Vast amounts of money, time, and effort are spent on medical research. By 2008, the UK government will spend £1.2 billion per year on medical research in the NHS alone. This does not include the research done by charities, universities, or drug companies.

The hope is that, with all this money, someone will discover a 'cure' for something. Given that similar levels of spending have been the norm in Western countries for at least thirty years, somebody should be starting to question whether we are getting value for money.

The only large-scale, really effective advance in health care in the last forty years has been triple antigen therapy for Helicobacter pylori (a bacteria found to cause ulcers). Although newspapers splash the 'latest advance' in medical care over their front pages almost daily, most people cannot name a single medication, apart from antibiotics, that ever 'cured' anything.

If medical science can't cure anything, it means it doesn't understand it. If doctors truly understood disease, they would be able to turn it off and

on, consistently and reliably. You would be able to go down to your doctor and say, 'I'd like to have diabetes and breast cancer, please', and the doctor would be able to tell you how to get it, within a year or two. Try it; see what happens.

If your doctor can't tell you how to *contract* a disease, how on earth can they tell you how to *prevent* one, let alone tell you how to *get better* once you have one?

Experimentation

Science has an esteemed position in our society. We believe scientists are searching for universal truths that benefit us all, and we are therefore willing to place enormous faith in the conclusions of research.

Medicine covers itself with the trappings of science. The association of modern medicine with scientific orthodoxy allows doctors to take the moral high ground, dismissing any non-medical approaches as 'unscientific' and, therefore, inferior.

In spite of our unquestioning faith, science will never be able to tell you how to cure your illness. Why? Because of the way science must work.

Most of us are familiar with a high school approach to experimentation. We arrive at a hypothesis and then test the hypothesis. If we want to know what happens to a certain rock when we hit it with a hammer, we could take two identical rocks and hit one with a hammer and observe the difference between the one we hit and the one we didn't hit.

We can be fairly certain that the blow of the hammer caused the destruction of the rock because we observed the intervention and we still have the control rock to which to compare it.

Such comparison is not possible in a medical experiment. Biological diversity means that no two people are the same. Physically, chemically, and emotionally, we are unique, and any intervention makes us different from who we were before. It is therefore impossible to isolate the effects of a medical experiment.

Being good scientists, we may try to repeat the rock experiment three, four, ten, or twenty times to increase 'certainty' about what happens when we

strike a rock with a hammer. Unfortunately, by repeating the experiment, we have changed the question.

What we first wanted to know was what happened to 'a rock' when we hit it. Now we are looking at what happens to 'rocks' when we hit them with a hammer, and we are now more concerned with the hammer than with the rock.

Imagine for a minute that you are one of the rocks. Do you really want to know what happens to all the other 'rocks' when they are hit with a hammer, or do you want to know about the effect on *you*?

Thus, if a medical procedure is the hammer, what you want to know is what is going to happen to you when you have the procedure.

Unless you have altruistically signed up to a massive experiment for the good of others, your outcome is the only one that is truly valuable to you. But scientists don't look at it that way.

Scientists doing research don't care about what happens to you, or to any individual; they want the 'power' (their word) that comes from observing repeated results.

However, since every one of their subjects is so different, they have a tough time 'controlling' the experiment, something they must do to remove the enemies of science—confounding, bias, and chance.

No Safety in Numbers

In the language of the medical experiment, 'controls' are the group that is left unaltered. Since you can't be your own control (without the accusation that you made a 'spontaneous recovery', thereby proving the placebo effect and the increasing the certainty that the problem was all in your mind anyway), the only option for a scientist is to take a group of subjects and 'randomise' them into two groups, one to be the control, the other the experimental group. Once the experiment is performed, they compare the two groups and presume that the average of the difference in the outcome was due to the intervention.

In scientific terms, the lower the number of subjects in each group, the lower the 'power' of the study. In this context, 'power' refers to the certainty that

the difference in outcome was, in fact, due to the intervention, rather than chance. (It has nothing to do with the effectiveness of the treatment.)

So researchers seek the largest possible groups. However, the relevance of the results to any individual in either group *decreases* as the number of subjects in the group *increases.*

Here's why. In a clinical trial, patients are assigned into one of two (or three or four) groups. The split is supposed to be totally random so any characteristics of patients that might favour the treatment or the placebo (typically an inert medication given to the control group) are split randomly between the groups. This is to avoid the possibility that an experimenter might consciously or unconsciously place the sicker, shorter, or better-looking patients in one group to favour a certain outcome.

Each group receives either the treatment or a placebo, and then every patient is measured at the start and the end of the experiment. The difference between the two measurements, averaged across all the patients in each group, is presumed to be the effect of the treatment.

Let's imagine a clinical trial to compare 'Treatment A' with 'Placebo B'. After the experiment, we find that Treatment A has resulted in substantial improvement for 70% of patients and Placebo B has resulted in a substantial improvement for 40% of patients. Obviously, doctors would want to use treatment A because, on average, it was more effective. ***However, these results tell us absolutely nothing about what happened to any individual patient in this trial.***

Even armed with the results of this trial, when you go for treatment, your doctor has no way of knowing whether you will be one of the 70% for whom the drug worked or the 30% for whom it didn't. They have no way of knowing whether you might be one of the 40% who improved with the placebo. Some of the treatment group would have worsened on Treatment A, just as some people in the Placebo B group would have improved.

Remember that, theoretically, if each group had been given the opposite treatment, the results would have been the same. Even if the trial protocol were perfect and implemented to the letter (it never is), doctors are still guessing as to whether Treatment A would benefit you or not. Sure, the odds are increased that you would get better with Treatment A (presuming

you have exactly the same disease the trial studied, have no risk factors that would have eliminated you from the original study, and fit the age and sex profile of the study participants), but the idea that the scientific evidence gives you any certainty as to the result in your particular case is patent nonsense.

The 'Gold Standard'

So, the 'gold standard' of medical evidence—the clinical trial—works on groups of patients, averaging the benefits (or harm), and then determining how likely it is that the result could have been achieved by chance. An arbitrary probability is usually agreed upon, so that, if a result has greater than, say, a one in twenty chance of happening by luck alone, then the result is not regarded as statistically significant, no matter how much benefit was delivered by the treatment.

Scientific evidence is useful if you are a government, insurance company, or an organisation paying for the treatment of a population. When these organisations are paying for the 'disease care' (as opposed to health care) of their citizens, members, or subjects, they want to minimise their costs and maximise their benefits. Naturally, they will try to achieve the biggest 'bang' for their 'bucks', and will only pay for those treatments with the best overall result.

The argument that a treatment is not valid until it have been proven "scientifically" is dubious. If a treatment has little cost and no danger, what is the harm in patients trying it (presuming serious pathology has been ruled out), even if it benefits only 20% of patients? Such benefit would be unlikely to show as statistically significant in a randomised trial, but may be extremely significant to the 20% for whom it worked.

Now, you may be as comforted as the insurance companies would be, that you are more likely to be in the 70% group, but I am not. What if Treatment A caused major side effects, or carried a risk of liver failure or sudden death? Would you not want to try the placebo first?

The 70% group may have been those that classified themselves as improved or significantly improved after one month on the treatment. Is that what you want? What happens after that?

What were the results after six months, or a year? What happened to the children of those that took thalidomide or DPT (diphtheria/pertussis/tetanus vaccine)? Questions about the longer-term effects are almost never answered in clinical trials because of the costs and complexities of long experiments.

If I were a patient, 'substantial improvement' would not be enough. I would only be satisfied with a cure. But medical trials don't usually have 'cure' as one of the outcome options. In fact, most medical treatments are so ineffective that, if cure was the desired outcome, they would have zero success.

The 'scientific method' itself is only needed when a treatment is so ineffective that the only way to find out whether any difference exists between the treatment and a placebo is a clinical trial.

Let's say you take two packs of playing cards. Each card represents the average improvement of an individual patient, and an ace is the good result you want to measure. If you want to know whether the packs contain the same number of aces and you can't take the packs apart and actually count them, statistical analysis will, in effect, turn one card over from each pack and check to see if it is an ace. If one pack contains only aces while the other contains none, it won't take many comparisons to work out that there is a major difference between the two packs. You don't need a statistical analysis at all.

Contrast this with the situation of very minor differences between the packs so that there are five aces in one pack and four in another. Now you are going to need to turn over huge numbers of cards before you can be statistically certain there is a difference. Statistical packages exist that will calculate how many cards you will need to turn over to be reasonably certain a difference exists, but, in general, the more times you look for aces—i.e., the more patients in a trial—the more certain you become.

This is the 'power' scientists are looking for—statistical power. The higher the power of the trial, the less likely that any difference found during the experiment might be a random or chance effect. (Again an important reminder: power does ***not*** refer to the effectiveness of the treatment.)

Highly powered trials are the gold standard of medical evidence, which is why huge numbers of patients are involved. But such expensive and

elaborate trials are only necessary because the effects (benefits or harm) of the treatments being tested are incredibly small.

Next time you see the results of a study involving thousands of patients, look at those results very carefully. As impressive as the study sounds, it is likely that the effect of treatment is small. In fact, the effectiveness of the treatment is likely to be inversely proportional to the number of patients involved—the more patients, the less effectiveness. This kind of result is true of most drug testing.

As just one example, when researchers analysed the results of all the clinical trials sent to the FDA regarding drug treatment for depression, they were able to include the results of 5133 patients. Because the number of patients was so large, they were able to scientifically conclude that antidepressant drugs did have a statistically significant advantage over the effects of a placebo pill, but the advantage was so small, you would be hard-pressed to tell the difference. In other words, there was a statistically significant difference, but little to no clinically significant difference.[3]

'Number Needed to Treat'

Imagine a trial designed to test the effectiveness of a blood pressure drug to prevent a stroke. Let's say forty out of a thousand in the placebo group have a stroke during the trial period, and twenty out of a thousand in the medication group have a stroke. Presuming the placebo did not contain sugar or other substances that could cause a stroke, you might rightly conclude that the medication led to 50% fewer strokes.

The headline might read, 'New drug cuts stroke risk in half'. The reality, however, is that only twenty out of a thousand (or 2%) actually benefited from the treatment.

To overcome this problem, statisticians can now turn the results of trials into a different measurement, one called 'Number Needed to Treat', or NNT. The NNT is the number of people you have to treat in order to stop one of them from having a heart attack, stroke, death, or other bad thing.

It turns out the number needed to treat for blood pressure medication is at least forty-three, although with some treatments, it is around eight hundred. Put another way, only around 2% of people who would have had a stroke did

not have one because they took blood pressure medication for 5 years.[4] (The benefit is higher if the patient has had a previous heart attack or stroke.)

So, the next time your doctor recommends a medication, ask him or her for the NNT. Or go to **www.live-without-pain.com**, click on the NNT link, and look it up yourself.

Remember: the lower the number, the more effective the treatment. A NNT of one (1) means the treatment is successful in everyone treated.

More Research

In the fields of physics and chemistry, understanding the laws of Nature through science allowed humankind the luxury of manipulating the world to suit its needs. It was naturally assumed that similar results would be achieved in the areas of biology and medicine.

However, the truly huge advances in medicine, like the discovery of antibiotics and the theories of evolution and genetics, were based on careful observation, not the clinical trials that are exalted as today's gold standard.

In theory, scientific medicine seeks to 'prove' causality. It helps us to be 'sure' something works, to *know* that A 'causes' B. But, as we have shown, this very rarely (if ever) happens.

Consequently, according to the scientific literature, the only certain conclusion of nearly all medical research is that we need more research.

Since 1980, the rallying cry in healthcare has been 'evidence-based medicine' (EBM). Medical educators have been trying to move away from the 'apprenticeship' method of teaching and towards teaching doctors how to find, interpret, and use peer-reviewed, published evidence.

At first glance EBM makes sense. Who could fail to endorse objective evidence over opinion and heresay?

But as we have seen, the 'evidence' on which our doctors are urged to rely is quite often unfit for purpose. It is just not designed to inform opinion specific to any individual, even you. Perhaps this is one reason why even good scientific evidence usually fails to change our behaviour (giving up smoking being just one example).

Whether it is generally better to have a 'natural' (non-harmful, health-enhancing) treatment or a 'synthetic' (health-destroying, man-made) treatment is one of those questions that probably cannot be answered with science since the answer you get will depend on the question you ask.

We might be able to test short-term results but long-term consequences are much more difficult to quantify and so are rarely considered. It is up to every one of us to avoid becoming someone else's 'unforeseen circumstances'.

Ironically, whether EBM will produce better outcomes for patients has never been tested scientifically.

chapter 3

nature's way to health

Creating health is much easier than treating disease, and much more effective. Health is a natural state—it's how Nature intended us to be. In health care, our natural wisdom seems to decrease as our knowledge increases.

Since health is our natural state, the best way to optimise health is to restore that natural state, retaining and maintaining as much of our innate or genetic capacity as is humanly possible in the modern world.

While ageing is inevitable, premature decline, sickness, and chronic pain are not. Our natural state is a healthy one, full of vitality and untapped potential.

Interference, intervention, and meddling are the enemies of health and wellness. To live a long, healthy, and pain-free life, we must let our bodies do what they do so well—repair, renew, maintain, and restore.

Definitions of Health & Illness

As separate living beings, each of us fights a daily battle to maintain our health. Even the most basic activity imposes a stress on our body that needs to be resisted. Simply getting out of bed or walking down a flight of stairs places potentially life-threatening forces on your body.

Unless you are elderly or infirm, you can probably manage these basic activities without fear of damage or injury. Why? Because you are robust.

Robustness turns out to be a useful definition of health. The more robust you are, the better equipped you are to withstand the physical, chemical, and emotional strains that are placed on you every day. Robust individuals avoid damage, repair injury, and effortlessly resist the stresses of their environment and lifestyle.

Illness has been defined as 'impairment of normal physiological function affecting part or all of an organism'. In other words, illness is the result of abnormal function.

We are ill or unhealthy when we succumb to injury or tissue damage. Under this definition, arthritis, diabetes, a sprained ankle, and a heart attack are all the *same* thing. They are symptoms of a body that is unable to withstand or repair a stress, although the mechanisms of the stress and repair may be quite different.

Failure to understand the commonality of all disease as being a lack of robustness has lead to the absurdity of modern medicine's desire to label every pathology, while only knowing the cause of a handful of diseases.

Our Natural State

As noted above, health is the natural state of every living organism. We don't need to improve health because health cannot be improved. Health can only be lost, compromised, or diminished.

Everyone is preprogrammed for health. Some of us have bodies more like a Lada than a Porsche, but each of us grew from just two cells into an enormously complex being, capable of repair, movement, maintenance, and growth.

So, what is important is not the body you were blessed with, but how well it is working. How well you manage your health is much more important than your age, your parents, or when you last had your blood pressure checked.

We know many things that decrease our health. Starvation, vitamin deficiency, dehydration, poisoning, food contamination, broken bones, physical and emotional trauma, are just some of the causes of diminished health. They are stresses that interfere with the proper function of a part of our body, and this has a detrimental effect on the whole.

Too Much Bad Stuff (Toxicity)	Too Little Good Stuff (Deficiency)
Radiation	Vitamins
Trans fats	Minerals
Sugar	Water
Organophosphates (found in pesticides)	Air
Lead	Protein
Mercury	Calories
Aluminum	

The severity of the detrimental effect will be related to how rapidly the affected body system can react to the stress and repair the damage.

A healthy individual deprived of food will live for months. Deprived of water, they will live for days. Deprived of air, they will live for minutes. Deprive them of the functions of the brain—they will die instantly.

Total Control

The nervous system is often overlooked in western medicine because it cannot be examined through a microscope or assessed on an X-ray. Yet, it controls almost all body function. It is also very vulnerable to interference.

We often assume that our nervous system is working fine when it isn't. Living with a malfunctioning nervous system can damage your health just as efficiently as vitamin C deficiency or lead poisoning.

Our nervous system is in total control of our awareness of the outside world. We depend on nerve sensors for our safety. Sight, smell, taste, touch, and hearing help us to recognise a hazardous situation and take whatever action is necessary to avoid injury and enhance survival. Danger is anything that can potentially harm us, from a food that has gone off, to a car heading towards us.

Our reflex reactions to major threats are easy to observe and understand. However, it is not so easy to appreciate that the same survival and reflex mechanisms that allow us to escape from obvious danger, also operate to protect us against the most trivial of stresses.

Of course, the ability to sense danger would do us no good if we had no way to react to it. Our safety and survival rely on movement, which again

is controlled by nerves, their commands being accomplished by muscles. Thankfully, most of our danger-avoidance mechanisms function totally unconsciously, mostly via reflexes, avoiding the delay that conscious thought would involve.

Unfortunately, because we are unaware of the mechanisms involved, we have a tendency to be careless in the way we treat our bodies, often altering them in ways that interfere with our reflexes. This makes us less able to avoid danger, and, consequently, more susceptible to injury and disease.

Healthy As the Day You Were Born

Understanding how nerves and muscles work together to generate muscle strength is an area of medicine that has previously been unknown or ignored, but it is now the basis of this new theory of disease.

The integration of our senses and our muscles is part of a process known as *proprioception.* Once you understand what proprioception is, what it does, and how it goes wrong, you will know how to make yourself healthier, happier, and more robust than ever before. You will know how to live without pain and to avoid injuries that you previously would have thought were due to wear and tear, old age, or bad luck.

It's all totally natural... no gimmicks or extra expense... just a commonsense approach to making your body work the way it should have done all along. Armed with this knowledge, you can become as healthy as you were the day you were born.

In fact, you can become even healthier.

Reactive Medicine	Proprioceptive Medicine
This for that	Why is that?
Short-term fixes	Long-term solutions
Diseases are things	Diseases are descriptions of how things are
Symptoms need to be treated	Symptoms are normal responses
Treatment via drugs and surgery	Stop interfering with Nature
The body needs help	The body needs no interference
We know best	We know next to nothing
Looks to science	Looks to the natural order of things

Section II

Proprioception:

The Key to Good Health

chapter 4

how and why we move

In medical schools and textbooks, proprioception is defined as 'body position sense'—the ability to know where our body is at all times.

In other words, proprioception refers to our uncanny capacity to know almost exactly where our arm, leg, or finger is, without having to look at it. With proprioception, you can estimate the angle of your elbow, the position of your hand, and the spread of your fingers. If you had to touch your nose, you could do so, even with your eyes closed.

But, as impressive as this ability is, it is only part of the proprioception story. The ultimate purpose of proprioception is to control the way we move.

Proprioception gathers continuous input from the millions of sensors in our skin, muscles, joints, and ligaments... combines that with the input from our five main senses... then uses it all to control our balance, coordination, posture, and movement.

Whether you're picking up a glass, throwing a ball, watching television, or walking down a step, proprioception is constantly monitoring the input from the nerve sensors in your body, to make sure that the output to your muscles is perfect. This is a system so complex, diverse, and adaptable, that no amount of robotic or computing power can come close to duplicating the smooth and coordinated movements of the human body.

Your Brain & Its Messages

Your brain is a processing centre. It doesn't actually generate anything; it just connects the mass of incoming signals in the right way. Our every thought and action starts life as an *incoming* nerve signal.

The reason we don't survive hanging (except in rare cases) is because we can only survive about fifteen seconds once the spinal cord is cut or torn at the top of the neck. Those last seconds are courtesy of the small amount of input from the muscles of the head, and the sensory input from taste, smell, sight, and hearing.

The barrage of incoming nerve signals is the raw material that creates all brain function and, therefore, all human function. And most of those incoming nerve signals originate in the muscles themselves.

The brain's function is to turn those incoming nerve signals into *action*. In human beings, action will mean making muscles work, and, to a lesser extent, controlling our glands and our digestion.

Thus, brain *output* is determined by its *input*—input that comes mainly from the nerve sensors which control proprioception.

Nerve messages are classified as either incoming or outgoing. Incoming nerve messages are heading *towards* the spinal cord or brain and are known as sensory, or afferent. Outgoing nerve messages travel *from* the brain or spinal cord and are intended to make something happen; they are therefore known as motor, or efferent.

The ability for us to move at all—let alone perform somersaults, catch a ball, go to the toilet, or climb stairs—depends on the seamless integration of these two types of messages.

Sensory Input

Our awareness of the *outside* world is maintained through the five senses of sight, smell, taste, hearing, and touch. Our awareness of our *inside* world is maintained through proprioception. It really is our 'sixth sense'.

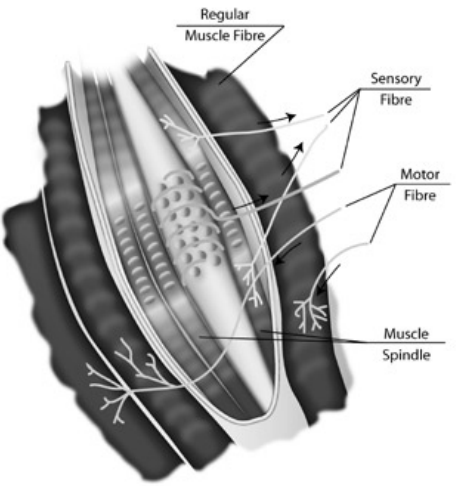
Proprioceptors are a special group of sensors found throughout the body. They provide information on the movement, position, tension, and force in every area of the body.

Most proprioceptors, especially those in the skin, send messages only when they are stimulated, but a special class—known as muscle spindle cells—sends a constant stream of messages to the spinal cord and brain, even when the muscle is resting.

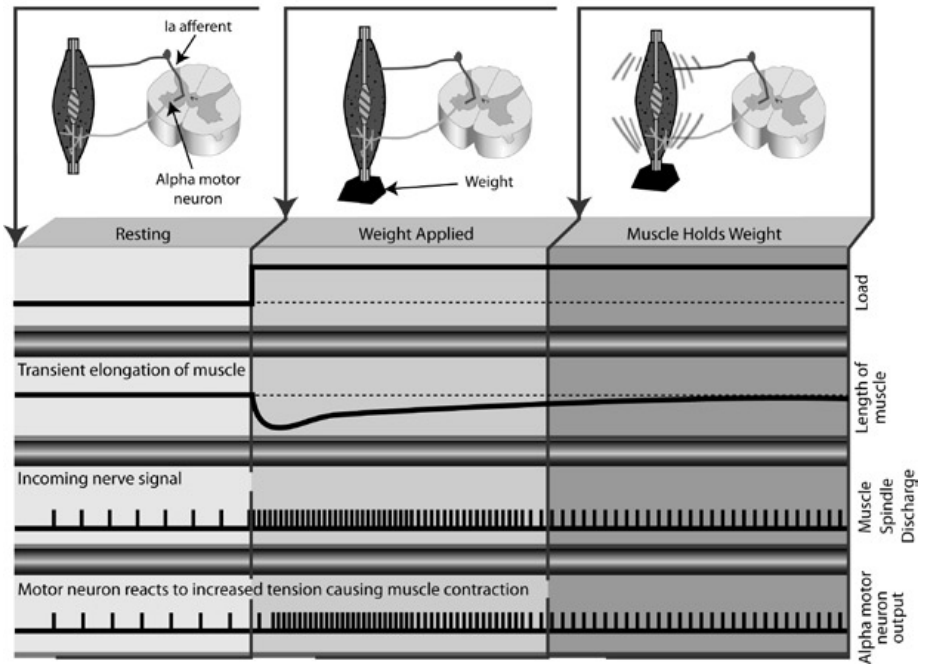
These spindle cells are smaller muscle fibres that sit alongside ordinary muscle fibres. Their job is to detect the slightest changes in the tension of the muscle.

