Living Better with Low Back Pain

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Managing Myths and Misconceptions

By

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To all those who taught me, answered their emails, phone calls, and took the time out of their days to share their knowledge and inspire me to learn. To my patients throughout the years, thank you for trusting your care to me. And finally to my wife and family for always being supportive, pushing me to do more and finish what I started.

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FUNDAMENTALS:
THE INTRODUCTION

You have opened this book, and you probably have back pain. You are likely frustrated that no one has been able to cure you. You probably have been to doctors and health care providers, taken a variety of medications, tried patches endorsed by famous sports stars, maybe you have even hung by your ankles, and you have likely been on dangerous addictive drugs…and none of them have really worked. You are probably thinking, I am doomed to be in pain, this is only going to get worse, and no one can help me.

Well, you are only partly correct. But, let me assure you that you are not doomed, and it does not have to get worse it is my sincere hope that using my experience in clinical treatment, the experiences of people I have treated, and my knowledge of academic research, that you will be able to improve. I make no promises, but I will do my best if you give me a bit of your time and effort, so please, stick with me.

Of course, as we get older, we must be more aware of our health in general, and that includes back pain, but many people live well into their 90s happy, active, and relatively pain-free. Positively, pain is one dilemma that often improves as we get older: both the amount of pain and our ability to be active with small amounts of discomfort.

Take a breath, this is not a book on how to avoid all pain and live to be 110 on a Greek island making your own wine and picking olives. Although I know this Greek guy who looks 60 but is nearly 100…. (Seriously I do). It is also not a cure-all book that will promise to remove all back pain instantly. I am also not selling anything; not a secret exercise program, or patch, or pillow, or brace you pump up, or bar to hang from, or extract of cherries, or pressed fish oil, or bone broth, or vegan powder, or a master class, or subscription, or

medication, or…anything. I am not selling anything. Well, just this book, but nothing else, and you or someone you know has already purchased it, so thank you.

The world has already spent billions of dollars to fight back pain and after a quarter century we are no better off, in fact, we are, in many cases, worse off. The medical profession, as well as other pseudoscientific quackeries, have tried it all, marketed it all, sold it all, and back pain persists as a modern-day medical disaster. We spend money on physician visits, testing, addictive medications, and theoretical, unproven surgeries. We lose time from work and stress the disability, unemployment, and compensation systems, and still, here we are, no better than when we started putting leeches on our backs to suck out the imbalances or bloodletting to drain the impurities.

We improved a bit though after bloodletting when in 1666 Friar Moulton published a book, "The Compleat Bonesetter," which included techniques passed down through families with no training or formal education of the simplest anatomical structures, which were thought to put bones back into place. I am not sure where those bones went when they were out of place, and judging from the friar's work, neither did he. Historically, the Friar's work is considered the beginning of orthopedic surgery. A few hundred years later, Andrew Still, the father of Osteopathy, began to teach his "rule of the artery." This was a theory that by manipulating or mobilizing the spine, proper blood flow would be restored to the body. This was only a theory, and he was never able to do what he thought it might when he first gave it a go in Missouri. About the same time a man named Palmer reported that a spinal manipulation or pop to a grocery store employee, who was deaf, miraculously restored his hearing. While the two may have happened around the same time, one likely had no relationship with the other, but that day chiropractic was born.

Meanwhile across the ocean Per Henrik Ling was stretching and bending and maneuvering people in what he called, "gymnast of the sick" and physical therapy (PT) or physiotherapy began. Per was a Swedish physician who used anatomy and circulation study to

advance therapeutic touch and restorative massage techniques. In the United States, PT was pioneered in Ling's work by Dudley Sargent in the mid-1800s, who saw more value in movement and exercise, rather than Ling's massage. Sargent's schools are known by some as the first Physiotherapy, Physical Therapy, or PT schools. PT garnered many of its main principles from exercise, athletics, and physical education.

Moving into the new century, the First World War was a watershed moment that required rehabilitation, prosthetics, and orthotics for those wounded in battle. The First, and later the Second World War, as well as the polio epidemic, unfortunately, saw PT and other forms of rehabilitation grow dramatically. From New England to Warm Springs Georgia, the profession grew alongside innovative-thinking physicians who treated returning veterans and children with paralysis. Slowly their training moved from certificate programs in hospitals to doctoral programs embedded within educational health and research centers. Physiotherapists are trained all over the country and the world and specialize in pain, musculoskeletal injuries, neurology, pediatrics, sports, geriatrics, wound care, and cardiopulmonary rehabilitation. Many PTs, as well as DOs and DCs, have post-graduate fellowship and residency training laser-focused to treat people with back pain. And, by the way, we have all tried lasers as well.

