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The Good Back Guide

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Published by Century

Extract

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FOREWORD

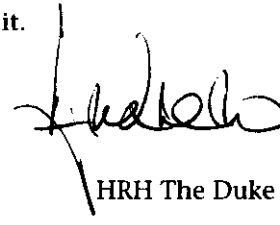
I have spent many hours in the pilot's seat of a helicopter throughout my naval career and I have not been immune to the ergonomic failures of seating arrangements in aircraft.

We are generally considered to be increasingly sedentary in our society and the occurrences of musculo-skeletal problems are, as a result, becoming a major problem in our everyday lives.

The need to learn how to sit correctly and how to help ourselves recover from sitting with an incorrect posture is vital in countering musculo-skeletal problems, particularly as we now spend so much time in front of a computer screen.

Barrie's book so clearly illustrates these problems and imparts his knowledge and skills to allow each of us to help ourselves. Thus we can either prevent musculo-skeletal problems from ever occuring or remedy them by taking the correct actions to alleviate their consequences.

I have benefitted from Barrie's skill for many years and the knowledge, expertise and experience that he has built up from more than 40 years in practice will, I hope, bring much relief to many. It will help a wider audience understand that moving from tree to grassland has affected our skeletal structure and that with a little more care and attention we can learn to work with our body's design rather than against it.



HRH The Duke of York

1 IN THE BEGINNING . . .

Think of this as not so much an 'introduction', but more of a 'beginning'. This is a book about you and me, the human animal, and about the apparent paradox as to why, on the one hand, we are undoubtedly the most successful animals on the planet – even the universe – yet on the other, we are the only ones to suffer from epidemic levels of back pain. At first sight, the two can seem incompatible but, at a closer look, the first is really the cause of the second.

Since the middle of last century, our modern world has accelerated at an unprecedented pace and indeed shows no sign of slowing down. Our modern media has permitted the spread of ideas faster than at any other time in our history. The trouble is that this evolution of ideas has outstripped the evolution of our body's structure.

We are like the pigs in George Orwell's *Animal Farm* that eventually move in to Farmer Jones's farmhouse where they look totally out of place, trying to sit in the armchairs, eat at the kitchen table and sleep in the beds. Take away our clothes, and with it the very thin veneer of sophistication that we allow ourselves, then picture us sitting at our computer desks, driving our cars, slumping in our soft armchairs and squashing ourselves into plane seats. We look ridiculous. We quite simply don't fit into the world we have created. Let me give you an example.

CURSE OF THE CURSOR!

CURSE stands for Continuous Use Repetitive Strain Effect. It applies to a myriad of situations, from the shoulder tension felt when driving on a motorway at night, to the muscular tension in the forearm from controlling the cursor on a computer screen with a mouse.

Take a moment to understand what happens when you use a mouse. The instant you hold the mouse you send a signal along a nerve from the brain – your body's central computer – to the muscles of your forearm and hand. It's like watching an old Wild West film where the 'baddies' light the fuse to a stick of dynamite. The flame zaps along it and eventually causes an explosion. Your thought ignites a chemical reaction along a nerve pathway until it reaches the intended muscle. The 'explosion' is an electrical discharge at the nerve/muscle junction, which causes the muscle to contract. This is a process that is going on consciously, and unconsciously, all day 24/7.

We're active animals, with our muscles instigating and controlling our movements, be it from turning our heads, picking up a cup or simply walking. But we're neither structurally nor functionally designed to hold muscles in contraction for long periods of time, just as we do when holding the muscles in the forearm tense to control the mouse.

Every contraction of a muscle requires energy; this energy comes in the form of a starch called glycogen in the blood supply. Arteries, with their muscular walls, pump blood into muscle tissue, energy is released to contract the muscle fibres, and lactic acid is produced as a residue.

Normally the movement of a muscle, a contraction and relaxation, helps as a pumping action on veins to drain lactic acid

from the area (venous drainage). But if the muscle is consuming energy and producing lactic acid but remaining permanently contracted, then it's unable to produce the necessary pumping action for the efficient drainage of the veins. The result is that lactic acid builds up in the muscle fibres, rendering them hard and painful. Meanwhile the repetitive use of the same neural pathway 'burns' a permanent circuit in the system. The whole effect is a constant neural signal producing a contracted hardened muscle that is permanently bathed in lactic acid. It becomes impossible to consciously relax the muscle, resulting in pain and stiffness.