Every muscle spindle cell constantly generates signals which travel from the muscle to the spinal cord. Like the rev counter of an engine, they are constantly active, responding to the activity of the muscle.

The Muscle Spindle



The Myotatic Reflex



Whether the muscle is fully stretched or semicontracted, the muscle spindles adjust their output to reflect the amount of tension in the muscle. This way, the muscle is ready to react at any time, no matter its position.

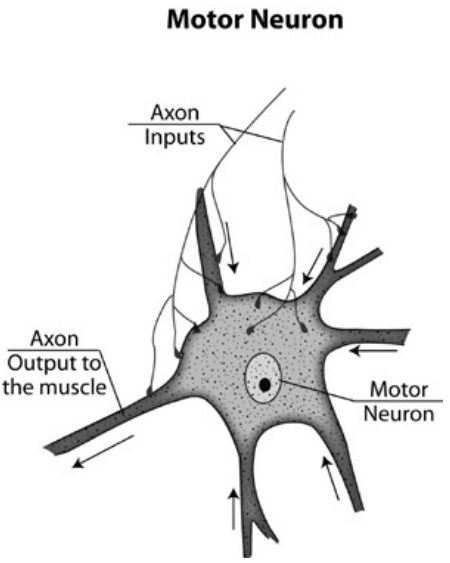
All proprioceptive information is sent to the spinal cord to perform two functions. First, it controls muscle tone, and, second, it supplies the brain and higher processing centres with vital feedback.

Although a great deal of sensory information reaches the brain, most of it is filtered before it gets to the consciousness. A majority of nerve messages never get as far as the brain; their reflex effects are managed within the spinal cord, totally independent of brain control.

In animal experiments—of which I do not approve—on decerebrate dogs (dogs that have had their spinal cords cut in the neck), researchers have found that that when they tickle such a dog on the shoulder blade, the dog will lift its hind leg on the same side to 'scratch' the 'flea' that is annoying it. When the tickling crosses the spine, the other leg starts scratching. This movement is occurring without any input from the brain; it is purely under reflex control. Similarly, a walking movement will be provoked simply by pushing on the pads of the dog's paws.

Motor Output

Motor output simply refers to messages sent from the brain to the body. These messages are designed to produce an action.

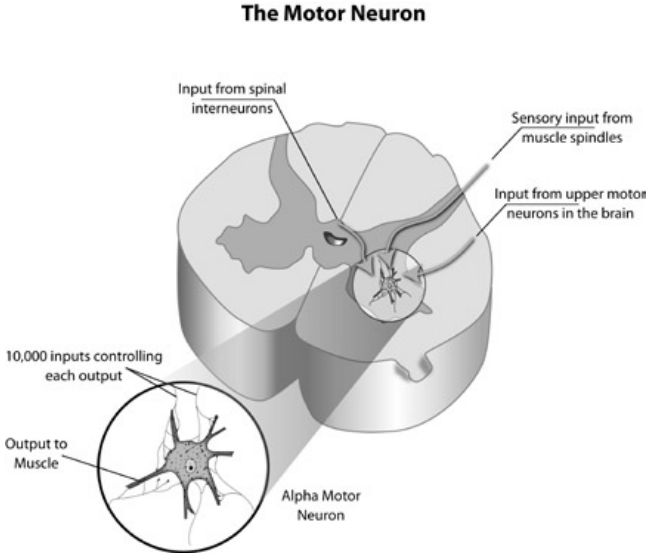


Although most of our conscious movement occurs via muscles that are traditionally classified as voluntary, up to 90% of our 'voluntary' muscle activity is totally subconscious or involuntary, controlled by reflexes that originate in our proprioceptors. It is this involuntary activity that stabilises, holds, controls, and limits the movements of our bones and joints.

All muscles are made of muscle fibres which contract when they receive an impulse from special nerve cells in the spinal cord called anterior motor neurons (which is a silly name because there are no posterior motor neurons).

Motor neurons are fascinating cells with only a single output. All they do is send messages—actually electrical impulses—to muscle fibres. A single motor neuron will supply one or more muscle fibres, so thousands of motor neurons have to act together to bring a muscle to full contraction. Every time they send a message, a muscle fibre, or fibres, will contract. The faster the messages are sent, the faster the fibre will contract. The more motor neurons that are sending messages, the stronger the contraction will be.

But what makes motor neurons really fascinating is not their output, but their input. Each motor neuron receives up to 10,000 different inputs—messages from other nerves—bringing information from other muscles, skin, tendons, ligaments, bones, and the brain. However, a motor neuron will not send a message to a muscle fibre until it has accumulated enough inputs. For your average motor neuron, this would be about 70mV (the work of nerves is measured in milli volts). Since each input supplies only one-half to one mV, it is impossible for any one input to cause an output.



Then, to make life even more complicated, not all inputs are positive (*facilitatory*). Some are negative (*inhibitory*).

So, each neuron waits until it receives enough facilitatory inputs to outweigh the inhibitory inputs. When the net total reaches about 70mV, the neuron fires, sending a signal to make a muscle fibre (or several fibres) contract. To put this in mind-boggling terms, we also need to remember that, even at rest, each motor neuron is firing fifty times per second. At maximum effort, each one is firing five hundred times per second.

Instructions

Motor neurons (and therefore muscles) receive their instructions from three main sources:

- Their own sensors in the muscle (muscle spindles)
- The brain
- Interneurons that receive inputs from proprioceptors in the skin, ligaments, tendons, and other muscles

Muscle spindle inputs we have already covered. Instructions from the brain are fairly self-explanatory and, technically, far too complicated for this discussion.

But interneurons are special nerve cells that interconnect messages from other nerve cells within the spinal cord. It is interneurons that supply the bulk of the 10,000 inputs to each motor neuron, and these inputs come from the mass of proprioceptors throughout the body, mainly in skin and muscles.

Thus, interneurons allow muscles to work together, sometimes moving, sometimes stabilising, sometimes balancing. Even simple operations like walking involve the whole body—trunk, spine, neck and arms, as well as the legs. As the tension changes in one area, proprioception will increase or decrease the tone of many others.

In other words, how and why we move comes down to proprioception. And, as we shall see in the next chapters, that means that proprioception truly is the key to our good health.

chapter 5
reacting to the world

If our *awareness* of the outside world comes from our senses, our *reactions* to the outside world are controlled by our reflexes.

When we think of reflexes, we typically think of an unexpected reaction to an outside stimulus. We might duck in response to a loud sound, dodge if we see something coming towards us, retract if we touch something hot, or pull away if we stand on something sharp.

All these 'reflex' reactions occur when muscles contract in response to an obvious external stimulus.

The reality is, outside forces are stimulating our muscles every time we move, run, jump, walk, throw, catch, get out of bed, or hold our head up, and our reflexes govern our reactions to those forces. Reflexes are ultimately responsible for the action of our muscles and, so, govern the way we move.

Reflexes are, by definition, actions that occur before the brain is aware of what is happening. Reaction to a stimulus is processed in the spinal cord, bypassing brain control. Naturally, if movement results, the brain will become aware of such movement and can regulate it somewhat, but the brain cannot control it.

Reflexes usually have five (and always four) separate parts:

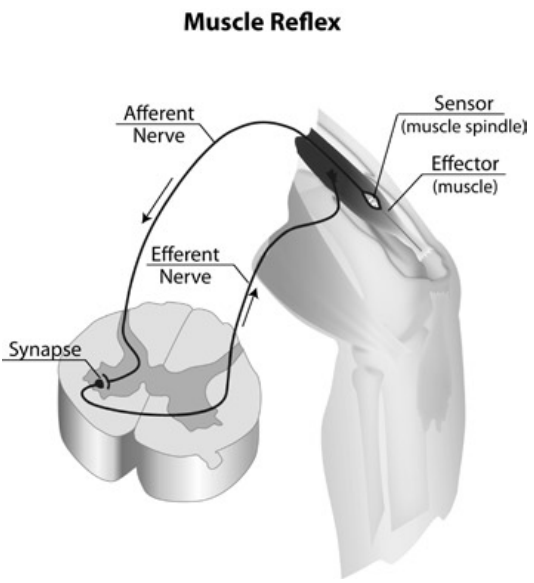
- A sensor

- A sensory nerve that carries the message from the sensor to the spinal cord
- An interneuron—a relay nerve, as discussed in the previous chapter (Some reflexes bypass the interneuron; others go via three or four interneurons.)
- A motor nerve that carries the message from the spinal cord to the muscle
- A muscle fibre that contracts

The Stretch (Myotatic) Reflex

One of the best-known reflexes is the knee-jerk reflex. You sit with your leg dangling towards the floor and your leg is tapped just below the kneecap. Hopefully, your foot will shoot out and then relax back to its starting point.

This reflex's sensors are the muscle spindles located in the quadriceps, or thigh muscle. You will remember that these sensors constantly generate nerve signals.



As the tendon is tapped below the kneecap, a small but sudden stretch is felt by the spindles. The spindles respond by 'revving' the engine, i.e., suddenly increasing the frequency of messages to the spinal cord. The muscle spindles' increased rate of firing relays directly and indirectly to the anterior motor neurons.

The anterior motor neurons now have more sensory input, so their output suddenly increases. The muscle contracts, and, instantly, your foot shoots out.

Not Just for Fun

This reflex does not exist simply for the amusement of doctors and young children. In life, this reflex works to protect our joints from injury.

Imagine a gymnast landing on a mat after a somersault. With her legs bent, she is ready for impact. As her feet touch the mat, her knees bend further. The quadriceps muscle on the front of her thigh starts to stretch. Sensors within the muscle detect the speed and force of the stretch, and fire rapidly. The nerve from the muscle carries the massively increased rate of firing back to the spinal cord, where a direct connection is made to the nerves that control the tone (strength) of the quadriceps. The massive increase in nerve activity is transmitted straight back to the quadriceps, causing it to contract instantly.

The faster the muscle stretches, the faster the response will be. Failure to contract hard enough would cause the gymnast to end her leap sprawled on the ground; too much contraction, and she would be flung straight up in the air again.

The example of the gymnast teaches us that feedback from the stretch of a muscle dynamically alters the muscle strength output in a way that protects our joints and our bodies from injury.

Most of us will never be doing somersaults, but we use those same reflexes every time we walk down stairs, jump off a chair, throw a ball, or bend over to pick up a pen.

Think back to the last time you jumped off a chair, or, if you haven't done it for a while, try it now. You may have had time to plan the landing, but did your planning really help?

Most of the time, the landing is done on autopilot. Feedback from muscle spindles in your thigh told the motor neurons in your spine exactly how much force to generate so you could land without injury.

Constant Adjustment

Muscles constantly adjust their tone to control our movements.

If you can, squat down on the floor right now. Don't hold onto anything. Just balance. Notice what is happening to your feet and ankles.

Do you feel the tiny adjusting movements keeping you on balance? These movements are the result of reflexes coming from the muscles themselves. Those same reflexes are operating in every muscle, throughout your body, all day, every day.

Imagine you were walking across rocks and your foot suddenly slipped. The muscles holding your foot would be stretched very rapidly, causing the spindle cells to increase their rate of firing back to the spinal cord. Direct connections to the nerves that contract the muscle are increased, and the muscle suddenly fires, holding the foot, and preventing a sprain of your ankle ligaments.

The reflex that caused your foot to shoot out when the kneecap was tapped, and stopped our gymnast from collapsing on the floor, is actually the same reflex that keeps your ankle safe from sprain or strain while you walk.

24/7

Actually, it is unfortunate that the stretch—or myotatic—mechanism was ever called a reflex because most people link reflexes with one-off events, like the knee jerk. But the myotatic mechanism is unlike all other reflexes because it functions twenty-four hours per day, constantly monitoring and maintaining appropriate muscle tone.

When we bend forward to pick up a pen off the ground, we often forget that muscles all the way up our spine are working to hold our weight, that our calf muscles are contracting to push our toes into the ground, and our neck muscles are active to hold our head up. When we pick up a chair or a bag of cement, the sensors in the muscles that move the vertebrae in our spine will have more or less tension placed upon them, and they will vary their output accordingly. As we lift the weight, the amount of tension in the muscles increases, and the muscles increase their power to hold our spine firmly.

These stabilising muscles are vital for our joint function and safety. If the stabilisers don't work with enough speed or strength, then the joint is likely to be sprained, strained, or damaged. This can happen in one major accident, leading to strain or sprain. Or it can happen over years, causing the wear and tear we know as osteoarthritis.

The Stretching Myth

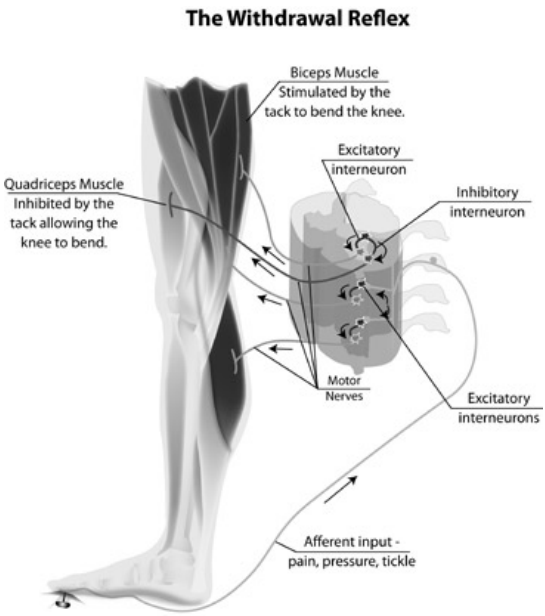
When you throw a ball, almost the only thing that stops your arm from leaving your body at the end of the throw is the contraction of your shoulder muscles, a contraction that only occurs when the myotatic reflex is activated by the stretch on the muscles.

Understanding the myotatic reflex helps us understand why, ***despite conventional wisdom, simple stretching is next to useless as a warm-up, warm-down, or injury prevention measure.*** Every time you stretch, the muscle you are stretching will increase its rate of firing, making that muscle hold even tighter.

Although pre- or post-exercise static stretching has never been shown to prevent injury, nearly all athletes do it religiously, and coaches often insist on it. If you really want to warm up for a sporting activity, or even to mow the lawn, do some push-ups, jump up and down, or go for a short run. Making your muscles work increases the brain input from your muscles, making them stronger, and conditioning your mind and your body for the work ahead.

The Withdrawal (Flexor/Polysynaptic) Reflex

The stretch, or myotatic, reflex is just one of the reflexes vital to our survival and safety. We also need the withdrawal reflex—the name given to the sequence of events that lifts your foot off a nail, pulls your hand from a hotplate, or causes you to flinch when tickled. It is often called the flexor withdrawal reflex, or the polysynaptic withdrawal reflex, but the simple 'withdrawal reflex' is very descriptive because it functions to move us away from danger.



If we stand on a nail, pain sensors in our foot are activated, causing contraction of the hamstrings and calf muscles which lift our foot off the nail. Without such a reflex, we might carry on walking normally and do much more damage. The sensors in our feet respond not just to pain, but also to pressure and light touch. Notice the way we flinch when tickled, and find it difficult to walk with a pebble or other small object in our shoe.

If our gymnast were to land on a nail or sharp stone, feedback from the skin via the flexor withdrawal reflex would activate the hamstrings and cause the quadriceps muscle to be inhibited (switched off). Switching off the very muscles she needs to break her fall would cause her knees to buckle, and she would land in a heap on the floor—but she would not step hard on the sharp object.

More Than Danger Control

Proprioceptors in our skin detect pain, pressure, light touch, vibration, and temperature. All are linked to relevant muscles by the withdrawal reflex so that, should any of these sensors pick up a sudden change, the part that is threatened will be drawn away rapidly.

You will probably recognise the withdrawal reflex in the feet (standing on a nail) and hands (pulling away after touching a hotplate), but it operates throughout the body. From the agony of biting on a stone to the hysterics of a child being tickled, the withdrawal reflex is always ready to prevent continued irritation, and it does so by altering muscle strength, activating some muscles and inhibiting others.

But the flexor withdrawal reflex does more than just sense danger. The fast connections between sensors in our skin and our muscles help us with movement control.

When we catch a ball, skin sensors will help us gauge its weight. This information is combined with information about the amount of tension on the biceps muscle. That combined information will then be interpreted instantly in the spinal cord so that the right amount of counterforce is generated to allow us to hold the object still, rather than dropping it or throwing it back into the air.

The Law of Reciprocal Inhibition

When we think about reflexes, we will naturally think most about the muscles that are actually doing the work.

Since muscles can only pull and never push, they need opposing muscles to pull the joint back to its starting position. Muscles therefore work in pairs, known as agonists and antagonists. An antagonist is simply a muscle (or muscles) that opposes the movement of an agonist. Muscles can shift very quickly from being agonists to antagonists, and back again.

The easiest muscles to use as an example are the biceps and triceps, the muscles that move the elbow. Whenever we bend our elbow, the biceps contracts. As the biceps is contracting, messages are sent to the triceps to temporarily tone it down. The biceps is said to be facilitated, the triceps inhibited.

Sometimes the elbow can straighten with no effort by the triceps (as when we put down a drink), but, if effort is required (e.g., doing a push-up), then the triceps would be facilitated and the biceps inhibited.

Thus, the Law of Reciprocal Inhibition creates muscle partnerships which help control our movements and reactions.

Opposites

Whenever a motor neuron gets a message to fire, nerves controlling the opposite muscle (or muscles) receive an inhibitory message. In the knee-jerk reflex, facilitation of the quadriceps would accompany inhibition of the hamstrings (the opposite muscle). This ensures the muscle actions don't cancel each other out.

We are never aware that our muscles are inhibited. We don't feel anything in our hamstrings when our knee is tapped, even though the hamstrings are temporarily weakened. When we lift our arm, we feel nothing in the muscles that would usually pull the arm down, but they are inhibited none the less.

Much of the control the brain exerts on our movements is actually inhibitory. Without inhibitory input from the brain, our muscles would contract spontaneously, giving the curled-up posture we sometimes see in people who have had a stroke. Thus, smooth movement depends on inhibitory

inputs, not just from proprioceptors, but from the brain itself.

Inhibition is not paralysis. If one of the muscles in a pair were completely inhibited, the unopposed muscle action would quickly pull the bones out of position. Our joints would become unstable and dislocated. Partial inhibition allows the opposing muscle to maintain the right amount of muscle tone so that the joints stay in alignment. When the agonist and antagonist muscles work together, the joints are stable but flexible.

The Law of Reciprocal Inhibition plays an important part in the symphony of harmonious and controlled movement.

That 'law' operates consistently, throughout the body, during the smallest movement or the most violent. It occurs in the neck, back, hips, legs, abdomen, ankles, feet, and toes—anywhere muscles move bones. Without it, we would find it difficult to move at all. Opposing muscles would compete with each other, and our joints would flop around in an uncoordinated fashion.

The point is that any *excitatory* input from the stretch (myotatic) reflex or the withdrawal (flexor/polysynaptic) reflex is also *inhibitory*. Every time an input switches on one muscle, it must be switching off its opposite.

That's the way our bodies work when they are working properly, and we are avoiding injury.

chapter 6

the hidden cause of injury

In its most basic form, injury is caused by our inability to resist an outside force. That force can be as overwhelming as the impact of a bus, or as minor as overcoming gravity as we raise our hand. When we fail to resist the force, the tissues that would do the resisting become stretched, torn, or bruised.

Apart from skin and bone, the body parts most likely to be injured (and cause pain) are joints and muscles. And, when we talk about joints being injured, we are really talking about the structures that support the joints—ligaments and muscles.

Ligaments are designed to prevent excessive movement. Because they have almost no elasticity, they play little to no part in normal movement. Instead, they stabilize the joint and prevent dislocation.

Therefore, it is our muscles that prevent most injuries. Muscles are the only structures in the body that have the ability to stabilise joints throughout their range of motion and therefore to resist outside forces.

Injuries That Don't Happen

Nearly all potential injuries never happen. Healthy people run, skip, dance, and jump without caring, or even noticing, that their muscles are constantly adjusting their posture, weight, balance, and coordination to make sure they don't sprain an ankle, dislocate a shoulder, twist a knee, or 'spasm' a neck.

Occasionally we make a mistake. Falls, bumps, bruises, and scrapes are all part of life. Mostly we pick ourselves up, dust ourselves off, and let our body get on with healing itself—a job it normally does very well.

Except when it doesn't.

Sometimes, people do sustain injuries that don't get better by themselves. Most of these are known as musculoskeletal injuries, which means they affect the muscles, tendons, or joints.

Although, technically, these injuries are classed as strains (for muscles) and sprains (for joints and ligaments), they are essentially the same injury, since they involve excessive force which overstretches certain tissues (muscles or ligaments), resulting in partial or total tears of those structures.

Surprisingly, the severity of the injury is in no way related to the severity of the force. Most 'slipped discs' occur with a minimum of trauma, often no more than picking up a pencil (although lawnmowers and pianos are not uncommon). Repetitive strain injury may occur from using a keyboard or a mouse, an activity other people can do for hours without any injury at all.

Most people put their injuries down to an accident, activity, or event. They almost always know when their problem started, and, logically, they tend to blame it on that event, whether it was as trivial as bending over to light the fire or as major as a car accident. It is always the event that is blamed, yet the event or accident is almost never the real problem.

The *real* problem is the lack of muscle tone that allowed the event to occur.

Healing Time

Strains, sprains, and broken bones have known healing times that are reasonably consistent. Sprains take about six weeks, strains a bit longer, and most broken bones heal within twelve weeks, depending on the age of the patient.

Injuries that go well beyond their normal healing times are a challenge to patients and their health professionals. For these patients, recovery time is often not related to the severity of the injury. Many patients who end up in hospital with severe fractures make an almost total recovery, while others who have a slight bump are still incapacitated years after the injury. Some

get better (the pain goes away) only to have the problem (or the arthritis it caused) return at a later date.

Modern medicine has no answers for individuals who go outside the norms of healing time. They are given exercises, surgery, and painkillers, but often end up in chronic pain or on antidepressants.

To understand why some people are unable to heal, we need to question the assumption that the event was the problem. Perhaps the event was just the event; the problem was our inability to *deal* with the event.

The Cause of Nearly All Injury

Our bodies are always resisting outside forces. Just walking down a step produces a force through our ankle, knee, and hip, which could cause injury if it were not for the ability of every muscle to assess the amount of tension being applied to it and act in a millisecond to resist that tension. Our muscles are always at the ready—willing and able to protect us from the certain injury that would otherwise accompany even such normal activities as walking, running, jumping, or sitting.