But we have not improved as much as we think, or that you should expect. A recent study in 2018 showed that placing 4-7 leeches on the lower back of people with chronic back pain could be just as or even more effective than modern-day treatments. I am not kidding. Just as Henry VIII was treated with leeches, physicians in Germany did the same thing just a few years ago, and it worked. In some cases, it was better than hands-on care, exercise, reassurance, and education. It was not the best-planned study, and very few studies are without fault, but the fact that it was done speaks to how difficult back pain is to treat. Please don't run out and get leeches, or try this form of treatment, which was probably a placebo (meaning a treatment that works, not because of the treatment itself, but the beliefs of the person receiving it that it will help) but do appreciate

that if we were still sucking the impurities out of the milieu in 2018, well, we have a long way to go.

While many professions and much of modern-day science occurred via happenstance, penicillin, a modern miracle occurred by chance, most evolve and rely more on science than theory. But in medicine, while this is true, we (and I mean all of us in the medical field from bonesetters in the outback to 'advanced' computer-guided surgeons) still cling to the theory and traditions of the past. Not only when treating back pain but in some ways our overall approach to the field. Think of modern-day sleep-deprived medical residents wearily assessing you in the emergency department, or students of any other teaching medical professions, having the chance to hone their skills on your body. While this is necessary and typically works pretty well when the professional takes additional time to teach them, in many cases, it has devolved into a broken means of increasing productivity and profit. Every time in my career that I have been asked to mentor a student, the productivity expectations of my employer have increased for me, not decreased. We have done the exact opposite of what was needed.

Well, sorry if this starts on a flat note, but I can assure you it will get better and after you read this book you will:

1. Have a better understanding of what back pain is
2. Be assured what back pain is not
3. Learn what we, the health professionals, can and cannot do for you based on what we have tried
4. Understand what you can do for your back pain

I can also tell you that your back pain and the back pain that others have is most assuredly not your fault or their fault. It is also not the fault of the well-meaning medical professionals who have been fighting this epidemic for years, but if curing back pain were a university class, we would all have received a big, bolded, red F. We, as a medical profession, and several professions must equally share the blame, have tried our best. Really, we all wanted to get you better, but we have failed our clients in spectacular ways. We have not only

failed to help people with back pain, but we have likely made the whole mess worse. So, on behalf of all of us, sorry about that.

Rest assured as your mind races and you are tempted to leaf through to 'the good part' of this book, that I have endeavored to waste no words, not waste your time, and will give you the important information you need. You need to understand back pain, as best as any of us do, and calm your racing mind. Again, I am not promising a complete cure, and if you are promised a 100% guarantee of a cure for your back pain, I suggest you gather your belongings and run as fast as your pain will allow you to run and get away from the person, device, or drug promising such relief. I feel confident telling you that it is just not possible. It does not mean they will not help, and we can help, we just cannot cure. They may be very well-intentioned, and not scam artists or snake oil salesmen, (by the way, is there such thing as snake oil and who is buying it?) although they very well might be, because, and I am positive of this, we simply do not have anything or anyone that can guarantee a cure for back pain. Unless the savior, if you have such belief, has returned to earth without our knowledge, it does not exist. Period. Stop. That's the tweet. That's the TED talk. Not happening. Clear? Good. So please continue so I can do my best to help you and so many others who have back pain.

On a personal note, I have felt for years a calling to write this book. I have tried, and failed, to treat many people with back pain. Now, I have helped many people, but I am pretty sure I have not cured or fully eliminated anyone's back pain in the time I have been given to try. And if my colleagues in the medical profession are honest, we have, given the big picture, for the most part, all failed. Pick your preferred provider and your treatment of choice, chances are they are not much better than our bodies' long-term innate natural ability to heal itself with time. That's right, doing nothing is just as good as, and often better, in the long run, than receiving any kind of medical care. That includes surgery. Now, nothing means living a relatively healthy life and creating optimal conditions for healing, as well as properly dosed exercise and activity. So, that alone is something and we will talk about what that means. Of course, there are exceptions, and we in the medical profession are pretty good at getting you a few

days, weeks, or even months of solid relief and improvement, and that can be a pretty good thing. But as far as complete healing of current and total prevention of future back pain, we all receive, at best, another F.