THE REPETITIVE STRAIN EFFECT

The evolutionary idea that has produced the computer and the mouse has been far faster than the evolution of the structural and functional ability of the body to cope with it. It could be argued that we were better off when we used the old upright Imperial typewriter, where we had to make that sweeping movement, with



the right hand, to return the carriage to the start at the end of each line, and had to use a more exaggerated finger movement to depress the keys. Those movements, repeated every few seconds, were the necessary squeezing action of the forearm muscles to ensure the 'pumping' motion for the venous drainage. As one friend remarked, 'If only the Imperial had contained a cut and paste function, all would have been fine.'

UPPER AND LOWER BACK

The majority of back problems, other than those caused by injuries of excessive force and strain, are due to the widening gap between the pace of the evolution of ideas and technology and the comparative slowness of the evolution of our bodies. These problems frequently blight our everyday lives.

While lower back problems are often the result of our difficulties in standing upright – and so working against gravity – with a lumbar spine increasingly weakened by our excessively sedentary lifestyle, problems with the upper back, neck and shoulders, are the result of our interfacing with the world of evolving ideas. A sedentary office life glued to the computer has become our biggest enemy.

WHY SHOULD YOU READ THIS BOOK?

Recently receiving the practical details of how to collect my pension made me realise that I must now be cast in the role of elder statesman in my profession. It also made me realise that I have been promising to write this book for years and it is high time I got on with it. Forty years of treating, teaching and

learning from both patients and students has given me a unique insight into how we function, what goes wrong and, importantly, what can be done to correct it. I have always tried, and I hope succeeded, in explaining to patients in words, and examples that they can understand, the cause and the reason for their problems.

Having had one of the busiest practices in London, and over such a long time, has enabled me to knock around ideas with a broad spectrum of people. For many of my patients and friends the ideas expressed here are old hat. I have never been one to keep my light under a bushel. To those with whom I have not had the pleasure of one-to-one connection, I hope that this combination of a lifetime's work and ideas will be both useful and informative.

STANDING UPRIGHT

Around 3.6 million years ago a simple event was captured for posterity, giving us a brief but tangible glimpse of the presence of our ancestors on this planet. Three sets of footprints were inexorably imprinted in wet volcanic ash freshly blown from the nearby Sadiman volcano in what is now modern Tanzania. One figure was in front, the second almost following directly behind and the third, slightly smaller, behind up and to the left.

These now famous Laetoli footprints show that they were hominids, human-like animals, and that they were standing upright. Were they a family with a child? Where were they going? How did they communicate? And, for the purpose of our statistics, did they have back pain, shoulder problems and headaches? Unfortunately, there are too few frames of even this quality for us to piece together a picture of our past.

Our nearest relative, the chimpanzee, can stand upright for periods of time, and so we can conclude, that evolving over millions of years, we must have gradually improved upon this attribute. In fact we haven't changed much physically – we share some 99 per cent of our genes with chimpanzees – but where we have changed is intellectually. Put in simple terms, that means if we had two bags of Lego, in the form of genes, one to build the human animal and the other a chimp, we could swap 99 pieces in every hundred and, in theory, still end up with our objective. But, in contrast to the chimps, for some reason we have been able to access our brain – our computer – to load and run an exceptional quantity, and quality, of 'software programmes'.

Geneticists suggest that women chose the more intelligent male as their partner, thus producing more intelligent offspring, and in this manner we have progressed to our current level of intellectual capacity. In a way, this intellect, and with it curiosity, came upon us a little too quickly and it has evolved at a seemingly unrestricted pace. We could have done with a few more million years, perfecting the change from walking on all fours to standing upright. This may well have resulted in a spine better adapted to sitting and standing in an upright manner than the one we currently have.

SURVIVAL OF THE ECONOMICALLY FITTEST

I have a lovely 75-year-old gardener who looks after the land around our house in France. He has lived in a small hamlet, in a modest house, and looked after gardens and the land all his life. You can see just from looking at him that he is a happy man.

I said to him one day, 'Roger, never envy those who left the villages and went to the city to seek money and fortune. They

all crave enough money to retire and do what you have done all your life!'

We settle for long hours in appalling conditions, facing the one-eyed monster of the computer, a slave to its presence. Though we earn more money, in real terms our disposable income, once we have paid the outrageous sums for just surviving in this expensive world of ours, leaves little left over.