By controlling the movement of joints, muscles prevent injury. Thus, if muscle tone or strength is lost, injury is more likely. Joints can be sprained or strained, muscles can be torn, cartilage can be ruptured, ligaments and discs can be torn; in fact, almost any injury is possible with a lack of muscle tone. Put another way, ***a lack of muscle tone is the cause of nearly all injury.***

Researchers studied Australian Rules footballers. They measured their preseason hamstring strength, and then waited to see which players injured their hamstrings during the season. They found that those players with hamstring weakness were most likely to receive hamstring injuries.[5]

Most painful conditions are joint or muscle injuries. Frozen shoulder, carpal tunnel syndrome, tennis elbow, torn cartilage, repetitive strain injury, torn ligament, pulled muscles, slipped discs, and whiplash are all variations of the same basic injury. When a muscle fails to protect a joint from excessive or inappropriate movement, then damage and inflammation results.

The answer to such injuries is not anti-inflammatory medication; it is to restore proper muscle tone. Normal muscle control will take the stress off

an injured joint, permit faster healing, and prevent further injury.

Unfortunately, most patients and their doctors see the chicken before the egg. They look at the injury, find the weakness, and presume the injury caused the weakness. Since the patient's muscle reflexes and responses were never tested before the injury, the fact that there was a predisposition to injury is never discovered.

Naturally, there are a few cases where a trauma would be sufficient to overcome even the most toned of muscles. In these cases, normal muscle tone should stabilise the joints sufficiently to allow full and proper healing.

Clearly, muscle tone is something we tend to take for granted; yet it is the key to injury prevention and recovery.

I Don't Need Exercise?!

Before you dismiss this book as yet another promotion of exercise, let me tell you the most astounding and controversial thing about muscle tone: ***most muscle tone has nothing to do with exercise.***

When we exercise, whether by walking or lifting weights, we control our muscles *consciously.* Our brain decides on a set of actions, and sends messages to the processing centres of our nervous system to have us carry them out. Neurologists[6] call this feed-forward muscle control, but, for our purposes, let's call it *proactive* control.

Proactive control is used to produce the *propulsive* force needed for a bench press or the extension of an arm to pick up a pencil. Such an action is initiated with a brain-generated plan that integrates sight, sound, balance, and touch to formulate an outline of the desired movement. Processing the plan involves complex feedback mechanisms influenced by the cerebellum and thalamus, and by other brain centres, including the vestibular. Proactive control is the system most commonly employed in athletic training, rehabilitation schemes, and physical therapy designed to increase muscle strength through controlled repetition of deliberate actions.

Unfortunately, as any doctor will tell you, most injuries do not occur during controlled activity. Most injuries occur at times when we are off guard, or 'forget' to move properly. Sprains and strains usually occur during routine

activities we have done thousands of times before— throwing, lifting, walking, running—and, although 'this time' might have been slightly different, it is usually a quite innocuous movement or activity that causes the injury.

So it is not a lack of 'training' or proactive strength that causes the injury; it is a lack of *reactive* tone or strength that causes our body to fail and our tissues to give way.

Reactive Control

Reactive control is a local control system in which signals from sensors in the muscle and skin are compared with a desired state, predetermined by the brain in the proactive control phase. It uses spinal-level reflexes to resist, reverse, or oppose unexpected external forces that might take our movements off target or off position. Reactive control uses quite a different set of processes than the *proactive* system.

If I drop a tennis ball and you reach out to catch it, your ability to compute the angle and velocity of the ball, work out where your hand needs to be, and then move it there, would all be defined as proactive control. The reflex reaction of your biceps, triceps, flexor, and extensor muscles caused by the stretch on their respective muscle spindles as you catch the ball would constitute reactive control.

Reactive control depends mostly on the stretch, or myotatic, reflex (discussed more fully in the previous chapter). The reactive myotatic muscle control mechanism is what prevents an ankle sprain if a rock gives way suddenly under your foot. The sudden stretch of the muscles on the outside of the ankle (the ones that prevent a sprain) will increase the firing from those muscle spindles, directly stimulating the motor neurons to increase their output, thus holding the ankle steady and preventing damage to the ligaments, bones, and joints. It is reactive control that will tighten every shoulder muscle at the end of a throw to keep your arm attached to your trunk. It is reactive control that stabilises your spine when you bend over to pick up a lawnmower.

Reactive muscle control prevents injury by constantly adapting muscle tone to the tension applied to the muscle, thereby limiting the amount of load

transferred to surrounding tissues. And, because it uses spinal-level reflexes, it does so at speeds that could not be achieved with processing in the brain.

Being a neurological mechanism, reactive muscle control is not related to the physical capacity of the muscle or the training of the individual. Good control can exist in a eighty-three-year-old woman who weighs fifty kilogrammes just as easily as in a twenty-five-year-old bodybuilder who weighs eighty kilogrammes. Equally, both individuals can suffer from many kinds of proprioceptive interference that will leave them with a faulty reactive mechanism.

Faulty reactive muscle control is the number one reason for musculoskeletal injury, including all kinds of sprains, strains, tears, and osteoarthritis.

Always Working

Reactive feedback control is often found lacking in patients with injuries. Although researchers have found persistent muscle inhibition after injury[7], most assume (wrongly, in my opinion) that the inhibition was caused by the injury. It is equally probable that the injury was caused by the inhibition.

Our muscles are always working. As noted in Chapter 4, even when we are totally relaxed, nerve messages are sent from muscle spindles to our spinal cord and back again, at least fifty times per second. This is called resting muscle tone. Resting muscle tone is vital to keep our muscles ready and able to hold us, no matter what we are doing at the time. There must be no delay, no downtime.

When we are working a muscle to its maximum, messages are sent from the spinal cord at a rate of five hundred times per second. The more often a signal is sent, the harder and faster a muscle fibre will contract.

If anything reduces our muscle tone by causing persistent muscle inhibition, we are more likely to be injured.

Muscle Tone Protection

Over time, bones and joints that are not properly protected by good muscle tone may suffer multiple minor sprains or strains. Eventually, this is called 'wear and tear', or osteoarthritis.

Researchers have discovered that osteoarthritis of the knee is actually caused by weakness of the quadriceps muscle[8]. Although they have not identified the cause of the weakness, the researchers know that, without good strength in the muscles that control the joint, the joint will move badly and the abnormal movement will cause the joint to degenerate.

Muscle weakness causes poor posture. If muscles are weak, posture will change as the inhibited muscles fail to hold the bones and joints in the correct position. Rounded shoulders, spinal curvatures, fallen arches, foot pronation (toes turned out), knock-knees, and a 'twisted' pelvis can all result from persistent muscle inhibition.

An Injury Waiting to Happen

Patients with faulty reactive muscle control are *much* more likely to be ill or injured than patients with good control. Even if they have not been injured yet, they are just an injury waiting to happen.

Our bodies will still work in the presence of persistent muscle inhibition—just not very well. By itself, muscle inhibition does not cause swelling, pain, or inflammation, so there are no symptoms of weakness, and, because it is subconscious, we are not aware we have any weakness at all. We may put up with minor aches and pains without ever realising we are predisposed to an injury.

If your back muscles are inhibited by 10%, you may live for years with no apparent ill effects. Stiffness, osteoarthritis, and a lack of range of motion might bother you occasionally, but, as long as you never have to use more than 90% of your back strength, you may feel only minor aches and pains that can be treated easily with a painkiller or gentle activity.

If, however, you were to pick up the lawnmower or reach into the back seat of your car to pick up a bag, your back may give way because the inhibited muscles would be unable to support your joints effectively.

Many people with inhibited neck muscles have no idea their muscles are underperforming until they have a car accident. Their inhibited muscles allow far more movement than would be predicted by the speed of the impact and, thus, a far greater injury results. These patients struggle with their injuries two, five, or ten years after the event, because the underlying cause

of their problem was never recognised as dysfunctional proprioception that caused poor muscle tone. Even if muscle weakness is found and attributed to abnormal proprioception, it will often be presumed that the weakness was caused by the accident, rather than it being a major contributing factor to the injury.

Resistance

As seen above, muscle tone gives us the ability to resist outside forces, forces that would otherwise cause injury. But inhibited muscles can't provide that resistance.

And inhibited muscles cannot be strengthened with exercise because the muscle tissue itself is already strong; it's the action of the muscle that is weak because the control mechanism has failed. Using an inhibited muscle is like trying to make a car go when the throttle cable is made of rubber. The car has potential power; we just can't use it.

So, the question is: what causes persistent muscle inhibition?

Answer: abnormal proprioception, i.e., problems with our bodies' internal sensor systems.

It does not matter how strong a muscle is; if the reflexes that control the muscle are compromised, the muscle will not function correctly.

For example, it doesn't matter how much you exercise, how toned your body is, or how strong you are—if someone sticks a knife in your back, you will move. Your back muscles will contract and your front muscles will be inhibited.

Exercising muscles inhibited by faulty proprioception only increases the damage to the joints. Indeed, exercising a muscle that has faulty proprioception cannot produce meaningful or lasting changes in strength, which is why so many injuries become chronic and so many athletes have their careers terminated through chronic or recurrent injury.

It is proprioception that generates muscle tone, and proprioception that governs robustness, not exercise. This is the folly of exercise regimes following injury. One study found that in most cases of knee injury, a degree of muscle inhibition remained in spite of extensive rehabilitation and

exercise.[7] In my opinion, the reason these researchers couldn't eliminate the inhibition they presumed was caused by the injury, is because the inhibition was there before the injury. In fact, the injury would never have occurred without the inhibition.

This inhibition came not from a lack of exercise, but from proprioceptive irritation. When the cause of the irritation is removed, the inhibition will vanish, whether or not the patient exercises.

Exercising after injury is like changing the oil every day when you have a flat tyre. You are doing something useful, but it's just not what the body really needs.

Correcting the Problem

The only way to correct muscle inhibition is to alter the proprioception that caused the weakness in the first place. Once your muscle inhibition is corrected, your joints will be held in the correct alignment, and you will be able to resist whatever forces you subject your body to. Gradually, your pains will evaporate as your ligaments heal, your osteoarthritis won't hurt because there will be less strain on the joints, and you will be able to do things you haven't managed in years.

With full muscle strength, you will be able to work longer, play harder, run faster, jump higher, than you have been able to do before.

Many people are told to rest or decrease their activities due to an injury. I hate to think how many millions of people have had their promising work or sports careers cut short because of abnormal proprioceptive input.

You cannot make your body work better if there is nothing wrong with your inhibition in the first place. Proprioception either works properly or it doesn't.

If you are one of the lucky ones whose proprioception works right, then you probably wonder why other people get injured at all. You will have no understanding of the difficulties faced by those with persistent muscle inhibition because you have never felt what it is like to be weak.

Proprioception cannot really be trained, and it is difficult to treat with exercise, but *spectacular* results can be achieved by locating the source of

the abnormal proprioceptive input and removing this permanently.

Using this technique, you will be able to remove the hidden causes of injury, and your body can return to the full and optimum function you were supposed to have from the start.

chapter 7
toning up our insides

Proprioception controls muscle and joint function, and, as we have learned, therefore plays a major role in preventing and healing injuries. But it also has other, surprising functions.

Battery of the Body

Every muscle spindle is constantly sending input back to the brain and nervous system. This nerve input from the muscle spindles is the brain's main source of biofeedback—the brain's primary form of 'nourishment' with information. Without the feedback and stimulation from muscle spindle cells, the brain would cease to function.

Although nerve cells rely on glucose for their energy, this alone does not translate into nerve transmission. The nerve transmission part of brain activity instead starts with that input from the muscle spindles. Thus, the level of background stimulation from the muscles will determine the level of activity received by the brain and nervous system.

This means that incoming information from muscles actually provides a base level of stimulation to the brain and parts of the nervous system. ***In some ways, muscle tone becomes the battery of the body,*** providing the input from which everything eventually functions. Neurologists say that the nervous system is 'sensory-driven,' meaning that the brain operates based on incoming information, and, if deprived of sufficient incoming stimulation, the brain will slow, degenerate, and die.

This increased brain activity due to increased muscle use is part of the reason people feel invigorated by exercise, whether it is jogging or weightlifting or digging the garden.

Even people with dementia are helped by exercise, not because of any improved cardiovascular fitness, but because their brains are being stimulated by nerve input from their muscles.[9]

So, if anything causes persistent muscle inhibition (and there are lots of things which can, as we will learn in the chapters ahead), then the resulting reduction in muscle tone will reduce the input to the brain from the muscle spindles, causing the brain to reduce its output, which further inhibits the muscles, and so on, in a negative-feedback spiral.

Hormones and Glands

Many people will be surprised to learn that muscle tone also actually helps to run our hormonal and glandular systems.

Using microelectrodes inserted into the sympathetic nerves supplying the kidneys in cats and the adrenal glands in rats, researchers in Texas[10,11] were able to measure the amount of nerve stimulation to those glands. (Sympathetic nerves regulate the activity of those organs.) The researchers rapidly stretched the calf muscles of the animals and found, when they did, there was a burst of nerve activity to the kidneys and adrenal glands with every stretch. However, when they cut or blocked the nerves that take proprioceptive messages from the calf muscle to the spine, the effect was lost.

This research has enormous significance for the way we think about our health. If, as is likely, similar mechanisms are present in humans, then several implications become apparent.

Fight or Flight

We know that in times of fight or flight, the adrenal glands produce a burst of adrenalin that boosts our ability to cope with a stress. The research on rats (if it can be applied to humans) demonstrates that the act of running from a threat increases the tension in the calf muscles, thus activating the muscle

spindles and increasing the frequency of messages to the spinal cord from the calf muscles, and so stimulating the adrenal glands to release a burst of adrenalin to help us run even faster.

This means the fight-or-flight response is not just an emotional one, but it also has a physical component, one that relies on proprioception. This research helps explain why runners talk about a runner's 'high'. The 'high' is coming from adrenal stimulation.

Stimulation of other adrenal hormones—like cortisone, aldosterone, and testosterone—would also lessen pain, increase energy levels, and generally make us feel better.

The Real Reason for High Blood Pressure

In cats, the research shows that the kidneys are activated through the same mechanism, and human research shows that exercise, like running, reduces blood pressure.

Blood pressure is not controlled by the heart; it is controlled by the adrenal glands and by the kidneys, which secrete diuretic hormones responsible for regulating fluid levels and, thus, blood pressure. Increased fluid levels are the real reason our blood pressure rises in the first place.

Running probably increases stimulation to the sympathetic nerves in the kidneys, causing in turn an increase in blood flow through the kidneys so that they release more diuretic hormones, leading to an increased excretion of water and lowering of blood pressure.

Running does not lower blood pressure by training or conditioning the heart. If you could increase the stroke volume or strength of heart contraction through exercise, this would actually raise blood pressure, not lower it.

If stimulation to the kidneys and adrenal glands is reduced through lack of calf muscle tone, it is easy to understand why so many of us seem to need blood pressure tablets and antidepressants.

Why Are We So Tired?

Adrenal gland hormones give us our drive, determination, stamina, and

the ability to withstand stress. Lack of adrenal hormone release due to poor lower leg muscle tone can therefore cause lethargy, tiredness, depression, and the inability to cope with stress. In medical terms, this is often called ME (myalgic encephalomyelitis) or chronic fatigue, depression, or fibromyalgia.

All these conditions can thus be caused by inhibition of the calf muscles, a condition far more common than you would ever imagine, and one totally ignored by the medical profession. Doctors have never been trained to test muscles effectively, and, if they try, the are only doing so to recognise overt pathology like paralysis or nerve damage.

People with poor muscle tone feel tired and lethargic; they often have foggy thinking, depression, mood swings, weight gain, hormonal changes, and a myriad of other problems. Increases in blood pressure, fatigue, and the inability to cope with stress are some of the most ubiquitous and expensive of all health problems facing western medicine. Add to these the rising incidence of musculoskeletal injuries, and ***proprioceptive medicine may offer a genuine alternative to most non-emergency medical conditions.***

Medical science is just beginning to glimpse the importance of muscle tone, it remains to be seen how far adoption of the principles of proprioceptive medicine will go towards explaining and conquering the current epidemics of pain, illness and injury.

Stronger people live longer

In July 2008 a major study was published in the British Medical Journal[12]. The researchers followed 8762 American men (aged 20-80) for nearly 19 years. All of these men received a physical examination, a strength test (measured using a one-repetition maximum bench press and leg press) and a cardiovascular test at the start of the study. Men with poor health or a poor health history at the start of the study were not included.

Over an average 18.9 year follow-up, 503 of the men died.

Overall, there were 50% more deaths in the weakest third of men, than in the middle or upper third. This association between low strength and early death was still seen even after the researchers allowed for factors such as age, physical activity, smoking, alcohol intake, body mass index, baseline medical conditions, and family history of cardiovascular disease.

When the researchers looked just at deaths from cardiovasular disease and from cancer, they found the relationship between strength and mortality still persisted, the weakest men died the earliest.

Interestingly, from a proprioceptive perspective, the association between weakness and early death even persisted after cardiorespiratory fitness and activity levels was taken into account. So it was not activity levels or exercise that made the difference, it was something else.

Referred Pain

Although, as we have just seen, muscle tone can affect organ function, organ function can also affect muscle tone.

A normally functioning organ does not alter proprioception and has no effect on muscle tone. If, however, an organ becomes inflamed or irritated, then proprioceptors can be activated and muscles inhibited, even before the patient experiences pain. That means muscle inhibition is occasionally an early sign of organ irritation.

We know that organs can refer pain. Heart attacks typically refer down the left chest, neck, and arm; gall bladder attacks can refer to the right shoulder or to midback; kidney pain can refer to the back; appendix pain is often felt around the belly button or through to the back.

Organ irritation often causes intermittent symptoms because our internal organs change with the time of day and the food we eat. If it does refer pain, the pain may come and go, changing hourly, daily, weekly, or monthly, depending on what is causing the irritation.

Muscle weakness associated with organ function may only show up if the organ is challenged to work harder by direct pressure, or by exposure to a toxic food or chemical.

'Hands-On' Therapy

There are hundreds of thousands of bodyworkers and physical therapists around the world who do a fantastic job helping their injured patients return to normal activities. With the odd exception, most of these use some form of 'hands-on' treatment.

In the past, these practitioners have been mostly ignored, if not ridiculed, by mainstream medicine practitioners who regarded themselves as infinitely superior since they dealt with the far more important job of saving people's lives.

Doctors found out very quickly that the usual tools at their disposal (drugs and surgery) were absolutely useless at helping their patients recover from injury faster, so they were happy to leave this job to 'Nature', and, if that didn't work, refer them to physical therapy or a pain management programme.

Many doctors barely disguise their contempt for hands-on medicine, although they are now being forced to recognise its value as patients demand action, and they realise they have nothing to offer.

Why Physical Treatments Work

Any practitioner who touches, moves, pokes, prods, or examines a patient, is altering that patient's proprioception. By altering their proprioception, they are changing the patient's muscle tone, increasing feedback to the brain, stimulating the patient's adrenal glands and kidneys, and, therefore, making the patient feel better.

As an example, consider *foot reflexology*. Whatever a reflexologist thinks they are doing by stimulating points on the feet, there can be no doubt they are stimulating nerve sensors and, therefore, producing the flexor withdrawal reflex. Although the leg may not move, there will certainly be facilitation (increased activity) of some muscles and inhibition of others.

If the calf muscles were to be facilitated by stimulation of the withdrawal reflex (and it is hard to see how they could not be), then the reflexologist would also be affecting the function of the adrenal glands and kidneys.

The limitation to the effectiveness of the therapy may arise in the fact that, after the therapy ends, the changes in muscle tone would also end.

Acupuncture can likewise be explained in terms of proprioceptive stimulation. The insertion of needles induces the withdrawal reflex just like reflexology does. However, the needle's effects will be more specific and far more powerful than simple pressure on the skin because the needle may physically damage nerve receptors. Therefore, the stimulation from those nerve receptors may last days to weeks after the needles are withdrawn.

It is not my intention to negate the model of understanding that has served acupuncture so well for centuries. The theory of energy flowing through invisible channels is sophisticated and elegant, but that does not make it right. Proprioceptive medicine offers an alternative explanation for the practice of acupuncture.

Chiropractors and *osteopaths* also have theories about how their therapies work, yet, often, their theories cannot explain their results.

Chiropractors and osteopaths have always found that many of their patients feel better after manipulative treatment. In other words, they have felt not just relief from their pain, but better generally. Trying to explain the effects of manipulation as simple joint mobilisation does not allow the possibility that patients would have improvements in their overall health, despite that being a common finding in chiropractic and osteopathic offices all over the world.

Manipulation stimulates the joints of the spine and increases the tension on the muscles that support the vertebra. As the muscle spindles of the vertebral muscles start to fire, they move the vertebrae more effectively, and that joint stimulation further stimulates the muscles in a positive-feedback loop.

So perhaps the patient's increased well-being occurs because the manipulation stimulates increased muscle spindle activity, which boosts the sensory input to the brain.

And then there are *massage* and *acupressure*, which also stimulate the skin and are, therefore, yet other forms of proprioceptive input.

A Normal and Unconscious Process

Proprioceptive medicine offers us a common understanding of the beneficial effects of *all* the physical therapies, from reflexology to yoga, Qi Gong to aerobics, Pilates to Shiatsu. Even exercise has an important role in maintaining body function once proprioception has been restored. All the physical therapies affect proprioception, and, therefore, have an effect on the nervous system and our general physiology.

The tendency to underestimate the importance of proprioception in physical therapies has probably occurred because of the unconscious nature of

proprioceptive function. Nearly all authorities have ignored its contribution to general health and resistance to injury.

When proprioception has been addressed, therapists have attempted to restore normal proprioception after injury. Athletes and trainers attempt to 'train' proprioception back to normal with exercises and repetitive activity.

Although the intention is admirable, the results are often disappointing because they miss the point. Proprioception is a normal physiologic process. It did not need to be trained originally, and it doesn't need retraining when it goes wrong.

What proprioception needs is not to be interfered with. That means all causes of interference need to be removed.

Section III

Why We Hurt

chapter 8

my earrings are causing my arthritis?!

It is time to look at some of the ways proprioception can be disturbed, disrupted, and generally messed up.

Any input to the nervous system can and usually will result in a temporary change in muscle function, either inhibition or facilitation (one cannot occur without the other). But, sometimes, muscle inhibition can persist, and even become permanent; silently causing pain, disability, and illness—and we may never even know it is happening.

There are many possible causes of persistent muscle inhibition, but they all involve what we can call *dysfunctional proprioception*, i.e., a disruption of normal proprioception, those crucial messages nerve sensors are sending back to the brain and nervous system.

Muscle inhibition can affect just one muscle, a group of muscles, or it can affect all muscles. Persistent muscle inhibition isn't a disease in itself, but it certainly makes illness and injury more likely.

You may live for many years with muscle inhibition, and, as long as you never need those inhibited muscles to work at full capacity, you may never experience acute pain or injury. You may put your tiredness down to late nights or overwork, your headaches down to stress, and your sore back down to getting old. Your doctor may even confirm your suspicions and give you some medication for it.

But you and your doctor are probably wrong. Your tiredness, your headaches, and your sore back may be a result of your . . . earrings?!

Sensitive Sensors

Anything that can be sensed by your nervous system has the potential to cause muscle inhibition, and, since we have learned that muscle weakness is the cause of osteoarthritis (see especially Chapter 6), we can start to understand how your earrings could actually be the cause of your arthritis (as well as other illnesses and injuries).