After over a quarter of a century in the medical profession working with athletes, weekend warriors, professionals of all vocations, regular folks in a variety of settings, and several countries, and continents, I mirror the lack of success of nearly all professionals and share their embarrassing defeats. We are all pretty good at providing some short-term relief and identifying people with serious problems, but pretty bad at "curing", preventing, predicting, and eliminating back pain. Despite the billions of dollars in care and research, all the hours of study, and all the well-intentioned time spent with our clients (or lack of time), the whole business of back pain has just become worse, not better.

Most professions have been guilty of providing too much medicine and care. Yes, you hear so much about the lack of health care, but often when it comes to back pain, we give too much care. The medical profession treats things that will go away through the natural course of healing. Like giving an antibiotic for a viral infection, which has little to no effect, and eventually can be harmful to your gut and immune system, we give treatment that appears to work, but only because you would have gotten better anyway. And just like a virus, once it subsides, back pain can return. We also give treatments and have made-up maladies, which do not exist, that prolong discomfort and set in motion the framework for a lifetime of chronic pain.

Yes, we make up maladies. A syndrome, an itis, a disease, an imbalance, and maybe we throw in a condition. Many of these have no gold standard of diagnosis, meaning we can't actually see them on an image, and we don't have years of data showing relationships and symptom improvement after interventions.

We all have our stories when likely through no skill of our own, our clients made considerable improvement in a week or so, or even one visit, creating a vocal supporter of our genius, opening our doors for

those seeking relief, and when we fail, they believe they have failed, their case is unique, and there is no hope. People in the medical profession push our incompetence right back to our clients. We actually have the gal to, fairly commonly I might add, say, or write that our client "failed treatment." When in actuality, we have failed them. We have failed you and so many, many others. I wish it were not so. But it is true. We all can recount stories that make us cringe, stories of simply irresponsible treatment from the time of injury through assessment, treatment, retreating, referrals, surgery, rehabilitation, and on and on. We hear about and likely have been on the giving end of some horrendous care.

Now, before my example, I will say that we, the medical back pain industrial complex members, could be pretty decent at a few things when it comes to back pain. We can determine if your pain is an emergency. We can help you feel better for some time. And we can get you on your way back to work, to your hobbies, your sport, and your life, even if your back still hurts a bit. We are not all always a bunch of blubbering idiots. It's just that on the whole, we are. When considering the overall success or lack thereof and our history of treating back pain, we are, as I have said, awful. I do want to be clear here, this was not a concerted effort to take your money, create a population of people with back pain who need us, or willful ignorance of what works and what does not, it is merely the collective reality of very well-meaning, and often very smart people, doing our best to relieve the world of their aching backs.

We should recognize that there are some innovative approaches to care, cost savings, and improvement of health and self-improvement. We are working on it, and we have had some successes, but the process is frustratingly slow. I have heard the refrain for over a quarter century that we need to do better, and in some cases, we have, but in many others, on the whole, we have not. It is simply unacceptable. The medical profession as a whole, every single one of us, needs to take ownership of back pain to come to terms with our track record, and honestly tell people what we can do for them, what we cannot do, and what you can do for yourself.

Fred

One unfortunate client, I will call him Fred, was hit by a slow-moving train, (although it's best never to get hit by any type of train, moving or not) thrown down a hill, and then dropped onto a road. He is lucky to be alive. Now I understand that this is an extreme example but stick with me here because Fred's care was not that different from people with what some may call 'nonspecific low back pain', which means your back hurts, and no one has a clue what is wrong. This by the way is becoming a very, very common way to explain back pain. Would a heart doctor tell you, 'Sorry you have nonspecific heart pain let me crack open your ribs and see what's happening in there?'

So, the first line of Fred's treatment was X-rays, read in the emergency department by a stressed-out resident with 4 hours of sleep per night who gave them a cursory look and did not see any life-threatening fracture or serious pathology. Then to ease his pain he was given muscle relaxers, narcotic pain medication (he was hit by a train, so give him the works), and advised to go home and rest for a few weeks. "Take it easy," the doctor told him, "Rest, hang out on the couch for a few weeks, and don't work or be too physical until you feel better." Then arbitrarily told Fred not to lift any more than a gallon of milk.

Well, trusting the doctor, as most of us do, (who, by the way, likely had very little, if any, training in assessing and treating back pain, and even less time getting to know Fred) and the sincerity of those trying to help him led Fred to head home, drug up and lay on the couch for a few weeks eating comfort food, watching bad cable movies, and searching the web for 'can back injuries paralyze me', 'can I work after a back injury' and 'cures for back pain'.