The price we pay for this version of Utopia is a massive increase in back pain. Instead of the promised earlier retirement, and greater leisure, we are now facing the need to work even longer. Our increasingly sedentary existence weakens us further and, unless we learn how to adapt, this will only worsen.

A BRIGHT NOTE OF OPTIMISM

If what you have read so far seems to be all doom and gloom, then let me help change that to something far more optimistic. Let me inject some element of hope, in a belief that we, the human animal, can learn by our errors and use the intelligence that we undoubtedly have to truly improve our future.

We have to take a radical look at the workplace. It is our interfacing with it that leads to most neck and back problems. We must teach our children how to avoid postural disasters as they slouch over the computer screen. We must devise a more 'user-friendly' environment. In the long run, the costs involved would be met by the savings in medical expenditure and the increased production of a workforce that is not weakened by back pain. We are at an unprecedented moment in our history and more than ever the future is potentially under our control. The baton has been passed to the next generation and they must improve on

what we have done in the past.

Evolution is, and always has been, about survival. This book is about surviving, by understanding the problems we face in the modern world and, with that knowledge, being able to intelligently command our future. Back pain may not be fatal, but – as you'll know – it does affect the quality of our lives, and that's important. We have to learn to survive today, under today's circumstances, and it is to this end that I have written this book.

2 BACK PAIN: HOW DID WE GET INTO THIS STATE?

The human animal made two errors: the first was standing upright; the second was leaving our natural environment. We might have evolved to survive the first had we not rushed into the second.

When we embarked on a journey of scientific and intellectual evolution, we not only defined the moment of our success but also of our demise. Instead of evolving to live in harmony with our environment, we created the environment in which we live and have, ironically, become the victims of our own creation.

So while we have successfully become the most – or perhaps the only – intellectually developed animal on this planet, we are also the animal most poorly adapted to its environment. No longer are we in a world of survival of the fittest, but rather a world of survival of the economically fittest, and the economically fittest are, for the most part, urban-based and sedentary. And by driving our children to and from school, for example, we are teaching them to do the same.

Back pain is now filtering through to our teenage generation, as they sit uncomfortably at school desks, designed for yesterday's shorter generation, to return home to an evening sitting, slumped, in front of the TV or computer.

Unlike other animals, which have slowly and continuously adapted to their environment, we have bypassed that route. In previous generations we reached sexual maturity earlier, had many children and only the fittest survived – the planet's formula for progressive evolution.

Now, in our socially ordered society, we don't reproduce until later, have one or two children at the most, whom we can keep alive irrespective of the process of natural selection. In this state we can neither expect to have the time, nor turnover, to adapt to our environment. Natural selection would take far too long to produce the measures necessary for us to cope with our rapidly changing self-created world. The goalposts have moved, and are moving quickly, and our bodies simply can't keep pace with our minds.

It is no coincidence that over the last 50 years, there has been an unprecedented expansion in every sphere of intellect, but there has also been a catastrophic rise in the incidence of back pain. While our intellectual evolution, as shown by our material and scientific progress, rises at an astounding pace, the downside is that our physical demise matches it.

Current statistics from the Department of Health indicate that back pain is costing British industry some five billion pounds a year in lost production through absenteeism and the National Health Service (NHS) £481 million a year in treating it. The tragedy is that this is the UK's leading cause of disability, and even more disturbing is that recent research is showing that back pain is increasingly prevalent among children. These are NHS figures, and so do not include those who seek private help for their problems, or who suffer silently and struggle on with what they feel is an incurable situation. The real figure is probably much higher.

We are getting progressively weaker, less adapted, and thus less capable of coping with the world we have created. Our 'creature comforts' – the bed, the soft armchair, the car, the office desk and the computer – are the very instruments of our torture. Certainly, we are making some progress. We are now looking at user-friendly chairs, desks, and computers – and there is no doubt that these can help – but there is much more that we can and should be doing. We need a simple 'user-friendly guide' to the human animal, a straightforward, practical understanding of its structure, how it works and why it goes wrong. With this knowledge we can then find the logical solutions to cope with it.

Imagine that you have just opened the box of the latest new gizmo for your computer. You look at it with awe, admiration and a certain apprehension, and then look frantically into the almost discarded box, to search for that little plastic bag containing the 'Getting Started' and 'User's Guide' manuals. Well, this book is the 'Getting Started and User-Friendly Guide to the Human Animal'! So, sit back comfortably – a cushion in the small of your back, shoulders relaxed – and we can begin.