[NB: There are two major types of arthritis—the inflammatory type (e.g., rheumatoid, psoriatic, enteropathic, etc.) and the 'wear and tear type' (osteoarthritis). Here we are talking only about osteoarthritis.]

Nerve sensors in the skin are so sensitive they can feel one hair move. What would happen if someone poked you in the stomach? If you weren't expecting it, you would flinch. That is, your stomach muscles would contract and you would fold in the middle. This is the withdrawal reflex, the same reflex that would lift your foot off the floor if you stood on a nail, or pull your hand away if you touched a hotplate.

When you are poked and your stomach muscles contract, the muscles opposite them, the back muscles, must be inhibited. As soon as the irritation from the poking has gone, the muscles will relax and return to normal resting muscle tone.

But what if the irritation never went away?

Belly Piercing

Sarah came to see me after two years of low back pain. I examined her with all the standard tests. She seemed to have strained her low back, but a simple low back strain should have healed in about six weeks. Why was hers still troublesome after two years?

I also tested the strength of her back muscles. She was completely unable to generate resistance in the muscles at the side of her low back (the quadratus lumborum). Theses muscles help us bend sideways and also twist the trunk. I knew that if I found the cause of the weakness in these muscles, then her

low back would be more stable and should heal properly.

Searching for the causes of irritation to proprioception becomes easier when you know what you are looking for. In this case, Sarah had a belly piercing. The stud through the skin of her tummy acted as a permanent irritant to the skin, just like someone constantly poking her in the stomach. The stud was contracting her abdominal muscles and inhibiting her back muscles.

I asked Sarah to change the irritation from her stud by pressing it from right to left. (The direction doesn't matter; moving it does.) This immediately restored her quadratus lumborum to normal strength. When we removed the stud, her back muscles returned to normal. While she did need one small manipulation to restore the movement of one of her vertebrae, she otherwise needed no further treatment and made a full recovery.

Experience tells me she would never have recovered with just manipulation, although, once the stud was removed, she may have been able to recover without the manipulation, given enough time and exercise.

[You can see Sarah's case online at **www.live-without-pain.com**; click on 'Belly Piercing'.]

Nose Stud

Louise's case was similar. When I first saw her, she was having trouble bending. Her back had 'gone'. When she tried to touch her toes, she ended about ten centimetres from the floor. When she tried to straighten, she had to walk her hands up her thighs, as her back muscles would not support her.

Several times she was tested, and every time the same thing happened. I asked her to push her nose stud to one side. As soon as she did, she was able to bend forward and put her hand on the floor, then straighten up without hesitation. Removing the pressure on the nose stud, however, returned her to her previous best of ten centimetres from the floor.

Permanent removal of her nose stud relieved her pain immediately, and she made a full recovery with no further treatment.

[You can see Louise and her piercing online at **www.live-without-pain.com**. Click on 'Nose Piercing/Low Back Pain'.]

While body piercing is fashionable, the irritation and muscle weakness it produces cause much pain and suffering. Remember the effect of standing on a nail or being poked in the stomach? These produced dysfunctional proprioception—contraction of certain muscles and inhibition of others. When a stud is placed in the body, that irritation remains, and so does the inhibition, living proof of the flexor withdrawal reflex.

The weakness created by the inhibition then causes bones and joints to move badly, and joints to be sprained, strained, and inflamed.

Ear Piercing

Some studs seem to have no effect, although this is probably due to our inability to detect the effect, rather than it not existing. There is no question, though, that the positioning of any stud is critical.

Many women seem to have no effect from ear piercing when the hole goes through the centre of the ear lobe. However, piercing the ear too high or too low can produce dramatic changes in body function, as the proprioceptive system senses the irritation and alters the tension of the neck muscles to try to pull away from the piercing.

Sometimes only the neck muscles are involved; other times the inhibition of the neck will disrupt the proprioceptive mechanism more widely, and the whole of the trunk or the whole of the body can become involved.

Since we are totally unaware of the ensuing inhibition, we think everything is normal. Months or years later, when we start to have headaches, or aches and pains caused by a minor car accident don't clear up, or stiffness in our joints is X-rayed and diagnosed as osteoarthritis or spondylitis, we never think to relate it to the earrings we put in when we were younger.

Julie was fourteen when I saw her. Moody, tearful, and depressed, she had no energy and was failing at school. She was weak all over. Removing her earrings allowed her muscles to fire once again, and, with a little dietary change, she picked up her life and started to thrive.

Jewellery

Jewellery does not need to pierce the skin to cause irritation. Metal in contact

with the skin is often sufficient to provoke the flexor withdrawal reflex and cause muscle weakness. The most common culprits are necklaces, neck chains, rings, and watches. Heavier jewellery creates more irritation and damage than finer jewellery; the type of metal matters less.

Clive, a thirty-year-old man with severe low back pain, reported that he had been suffering for more than three months. One of the things I did for him as he was lying on the table in agony was remove his heavy, gold neck chain.

After a few minutes, he was able to walk around, pain-free. While he was still standing, I placed the chain around his neck again, his knees buckled, and he screamed in pain. I took the chain off, and the pain disappeared.

He subsequently recalled how his back pain came on one week after his birthday, when his wife had given him the chain. Clive's pain had gone away while he was on holiday for a week—he hadn't taken the chain with him—and had been with him again since the holiday ended, three months earlier.

A sixteen-year-old male patient was devoted to football. He played in goal but had always been unable to take his own goal kicks. The week after he removed his ring and neck chain, he not only played the whole game injury-free, but he was able to kick the ball over the half-way line, something he had never done before.

Can You Live Without Jewellery?

John was a big man, twenty-one stone, although he had lost eight stone already. Impressively tattooed, he was not someone to be taken lightly. In spite of his impressive presence, however, he had to walk down stairs backwards because his knees would not support him if he walked down forwards. The arthritis developing in his knees was disabling, but his weight ruled him out of knee replacement surgery. His pain and disability meant he was having trouble keeping his job.

John was a tough guy, and his tattoos, long ponytail, and four large earrings added to his image. Trouble was, his days were now being spent in bed or in front of the television because that was all he could manage. In spite of his size, his legs were about as strong as those of a five-year-old. No wonder he couldn't walk down the stairs.

However, after I took his earrings out, he walked down the stairs forwards, though still with some pain, as his joints were already a little degenerated. As he steadily recovered over the next few weeks, his wife was amazed to see him digging the garden, playing with his grandchildren, and taking walks. He was amazed that he actually enjoyed his work more and was able to get on with his employees better.

We give jewellery so much meaning. A ring, a watch, or a chain can signify love, acceptance, belonging, duty, loyalty, and identity. These are powerful emotions. Remember, though, that chains were also used as shackles, which carry a very different meaning. Be careful about the meaning you give to 'things'.

In my experience, many people—and not just women—would rather lose an arm than give up a piercing or piece of jewellery. In Clive's case, above, I was grateful to his wife for not taking offence when he no longer wore the chain she gave him. She obviously realised that his health was more important.

Do you really need your jewellery? Is it so important to you that you would risk your health rather than take it off? Do your own experiment. Take your jewellery off for two weeks and see if your symptoms improve. Put it back on and see if the symptoms return. Keep doing this for as long as it takes to convince you that the effect is real. If there is no difference, then wear the jewellery.

And, if taking off your jewellery does help, there are alternatives. (See Simple Solutions below.) But, no matter what, you might still want to try leaving a watch, or a ring, or a chain at home. You may find it can be extremely liberating. Freeing yourself from the emotional dependence on these things can make you stronger and more joyful.

Remember: you don't need to lose the emotional significance of any of the jewellery. Have it framed, keep it safe, put it above your bed or under your pillow—the significance won't change, but you aren't making yourself ill.

Simple Solutions

- Remove as much metal from your body as you can. This might include all piercings (though Teflon™, plastic, and Bioplast™ piercings do not usually cause proprioceptive interference), chains,

watches, rings, and toe rings.

- Rings, piercings, and other metal can be coated with a clear lacquer (e.g., nail varnish), although this does not guarantee safety.
- Pierced earrings can be replaced with clip-ons.
- Watches can be carried in a pocket or replaced with a fob watch. Most of us also carry mobile phones or PDAs that will usually give us the time.

I cannot explain why metal irritates, and plastic or coated metal does not. I can only presume it has something to do with the weight or the temperature of the metal. Mostly, I suspect it is just luck whether the metal touches nerve endings that are susceptible to irritation.

Remember that you may have more than one problem. Removing jewellery may not help a specific symptom if that symptom is really coming from something else.

You need to get rid of all interference to be truly healthy. Unfortunately, it's not until you have got rid of all interference and are totally well, that you will know you have reached that stage. Only then can you look back and positively identify those things that were making you ill.

Please participate in our large online trial to assess the pain-reducing effects of removing jewellery at **www.jewellery-experiment.co.uk**.

chapter 9

metal in my mouth is causing my back pain?!

Some of the worst irritators of nerve receptors are non-genuine parts.

If you or your garage put non-genuine parts in your car, you are taking a risk. The risk is that the parts might be inferior to genuine parts that have been designed to higher specifications and tested to work properly.

What would happen if the dealers were right? What if the replacement brake pads were made of foam rubber? What if the new exhaust was made of tinfoil, or the oil was diluted with diesel? What if you put orange juice in the tank instead of petrol? Of course these examples are ridiculous, and no one would dream of doing such things to their car. So why do they do it to their bodies?

Dentists put mercury, gold, and cadmium in our teeth; doctors give us poisons they hope will make us better; fashion puts needles though our skin; and big business gives us food, cosmetics, perfumes, and cleaning products that were manufactured in a laboratory.

Non-genuine parts pose one of the biggest potential dangers to your health, second only to poor nutrition. Non-genuine parts—especially metal parts—upset normal proprioception, and interfere with movement, strength, and control.

Consequences

If we interfere with the finely tuned nature of the nervous system, there will be consequences, whether we intend them or not, and whether we are aware of them or not. The consequences may be trivial and unnoticed, or they may be severe and debilitating.

I mentioned Lesley in the Introduction. She came into my office in May 2000, so weak she could hardly walk. Lesley had a long list of symptoms, including back pain, neck pain, pins and needles in nearly every part of her body, heaviness of her hands, difficulty in breathing, trouble walking, clumsiness, and fatigue. Exploratory spinal surgery four years earlier had found nothing. Her most disabling symptom was weakness.

Lesley told me that, when she used to go horse riding, she had to stop the horse next to a large pile of hay because, when she tried to get off the horse, her legs wouldn't hold her and she would collapse in a heap on the ground. I asked her to stand on a chair, and she couldn't step off. I asked her to lay on her back and lift one of her legs as high as she could. It took her several seconds to get the leg off the table at all, and ten seconds to get the leg high in the air.

Her movement was not normal. Lesley was trying hard, but the weight of her leg was too much for her body to lift without massive effort. I was so surprised by her weakness, I sent her off to her local gym where the instructor measured her strength. On a leg extension exercise, Lesley was able to lift no more than five pounds.

Lesley's weakness was throughout her body, every muscle almost useless. From a standing position, she could lift her foot no more than eight inches off the floor. She could make the muscle work, but with very limited power.

Lesley didn't have a diagnosis. No specialist or doctor could identify or label her condition—which is probably just as well. After all, what was wrong with Lesley was much less important than why her body wasn't working normally.

Overnight Recovery

It turns out Lesley's condition had deteriorated progressively for fifteen years.

Now unable to lift the lightest of weights, and having trouble breathing, she lived with pain throughout her body.

Sadly, Lesley was typical of thousands of patients who have an unrecognised illness. It was bad enough that she didn't have a diagnosis, but it was worse that she didn't have an *explanation*. Without a diagnosis, she ran the risk of being labelled hysterical or psychosomatic, or being written off with a 'wastebasket' diagnosis. But, without an *explanation* for her problems, she had no ability to bring her body from sickness into health.

Once she had the explanation, Lesley recovered overnight. When I saw her just three days later, all her vitality had returned, and she had lost nearly all her pain. She went from being only just able to lift five pounds, to lifting forty pounds easily. She got her life back, and her problems have never returned.

Lesley had three gold crowns in her mouth at the time of my exam. All I did for her was find a dentist willing to take those crowns out. As it happened, one of the crowned teeth actually needed extracting, as the dentist suspected there was an abscess underneath. But, at her first dental visit, she had two of the three crowns removed, and, at this stage, with one crown still in her mouth, I videotaped her already dramatic improvement.

That night, she was able to sit on the floor with her legs crossed for the first time in four years. After three days, she bounded into my clinic and was able to fling her legs in the air with ease. In a standing position, she was able to lift her legs higher than her shoulder.

Her life was altered forever. With full strength in her muscles, she lost her back pain, her balance returned, and her breathing and blood pressure normalised. The heavy, leaden feelings in her fingers disappeared, allowing her to pursue her career as a piano teacher.

Her amazing response was not random or isolated. She was suffering from muscle inhibition caused by bad proprioceptive input from non-genuine parts given to her by her dentist.

By using a procedure to identify muscle inhibition, the cause of her body's failure to work properly became obvious and her recovery was assured. All she needed to do was press her finger down onto her gold crowns, and she could lift each leg in one second instead of the ten seconds it took without the pressure.

[You can watch a video of Lesley, filmed in my clinic, before and after the crown removal, online at **www.live-without-pain.com**. Click on 'Muscle Weakness/Dental Crowns'.]

Chew, Chew

In 1994, researchers in Adelaide published an extraordinary study in the journal *Experimental Brain Research*. Dr Kemal Türker and colleagues inserted small electrodes into the biting muscles of volunteers. These electrodes were able to measure facilitation and inhibition of those muscles.[13]

The researchers then applied slow pressure to a front tooth, simulating what would happen if the volunteer was biting through something hard. The measurements showed that slowly increasing pressure facilitated the muscle, making it able to contract. The researchers then gave the tooth a brisk tap, simulating the situation where we suddenly bite something hard, like a seed or a stone. The biting muscles were immediately inhibited, i.e., switched off.

In other words, chewing and biting turn out to be relatively subconscious activities. Since we don't actually know how hard something is until we bite it, each tooth socket is filled with nerve sensors that tell our brain how much pressure is on the tooth. These sensors are stimulated by increasing pressure—as would be the case if we are biting a nut or an apple—and they, in turn, cause the bite muscles to fire. If the apple or nut turns out to be somewhat harder than we anticipated, the sensors detect more pressure, and send for more output from the muscles. And we hardly realise it's happening.

If, however, we are chewing away and suddenly bite something hard and unexpected, like a stone or seed, those same sensors detect a sudden increase in pressure and immediately inhibit, or switch off, the bite muscles, preventing damage to the teeth. Clever, heh?

The Importance of the Teeth

Proprioception will never affect just one muscle. Our body moves with a complex combination of coordinated muscle involvements. Remember the

last time you unexpectedly bit on something hard? Was it just your jaw that dropped open?

Depending on the amount of pain involved, you probably flinched most of your body, activating the stomach muscles, back muscles, neck muscles, and even arm muscles (as you brought your hand up to your face). Whatever contortion you performed, it was a reflex reaction to the proprioceptive insult to your tooth.

If proprioception matters to the body, it matters most to the teeth. While much proprioception is processed at a local spinal level, all sensory information ultimately reaches the sensory lobe of the brain, which has direct connections to the motor areas. The function of this sensory lobe has been well mapped, and that map illustrates that a large area of the brain is devoted to processing sensory information from the mouth, lips, and teeth. Thus, proprioceptive irritation to the mouth can cause severe muscle inhibition.

While most dentists are aware that a faulty bite can cause facial and jaw pains, most have no idea that the work they do in the mouth can also result in muscle weakness in almost any other area of the body, and most doctors, when confronted by weakness or pain, have no inclination or reason to look in the patient's mouth.

Removing the Source

Mrs H was in a great deal of pain. She could hardly walk, even though she had already been given a month of standard chiropractic treatment and exercise. On testing her muscles, a pattern was obvious. All the muscles down the left side of her body were inhibited. Her left leg, left hip, left arm, and left side of neck were all weak and not functioning. Either she had suffered a stroke, or something else was causing the weakness.

Inside her mouth was a large gold crown on one of her back teeth. When she pushed on the crown, her left-side weakness was eliminated immediately. Pushing on the tooth changed the proprioceptive information from the tooth to the brain, just as the researchers in Adelaide had demonstrated.

Mrs H couldn't get to her dentist that week and arrived back with me a week later in even more pain. Carried into the clinic, she just made it onto the

couch, and I examined her again to find the same things. This time she got an appointment at her dentist that day, and, to his credit, he removed the crown. She rested for two days, and, by the third day, was up and about. After also having an amalgam filling replaced, she went on to make a full and spectacular recovery, returning to normal activities—even playing tennis—in less than two weeks.

Mrs H kept the crown and the amalgam filling her dentist removed. Placing the crown in her saliva, I measured the voltage across the gold and amalgam at 175mV.

It takes between 20mV and 90mV to make a nerve fire, depending upon whether the neuron in question is facilitated or inhibited; the average is about 70mV. (See Chapter 4 for a more complete explanation.) Mrs H had had 175mV of continual nerve discharge to her brain for the eight years that crown was in place. Her brain reacted by inhibiting the muscles on her left side, and the lack of support on that side caused the joints in her low back to sprain and strain.

The crown wasn't causing the pain in her back; she definitely had an injury to her back. But the crown was the cause of her weakness, and it was the weakness that caused her inability to heal the injury.

Mrs H happened to injure her low back, but it was equally possible that any of the joints of her left side could have been affected. If she had reaching for a heavy box, she could have strained her shoulder and been diagnosed with a frozen shoulder or tendonitis. If she had used a keyboard, she could have developed a carpal tunnel syndrome and needed an operation. She could have slipped and sprained her ankle, twisted her knee, or 'torn a hamstring'—all because a crown in her mouth was irritating proprioceptive nerves to her brain, and the muscles on her left side were unable to support her joints properly.

Treating the injury or trying to ease the pain always misses the point, if the origin of the problem is a muscle weakness caused by proprioceptive irritation. No amount of paracetamol, exercise, ultrasound, massage, vitamins, or acupuncture is going to override the effect of 175mV constantly bombarding the brain. The only effective cure is to remove the source of the irritation.

Metal Mouth

Teeth are extremely sensitive to proprioception. Dentists know that a couple of microns difference in the bite can have a huge impact on patients. What most have failed to realise, however, is that many procedures they thought were safe have never been tested for their effects on proprioception.

Placing metal—especially amalgam fillings (a mixture of mercury and other metals)—in the mouth has long been controversial due to fears about heavy metal and mercury poisoning. ***Proprioception is not about poisoning.*** Removing abnormal proprioception cures the problem far too rapidly for the effects to be due to toxicity.

Instead, placing metal in the mouth sets up a type of withdrawal reflex. The metal irritates the skin (mucous membranes) of the mouth just like a pebble would irritate the proprioceptors of the foot. The irritation of the metal alters the proprioception to the brain and nervous system, and muscle inhibition results. Sometimes the irritation is immediate; sometimes irritation develops with corrosion of the metal or decay underneath the metal.

Because the mucous membranes of the mouth are far more sensitive than the skin of the foot, and the area of the brain designated to control the movements of the mouth is far greater than that devoted to the feet, irritation in the mouth can result in massive proprioceptive disturbance and muscle inhibition; the consequences are often devastating.

Mrs MH staggered into the clinic holding as best she could the area of her back between her shoulder blades. She spoke in a very quiet voice, gasping short breaths between sentences. The area she was pointing to was so sore, I was convinced there would be a compression fracture or some bone-destroying disease present, so I sent her off for X-rays. They were negative.

The area was so tender that treating it with anything other than ice was impossible, but ice was not going to solve the problem, which had been recurring for four years. Finding weakness in the area, I asked the lady to put pressure on one of her crowns. The weakness improved immediately. I advised the woman to visit her dentist.

On her first visit, the dentist did not remove the crown, but he did reduce the height of it slightly. Mrs MH felt immediate improvement and was able to talk and breathe more normally. Soon after, she had the crown removed, and

has since made a full recovery. She has no more attacks of 'muscle spasms' (her original diagnosis) and no tenderness in the middle of her back.

Having referred hundreds of patients for dental work to correct proprioceptive disturbance, my view is that *no* amount of metal in the mouth is safe. However, certain patterns of injury have emerged.

In order of severity these would be

- metal crowns,
- abscesses,
- amalgam fillings,
- dentures, and
- tooth extraction.

The remainder of this chapter will look at each of these separately, in more detail, and offer advice on dealing with these issues.

Metal Crowns

Dental crowns are used when too much of a tooth is damaged for a repair to be possible. Most crowns are made of metal, although many have a layer of porcelain fused over the metal. These are called 'bonded porcelain crowns', and are distinguished by a thin line of black metal visible on the inside of the tooth, near the gum. Metal crowns and bonded porcelain crowns are made of either precious or semi-precious metals. Gold crowns are being used less often than previously, for cosmetic (appearance) reasons.

Metal crowns may cause proprioceptive irritation for several reasons, although the precise mechanism is still unknown. We know that when gold or another metal is placed over amalgam (itself a combination of metals), currents are generated which affect the proprioceptive nerves, even if there is a layer of cement between the two. The worst cases of irritation are usually in teeth containing a silver amalgam preparation (filling) under a gold or bonded porcelain crown. These are nearly always problematic.

When placed *without* amalgam, the crown may corrode slightly, or allow the introduction of bacteria and decay underneath it.

Not all gold crowns will cause problems, but those that do can produce untold pain, misery, and suffering in their unsuspecting victims. The weakness and injury they cause can affect any muscle or joint in the body.

Why?

We don't yet know what causes some crowns to create muscle weakness while others do not. Occasionally, dentists find evidence of corrosion or decay under the crown that would explain the increased irritation to the nerves, but sometimes no such evidence is visible. It now seems likely that the irritation exists simply due to the contact of the metal to the mucous membranes. Mucous membranes are much more sensitive than skin, although their functions are very similar.

X-rays and visual examination cannot see underneath the crown and, therefore, cannot aid the diagnosis. The only way to know if a crown is causing problems is to remove the crown, or test for muscle inhibition.

Alternatives

Saving overfilled or broken teeth is highly desirable, but, if placing metal crowns condemns the patient to a lifetime of pain and ill-health, then an alternative must be sought. Fortunately, many dentists are now able to use solid porcelain or composite crowns. These are cast or computer-milled out of a block of solid or composite porcelain. In addition to giving a better cosmetic result, these crowns do not seem to cause proprioceptive irritation or muscle weakness.

Abscesses

A tooth abscess is an infection in the tooth or in the socket around the tooth. While some become obvious due to the pain they cause, others produce no pain. Although painless, however, they can still irritate proprioceptive nerves.

A few of these infections will spread into the bone surrounding the tooth and destroy large areas of that bone. These are called NICO lesions (short for Neuralgia Inducing Osteonecrosis), or cavitations. Many dentists believe that such an area of infection can be the source of decaying bacterial matter

finding its way into the bloodstream. Bacteria can then circulate to cause infection in many other parts of the body. While not popular, this 'focal theory of infection' has many advocates.