This all made Fred's pain worse, his mind more worrisome, and afraid to move for fear of a lifetime of pain. Feeling no better, feeling worse, and losing a large part of his income (really good workers' compensation pays only 60% of your salary in the US), having his family look at him as a lazy slug on the couch, being told 'your X-rays are normal, so there is nothing wrong', and having pain at rest which worsened even when trying to bathe or put on his shoes and

socks, our sad train wreck of a patient, only got worse. Fred's pain made him fearful to move, so he could not work. No one could tell him what was wrong, he was afraid it was really bad, and he might become paralyzed. Fred was a mess…and it was not his fault.

Fred sought out providers for over a year and finally received advanced testing, an MRI, the thing all the high-level, well-paid athletes get immediately after they twist their knee...and the medical providers found something. Time for a party! Someone found out what was wrong with him. He had something. He had a diagnosis. Well, in modern medicine a diagnosis needs a treatment (that is just the way it works: you have A, I do B, and everyone is happy). In Fred's case, the treatment was surgery and so surgery was recommended. With a glimmer of hope he dutifully reported to the operating room and had what was described as 'successful surgery', it all went well, and cost a lot of money. Fred told me that the surgeon really never touched him on the visit when surgery was recommended. The surgeon just popped up the MRI, circled a few nasty-looking things, and explained what needed to be done to correct this abnormality. The surgeon, a very well-respected, likable, very fit man, who had a waiting list of six months, placed his MRI on a screen (like light bright if you remember that…if not ask your mother…or grandmother) and pointed to a thing, his diagnosis, and explained how he 'needed' to have surgery.

The surgeon did not spend much time talking to Fred, answering his questions, getting to know him, his story, and his concerns. No. Fred had A, the surgeon will do B, and all will be well. Now, I am not downplaying the power of a successful surgery and I am not saying that this surgery was not the best evidence-based medical decision for Fred at that time. I am saying that it may not have been 'needed' and that placing people on operating tables after looking at a picture of their inners, has come to be understood as a really bad idea.

Fred walked with a cane and brace and started treatment and rehabilitation over four months, he still had limited income (60 % of his salary, no matching retirement) and was losing sleep worrying about how he might once again provide for his family working a

physical job on the railroad. Initially, Fred wore a hard plastic brace to protect his surgery. The home care staff told him he needed to wear it, or he could be paralyzed. Fred barely took the brace off outside of therapy and when he was in therapy he was asked to 'pull his belly button in, but not hold his breath, brace his back muscles, and pretend he was holding in a pee, while not tightening his gluteal muscles, and not holding his breath.' All while lying on his stomach with his face securely tucked in a hole in a table looking at the floor. You know, the kind of thing we all do daily. Oh, and he repeated these steps, minus the putting his face in a hole, each time before he bent forward, twisted, or lifted anything…you guessed it, more than a few gallons of milk, about ten pounds. (It went up)

After several months of intense therapy, he received a work capacity evaluation and was told he did great. Fred was in pain but did the tasks he was asked to do. The work hardening specialist (what a title) recorded the time it took Fred to lift, carry, reach, walk, and complete a series of jobs that were reminiscent of an American Gladiator course. It all hurt. But Fred did not want to be perceived as a faker, for fear that if he was, not only would he lose his 60% income, but he might also be forced to pay back what he received, or even worse, be fired. He had heard of that. Stories of injured people followed by cameras waiting for the moment they might run to hug a friend or take some groceries (Over 10 pounds) out of the trunk.

Fred followed up with the surgeon who showed him his 'fixed back' and how much better it looked. His lower vertebrae were scraped clean, and two plates and four screws connected L4 and L5 (the bottom two of your five low back bones or vertebrae) tightly so there would be no movement, think crazy gluing two out of five rusty chain links, and his pain would go away. A lead to B, which will lead to a better Fred. The surgery was a success. In a two-minute appointment, Fred was cleared for full duty and was given pain meds as needed, which for Fred was pretty much every day. There was only one problem. He was not better. His back still hurt, he moved differently, and cautiously, his legs were weak, and he was short of breath and fatigued as he tried to complete an eight-hour shift (previously he would double up for overtime), so he used his vacation, sick, and

personal days to avoid being fired.

After about six months his pain meds were not effective anymore. They simply did not work. So, his primary care doctor changed them from medication A to B to C to A in the morning and B at night. He became constipated and was sent to a GI doctor, since, well, constipation and his back pain were not related (Later we understood that excessive opioid use, to the point that they were ineffective, wreaked havoc on our body's ability to normally digest our meals and led to chronic constipation.)

It was then assumed that Fred must have a hyperactive nervous system, so he was prescribed a series of injections to calm the nerves, lessen his pain, and allow the strength to return to his legs. They helped for a few days, but then the pain returned. Since they helped, it was determined that his nerves should be ablated. Huh? Essentially a laser was directed at the nerve that allowed him to feel pain. But to get to that nerve, incisions were made through the same area that was cut before. Have you ever fallen on your elbow and scraped it, then as it was healing hit it on a wall? Think of someone cutting 4 or more inches into your spine, once for screws, requiring a drill to place them, and once for a deadly laser to kill your nerve. Have you tensed your entire body yet? I have.

Fred's life was a literal train wreck when his job duties were altered, and his salary lowered. Eventually, his job was eliminated, and Fred was unemployed, denied disability payments, found that he had unknowingly signed a document saying he was better and relieved his employer from paying anything beyond his defined benefit plan, and had given up his ability to litigate the matter. Fred thought his employer and insurance company would take care of him, but they, as is so often the case, only took care of themselves.

Fred still had back pain and was generally mad as hell at the entire system. This well-trained railroad employee, who worked his way up the pay, time off, and benefit scale was summarily released by a group of well-paid medical professionals, human resource managers, actuarial accountants, insurance case managers, and well-compensated attorneys. A proud man was reduced to part-time at the

local Walmart to cover benefits and relied, periodically, on the Christian center's food for neighbors' Friday afternoon delivery service.

Sorry for that downer, but we have gotten better. Well, those of us that have been paying attention have gotten better, or at least tried to lower expectations, to allow for success. But the medical profession, in general, is a very autonomous doing. What I mean by that is in most cases, no one is actually monitoring what we are doing. That can be good when a caring practitioner with the required time is dedicated to helping you and your back pain. It can be an unmitigated disaster when profit, societal pressures, and lack of good medical options merge into the one large mess that back pain has become. And it's not just Fred's extreme example. Back pain happens to nearly all of us.

Frequency

Back pain is common. I repeat, back pain is common. In fact, it is very, very, very common. You are more likely to have back pain than not have back pain. It is part of the human experience. It is like a headache or stomachache or complaining that your taxes are too high or waiting on hold with Apple or Microsoft support. So just check "I AGREE" so we can move on. I know that is not an objective statement but there are fancy numbers in journal articles and textbooks that show this, but for now…you should know having back pain is like having ears or toes or liking ice cream. It is just a thing we all have.

Having pain is a normal human experience. It's OK and even expected that people are sometimes in pain. I know people in modern society want quick cures and just don't want to be in any pain, ever, but we, as humans, just simply do not work that way, and we never have. Ever. Pain, despite the commercials you see and what your medical professional may have told you, is, in fact, completely normal and should even be expected.

Data tells us that 80 - 90% of people have back pain at some point in their lives. Imagine an election victory with 80 – 90% of the votes,

or a baseball team winning 80 – 90% of their games, or 80-90% of the people you meet like you, or you like them. My point is that is really high. Every year about 15% to 33% of people in the world have some type of back pain. In the US, a full 25% of the adult population has had back pain for at least one day in the past month. Imagine, one-third of the world's population have back pain at any one time. One in every three people you see may be in pain. No wonder we drive like lunatics and don't smile so much anymore. No wonder an entire aisle in the grocery store may as well be a pharmacy. No wonder pharmacies are now located in grocery stores.

Recall the data we saw daily during COVID-19, a terrible global pandemic. Each night we saw charts and graphs and numbers of cases in the world, in our country, in our region. Imagine a daily count of humans with back pain. The number would be in the billions. The cost is unbelievably high. The effects on society are horrible. I am not equalizing the devastating effects of the virus we were, or are still battling, but I do want you to understand the frequency and sheer number of people on this planet, that at any one time, are dealing with a sore back.

People with back pain tend to miss work. It is the leading cause of lost wages and is therefore perhaps the most massive economic burden we have in the modern world. Think of a stock market crash in the form of otherwise productive people at home on their couch suffering in pain. The problem is only getting worse; specifically, since the early 1980s, it has been presenting in epidemic proportions. Did the world miraculously change in 1980? Well, of course, it changed, but for the most part, we humans and the orbit of our Earth remained pretty similar.

You may think unhealthy people, people who lay around all day and watch talk shows and collect checks…whether unemployment or dividends…are more inclined to have sore backs, but that is not accurate. I got it, you scream, video games, I knew they were creating a generation of…. stop, it's not that either. Nor is it phones or backpacks or running or sitting or…or any one thing. Sitting is not the new smoking. Not even close. The comparison is horribly silly.