Often the infection can be treated with root canal therapy, but occasionally it has already affected the bone around the tooth. The only effective treatment in this case is to extract the tooth and drill away the dead and decaying bone from inside the socket. This is a delicate and highly invasive procedure that must be attempted only by dentists experienced in its use, and with the full understanding and informed consent of the patient.

Amalgam Fillings

The public debate over the use of silver amalgam fillings has raged for at least 150 years. All that debate has been about the use of mercury in amalgam fillings because of its potential toxicity.

Proprioceptive medicine is not directly concerned with toxicity, and the effects of toxicity cannot be readily identified or diagnosed through its effects on muscles, so I will keep my comments on mercury toxicity brief.

Dental associations have always defended the use of mercury. The American Dental Association (ADA) statement on dental amalgam says 'the ADA continues to believe that amalgam is a valuable, viable and safe choice for dental patients', and concurs with the findings of the U.S. Public Health Service that amalgam has 'continuing value in maintaining oral health'.

More Than Oral Health

Great. Your oral health might be fine, what about the rest of your health? What if a dentist puts a known poison in your mouth and then, weeks to decades later, you get sick? You visit a doctor who believes it is a dentist's job to care for your teeth and has been taught that there can be no effects from your amalgams or your crowns. They put you on medication, or they cut out your gall bladder, because that is the obvious treatment. No one looks in your mouth.

Mercury is one of the most toxic substances known to humankind, second only to plutonium. According to the ADA, 'It (amalgam) contains a mixture

of metals such as silver, copper and tin, in addition to mercury, which chemically binds these components into a hard, stable and safe substance'. Except that, if it did chemically bind, it would be an alloy, not an amalgam.

In fact, the mercury is used as a glue to bind the other metals, and it *does* leak into your body every time you eat, drink, chew, or swallow. Each filling is about 50% mercury, and a large filling contains about as much mercury as is contained in a thermometer. The mercury vapour in your breath is directly related to the number of fillings in your mouth.[14]

The Dental Amalgam Mercury Syndrome Association (DAMS) says, 'Many of our people have had recoveries from serious health problems, which were considered to have an unknown cause and cure, after their amalgams were removed and replaced with non-toxic restorative material. So we feel a calling to educate the public about health hazards associated with the dental amalgam'.

While it is possible that the improvements in health that arise from amalgam replacement occurred from decreasing the toxicity of mercury, it is also possible that the sinister and silent effects of proprioception were also involved. Mercury does not leave the body quickly. So immediate improvements are more likely due to changes in proprioception.

Proprioceptive effects from fillings are not as common as those from crowns, but they do occur. Many amalgam fillings sit in teeth with apparently no proprioceptive effects; in other cases, even the smallest filling can cause muscle inhibition. Some patients need only one filling replaced; very rarely, a patient needs to have all their fillings replaced.

There seems to be no set pattern that allows us to predict which amalgams will have a proprioceptive effect and which will not. All are probably toxic. The only way to detect proprioceptive lesions from fillings is to examine muscle reflexes.

Removal Precautions

Once found, the amalgam can be replaced by a non-metal alternative. But mercury removal should only be performed by dentists who take precautions to minimise mercury exposure during removal.

The International Academy of Oral Medicine and Toxicology (IAOMT) has recommended the following very specific amalgam removal protocols. If these protocols are followed, the amount of mercury released into the body during amalgam removal is reduced:

- Place a rubber dam around the tooth to isolate it from the body.
- Provide an alternative source of air to the patient.
- Place a saliva ejector under the dam to remove mercury vapour that penetrates the latex.
- Use high volume evacuation with isolate attachment (i.e., use a special suction device that will catch and segregate the mercury).
- Section amalgams, and remove in as large pieces as possible.
- Remove and properly dispose of rubber dam and mercury after amalgam removal.

Other recommendations come from DAMS:

- Remove no more than two amalgams per appointment.
- Time appointments for amalgam removal at least one month apart.
- Administer intravenous Vitamin C before removal. (Mercury has a greater affinity to Vitamin C in the blood than in body tissue, so will leave the body more quickly this way.)
- Don't remove amalgams from a pregnant woman.

To Remove or Not to Remove?

These recommendations do not exactly encourage one to pursue removal, do they? And, while it may be prudent to follow them when considering concerns about toxicity, I am sure that, if the effects of proprioceptive insult were also taken into account, the balance of priority would shift to removal rather than concern about precautions.

Chris was a young man, about twenty-four-years-old. He worked out often at the gym and was in great physical shape. However, he would often hurt his low back while working out. I treated everything I thought it was possible to treat over a two-year period. Every time he visited me, he would leave the

clinic fully functional, only to damage his back again the next time he went to the gym.

One day, I had him lift a weight in the clinic. He really struggled and could only lift the weight to an angle of about 80 degrees. I had him bite on a cotton roll (changing his proprioception) over the only tooth with an amalgam filling. Suddenly, he could lift the weight easily 180 degrees—in other words, above his head. On letting go the pressure on the tooth, he was able only to lift to 80 degrees again.

Although the filling was small, it was enough interference to his nervous system to inhibit his back muscles and cause chronic back injury. With the filling replaced, he went on to train effectively, lift much heavier weights, and make a full recovery.

[You can see a video of Chris filmed in my clinic at **www.live-without-pain .com**. Click on 'Amalgam Filling'.]

It is worth noting that, even though the muscles of Chris's low back were stronger immediately after amalgam removal, he still had some damage to the joints in that area from all the times he hurt it previously. This damage may take months or years to heal, and some occasional pain would be likely during this time, although the severity and duration would be vastly reduced.

Dentures

Dentures are manufactured by mixing a toxic and volatile liquid— called a monomer—with a powder. When the two are mixed, the resulting acrylic is poured into a mould, which is allowed to set. The denture must then be 'cured' to remove the resting (remaining) monomer. The denture is wrapped in plaster of Paris and placed in another mould. It is then cured by boiling under pressure.

Many denture laboratories cure dentures overnight. Others cure for as little as twenty minutes. Sometimes the manufacturer's instructions suggest only a twenty-minute cure. It appears that this is not long enough, and many people have dentures with too much remaining monomer.

When dentures are repaired, they are often 'cold-cured', leaving excessive

monomer exposed. It is also possible that soaking dentures overnight with cleaning tablets breaks down the polished surface of the denture, exposing the monomer.

If this monomer is placed in the mouth, taste receptors detect it as foreign and poisonous. This can cause muscle weakness which may be severe, widespread, and extremely disabling. (See more on this connection of taste to weakness in Chapter 12.) It can lead to difficulty with movement, brain function, and arthritic pain—all problems normally associated with the elderly, those who are the most likely to be wearing dentures.

The 'Cure'

Fortunately, the cure for weakness caused by dentures is simple and inexpensive, and really is a 'cure'. Such dentures can be re-cured overnight by a denture lab, in order to remove the remaining monomer and render the denture less toxic.

A satisfactory cure can even sometimes be effected with ten minutes' exposure to ultraviolet light. Monomer is also found in many composite or white fillings, which are cured by the dentist in this way, and this monomer does not appear to cause problems.

In addition, newer vinyl dentures are becoming more common, so, hopefully, the epidemic of seniors' disability will subside over the next few years.

Denture Glue

There is one other concern, however. Many elderly people need to glue their dentures in place. Unfortunately, the glues they use are not always safe.

An eighty-three-year-old lady visited my clinic recently because, over the last year, she had been having trouble walking into town as quickly and easily as she had done in the past. Her examination showed obvious muscle weakness, which went away when she took out her dentures.

Oddly, the weakness only returned when she tasted the top of her upper denture where the denture paste was applied, and not the lower portion that was free of paste.

I found several other brands of paste for her that did not contain petrolatum and liquid paraffin, and she often drops in now to tell me that every day she feels better and better.

Two years later, a study was published in the medical journal Neurology, confirming my finding.[15]

Tooth Extraction

One of the most surprising observations of my work with proprioception has to do with tooth extraction.

While it is mostly true that muscle spindles are the only nerve sensor that spontaneously produces afferent input (messages to the brain and/or spinal cord), there is one other 'mechanoreceptor' that shares this characteristic. The nerve sensors found in the periodontal ligaments of the teeth also produce spontaneous output, and, therefore, provide consistent stimulation of the brain. (The periodontal ligaments lie in the tooth sockets and hold the teeth into the jawbone.)

Eating, chewing, and swallowing are such instinctive processes, it is easy to underestimate the amount of processing necessary to coordinate the actions of teeth, jaw, tongue, and neck. The periodontal sensors therefore contribute a small but significant portion of the overall stimulation to the brain.

It has appeared to me that extracting an adult tooth destroys the periodontal ligament receptors related to that tooth, and this slightly reduces overall brain activity.

For most people, this lack of brain input and subsequent lack of brain output will be unnoticeable, but, for the athlete, this will become significant as the edge will come off their overall power.

This observation is very hard to prove, but I have set up an online experiment to gather more evidence. I have found that a gymnastics exercise called the half-lever is nearly impossible to do unless you have all your teeth. Please take part in the experiment by going to **www.live-without-pain.com**, and clicking on the link to **www.recordyourresult.com**.

Simple Solutions?

There are no simple solutions in dentistry.

In general, however, you should at least do these things:

- Find a good mercury-free dentist.
- Don't put any new metal in your mouth.
- Don't remove good teeth in children (part of standard orthodontics).
- Have your teeth checked by a practitioner of proprioceptive medicine, as well as by your dentist, and remove any metal that is causing weakness, especially if the weakness is switched off by pressing on the tooth or applying pressure to the tooth.

Some Words of Caution

I said in the Introduction that proprioceptive medicine did not involve any extra expense. Dentistry is the exception.

There will be very little extra expense if patients opt for non-metal restorations and repair in the first place. There *will* be extra expense (sometimes considerable) if existing dental work needs to be replaced.

And, until governments and insurance companies recognise proprioceptive insult as a valid medical condition, most dental work will be at the patients' own expense.

For this and other reasons, restoring health through changing dentistry must be approached cautiously. Good dentistry is always expensive, and some of the changes are irreversible, while positive results cannot be guaranteed. Before embarking on any dental work, patients must make sure they understand and accept the costs involved, and the risk that there may be no immediate or perceived benefit from the procedure.

While results cannot be guaranteed, more certainty can be obtained when there is a measurable change in muscular strength before and after biting or altering the pressure on the suspected tooth. Most certainty is achieved when a weak muscle becomes stronger after altering the proprioception from the tooth.

I do not recommend blindly replacing all the metal in the mouth although I have no doubt that perfect health cannot be achieved in the presence of dental metal. I do recommend replacement if there is a demonstrable weakness that can be abolished by an increase in pressure over one of the teeth.

Although you should be certain that dental metal is contributing to your problem before you remove it, the removal of dental metal should be considered more of a diagnostic procedure than a therapeutic one. Ultimately, no matter what the results of scientific testing and clinical trials are, the only way you can know for certain whether your dental metal is affecting you is by removing it.

chapter 10
the simple spine

Our spines seem complicated, but they are really quite simple. The bony structure is arranged ingeniously to support the body, protect the nervous system, and move the trunk. Each of the thirty-four vertebrae that form the spinal column is interlocked with the one above and below. The amount of movement in each vertebral joint is quite small, but it needs to be monitored and controlled at all times to prevent injury.

The front of each vertebra is called the 'body'. This part is short and squat and designed to carry the load of the human body. Between each vertebral body is a disc designed to distribute the weight load evenly, and still allow some flexibility.

The back of each vertebra is called the 'motion segment' because this is the part that is designed to move. It is joined to the vertebrae above and below itself by two joints called 'facet joints'. The facet joints are flat or gently rounded, and face different directions depending on where they are in the spine. In the lower spine, they run front to back, allowing for forward and back movements but very little rotation. In the upper spine and neck, the facets are angled at about forty-five degrees to make rotation and side-bending easy.

Ligaments surround the joints of the motion segment just as they surround all joints. Ligaments are strong and fibrous with little to no stretch capability. In fact, the role of ligaments is to limit extremes of movement (see our earlier discussion of this in Chapter 6). They are the last line of defence against

joint damage. Proprioceptors within a ligament will send alarm signals if the ligament is stretched too far. These signals then cause immediate release of muscle tone, forcing us to drop or let go of whatever we are trying to hold. Ligaments also contain certain specialised nerve endings designed to measure stretch and movement.

Levers

The rest of the motion segment is made of 'levers' (projecting parts of a bodily structure). Levers are for muscle attachment. With these levers, muscles can monitor and control the movement of every one of the spinal vertebrae and spinal joints, even the movements of the disc.

Muscles of all sizes attach to the vertebral levers. Small muscles might go to the next vertebra, while longer muscles might cross five or six vertebrae before exerting their pull. These muscles are filled with the muscle spindle sensory cells that constantly monitor stretch and tone in the muscle. The spindle cells send their messages to connect with other nerves in the spinal cord. Sensory cells in the skin, ligaments, and tendons send messages to the same areas. Further connections from the sensory areas go to motor areas, i.e., parts of the brain and spinal cord responsible for controlling movement.

Should an injury occur to a spinal joint, that injury might heal with slight scarring, but scar tissue tends to be inferior to the original ligaments and muscles. Thus, the scarring may cause a lack of motion between the vertebrae. The lack of motion decreases the amount of proprioceptive feedback from the area, and muscle inhibition results.

Muscle inhibition from jewellery, dentistry, or other foreign bodies will also cause reduced spinal motion, further aggravating muscle inhibition in a spiral effect. The lack of sensory input from an increasingly fixed vertebra seems to leave the brain with no choice other than to 'close down' the area by inhibiting the surrounding muscles. The inhibition leads to further restriction of motion. Eventually, the inhibition will result in the sprain and strain most people recognise as back pain, or the ache associated with osteoarthritis.

Manipulation

For many years, chiropractors, osteopaths, and physical therapists have been manipulating spinal joints for any number of conditions. Trying to describe the results they saw in their patients, chiropractors have devised many theories as to how manipulation works. The proprioceptive model is a further contribution to the art and science of manual medicine.

Manipulating a joint stimulates proprioception from the joint, affecting the ligaments and muscles surrounding the joint. The increased proprioception stimulates increased muscle tone—and, thus, even more proprioception—until a normal equilibrium is reached.

The amount of proprioception from spinal joints increases the closer you get to the head. This means that mechanical problems in the neck can have far greater consequences than a similar problem in the low back. Some neck problems even cause weakness (and, therefore, pain) in the low back, as well as shoulders, midback, neck, head, and face.

Recent published studies have shown that manipulation of the neck can increase the strength of the biceps muscle, and manipulation of the sacroiliac joints can increase the strength of the quadriceps muscle.[16,17]

To the Source

The vast majority of back and neck pain is caused by the same conditions that cause injury to any other joint. When the muscles that hold and support the vertebrae are inhibited, whether from dentistry, jewellery, or any other cause, then injury, tissue damage, and pain will result.

The answer to the majority of spinal and neck pain is therefore very simple: find the source of the inhibition, and remove it.

Good proprioception allows the muscle spindle cells to maintain good tone of the muscles that support the vertebral joints. Bad proprioception, caused by any source of body irritation, will cause inhibition of those pathways and poor muscle tone. Then, it is only a matter of time before those muscles will be called upon to support the joints they protect, but poor tone will prevent joint stabilisation, and sprain the ligaments surrounding the joint. Sprained ligaments swell, become inflamed, and the condition turns painful.

If the source of irritation to the nervous system is not identified and removed, the abnormal movement of the joint will become chronic and the joint will become arthritic. Osteoarthritis is the inevitable long-term result of muscle weakness.

[Watch a video of a young lady having an adjustment in my clinic to see her muscle weakness before a manipulation in her neck that cured her headaches permanently. The video is available at **www.live-without-pain.com**. Click on 'Headache Cured with Chiropractic'.]

Simple Solutions

Have your spine checked by a competent chiropractor or osteopath every six months or so. If a course of treatment is needed, ask the same questions that you would of a doctor prescribing drugs.

If you have done everything else to eliminate poor proprioception, there should be no risk that your 'treatment won't hold'. Six to twelve treatments should be enough for all but the most stubborn cases.

Some chiropractors promote wellness care, which is good. Wellness is a state of being that is self-reinforcing and self-sustaining—it should not need constant treatment unless there is an underlying structural reason for continuing weakness that is not ammenable to removal. In this case, "maintenance" treatment may well be an option.

Section IV

Finding and Fixing the Pain

chapter 11
testing for weakness

There are remarkably few ways you can know whether your proprioception and muscle tone are working properly.

The easiest way is to look at your history. If you are basically pain free, have had very few accidents, and normally recover quickly from any illness or injury, you probably have good proprioception. If, however, you have a history of pain, injury, illness, falls, or clumsiness, chances are your proprioception and muscle tone are less than adequate.

Unfortunately, actually testing your own muscle tone is not really feasible. As we have seen, muscle tone is mostly reactive—and, therefore, subconscious—so it is impossible for us to be aware of it, or to self-diagnose.

Manual Muscle Testing

Manual Muscle Testing (MMT) is the best, easiest, and possibly the only, way to test reactive muscle tone. And it is reactive muscle tone that is most important in preventing injury and organising movement.

If you want to test your own proactive strength, you could use machines or dumb-bells to see how much you could lift. If you wanted to test your own reactive strength, however, you would have to get someone to drop the weight on you and see how well you held it. This would be dangerous, irresponsible, and silly in the extreme, so please do not try it.

The alternative is manually testing a muscle. This allows the examiner to really test a patient's reflex reaction to an unknown external force—just as it would be in real life. By applying an unknown and theoretically unpredictable manual force, MMT stresses the patient's reactive feedback control loop, allowing the practitioner valuable insight into his or her capacity for injury prevention.

MMT is an art, normally taught to health practitioners, that can take years to learn; sadly, some people never take to it. It does suffer from an element of subjectivity but this can be minimized through proper training and protocols so that eventually objective measures (such as those I use on my videos) can be used to validate the findings of the manual tests.

Self-Testing

Some self-testing is theoretically possible, although you are likely to miss many weaknesses that a trained therapist would detect instantly. A well-trained practitioner will be more objective and accurate about your strength than you will ever be.

It's not too difficult to test your proactive strength, but, as noted above, it is almost impossible to test the more important reactive strength. The difficulty comes in knowing whether the strength you have is normal, or whether normal for you is actually inhibited.

The only way for you to know whether or not your muscle tone is normal is to try to find a way to increase your strength through changing proprioception, and then test your strength again. You will need to do this as many times as is necessary to convince yourself there is a difference. An increase in strength would indicate that the proprioception you changed is causing weakness, and should be changed in a more sustainable way.

Most increases in strength are immediate. Sometimes there is a short delay. If you remove a watch and your shoulder gets stronger, it may take a few minutes for the weakness to return after the watch is reapplied. Irritation from the pressure sensors activated by a watch is not as rapid as from the sensors that would be stimulated by a nail or a piercing.

The trick is to test honestly and know what proprioception to change.

Testing Honestly

Our bodies are remarkably sneaky and adaptable; they 'compensate' for a loss of function, which means that your body will try to hide any weakness. This is another reason there are no truly reliable home tests.

Your first job is to find a weakness. To do this, you need to stress your muscles.

The most specific and reliable test is the one you can't do. I know that sounds backwards, but have a think. Is there an exercise, movement or activity that you can't do right now because of either weakness or pain? It might be getting out of a chair, or walking down a step, or climbing a set of stairs. It doesn't matter what it is, what matters is that it is an activity that you "should" be able to do (based on your age and fitness) but you can't.

If you have such a test, you can skip to the next section and learn how to change your proprioception, then try the same activity again. If your activity becomes easier, faster or less painful (it won't usually become painless, not straight away) then you have a pretty good indicator that you have found part of the problem. All you need then do is change that part of your proprioception permanently and your body can then get on with the job of healing itself.

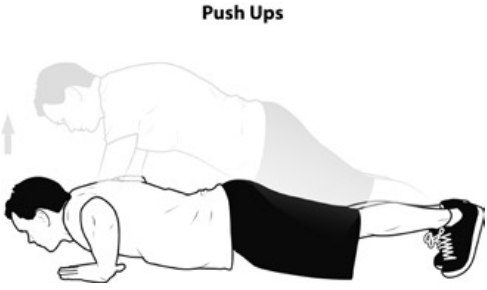
Other tests you can do are less reliable.

It is usually easier to test your strength in the safety of a gymnasium, assisted by a trained supervisor. However, there are a couple of tests you can do at home:

- **Push-ups:** To test for your ability to do push-ups, you must do them properly. There is a tendency to cheat with any strength test.

  Test yourself to see how many push-ups you can do in a minute, or how long you can hold yourself two inches (five centimetres) off the ground.

  Change your proprioception and try again.



- **Sit-ups:** See how many sit-ups you can do in a minute. Remember to keep your knees bent. Cross your arms across your chest. You can have someone holding your knees or ankles, or place your ankles under something to hold them still.

Change your proprioception and try again.

Then there are self-tests that require a gymnasium. Any strength exercise can be used. Dysfunctional proprioception sometimes affects all muscles, but often it will only affect specific muscles, and it is not possible to predict which muscles will be affected by any specific proprioceptive insult.

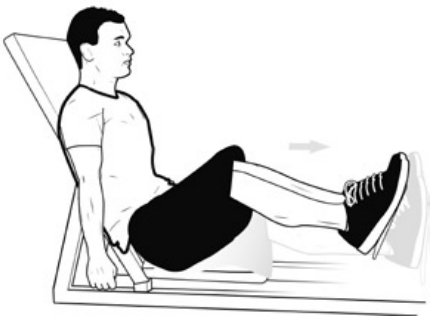
Here are some you might try:

- **Bench press:** It is dangerous to attempt this without an assistant since you need to find the weight you *cannot* lift. With an assistant, try to increase the weight until you are close to maximum, and struggling to complete the lift.

  Change your proprioception and try again.

- **Leg Press:** Once again, it is dangerous to attempt this without an assistant since you need to find the weight you *cannot* lift. With an assistant, try to increase the weight until you are close to maximum, and struggling to complete the lift.

  Change your proprioception and try again.



How to Change Your Proprioception

Remember: proprioception is your brain's way of recognising changes in pressure, stretch, or position. If anything is causing abnormal sensory input and, thereby, sabotaging your strength, then altering the position, pressure, or stretch of the irritated part of your body may restore your muscle strength to normal.

Proprioceptors (the nerve sensors) are most sensitive to changes in pressure and stretch, but those sensors fatigue over time. This means that, if you found your leg-raising strength was improved by pushing or pulling on a belly stud, the effect might be lost after a couple of minutes. You will find, however, that if you *remove* the stud, the increase in strength would be permanent.

With that in mind, here are some things you can try, to change your proprioception during self-testing:

- Take out your earrings or other piercings.
- Take off your jewellery.
- Take off your glasses.
- Remove any dentures.
- Bite on each tooth (especially those with fillings or crowns) with a cotton roll or some tissue paper rolled up tightly.
- Touch or pull on any scars you might have, since scar tissue can alter proprioception.
- Change your position by moving your head to one side and then the other.
- Change the position of your low back by bringing your knees up, down, or to either side.
- Turn off the lights, or close your eyes, since fluorescent lighting can cause weakness.

Remember: changes in strength do not tell us what is wrong— only that there is something wrong. For example, a tooth with a crown may cause weakness only because there is an abscess in the root. If so, replacing the crown will make no difference.

Consulting a Professional

The easiest—and most accurate—way to check for proprioceptive weakness is to consult a practitioner experienced in MMT, preferably one certified in proprioceptive medicine (see Appendix).

A practitioner trained in proprioceptive medicine can test muscles that are impossible to test with any gym machine. They can find the source of your problems far faster and with more certainty than you can, because they are independent and unbiased (hopefully).

The slight worry with a practitioner is that muscle testing, if done poorly, can make muscles appear strong or weak at will. For this reason, it is wise to be wary of any practitioner using muscle testing to sell you anything. If they want to sell you something, ask for a money-back guarantee and see if they are still so confident.

Most practitioners are competent and caring, but, without correct testing technique, they can easily be fooled. It is important that the practitioner is indeed testing close to your capacity. Any practitioner who asks you not to resist too hard does not understand the mechanisms of proprioception and muscle reflexes.

With MMT, a practitioner of proprioceptive medicine is using the undoubted connection between sensory input and motor output to decide what is influencing your body negatively. How does that compare with a blood test, an MRI scan, or an X-ray? ***No medical tests can come close to the sensitivity of proprioceptive testing. Remember, your nervous system is so sensitive, you can feel one hair move.***

Medical tests might tell you when you have the joint damage called osteoarthritis, but they can't tell you why you got it or what to do about it. An X-ray and an MRI scan take a 'snapshot' of your current structure, but this is like taking a picture of a car accident. You can see the amount of damage, but you can't see from the picture what caused the crash.

Proprioceptive testing, on the other hand, can find the weaknesses that cause osteoartritis and prevent the degeneration from occurring.

It is wonderful that medical science can replace a worn out hip, but wouldn't it be great if everyone knew how never to need this invasive and expensive surgery?

The Real Medical Miracles

The real medical miracles are the ones you never hear about—the people who go through their lives never needing a hip replacement, gall bladder surgery, or a heart bypass. *They* are the ones we should be studying and emulating. Famous psychologist Abraham Maslow allegedly said, 'If you want to know how fast a man can run, don't study the guy who came last.'

My clinical testing has shown that hip joint arthritis is most often caused by inhibition of the gluteus maximus—the huge muscle we sit on and that pulls our hip backwards, and is used whenever we walk, jump, climb, stand, get out of a chair, or lift anything.

The action of the gluteus maximus is to pull the leg behind us and to turn the foot, knee, and hip outwards. It is no accident that a degenerating hip joint is unable to do any of these movements. An arthritic hip is typically locked into a slightly flexed position and turned inward. As you now know, the weakness that causes this can itself have one of many causes, but once the real cause is identified, hip degeneration and surgery can often be avoided.

Catching It Early

Changing proprioception often results in dramatic improvement and symptomatic change, but only if caught at an early enough stage.

Tissue damage is the result of failure to repair an injury. Inflammation sets in, and the body lays down scar tissue in an attempt to stabilise the problem. Changing proprioception and restoring muscle strength does not immediately change tissue damage. The inhibition could have been there for ten years or more, and, in that time, considerable damage and degeneration could have occurred. It may take some time for the body to replace the worn out area. Healing joints, especially arthritic ones, may take years—even a lifetime, if the wear is quite advanced.

Sometimes the wear is so advanced that surgery is a sensible and necessary adjunct to removing the cause of the weakness. But surgery—even very successful hip surgery—is not a replacement for the search of proprioceptive irritation. If the muscles that support the hip are still weak after the surgery, then it is likely that recovery will take longer, and more complications will result.

Making the Change Permanent

Once you or your practitioner has found a weakness or weaknesses, and found how to change that weakness, you just need to make that change permanent.

So, if a tooth is the culprit, you need to find a cooperative dentist. If jewellery makes a difference, it could mean going without certain pieces. You could also try isolating the jewellery from your skin with cloth tape or some other method. Some patients have successfully insulated themselves from their jewellery by painting the contact surface of the metal with nail lacquer.

If a change in position changes your strength, you probably need to visit a chiropractor or an osteopath. Joints that are unable to move in the correct way will fail to send the right proprioceptive feedback from the ligaments and muscles. The muscles will then be inhibited, and the lack of mobility will continue. Sometimes exercise or a change in habits can change proprioception; a new bed or car seat might help.

Many people notice an immediate benefit once their muscle inhibition is removed. Others have a slow and gradual improvement. Remember: muscle inhibition is not an injury. It just causes the weakness that allows injury to occur. Once the weakness is removed, the joints, muscles, tendons, and bones still need time to heal. This could take six weeks to two years, and sometimes longer if you are trying to reverse the effects of severe osteoarthritis.

But improvement will come, once you have been tested for, and found the cause of, your weakness.

chapter 12

good eating for good health

Food is a subject close to everyone's stomach, a source of great pleasure and pain, joy and misery. Few subjects arouse more emotion, debate, and passion than food and drink.

I include a chapter on nutrition because optimum nutrition supports optimum proprioception. You just can't have one without the other if you want optimum health.

Nutrition is more than eating. Nutrition refers to the process of gaining sustenance, energy, and health. Therefore, it depends not just on what we eat, but also on

- how the food was grown;
- how it was stored, processed, and prepared;
- our ability to digest the food;
- our elimination of waste products; and
- what we fail to eat.

Quality

Nutrition gives us both the energy to fuel our body and the ingredients to grow and repair it.

Every part of your body has been manufactured from the food (and drink)

you have consumed. Every bone, cell, tendon, muscle, toenail, and eyelash has come from the carrot or chocolate bar you ate hours, days, weeks, or months ago.

Our evolution has made us remarkably adept at survival. We will use whatever is available to make our body tissues. If there is not enough calcium or vitamin D available, we will still make bone; it will just be softer than normal and break more easily. If there is not enough iron, we will still make blood; it just won't be able to transport as much oxygen and we will fatigue more easily. Although the final product often looks similar to normal, it won't be as strong or last as long.

In nutrition, there is no such thing as a free lunch. Poor foods simply make you less robust than you should be. Your heart will work, but not under stress. Your gall bladder will work, unless you eat chips. Your liver will work, but you can't drink as much as you used to.

If you want your body parts to last a long time, it makes sense to manufacture them out of the best possible ingredients so they keep working as long as you do. ***In other words, the secret to good nutrition is the quality of the food we consume.***

Scientists have known for many years that the quality of our food—especially the quality of our nutrition in childhood—can affect our health in later life.

Poor quality ingredients won't make you sick straight away. Your body is too efficient for that. It will try to cope with whatever you eat. Coping with thousands of years of shortages, drought, and excess means that we *can* live on crisps and fast food—for awhile. But it's in our habits that our destiny is fashioned.

The Essentials

We don't need many ingredients, but a few are essential. You will find all these ingredients for perfect health in Nature; after all, that's where we came from and that's where we'll go back to. After good proprioception, natural food is the key to great health. (Okay, maybe nutrition is just as important.)

It makes sense for us to look to the natural world for knowledge about what to eat, but, unfortunately, there are almost no places left on earth that have

not been adulterated and affected by modern industrial and pharmaceutical intervention.

Therefore, we are extremely lucky to have been left the work of Weston A Price[18]. If you are not familiar with his work, visit **www.live-with-pain .com** for links to the websites of The Weston A. Price® Foundation and the Price-Pottenger Nutrition Foundation™.

Weston Price was a dentist who set out to find the cause of tooth decay. In 1921, he left the US on a world-wide expedition that would take him ten years. He travelled the world to compare the teeth of people who existed on traditional diets with similar people in the same area, who, by virtue of a railway or a road, had access to modern, processed foods. At that time, it was still possible to find tribal groups who had no road or rail link to the outside world and, therefore, existed only on what they could find, grow, or farm for themselves, using the same methods and wisdom passed through the generations from their ancestors.

The tribal groups without access to processed foods ate the foods of Nature. Fruits, berries, nuts, seeds, vegetables, eggs, raw dairy products (rare), and meats would be all they had to eat. Processed or human-made foods like refined sugar, flour, jams, and pasteurised milk were never used.

The Myth of Milk

Price meticulously documented his findings, and they are published in a book called *Nutrition and Physical Degeneration*. Although his first priority was to count the number of decayed or missing teeth in each group, he soon noticed other obvious changes

The isolated peoples looked different. They had high cheekbones, wide maxillary (jaw) arches, no crowding of the teeth, and a surprising absence of disease or infirmity. Isolated peoples and their children had fewer than 2% of their teeth missing or decayed.

The children of equivalent tribal groups who had access to modern foods, however, had almost 30% caries (decayed or missing teeth). They also had narrow faces, narrow arches, tooth overcrowding, and susceptibility to illness.

Thousands of photos document similar findings in tribal groups all around the world in a unique and now unrepeatable demonstration of the importance of nutrition to our health, structure, function, and well-being.

Although Price found that isolated peoples sometimes relied on raw dairy products, the animal kingdom avoids them. Young mammals drink their mothers' milk until they are weaned, and then never touch it again. No other animal species drinks milk after it is weaned. Surprisingly, they don't suffer from osteoporosis.

Although many authorities tell us that milk is not only healthy but essential, nothing could be farther from the truth.

The myth of healthy milk is one of those science vs Nature battles that comes down to who you want to believe. Either you trust in 'science' (or, in the case of milk, the milk marketers), or you trust in your own observations of Nature.

Next time someone tells you that you or your children need milk products, ask them how a gorilla or a tiger or a giraffe, or any other animal, gets its calcium. If milk was essential for healthy bones, someone seems to have forgotten to tell the entire animal kingdom, because no other animal species drinks milk after it is weaned from its mother's milk.

The 'Real Food' Diet

The diet that protected the isolated peoples from illness and deformity was a 'real food' diet, composed of the foods they found in the environment in which they lived.

We are part of a natural ecosystem, one that has survived for millions of years. If there is a grand plan, we are certainly part of it. We should therefore look to that plan for our nutrition. It is for this reason that I (along with a great many nutritional authorities) recommend eating 'real food'.

Real food is food that you can find in Nature. You'll recognise it because it grows. It also spoils, rots, or goes off. The process of spoiling occurs when food is broken down or rotted by fungus and bacteria. If a food spoils or rots, it retains the ability to support the life of the fungus or bacteria. ***Food that doesn't spoil is not able to support life. If bacteria and fungus can't live on the food, chances are you can't either.***

This diet isn't difficult or dangerous, is safe for nearly everybody, and can protect you and your children from a wide variety of ailments and illnesses. It does take some thought and retraining. You may need to change where you shop and what you buy.

Foods available to us today can be separated into three categories:

- real food
- partially-processed food
- non-food

The following tables list and expand on foods in each of these categories.

Real Food: Eat as much as you like, organic and raw if possible.	
Eggs	Eggs are a true superfood. The cholesterol they contain is essential in order for your body to create cells and hormones. The egg's amino acid mix closely mirrors human protein. All mammals will eat eggs if they can find them. Make sure you buy the best quality you can find, organic and free-range if possible. Eat them as lightly cooked as possible, and raw (in smoothies) if you can.
All vegetables/salads	Vegetables that can be eaten raw, should be. See if you can make 50% of your vegetable intake raw, and about 80% of your overall food intake raw. Lots of organic carrots and cucumbers.
All fruits	As much as you like.
Beans, sprouted beans, and lentils	Sprouts are a great superfood. Beans and lentils must be cooked, but they make good vegetarian staples.
Avocado	A big favourite. High-quality natural fat and protein that will make you feel full without putting on weight. Fantastic for breakfast.
Rice	All rice is okay, but short grain brown rice is best. If you are trying to give up sugars and starches, however, you need to avoid rice for awhile.
Nuts and seeds	Great food. Nuts must be fresh to avoid the oils turning rancid. Raw nuts and seeds only (not roasted or salted).
Seaweeds	Mostly found in Japanese food. Good for calcium content and the thyroid gland.
Soups	Home-made soups and casseroles make great alternatives to packet food. Have them for breakfast to give you energy all day.
Exotic whole grains like millet, barley, quinoa, amaranth, buckwheat, etc.	The exotic grains are usually healthier and tastier than wheat.

Partially-Processed Food: Moderate consumption is okay.	
Flours to make bread, cakes, biscuits, and pasta	Most people have more energy if they avoid all grains, but this is too much to ask of anyone just starting 'real food' eating. Speciality flours like spelt, rye, barley, millet, quinoa, amaranth, and Kamut® make great alternatives to regular flour. They just take a little practice.
Tempeh, miso, and other fermented soy products	Tempeh and miso are fermented soy products and are generally regarded as healthy. Tofu, soy milk, TVP (textured vegetable protein), and soy protein are best avoided, or used in minimal quantities.
Meat, chicken, and fish	If you choose to eat meat, try to buy organic and free-range if possible. Avoid processed and mechanically reclaimed meat, which will be heavily treated.
Fruit juices	Commercial fruit juices are nearly always pasteurised, which destroys their enzyme content. Invest in a juicer; the slow-speed ones are best. Choose 'fresh-squeezed' over 'made from concentrate' and 'juice drink' (added sugar) products.
Rice milk, oat milk, almond milk, coconut milk	Oat milk is best for cooking. The others come in different brands, so don't be put off if you don't like the first one you try.
Butter	A good source of cholesterol and Vitamin D, both essential for good health.
Raw honey, maple syrup, brown rice syrup, molasses, or agave syrup	All sugars are bad and should be avoided, but, if you need some sweetener, try these less harmful versions.

Non-Foods: Avoid when possible.	
Artificial sweetener	Aspartame and sucralose as found in 'diet' and 'low-calorie' foods, are way too dangerous to be even a small part of your diet or that of your children.
Margarine	There is no such thing as solid vegetable oil in Nature. Just use butter.
Cordials	Sugar and chemicals – avoid.
Tobacco, tea and coffee, refined sugar and sweets, alcohol	Sugar, coffee, tea, alcohol, and tobacco are all stimulants. They are purified substances that have drug-like effects on the body. If you consistently use a food to make yourself feel better, you are using that food as a drug and you may be addicted to it. Addictions fuel destructive behaviour and stress. Once you have given up your addictive food, the odd one isn't going to hurt you.
Dairy products	No other animal species drinks milk after it is weaned. No milk, cream, milk chocolate, ice cream, yoghurt, cheese, or fromage frais.
Wheat bran	You can get all the fibre you need from fruit and vegetables; there is no need to eat wheat bran. Bran covers the outer layer of the wheat kernel and, therefore, absorbs all the sprays and insecticides used to protect the crop.
All breakfast cereals	All breakfast cereals are processed, packet food. Forget the slick advertising. Eat food that spoils, rots, or goes off, especially for breakfast. Cereals don't do any of these, nor can they be grown. They are dead and destructive to your health.
Cakes and biscuits	Cakes and biscuits are just cereals with added sugars and fats. They might taste great, but they do you no good at all, and their high sugar content robs you of your energy.
Deep-fried food and crisps	All vegetable oil forms trans fats when heated. Olive oil is reasonably stable, but it is best to cook with coconut oil, butter, or lard.
Anything microwaved	Best to avoid microwaved food until we know more about what it does to us. Please don't put plastic bottles or baby food (milk and formula) into microwaves.
Soya milk	Chemically denatured, soy is high in phytates that will leach calcium and other minerals from your body.
Table salt	We need a certain amount of salt to be healthy, but choose sea salt or rock salt instead.

A 'real food' diet is designed to emphasise the building blocks of health and minimise the interferences to normal function. Unfortunately, there is no guarantee that even real food will have much nutritional value by the time it has been intensively grown, harvested, transported, stored, and cooked.

Therefore, ideally, real food will be grown locally and eaten as soon as possible after it has been picked. Processing, storage, and cooking are the enemies of nutritional content.

Non-Foods

Non-foods tend to be human-made, or altered in some way by processing. They tend to be refined and taken away from their natural state. So, even if the origins were natural, the result certainly is not.

If you eat an orange, you are eating a whole food. If you squeeze the juice out of an orange and drink the juice, you have refined the food, and it is therefore less than whole. If you concentrate the juice and then rehydrate it, it is more refined. If you add sugar, colourings, and flavourings, it is more refined, and, if you make cordial, it is possible there is no orange left. Each step refines the original to make its effects more drug-like.

Some non-foods have very immediate, drug-like consequences. In sensitive children, sugar, dairy products, chocolate, colourings, and dyes can cause short-term reactions that include hyperactivity, aggression, crying, listlessness, and difficulty in concentrating. In adults, stimulants like coffee, alcohol, sugar, nicotine, and caffeine have well-known mood-altering effects.

If you take a short-term view, none of the non-foods could be considered dangerous, since most people can eat a little of them with no immediate harmful effects. It is indeed remarkable that so many people survive, and even seem to thrive, when they eat so much non-food. However, non-foods are not necessary for health, and they place a toxic burden on the body that needs to be metabolised and excreted, depleting valuable nutrients that could be used for growth and repair. Testing the muscle strength of non-food eaters soon exposes the reality of their diets. They have reduced levels of strength, recovery, and repair. Their energy comes from overstimulated adrenal glands that will eventually become exhausted, leading to injury, infection, stress, and exhaustion.

Time to Adapt

Adapting to a natural diet can take some time. What we eat is so much part of who we are and how we feel about ourselves, that to change involves a shift in identity—one of the hardest shifts to make.

If you are a mother, you will have been told since you were very young that milk was not only good for children, but important for their normal development. You may have been given sweets as a child, so you associate sweets with being cared for. You might want to care for your children in the same way, to make them feel special in the same way, so you give your children sweets, chocolate, and ice cream.

It is extremely difficult to change eating habits that have developed over generations, but, if we are to improve the health of future generations, we must give them different habits.

Real Food for Breakfast

The most important change to make is what we eat for breakfast. We have all heard the 'eat a good breakfast' mantra from health and diet gurus, but what constitutes a good breakfast is not what we find advertised on television.

The reason that breakfast cereals are on the non-food list is because most are processed and will not rot or decay easily (although they may go stale). While some are fortified with a few vitamins or minerals, these synthetic additions cannot possibly compensate for the loss of nutritional value that occurred during processing.

Being high in carbohydrates, cereals also tend to increase blood sugar levels, forcing the pancreatic cells to secrete insulin. (Failure to do so is found in diabetes.) Insulin's job is to suck the sugar *out* of the blood and *into* the cells, where it is converted to energy. When energy storage capacity is exceeded, the sugar is then converted into fat for storage. The point is, insulin release puts the body into 'fat storage mode.'

As insulin causes the sugar to be absorbed by the cells, the blood sugar level falls. If blood sugar levels fall too fast, low blood sugar symptoms like tiredness, headache, mood swings, anxiety, hunger, and craving for stimulants can occur. No wonder so many people feel the need for a morning cup of coffee or tea, or a cigarette.

The major problem with having cereals and/or a stimulant in the morning is that, for the rest of the day, your blood sugar levels will be swinging up and down.

Foods and Drugs

Not just cereals, but all stimulants raise blood sugar levels. That includes sugar, tea, coffee, milk and dairy products, nicotine, alcohol, and drugs. ***Any time you use a food to make yourself feel better, you are using the food as a drug.*** After all, the definition of a drug is simply a pure or refined substance that causes a physiologic change.

Foods are foods, and drugs are drugs. Keep the two separate. Not understanding the difference is why so many people have such trouble giving up their addictions to caffeine, sugar, nicotine, alcohol, and recreational drugs.

If you want to give up alcohol or cigarettes or drugs, but you are living on soft drinks, cereals, sugar, and chocolate, you will always go back to the drugs because you will need them to get you out of your blood sugar lows.

The way to avoid swings in blood sugar is to choose foods from the real food category—especially for breakfast. Unfortunately, in Western society we have no advertising to tell us we can choose soup for breakfast, or avocado on toast, or a carrot or an apple. But, if you try these things for just a few days, you will almost certainly feel a big improvement in your energy levels and mental clarity.

A word of warning: many people are addicted to stimulants and non-foods. ***If you think you are not addicted, just ask yourself when you last went four days without that food.***

Giving up an addiction can induce nasty withdrawal symptoms. Most commonly this will be a headache, but, occasionally, it can be nausea, vomiting, and tiredness. These symptoms should pass within three days if you are eating real food, and seven days if you have a lot of detoxification to do. If they do not subside, you should see your health advisor to investigate for other causes.

Using Muscle Testing to Find Food Intolerance

We have been using the term proprioception as a way of describing how afferent (sensory) information that comes from muscle, bone, skin, and joint sensors in the body, interacts with the parts of the nervous system that control the output that passes to our muscles. We know that this incoming information is used to regulate muscle tone because of the close relationship between sensory input and motor output.

However—although it seems unlikely—our muscle tone is influenced not only by these muscle, bone, skin, and joint sensors, but also by our other senses.

For example, there are reflex connections between the sensory areas of sight and our muscle tone. Imagine how it would be if our neck muscles did not reflexively follow the movements of our eyes. If we happen to catch movement in our peripheral vision, it is quite instinctive for our attention to be drawn to it and for our head to turn in that direction.

Intimate connections to many muscles allow us to reach out and grab or avoid objects flying towards us. Likewise, we flinch or duck in response to loud noises.

Taste and Smell

Nearly all sensory input arrives in the brain through a common gateway, the thalamus, and from there it is passed on to various other areas of the brain to be processed. Our brains are designed to make sense of the world using all our senses. When we experience fire, we see it, hear it, feel it, and smell it, and our brain combines all this information into an understanding of fire.

The sensory (or afferent) input of all our senses, as we have learned, also affects our muscle strength. That includes smell and taste, of course, as they are both sensory inputs.

When we taste food, receptors on the tongue are stimulated, and the nerves from the tongue travel back to the brain where the taste is interpreted. The molecules of food in our mouth don't have time to get to our brain to be tasted; the messages from the nerves of our tongue do.

Smell—processed in the brain from nerve messages that come from the

nose—is very important to our survival. For one thing, we use it to test food for goodness and suitability for eating, or, at least, we used to, before our food was so regulated and processed.

These days we tend to eat based on information that comes from advertising and packaging, rather than trusting our senses. One only needs to smell a tub of margarine or a pot of yoghurt to know that these are not real food, and, yet, we eat mountains of this junk every day.

Smell and taste are part of the process of digestion. Do you remember Pavlov's dog experiments? Pavlov is famous for getting his dogs to associate the ringing of a bell (another sensory input) with the presentation of food. His experiments involved tying off the oesophagus of each dog so that food could not enter its stomach. He then fixed tubes in the dog's stomach so he could measure the amount of gastric juice they produced when food was presented or a bell was rung.

Just think about this. No food is entering the stomach, but the smell of food, the taste of food, or the ringing of a bell associated with food, produced a change in the secretion of the stomach. Secretion of the stomach is a motor activity, produced by nerves stimulating glands, in the same way as nerves stimulate muscles.

Taste and Muscle Strength

Although the mechanisms are unclear, science is catching up with the notion that taste can alter muscle strength. (Remember the impact of the taste of denture glue on weakness, discussed in Chapter 9?)

Research published in the journal *Medical Science and Sports Exercise* showed that rinsing the mouths of athletes with a carbohydrate solution instead of water resulted in increased muscular performance. Increased muscular performance had nothing to do with absorption or nutrition; it had everything to do with taste.