There does, however, appear to be a slight tendency for women to have more back pain, perhaps from enduring us men, but often their pain is not as bad, or at least they do not perceive it as bad. Often the medical practitioner does not perceive that women's pain, particularly women of color, is as severe as it is. People tend to develop back pain more commonly until the age of 65, but then it is no more common than other ailments. Those of us with fancy degrees and more education also suffer from back pain, just not as commonly and not for as long. Sorry, I didn't make up the rules. But we tend to have time to go to the gym and usually a free gym where we teach. Those who do physical work for a living or are involved in long-term sports are more than twice as likely to develop back pain as someone like me who keeps fit and does very little manual labor. And perhaps more importantly I am usually able to rest and take some time off when I feel so inclined. I have even allowed the woods in my backyard to take over my lawn and rarely, if ever, use my lawnmower.

Next – I told you it gets better. Most people with back pain, which equates to about 90% of us (yes, I have had back pain too) get 'better' in two to four weeks with very little – if any – treatment. So, you say, what is the problem? 90% of people get better. That's an A for back pain. Well, the problem is that if we consider the entire world of 8 billion people, give, or take, that leaves somewhere between 1.6 billion and 1.8 billion people suffering from prolonged, recurrent back pain, and the pain that resolves, is likely to come back. That's a lot of people. It is worse in industrialized countries, getting worse with children and the younger population, and causing the entire world, well, a massive pain in the behind - or just above it. Please also consider that if children and younger people are developing chronic pain, that means a lifetime, a long lifetime of over-medicalization, medication, and simply put, a lower quality of life. That is a real societal problem and a horrible dilemma.

We intelligent professionals should be able to identify those on the road to back pain and do something about it before it happens or *a priori* as academics say. This struck me very early on in my career when I worked with a Division One American football program that

sent several players to professional football leagues all over the world. (At that time there was an American football league in the US and Europe and a league in Canada. Maybe they are still there, I don't know…the leagues, not the players because they are all over 50 now). We assessed things in players like a 40-yard dash, vertical jump, horizontal jump, agility course run, and strength in the bench press and squat. Those who did very well in these tests were the ones who went on to professional careers. Interestingly, as much as we tried to improve the traits of journeyman players, we were rarely successful in creating a professional athlete no matter how hard they worked. A scholarship or peer recognition was the best they would earn. Conversely, there were those players who crushed the testing protocol with only moderate efforts in the gym and fitness camps. They were just born with something. In one case, during a 30-second test, a very successful pro continued bench pressing 225 pounds when we turned our heads to write down a number, then casually asked, "Do I just keep going?" He broke the record. He was talking as he did it. (Don't ask me to explain, it just happened.) So just as in successful athletes, there may be something inherently biological or genetic that leads to back pain, or lack of back pain…currently we have no idea.

Pain, in general, does appear to be a mix of genetics, gender, age, body type, and fitness, as well as the demands placed on the body and back. Simply put if I decided to try to play professional rugby, I likely would have back pain, or suffer a serious debilitating injury in the first ten minutes. My body is not suited to professional rugby. However, if a professional rugby player, was asked to perform as a ballet dancer, they too would likely develop pain. Some of us are made to play rugby; strong, quick, powerful. Others are made to be ballet dancers; flexible, graceful, and artistically athletic. However, the majority of us, can participate in sports, work in an office, and go about our daily lives with little risk. We can even run a marathon once a year, lift some heavy weights now and then, or work a 60-hour week every week for a few months and get by with no pain.

So, it may be, but we are just not sure, that there are certain traits that just do not do well in certain occupations. The rugby and ballet

examples are pretty clear. However, when you think about teaching, dentistry, and office work, the lack of extremism would appear to prevent any specific conclusions. Frankly put, all things being equal, we have no well-proven ideas as to why some people develop back pain and others do not.

What we have discovered is that there may be very small relationships between our genetics, the type of body we have (Rugby star or ballet dancer) how we choose to use our body (occupation and sport), and the age at which degenerative changes appear on X-rays, even if we do not have pain.

Oh no, DEGENERATION…our backs will degenerate and then it's all downhill. That, I can assure you, is simply not true. I apologize for the entire medical profession for using the term, although we are trying to remove it from our vocabulary because it simply is silly, it remains in use and does nothing positive for anyone. We screwed up. We also really enjoyed and still enjoy using fantastic machinery to look at the bodies and backs of people with relatively mild backaches. This has led to the over-medicalization of a normal human problem, back pain, and a cascade of events in its treatment that has been nothing short of a disaster movie...and someone was going to pay for it.