Proprioceptive medicine practitioners use this information to test for compatibility of foods. They test muscles without food in the mouth, and then test again while the patient is tasting the food.

[You can see a video of a patient losing her strength while chewing on a

muesli bar at **www.live-without-pain.com**. Click on 'Taste Cereal Bar'.]

Most foods placed in the mouth have no effect on muscle strength. However, in some individuals, certain foods cause an immediate inhibition of many muscles. In others, tasting a nutrient—like a vitamin or a mineral—will cause an increase in muscle strength if that muscle was already inhibited. Since it often strengthens with only certain types of nutrients, it can be supposed that the person is lacking in those nutrients.

Blood Tests?

Anecdotally, the results from this approach are pleasing. Most patients experience a relief of symptoms and a sense of general well-being when taking supplements prescribed in this way. These supplements often work better than when vitamin or mineral prescriptions are given simply based on symptoms, or even on blood tests.

There are many reasons why blood tests for nutritional supplements might be unreliable.

Blood is not tissue. Blood levels of nutrients must be kept within narrow boundaries for us to function, so our body is designed to rob our tissues if blood levels fall too low. We store sugar in muscles and fat, and calcium in our bones. If blood levels of calcium start to fall, we begin a process of withdrawing calcium from our bones to keep our blood calcium levels constant. So a blood test for calcium may show normal levels of calcium, even in the presence of severe osteoporosis.

Blood tests give a measurement that is compared with 'normal' values. 'Normal', in this context, does not mean 'nothing wrong'. 'Normal' either means 'without any overt clinical disease' or 'the same as 95% of the general population'. So the 2.5% with extremely high readings, and the 2.5% with very low readings, are taken to be 'abnormal' and in need of treatment (the percentages can vary but the principle remains). Given that the 'general population' has a one in three chance of getting cancer an an almost one in two chance of heart disease, do you really feel reassured that your blood test is 'normal'?

In addition, many nutritional substances can only be absorbed or used when other cofactors are present. An iron deficiency may be due to a lack of

iron, but it can also be due to deficiencies of Vitamin C, citrate, or the right proteins. It can be blocked by the presence of antacids in the stomach, tea, soya products, wheat, lead, copper, mercury, cobalt, and zinc. So, if you just take an iron tablet, you may be completely missing the point.

Edible, But Not Food

Many people have a food intolerance that causes weakness to muscle testing. Most of the time, it's not their fault. The 'food' they are eating is not really food at all. It's edible, but it's not food.

One 'food' that commonly causes weakness is the artificial sweetener, aspartame. Now that you know how to test yourself for muscle inhibition (see the previous chapter), you can try this at home.

Find out how much weight you can lift, or find an exercise posture you can only just hold. Now, place some diet soft drink or other test substance into your mouth, and hold it there. Lift the weight or hold the position again.

Most people will fail this test with diet drinks and other non-foods, but a few will not. The few non-failers are either extremely constitutionally robust and/or their nervous system is in an overexcited state that makes them reasonably immune to any proprioceptive irritation.

What am I missing?

Modern agriculture, food production, storage, processing and cooking make it highly likely that many of us have one or more nutritional deficiencies. Ironically, many patients take vast quantities of nutritional supplements without ever noticing or feeling any benefit.

Nutrients in food are classified as either macro-nutrients or micro-nutrients.

Macro-nutrients are needed in larger quantities and include the major food groups like fats, proteins, and carbohydrates as well as certain minerals like calcium, sodium, phosphorus, potassium, chloride, magnesium and sulphur.

Micro-nutrients are needed in far lesser quantities, and although very important, deficiencies are likely to take longer to develop and be less severe than deficiencies of the macro-nutrients.

If you follow the Real Food eating plan, you are extremely unlikely to suffer a macro-nutrient deficiency. If, however, you have been on a standard diet until recently, you may suffer from certain deficiencies that deserve special mention.

Bone Pain

Many people with spinal or joint pain are actually suffering from bone pain caused by a lack of calcium.

Osteoporosis or osteopenia are surprisingly common and may be caused by a lack of calcium promoters like

- sunshine and vit D3
- green vegetables
- seaweeds
- nuts and seeds
- exercise

or an excess of calcium disrupters like

- pasteurised milk and dairy products
- phytate from soy products, wheat flour and tea
- high-protein diets

If you experience generalised pain or deep aching pain when firm pressure is applied to your bones, you should try a calcium supplement but the type of calcium you choose is very important. Please do not choose one you would not normally eat. Many of the studies showing negative effects from calcium supplementation have used the rock forms of the nutrients, rather than the plant-based forms we would normally eat and be able to digest.

Calcium carbonate is chalk and should be avoided. Dolomite is rock. Oyster shells are not high on most people's menu. If you can, get calcium from seaweed or plant-based sources.

Get plenty of sunshine exposure on your skin. If you can't get half an hour per day, you might want to consider a vit D supplement or a UVB lamp to boost your exposure.

Hearty Health

Magnesium is very important for the health of your heart and your kidneys. If you have any dairy products in your diet, it is likely that you are magnesium deficient, and some authors think that up to 80 percent of the population might be in that category.

Blood tests are a very unreliable way to assess magnesium since only one percent of the body's magnesium is in the blood and even that may not be in a form usable by the body.

You can increase the magnesium in your diet by using a supplement like magnesium citrate or magnesium oil but it is most important that you vastly increase the quantity of greens in your diet.

Just think about the massive quantities of green vegetables a gorilla or monkey eats, and then, remembering we have very similar digestive systems, see how well your intake stacks up.

Tired?

The last of the "universal" deficiencies I want to mention is iodine.

Bromine, iodine, fluorine and chlorine are a class of chemicals called the halogens. They share similar properties and in the body, tend to compete with one another.

The use of chlorine as a disinfectant and water treatment agent, bromine as a flour treatment and fluoride as a "decay preventer" has left poor old iodine fighting a losing battle to perform it's essential tasks.

Severe iodine deficiency produces hypothyroidism with characteristic symptoms of cretinism (severe mental retardation) and myxedema (swelling of the tissues). Fortunately such overt disease is rare, but sub-clinical hypothyroidism from iodine deficiency seems extremely common. Although trace amounts of iodine exist in green vegetables and seafoods, the increased use of the other halides means most of us lack essential iodine.

Symptoms of iodine deficiency include lethargy, fatigue, depression, weight gain, decreased appetite, constipation, hair loss, dry skin, brittle nails, carpal tunnel syndrome, preference for warm temperatures, and menstrual

irregularities. Iodine deficiency predisposes one to breast, prostate, endometrial and ovarian cancer.[19] Up to 72% of the world's population is affected by an iodine deficiency disorder.[20]

Although iodine is necessary in nearly all tissues, it is most associated with thyroid function. Diagnosis of iodine deficiency can be made with blood or urine testing, but typical symptoms or the lack of them have been shown to be a fairly accurate indication of thyroid function. Body temperature monitoring is also a good indicator.

Iodine supplements Iodoral® are available with links from the **www.live-without-pain.com** website. Unfortunately kelp tablets rarely provide enough iodine to make a noticeable difference.

Nutrition is such a vast and complicated subject that I have kept my suggestions here basic and superficial. If you have a nutritional issue, you should seek the help of a suitably qualified or experienced naturopath or health professional.

Simple Solutions

- Eat real food.
- Buy organic.
- Eat fresh, local food.
- Change your breakfast. Avoid cereals, and eat real foods instead.
- Reduce all stimulant foods.
- Cut down on sugars without switching to artificial sweetener.
- Get rid of all the foods on the non-food list.
- If you eat meat, try to get organic, range-fed (kept outside) meat.
- Reduce, as much as possible, foods on the partially processed list.

Remember: optimum nutrition supports optimum proprioception. You just can't have one without the other if you want optimum health.

chapter 13

clarifying the chemical soup

There are more than 100,000 notified human-made chemicals in existence. Of those, 89% have not been tested for their effects on human health as individual agents, and, certainly, their cumulative and combined effects have never been tested.

Over the last 200 years, we have become skilled at recognising both gross deficiency and acute poisoning, but we have enormous problems understanding and dealing with the low-level toxicity that is currently polluting us and our world.

There is no way any authority can possibly test all these substances for safety in humans. Even the tightly regulated drugs industry makes horrendous mistakes. How can we be sure that the much less regulated food additives and chemicals industry will take adequate precautions with our safety?

Our best protection is to be cautious with what we buy, in order to minimise the risk to our health. To rely on reassurances from regulators and those in positions of power could be a recipe for disaster.

Personal Choice

Whether or not we choose to act on any information is a personal choice. Most people know that toxins from smoking (as an example) will negatively affect their own health and the health of their children, yet millions continue to smoke. Moreover, if anyone suggests they give it up, smokers often

see this not as sensible advice, but as an attack on their lifestyle and rights.

The purpose of this book is not to tell anyone what they should or should not do; moreover, I have no doubt that many people will live long and fulfilling lives while exposed to the same hazards that will make other readers' lives a misery. I also know that it is absolutely impossible to avoid all known hazards. Therefore, we all make personal choices about which hazards to avoid and which to indulge.

Personally, I choose to take showers even though I know that I will inhale more chlorine than if I were to take a bath. Although there might be other environmental reasons to choose showers over a bath, I take showers because I enjoy them. However, while I could eat conventionally grown and sprayed crops, I choose to eat organic because the healthy alternative is available, affordable, and tastes better. I am absolutely convinced that the risks involved in consuming a huge variety of untested poisons can never be known, and I prefer not to take the risk.

I use the same arguments to avoid genetically modified (GM) crops. I have no idea how many people such crops will harm, but I am sure that we won't know what harm is resulting for at least another twenty years, or maybe another forty, or maybe never, if the producers of GM crops manage to contaminate every other crop in existence.

Chemical Sensitivity

When you assess the risk of any chemical toxin, you need to think about how it has been tested. Are these things safe? At what point do we say that something is safe or unsafe?

Many people have extremely strong constitutions and seem to be able to resist enormous toxic overload with minimal effects (although there is no guarantee their immunity will continue in the future). Other people are extremely sensitive and react to the slightest provocation.

When helping a chemically sensitive patient, we have two ways to address the problem—intrinsic and extrinsic. An intrinsic approach would have us improve the resistance of the individual to the toxin; the extrinsic approach involves removing the toxin.

There are some who decide not to isolate themselves from chemicals. They willingly eat sprayed food, take drugs for symptoms, contaminate their houses with perfumes and sprays, and smoke a pack a day. These people often believe that their bodies will respond to whatever challenges they throw at them, and they will be okay no matter how much they abuse their systems. I hope they are right.

There are others who isolate themselves from any and all environmental impacts. Some believe they are sensitive even to water or air. In extremely sensitive individuals, it is often better to strengthen the constitution before attempting to eliminate everything. It is important, however, not to miss a major allergen that could be sensitising the body to all the other allergens.

Real Risks

It is not possible here to assess the relative risk of all possible toxins. There are many authoritative texts and articles that will give chapter and verse on chemicals in our home, food, water, air, and cosmetics. Here, it is sufficient that I mention toxins that have adversely affected real patients in my practice—and I have personally witnessed benefit gained by avoidance. These risks were very real for the people they affected; they could also be real for you.

We are exposed to harmful chemicals via our food, water, air, cosmetics and personal care products, drugs, and vaccinations. Below, I will list those toxins I have seen, and offer some Simple Solutions for avoiding them.

Food

Contaminants can include

- pesticides,
- herbicides,
- insecticides,
- parasites,
- bacteria,
- preservatives, and
- processing.

Simple Solutions

- Buy organic.
- Grow your own fruit and veg whenever possible.
- Choose freshly picked, raw produce; it's the healthiest you can get.
- If fruits and veg are not organic, wash well with cold water.

Water

Contaminants can include

- sewage,
- chlorine,
- fluoride,
- aluminium,
- pharmaceuticals
- pesticides, and
- industrial waste.

Simple Solutions

- Invest in a good water filter. Reverse osmosis seems to offer the purest water.
- Don't drink tap water.

Air

Contaminants that can affect indoor air include

- tobacco smoke;
- combustion fumes from fires and boilers;
- carbon monoxide;
- perfumes;
- air fresheners;

- flame-retardant chemicals;
- volatile organic compounds (VOCs) from carpets and furnishings;
- formaldehyde, cleaning agents, pesticides, and solvents;
- dry cleaning fluid;
- photocopiers and laser printers; and
- cat, dust, and mite allergens.

[You can see a video of a patient who suffered from the effects of a toxic carpet at **www.live-without-pain.com.** Click on 'Toxic Carpet Sample'.]

Simple Solutions

- Don't smoke.
- Have gas fires and boilers checked.
- Make sure rooms are adequately ventilated.
- Reduce the amount of carpet in your home.
- Before you buy carpets or upholstery, put your nose to them and take a deep breath. See how you feel in the next ten minutes. Any nausea or headache should tell you to leave these alone.
- Do not use synthetic air fresheners. Essential oils do a better job, without the possible harmful effects.
- Avoid perfumes; instead, use natural fragrances like essential oils.

Our Skin and Bodies

Contaminants found in personal care products can include

- sodium lauryl sulphate,
- sodium laureth sulphate,
- mineral oils,
- talc,
- aluminium,
- fluoride,

- propylene glycol,
- pthalates, and
- butylated hydroxytoluene.

Simple Solutions

- Buy personal care products like shampoos, conditioners, creams, lotions, and toothpastes that are as natural as possible. You can find many different natural brands in health food stores. (However, just because an ingredient is made from a 'natural' source does not make it harmless. Vodka is 'from potatoes', but its effects are vastly different from the original vegetable. It makes no difference whether the sodium lauryl sulphate is from palm oil or petroleum oil; it can still cause skin irritation and eye damage.)
- Since we know that we can absorb chemicals through our skin (think nicotine patches), it makes sense not to put anything on our skin that we couldn't eat.
- Avoid deodorants that contain aluminium.
- Avoid fluoride in toothpaste.

Drugs

Drugs are some of the most tested poisons available, and yet testing will never have been for longer than two years, and many trials last for a period of three months. Long-term effects are always unknown.

When I ask the average patient why they are taking a certain medication, they nearly always respond, 'Because my doctor tells me to'. Perfectly sensible, intelligent patients are willing to suspend their better judgement and do exactly what their doctor tells them, even though research shows that following medical advice is one of the most dangerous things they could do.

Patients and doctors alike are reassured by groups like the US Food and Drug Administration (FDA) and other government regulators who are charged with the responsibility of verifying that the drugs we get are safe and effective. Unfortunately, given the recent recalls of Vioxx® and many other drugs, we know that such assurances are not guarantees.

Recalls

Remember, most harmful drugs do not have big, dramatic recalls. They tend to be withdrawn after years of use because later studies find they are of little or no use or are, in fact, dangerous.

Atenolol was used for thirty years as a mainstay of blood pressure treatment until it was found, years later, to be worse than useless[21]. Worse still, Atenolol was so trusted and popular that it became a 'reference' drug. A reference drug is one against which every subsequent drug is tested, so nearly all blood pressure drugs were tested not against a placebo, but rather against a drug that made patients worse. That means subsequent drugs did not have to *work* to get a license; they just had to do nothing.

Although all drugs have to undergo rigorous 'Phase III testing' involving 1,000-3,000 people over six to twenty-four months, these tests are not designed to determine long-term or cross-generational effects. When these drugs are released onto the market, we—the takers of the medications—are doing the long-term testing.

Control Groups

Unfortunately, by the time a licence is granted, the drug can no longer be tested; the effects can only be observed. This is why manufacturers are smart enough to do everything they can to eliminate control groups.

A control group is a set of individuals who are not exposed to the treatment. After the initial license approval, the problem with having a control group is that it makes it possible for the effects of the treatment to be known. If there is no control group, then any bad effects cannot be blamed on the treatment.

Of course, in the hype of a new drug release, when only the 'benefits' are known, the justification used to eliminate control groups is that it would be unethical to deprive any group of the benefits of the treatment.

Elimination of control groups seems to be *the* strategy for the promoters of any large chemical or drug company, whether it is for a new pesticide, herbicide, drug, vaccination, or GM food.

Your Risk Assessment

The assessment of risk is very much a personal choice. Personally, I would like to know that any human-made substance is safe over three generations, rather than three months—especially if it is to be given to people who may have children themselves.

Of course, human testing over three generations is impossible for drug trials. Drug companies could never wait that long for the profits from their inventions to roll in. Unfortunately, this means that we may well experience the effects of earlier campaigns many years later, when the cause and effect relationship can never be proved.

Ask your GP these questions about any proposed medication:

- Is it likely to cure the condition?
- What is the medication trying to prevent?
- Is it only going to ease symptoms?
- How long do I have to take it?
- Do you know why I have this condition, and someone else of my size and age does not?
- What is the NNT? (The NNT, or number needed to treat, is the number of patients that need to be treated to cure one of them, or prevent one bad thing happening in a certain amount of time. The closer the NNT is to one, the more effective the treatment. See Chapter 2 for more information.)
- What are the side effects?

Of course, there are many other relevant questions—like what were the results of the trials?—but interpretation of these might take years of training, and your doctor will probably be a little annoyed at your need even to ask.

Simple Solutions

- Just say NO! The only time to use drugs is for a short duration of time, when you know the real cause of the problem and you are taking steps to solve that problem. An example might be for toothache while you

are waiting to go to the dentist, or if you have just broken your leg, or have just had surgery.

- Talk to your doctor about reducing your medication, or having a short break from the medication, so that your need for the drug can be reassessed.

Vaccinations

Contaminants can include

- monosodium glutamate,
- aluminium,
- formaldehyde,
- latex rubber,
- microorganisms,
- polysorbate 80,
- glutaraldehyde,
- gelatin,
- gentamycin sulphate and polymyxin B (antibiotics),
- mercury (thimerosal),
- phenol/phenoxyethanol, and
- human and animal cells.

No Simple Solutions

Vaccination is a very personal, political, and contentious issue. Ask the same questions you would before embarking on any other treatment. Maybe ask for a written guarantee that there will be no harmful effects to yourself or your children.

Ask yourself whether injecting foreign proteins is going to help or hinder the development of your child's immature immune system. Inform yourself of the hazards and history of vaccination. Find out the level of compensation available from the government-run schemes to help vaccination-damaged children, how many people succeed in bringing claims, how you would

prove your child had been damaged by a vaccine and if any amout of money could compensate you for the death or permanent disability of your child?

Parents should be fully informed of the risks so that they can make better decisions. They should be told how many cases of diphtheria there were last year before their baby is given the DPT (diphtheria/pertussis/tetanus) injection. They should be told how many children died of pertussis last year, and how many of those who died had been vaccinated. They should be told exactly what is in the vaccination. Does it contain mercury, aluminium, formaldehyde, human embryo cells, egg proteins? Parents have the right to know how the vaccines were tested, and how many animals died or were tortured in the testing.

Be aware that there is a feeling that vaccine damage to children is a price worth paying. In a statement to the House of Lords in the UK, Lord Ashley said that vaccine damaged children were a special case because, like the war disabled, their injuries were suffered for the community.

"It is because they are wounded in the war against disease, a battle fought on behalf of the whole community, that this small group of children should be compensated."[22]

Weigh the risks, make your choice, and never regret the choice you make.

chapter 14

the next generation: natural babies

This book was written to put you in charge of your health. That is, I wanted to give you the information you need to keep yourself well so that you never need medical care, and, if you do need it, you only need to use the emergency treatment that western medicine does so well.

However, it is one thing to take charge of your own health, and quite another to make sure the next generation is healthier than we are, so that humankind can wean itself off its unhealthy reliance on drugs and surgery. The desire to produce healthier babies and children needs its own sanity warning, for, if you start to make 'unconventional' decisions about your children's health (no matter how natural or sensible they are), you run the risk of severe hostility—even imprisonment.

Nevertheless, our children need protection from the massive uncontrolled experiments currently being forced on our population by authorities who have to be seen to be ***doing something*** (doing something wins votes), and corporations who want to sell us a remedy for our fears, pains, or discomfort.

Parents everywhere need to protect their children from meddling and interference, for it is the children who have the most to lose, and the longest time to regret it.

Interference

When you look at the hazards of interfering with proprioception, it soon becomes obvious that human function is a complex and complicated system that doesn't take kindly to interference, no matter how educated or well meaning.

Unfortunately, in the area of childbirth and obstetrics, meddling and interference are the rules rather than the exception. Still, although most of conventional obstetrics and the medicalisation of birth seems contrary to common sense, there are a growing number of physicians questioning established wisdom, and a large body of data to support their conclusions.

If you follow the natural way, you do have to accept a degree of risk, and this is hard for anyone young and inexperienced. Many people would rather have somebody else (usually a 'higher authority') take the decisions, and then sue if those 'experts' get it wrong. It takes tremendous courage and conviction to accept the responsibility for making a decision, based on good research and rationality, and then believe that decision to be right even if fate eventually deals you a nightmare.

Healthy Parents

To have a healthy pregnancy and child, prospective parents must be healthy first. Hopefully, they will have eliminated sources of nerve and proprioceptive interference, had their muscle tone and muscle reflexes checked, and followed a good organic diet, free of genetic modifications.

During pregnancy, it is important that women cut down or eliminate dairy products, and avoid tea, coffee, and alcohol. Of course, avoiding smoking and drugs should go without saying.

Ultrasound

Many authorities now recommend that children not be given mobile phones because of the possible damage done by (microwave) radiation to the developing cells of the child's brain. Why, then, do parents allow and encourage ultrasound scans of their embryos and foetuses?

Marsden Wagner, MD, is a neonatologist and perinatal epidemiologist, and

was responsible for maternal and child health in the European Regional Office of the World Health Organisation for fourteen years. He says,

'Although ultrasound is expensive, routine scanning is of doubtful usefulness, and the procedure has not yet been proved to be safe, this technology is widely used, and its use is increasing rapidly without control'.[23]

There may be very good reasons to have an ultrasound, but finding out whether the baby is a boy or a girl isn't one of them.

Ask these two questions:

1. What are the chances that you would advise termination, or a change of management, of this pregnancy, based on the outcome of this scan?
2. Have any studies been done to rule out a link between ultrasound scanning and autism, attention-deficit hyperactivity disorder(ADHD), or other neurological problems?

Delivery

Unfortunately, most of us are thrust into the childbirth process with little or no experience. We are at our most vulnerable and trusting at this time—which makes extremely alarming the discovery that almost all *routine* obstetrical practices are unnecessary and potentially dangerous. Of course, all obstetrical practices have their uses occasionally, and no one would want to put the safety of themselves or their baby at risk. But, many times, routine procedures are only there for reasons of history, convenience, profit, fear of litigation, or ignorance.

If the woman's diet is good, and her low back and pelvic muscles are free of interference, there is no reason why she should not have a trouble-free labour and delivery.

Nature's Way

In Nature, an animal about to deliver will take herself somewhere quiet and comfortable. In isolated societies, women would go together to give birth. The natural process of giving birth is an entirely automatic one in which women pass into a trance-like state over which there is little to no control.

In western society, we often interfere with this process. Women in labour are subjected to bright lights, impersonal surroundings, strangers, and any number of examinations and monitors. Whatever else foetal monitoring achieves, it brings the woman out of her trance.

Dr Michel Odent, obstetrician and natural childbirth campaigner, even suggests that partners try not to interfere in this stage of labour as their exhortations to 'breathe...breathe' may have just the wrong effect. An experienced midwife knows exactly at what stage of labour a woman is in *by her breathing*. There is little need for internal examinations.

In Nature, women would be able to move around and find their own position for delivery. Gravity helps the process, so many women find squatting the best position for delivery. This, of course, can be prevented by standard obstetrical practise, including epidurals, monitors, and examinations.

In Nature, the baby would be put straight onto the breast of the mother after delivery. Even if the baby does not suckle, the contact of the baby, its crying and its smell, will cause natural oxytocin to be released in the mother, saving the need for an injection. In hospital birth, oxytocin is often given by injection after the birth of the baby to 'deliver the placenta' and 'reduce the risk of infection', which seems odd when the effect of the drug is to force the uterus to contract so fast that considerable traction needs to be placed on the placenta to get it out in time. This may result in haemorrhage and an open wound that has an increased risk of infection.

The umbilical cord should be left until it stops pulsing (at least three minutes) before being clamped and cut, so that the baby is not deprived of oxygen in those first few minutes after it is born. The baby can lose one-third to one-half of its lifesaving oxygen supply if the cord is clamped and cut early.[24] Visit **www.cordclamp.com** to read how early cord clamping can cause cerebral palsy, ADHD, autism, autistic spectrum disorders (ASD), learning and behavioural disorders, and mental deficiency.

The Hospital Way

In hospitals, delivery may be induced. Elective induction increases the risk of a first-time mother needing a Caesarean section by 50% to 250%.[25-31]

Forceps or ventouse may be used, sometimes causing bleeding and altering

the shape of the skull. This can affect the development of the spine and the size and shape of the brain.

The baby's heel is pricked to test for phenylketonuria. The incidence of phenylketonuria is 1 in 10,000—meaning 9,999 tests are negative for every 1 that is positive. This test is compulsory if your baby is born in hospital in the US.

Synthetic Vitamin K is given by intramuscular injection to prevent Haemorrhagic Disease of the Newborn. This is definitely not natural, as Haemorrhagic Disease of the Newborn *only* occurs with early cord clamping, because the baby's vital clotting factors and 30%-50% of its blood are left in the placenta.

Medicine's most common criteria for a successful delivery is simply a live birth and a live mother, along with a basic test of function like the APGAR (appearance, pulse, grimace, activity, respiration) score.

It is no wonder that home births are making a comeback. Many women are pleased they had their baby in hospital because there were complications, but who can tell how many of those complications were as a direct result of being in hospital? We can never know.

Dr Wagner (see above material on ultrasound safety) has also said, 'Overwhelming scientific evidence shows that the home is a perfectly safe place to give birth if you are one of the more than 80 percent of women who have had no serious medical complications during pregnancy'.

The Early Years

DPT vaccination is given at two, four, and six months. Various other vaccinations are given throughout childhood. Vaccines are definitely not natural. (See previous chapter for specific vaccine issues.)

Milk-based formula is given. Formula is not an accurate imitation of breast milk. Breast milk is not pasteurised, cooked, evaporated, and sourced from another species. Children are given pasteurised cow's milk from cows kept indoors and fed unnatural diets. Many breastfeeding problems would be eliminated if women were not themselves taking dairy products, coffee, and tea.

Children are weaned onto wheat-based cereals, which are themselves not

natural. In primitive societies, children were weaned by parents who would chew their baby's food for them, and then feed it to their baby. This solved the problem caused by the fact that babies do not possess the enzymes in their saliva to digest starch.

Many children are given a plentiful supply of non-foods like sweets, chocolates, crisps, biscuits, tea, colourings, flavourings, processed meats, and dairy products.

Your Way

Whenever a health professional wants to do something that could affect your child, ask them how it has been tested in children and whether it has been shown to be safe over three generations. This is the only way you can protect your grandchildren from someone's good idea or a drug company's bottom line.

If you are told that the intervention has been tested in children, be very suspicious. Children cannot give informed consent, and, therefore, studies in children are fraught with ethical complications and are rarely undertaken.

Young parents wanting to start a family are easily swayed by medical and orthodox opinion. It is very hard to hold fast to natural principles, and many defer to medical procedures, not because they are necessary, but because they are possible.

Fortunately, many hospitals and birthing centres are now apparently paying attention to the wishes of parents. Often, however, if you don't question, you won't be asked for your preferences.

Be careful, though, because it is easy for professionals to sway you so that their wishes become your wishes. Hospitals retain the right to act 'in your best interests', so you may find your preferences ignored if things start to get 'complicated'.

In other words, in this day and age, raising 'natural babies' and a healthy next generation is not going to be easy.

conclusion—
what you can do

When it comes to health, there are basically three belief systems:

1. Everything that happens to us is preordained, either by God or our genes.
2. Our health is primarily a function of luck.
3. Our health is determined by interaction with our environment.

If you believe in either of the first two options, looking after your health becomes a rather pointless exercise. You will believe that there is nothing you can do to control your future, and will live according to your tastes and preferences. If and when a disease or disability does strike, you will likely accept the treatment option that requires the least effort on your part.

Only with the third belief system will you have the ability and attitude to do things differently. You know that if you don't change anything, you will get more of the same. Obviously, if you're happy with your health, more of the same is good; if you're unhappy, more of the same is not so good.

Good Management

So, what if health were not based on good luck but good management? What if every one of us was capable of living into old age free of pain, disease, and disability? What if every time you got a disease, your doctor would find the cause of the disease and remove it? No drugs, no surgery, no expensive and

unnecessary tests—you'd just receive the information you needed to restore the ability of your body to heal itself, like it is supposed to, and achieve a complete cure, nearly every time.

Impossible? Maybe not.

Give vs. Do

Though many people say, 'I would give anything to get rid of…' when it comes to the crunch, ***the most important question in health care is not what someone will give to get better, but what they are prepared to do to get better.***

When we say we will give anything, we are offering to pay someone to take away our problem. The responsibility becomes theirs, and, naturally, if they fail or make us worse, then the whole problem becomes their fault and we may want compensation. The spiralling cost of modern medicine takes another spiral.

When we say that we will *do* anything to get rid of the problem, however, the responsibility for success or failure rests with us. We must find the right solution and implement it diligently.

Only by accepting that you are the only one responsible for your health, can you create a sustainable, drug-free future. Except in times of emergency, you are in charge; you are in control.

Who's Responsible?

When times are good, we all think we are responsible for our health. And why not take the credit? After all, we exercise, eat well, and think positively. Even if we do take the odd painkiller… even if we do have the odd backache or headache, hay fever or a cold, once a year… we certainly don't feel ill.

But what happens if you do get a problem? *Now* who is responsible? It is much harder to believe you are in control of your health if you become ill or start to have symptoms. Do you keep the responsibility for your lack of health, or do you give it away?

It doesn't matter whether we give our responsibility away to a doctor, a surgeon, a painkiller, an antibiotic, a faith healer, a chiropractor, or an acupuncturist—we still have given away our responsibility to manage our own health. Naturally there are many skilled practitioners around who can help you, but the "project manager" should always be you.

Your Parents' Choices

The type of medicine we choose depends on our beliefs. Those beliefs were formed during our upbringing; they are based on our education and experiences, most of which we did not choose and over which we had no control.

Your parents made hundreds of choices that influenced your health. They decided what they ate, drank, smoked, and took before they conceived you and while they carried you. They decided whether to breastfeed you, what to feed you, where to deliver you, what drugs to give you, whether or not to vaccinate you, the school you went to, and how much television you watched. All these things, and many more, affected not just your health, but your attitudes towards health.

Your parents did their best with the knowledge they had, just as you do now. Most of this knowledge was based on medical science, as interpreted by doctors, politicians, corporations, advertisers, and the media. It's important that all of us are humble enough not to *believe* everything we *think*.

My Best Advice

Much of this book has attempted to give you the inclination and tools to question conventional wisdom. I hope I have been able to show some of the reasons why the current medical system of thinking is broken. (If you want more reasons to avoid western medicine, visit **www.live-without-pain.com** for links to other resources.)

I have offered many suggestions, but here's a summary of the five most important:

1. Remove as much jewellery as you can, as often as you can, or replace it with non-metal alternatives.

2. Be aware that the metal in your mouth might be part of your problem. Because it is expensive to remove and replace dental metal, before you proceed you probably should find a practitioner experienced in proprioceptive testing to check whether your teeth are part of the problem.
3. Take as many of the toxins out of your home and your life as possible.
4. Eat loads of good, mostly raw, no sugar, low-grain, high-nutrient food.
5. Avoid all medications except for very short-term use and emergencies.

Common Sense

The principles of natural health are quite straightforward, especially when you examine well-being with proprioception in mind. Once you abandon the folly of treating conditions, and act always to strengthen and build the body, the rest is just common sense. It all comes down to, 'Don't mess with Nature, because there is a good chance you might live to regret it'.

Unfortunately, living with this very simple philosophy puts us at odds with the majority of our community, the media, health professionals, governments, and just about every other do-gooder on the planet. Everyone wants to ***do something***. It's as though nobody trusts Nature any more.

I am not advocating that anyone be left to suffer or die. Picking those times when *doing something* is a necessity requires skill and experience. When decisive action will save a life or transform a bad situation, then we give thanks to those who have the skill and knowledge to act.

More often though, the people we trust to act on our behalf meddle with things that aren't broken and don't need fixing. Top of the meddlers are governments, dentists, doctors, and food producers.

Facing the Hostility

If you should decide to trust Nature, you may find yourself subjected to variable levels of hostility from friends, family, and even the authorities. You are defying conventional wisdom, a stance that threatens what other people believe and may have staked their careers on.

The medical profession works very hard to protect the current paradigm of health and disease. Dissenting voices within the profession are often accused of unprofessional conduct, and views coming from outside the profession are dismissed as quackery. Whether or not the novel treatments are effective is irrelevant to the criticism. According to some doctors and academics, a treatment is not proven until it has been published in a peer-reviewed journal, as if the act of publishing alters the authenticity of the treatment.

Modern medicine fails to improve the health (as opposed to manage the symptoms) of the majority of patients, yet it will be defended for two reasons:

1. It is good for business. Curing a disease is much less lucrative than a lifetime of treating symptoms.
2. There is a widespread belief that there is no viable alternative. ('What caused your disease is unknown, and, therefore, the best we can do is control your symptoms'.)

Placebos?

The techniques and methods of practice that have grown out of an understanding of proprioception enable any fully qualified health practitioner to find the treatment most suited to an individual patient, based on the patient's needs at that time. Moreover, the practitioner has the opportunity to test the usefulness of many different therapies before they are even applied, so that the patient and practitioner have a high degree of certainty that a given treatment will be successful.

Critics will argue that a high degree of certainty will increase the likelihood of a placebo response, forgetting that all medical interactions— including drugs and surgery—carry a very high degree of certainty and placebo response. That is part of the therapy.

If the only outcome that mattered was that a particular patient recovered, and if this result was best achieved by a placebo, wouldn't you like a diagnostic system that told you that? Therapeutic benefit without a placebo response is only important in clinical trials. In the real world of a practitioner/patient relationship, the placebo effect is ever present, and especially so in western

medicine with its awe-inspiring power of doctors, specialists, hospitals, and technology.

Not Treatment, But a Cure

Proprioceptive medicine practitioners have systems that identify the patient's highest priority for treatment. With any complaint, there will be dozens of treatments that 'might help'. Fortunately, systems exist that help us determine exactly the treatment or therapy that is going to produce the greatest result in the shortest time.

Thus, finding a practitioner skilled in the diagnosis of proprioceptive interference should allow you not to waste time and money on treatments that don't work.

If all you want is a treatment, then almost anything will do. If, however, you want a cure, there are certain essentials you must take care of, and removing all types of deficiency and toxicity should be top of your list.

If you have scurvy, there are hundreds of treatments, vitamins, and minerals you could take, but only one will 'cure' you. With accurate testing, a skilled practitioner can avoid referring the patient to endless specialists for expensive but pointless tests and treatments that don't work.

Remember that healing takes time. Even after you remove all interference to the way your body works, symptoms may persist for a little while as your body works to heal the damage you did already. However, you should see good progress in two weeks, great results in six weeks. How long it takes for you to be "cured" depends on how long you had the weakness in the first place. If you are not seeing good results, keep looking for the cause, and keep working at it until you solve the problem.

And when you do solve the problem, let the world know via the **live-without-pain.com** website. You never know, your story might stop countless people suffering the way you did.

In this way, you too can help the people for whom this book has been written—people just like you, who want an alternative to drugs and surgery, and who are prepared to take control of their health so they may live long, full, and pain-free lives.

appendix—
a note for practitioners

If you would like to join the growing number of proprioceptively-aware practitioners, you are welcome to join the Association for the Advancement of Proprioceptive Medicine. Full-time and suitably qualified health professionals are welcome to join and to contribute to the body of clinical and research evidence being collected at **www.proprioception.org.uk**.

The assessment of muscle reflexes and muscle tone is relatively easy to learn, but difficult to master. Seminars and further educational materials are available from the association.

Our website—**www.live-without-pain.com**—holds links to practitioners who have completed the basic training.

The Association provides a 'certified' status to practitioners who prove they are able to identify patient-relevant muscle inhibition.

Patients interested in proprioceptive medicine can search for trained and certified practitioners in their area.

epilogue

"Where's your evidence?"

I can almost hear the chorus of health professionals now. The great cry that allows anyone who has sat through 5-12 years of study, to steadfastly hold to what they have been taught is true based on the current paradigm.

Unfortunately the current paradigm provides precious few answers, especially when it comes to relying on published research evidence.

Although the question of evidence is fair, the evidence that exists to prove any clinician's success will be slim to non-existent.

Ten years ago I sat through a 2 year Masters programme in Health Services Research and Technology Assessment at the prestigious School of Health and Related Research at the University of Sheffield.

I enrolled because I wanted the answer to one question, "How can I conduct meaningful practice-based research?"

After a lot of sweat, tears, study and questions, I finally found my answer. It's not possible.

Medical research functions on a set of assumptions and presumptions which preclude most practitioners from conducting meaningful studies.

The gold standard in clinical trials is the placebo-controlled, double blind trial. This is ideal for drug testing because the only variable is the drug and

the effects of the drug are not much influenced by the skill of the prescriber or the environment in which it is prescribed.

Since most non-drug interventions depend on the skill of the practitioner and the type of therapy administered is perfectly obvious to the patient and practitioner, trials attempt to control unknown variables through randomisation.

Randomised Controlled Trials are a great idea in theory but have several drawbacks which make their implementation by clinicians almost impossible and their results inapplicable.

The controlled trial attempts to remove chance, bias and confounding from an experimental observation. By controlling or leaving unaltered as many of the "extenuating circumstances" as possible, it is hoped the the effects of the therapy can be ascertained.

Good randomisation is supposed to ensure that variables in patient selection are eliminated so that the results are not biased by selecting healthier, younger or better-suited people in one group or the other.

However, most RCTs presume that all practitioners are the same and the patient experience will have nothing to do with the outcome.

As an example, in 1995 the MRC Meade Trial compared randomised patients attending chiropractic or hospital outpatient clinics to receive either Chiropractic treatment at one of the private clinics that had volunteered for the study or at hospital outpatient physiotherapy clinics. Three years later, those treated in chiropractic clinics still had more benefit than those treated in the hospital clinics.[32] But what actually caused the benefit?

Was it that chiropractic treatment really is better or are chiropractors more confident, or more personable? Did the chiropractic clinics play better music than the outpatient clinics, were the reception staff better trained? And so on.

Far from being controlled, randomisation across centres introduced hundreds of confounding factors.

Added to this uncertainty is the fact that patients had clearly expressed a preference for the type of therapy they would receive by attending either physiotherapy or chiropractic in the first place.

The RCT avoids selection bias by randomly allocating patients to placebo or treatment groups. Fair enough don't you think? Unless you're a patient.

Imagine you took your car in for servicing and they asked you to sign a form agreeing to have your car randomly allocated into one of two groups, one using your regular oil and another using an experimental oil.

Do you think you might have a preference as to which one was used? Do you think that this might bias your observations of your car's performance? Do you think you might take your car to another garage? Would you be prepared to pay for this service? Would you be worried that your car's engine might seize the week after the service and do you think this anxiety might affect the way you drove your car?

If you want to compare chiropractic with acupuncture for low back, are you going to recruit low back pain sufferers from the general population or from patients consulting a specific clinic?

Naturally, clinic recruiting is easier. But patients attending a clinic have already expressed a desire to be treated in a certain way. Is it ethical to deny them their wishes?

Patients have always, directly or indirectly chosen their own treatment modalities.

RCTs are predicated on there being no expectation of benefit on the part of the practitioner or the patient. If one therapy has clear benefits over another, there is no need to do an RCT.

Unfortunately this is almost never the case in practice. Barkun et al. published a RCT of laparoscopic versus mini-cholecystectomy in 1992, and he stated that there was a high rate of withdrawal after randomisation, especially in the group for open procedure. He stated that "the trial was stopped because patient recruitment had become difficult".

Our patients are paying for treatment, not to be experimented on. If someone is paying for my service, I can't ethically deny that person my best treatment, even temporarily, in the interests of research.

To undertake a randomised controlled trial as a clinician, I would have to treat the treatment group for free and attract patients willing to take part

in the experiment (sometimes even paying them to take part), devoting enormous time and resources to the process.

While I might be able to prove that in my practice, a certain treatment is beneficial to certain patients, that result would not be applicable to other practitioners.

So I would have to convince others to participate in the trial even though we are theoretically investigating something for which there is no clear preference – which means the level of interest in the outcome will be low.

The structure of the RCT is such that only small samples of patients are used to test one or two symptoms, usually using constrained technique choices using carefully selected or willing clinicians who may not be representative of the general population of clinicians. Bias and chance are almost guaranteed; yet this is supposedly our gold standard? Then these microscopic snapshots have their results pooled and guidelines are developed that supposed to dictate "best practice". It is ridiculous.

No clinician would start a trial if they did not have an expectation of benefit of one treatment over another and yet this immediately stresses the outcome and makes recruitment difficult.

All the average patient wants to know is "Is this likely to work for me?" The truth is, to answer that question, you don't need an RCT, you just need a comprehensive audit procedure.

If you want to know whether physiotherapists get better results than chiropractors, or whether osteopaths get better results than chiropractors, you could just measure their outcomes using an independent auditing procedure.

Patients are happy, they received a widely used and accepted treatment. The clinicians are happy, they were doing practice-based research on paying customers. The professions are happy because we advance our knowledge and the researchers are happy because they come out with a very well controlled trial with broad validity.

Imagine the questions we could finally answer.

With a standardised and independent measuring system, quality comparative trials become reliable and cheap to implement. As long as the same

measuring process is being used, many things can be compared.

A practitioner could compare the results of two different therapies. A government could compare the results of two different drugs. An insurance company could decide who best to refer their patients to.

One day it hit me. What if we take chance and bias out of the equation all together? What if we just measure our results and then compare our results with ourselves and then with anyone else?

Outcomes assessment is an important and well-respected part of research. The most commonly-used tools have been validated and checked, but there is little consistency in use, so it becomes impossible to generalise the results.

What we needed was a validated, easy-to-use, online, patient-centered outcomes assessment delivered automatically to the majority of our patients with medium to long-term follow-up.

This is exactly what **RecordYourResults.com** was set up to achieve. I have been testing and refining the system over the last 12 months and it is now ready to go.

I use it to manage my patients and my practice better. At a glance I can pick out any patients who aren't improving or getting worse.

I can get snap-shots of my practice and see what type of patients I am seeing and how quickly they get better.

I can even enter data to record to find my cost-effectiveness and follow this over time so that if I modify my approach, I can measure the effects of those changes.

At any stage I can sit down with my patients and find out how they perceive their progress and what is stopping them feeling 100%. I can also get them to see how my treatment is changing their condition and their health in the long term, not just with the pain they have today.

In time, as the body of data grows, I will have real data on which to base any advertising and claims I wish to make and I will be able to counter the non-believers who say "where is your evidence" with the counter of "where is yours?"

RecordYourResults.com is open to any health practitioner who really wants to assess the effectiveness and cost-effectiveness of their therapy and I encourage all practitioners to have a look at the system, whether they are interested in pursuing Proprioceptive Medicine or not.

Simon King
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about the author

Simon King has been practicing and teaching chiropractic for 22 years.

He grew up in Auckland, NZ and had his first chiropractic treatment after falling off a chair at the age of 6. That early treatment seemed to end his prior need for weekly blood tests that were searching for the origin of a "leukaemic – like" condition and ironically, low muscle tone.

At the age of 14, the chiropractic philosophy that the body would look after itself if the nervous system was working properly, seemed so appealing that he chose this as his future career.

Around this time he also took up bike racing and made the NZ cycling team at the age of 17, competing in road and track events in New Zealand and Australia, including the Empire Games in 1980.

He started his chiropractic studies at the RMIT (then PIT) in Melbourne, being part of the first-ever government-funded chiropractic course. After 5 years' full-time study he practiced for 2 years on the Gold Coast in Australia before taking up a teaching post at the Anglo-European College of Chiropractic in Bournemouth, England, and then moved back into practice in Retford, Nottinghamshire and Grantham, Lincolnshire.

As his practice developed, he became fascinated by the fact that certain patients responded to treatment easily while others did not and the

difference could not be explained by current knowledge or teaching. Simon studied and became proficient in Applied Kinesiology, a system of diagnosis based on manual muscle testing and became a diplomate of the International College of Applied Kinesiology in 1996. The theory that became proprioceptive medicine grew out of his desire to understand the facilitation and inhibition that are fundamental to Applied Kinesiology.

He has been teaching Applied Kinesiology and proprioceptive medicine to health professionals for 8 years and is currently practicing in Berkhamsted, Hertfordshire.

UK £10.95 Health & Fitness

Are your jewellery and dental work causing you pain or ill health?

Do you have an illness or injury that just won't heal? Do you suffer from unexplained aches, pains, stiffness, or fatigue that won't go away, no matter what you try? The culprit may literally be right under your nose or hanging around your neck. Simon King, an experienced clinician, explains in plain language how necklaces, rings, watches, piercings and metal dental work can affect your sensory nervous system and muscle reflexes - whether you can feel anything happening or not.

Based on a well-known but under-appreciated mechanism called "Proprioception," *Live without Pain* reveals how many common items activate proprioceptive mechanisms which leave you vulnerable to pain, and how you can remedy these without drugs, surgery or exercises. It offers individuals and health practitioners alike simple solutions that build health; sometimes resolving even long-term health issues in the process. You will learn:

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Free yourself and your family from common toxins in your home, food, bathroom, and your lifestyle.

Simon King**, founder of the Association for the Advancement of Proprioceptive Medicine, is an international lecturer in Proprioceptive Medicine and a chiropractor with 20 years of private patient care. In addition to this book, Simon provides videos, training seminars, and consulting to chiropractors and other health professionals looking for diagnostic and treatment methods to better help their own clients. For more information, go to **www.live-without-pain.com

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