INSURING CARE FOR BACK PAIN

Somewhere around the early 1990's in the US the concept of health maintenance organizations or HMOs, began to take hold. Since most people rely on their employers for health insurance, it made sense for the employers to try to provide care for as affordable a cost as possible. This makes sense, right? Why pay more? Well, the employers paid less, but the employees, aka the patients, paid more. The cost of insurance actually went up, for the entire country and became a huge part of the US GDP. It appears that this was not because people received more care. No, the insurance companies, often referred to as the middleman, made huge profits. Health Care administration became a college major. Health Care CEOs were multimillionaires and often on TV in golf pro-ams. As HMOs slowly took over the marketplace, the cost to the patient in terms of actual dollars, and the actual frequency of back pain, grew exponentially.

Maybe this is a for-profit medical care issue you might think reading what I just described, but it was a global health care disaster. Back pain grew in the NHS in the United Kingdom, throughout the EU, and even into the South Pacific countries of Australia and New Zealand. They all had nearly the same issues as the US: more people with back pain, more interventions that ultimately cost more, and outcomes that were worse than when we started. The whole world had back pain.

But, back in the US you could see a Chiropractor in California, an Osteopath in Oklahoma, a neurologist in New York, a surgeon in South Dakota, and a Physical Therapist in Pennsylvania, all with the same problem, and receive 5 different diagnoses and 5 vastly different treatment plans. They may vary from exercise to traction to further testing, to medication, to manipulation, and even surgery. Not only don't we have it together in our professions, but when we compare what a variety of professions do, that is you get another opinion, the options become comical. How do you know who to trust

or believe if you are an accountant a teacher or a painter? The obvious answer is you don't.

You must be wondering with all of these smart people, why don't we all just meet up in one place and figure it out? We did…once. That's right, to my knowledge in the history of the world, there has only been one intentional interdisciplinary conference on back pain. One. Very little appeared to have been accomplished, other than agreeing that we like coffee and enjoy a nice lunch at our educational meetings. So, between lattes and sandwiches, we attempted to grow the body of evidence on how best to treat back pain. Again, another big red F. Not much was accomplished. We were too protective of our turf, too concerned with our egos, too busy to talk outside our bubbles, and too egotistical to work for you, instead of us.

We admitted that we all did well treating acute (or new) low back pain, pretty good at treating it for the first three or four months, then really bad after that. We understood that we were, for some reason, incapable of sharing information for the good of our patients and had created "professional towers of Babel" where no one understood anyone because each profession insisted on having its own language. We were all doing the same things, calling them different things, and pretending we were somehow better than the other profession. This was occurring all over the world, from the US to the UK, to Finland, Germany, and Australia to name a few. We, as worldwide medical practitioners treating back pain, know what we need to do to bring our knowledge bases together and exponentially increase the research and clinical knowledge for the good of our patients, and we have done almost nothing about it.

Well, you think, I just love my (insert profession here) and they are really great and up-to-date on the best medical knowledge? Are you sure? I am not. Unfortunately, our medical system has things all backward yet again. We invest billions, yes billions with a B, in the development of new treatments and technologies, but very little in ensuring that they reach the patient. In theory, we know a lot. In reality, our patients never benefit from a majority of that knowledge. It's a mess.

It is often stated that it takes 17 years from the discovery of a medical improvement to reach everyday practice. Even worse, in those 17 years, only 14% of the research is commonly used in patient care and only 18% of medical professionals report using the best available evidence daily. What is wrong with us? If this were any other industry it would be an international scandal.

These percentages are for medicine in general, but the gaps between evidence (what research and science have shown to be helpful) /guidelines (what each profession suggests for treatment based on positive results) and practice for back pain are even worse. While most guidelines advise against electrical devices for pain, they are still used. While most guidelines advise against prescriptions and drugs for initial care, they are still given. While very few guidelines advise performing an MRI or even an X-ray, they are more common than ever. While most guidelines emphasize exercise and movement early in the episode of back pain, time constraints, and other challenges prevent this from happening. Worldwide, early activity is only prescribed between 28 and 67% of the time, even when the clinician is aware that it should be done. What is going on here? If we, the entire back pain industrial complex, know what to do, why are we not doing it and when we are, why is it taking us so long to implement it? What is wrong with us? Is it just in our DNA?

FROM OUR ANCESTORS

Maybe back pain is just something we have in our DNA. Perhaps we, as humans, even Neanderthals, have had back pain. But there is strikingly little evidence of the presence of back pain in our hunter and gatherer ancestors. I am not an anthropologist, and it may be that I am looking in the wrong places, but how can we ever know if people no longer living have back pain? We may be able to assess their vertebrae and skeletons and come to a consensus about the health of their spine, but, as we will see, the health of the spine is not always causative or even related/correlated to one's pain or function. Some supporters of the paleo diet (as an example, I am not participating in the diet wars here) will draw comparisons to nearly every disease of the industrialized world, including back pain, to our evolutionary trends. The idea goes that we were much better off as hunter-gatherers and the dawn of things like farming made most ailments worse. I think farmers are a pretty healthy group, but I will concede that those who work on what we now call 'factory farms' are at high risk for back pain. But, if you have been to a factory farm, you would understand that often those who work there are likely completing the equivalent of a marathon per day, and that is not normal.

Some anthropologists link things like back pain and sore feet to human evolution. We may have gotten smarter, and more upright, but as a result, the tradeoff seems to be we have a few more ailments than those that dragged their knuckles and hung around in caves. Further extrapolations consider that walking is the culprit. Because, some anthropologists speculate, we twist as we walk, one foot forward while the opposite leg and same side arm are backward, we dangerously twist our spines. I find this hard to digest since evolution should carry forward the positive traits of a species. Also, our spinal discs (the padding between the vertebrae) are incredibly strong and designed to absorb both the weight of our bodies and the twisting that occurs with walking, which began nearly 2 million years ago. The

outer portion of our discs has an amazing layering of collagen, which is stronger than steel in resisting forces, and is layered in nearly every conceivable angle to counter these rotational forces. Biomechanically these rotational forces are countered or absorbed from our feet to our neck. Think of a golf swing, which is a great example of rotational forces similar to those of walking, only at much greater speeds. A right-handed golfer twists to the right to prepare to hit a shot. This twisting builds energy (potential energy) in muscles, tendons, ligaments, cartilage, and sometimes bone, to allow for a release to the left to impart this energy (kinetic energy) to smash the ball down the fairway...or into the woods. While some golfers do have back pain, it's more common for them to have hip and shoulder issues. Trust me, the back does not weaken while we walk and rotate, on the contrary, it gets stronger.

At the same time as we began walking our spine adapted by forming three distinct curves, which allows for much more strength than a straight line. I respect the theorists but disagree with the theory.

However, when comparing the low back or lumbar vertebrae of people who have had lumbar disc pathology with the same bones of chimpanzees and orangutans, researchers discovered these bones were similar. So, we may conclude that your lumbar vertebrae are more chimp-like if you have disc problems and may not be adapted to walking on two legs. But this finding just shows a similarity in the anatomy of a few bones, and by no means should be noted as a causation.

Conversely when considering humans with spondylolysis, or a failure or fracture of the weight-bearing portion of the lumbar vertebrae, humans that had vertebrae that were structured differently than the apes, tended to have less structural problems. So, the more ape-like your back, the more likely you may be to have a disc problem if you walk on two legs, but the less ape-like your back, the more likely you are, again if you walk on two legs, to have an injury from boney stress. Whether a monkey or not a monkey, you can still have back pain. But by no stretch of the imagination is it caused by walking. So put down the banana and stop dragging your knuckles.

Well, what about early humans? Did they have back pain? I don't think any reasonable person would say we know for sure or will ever know. They died younger and lived differently, and cavemen as well as cavewomen appeared to be more robust. Their midbacks were more barrel-shaped and likely housed larger lungs to allow for more low-level activities like walking and hunting to occur over longer periods without fatigue. Indeed, groups of humans would chase and encircle much faster animals until they simply wore them out. Part of this was our ability to run at slow speeds for long distances, as well as sweat to regulate our body temperature.

Maybe a few of these primal hunters had some back pain, maybe they did not. But they had much more important things on their mind, like dinner. Both getting dinner and not becoming dinner. They needed this endurance as hunter-gatherers and group hunters. None of them competed in endurance events, so we have no idea if their structure would have made them marathon champions. But at some point, this large housing built for our lungs started to fracture in older humans, this almost spontaneous fracture, commonly referred to as a compression fracture, is rarely if ever found in any other mammals. Could it be that because we are living longer and only have to hop in a car to get our food from a window, if you call that food, rather than walk for it for hundreds of miles as the seasons change, our backs are now a bit different? It is likely impossible to say, but modernization and lack of activity are external occurrences and not part of an evolutionary process. Likely it is the modern human environment that has led to these fractures, and they have nothing to do with the structure or weakness of the human spine.