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Treating Back Pain

### TREATMENT OF BACK PAIN AND WHAT ROLE CORRECTIVE EXERCISE HAS

Each year 40% to 60% of American adults suffer from chronic back pain. More than a million spine surgery procedures are performed annually in the United States with medical costs to treat back pain approaching 24 billion dollars per year.

You are listening to ReachMD, The Channel for Medical Professionals. Welcome to Clinicians Roundtable. I am Dr. Leslie Lundt, your host and with me today is Dr. Stuart McGill. Dr. McGill is a professor of Spine Biomechanics and the chairman of the Department of Kinesiology at the University of Waterloo in Canada. He has been the author of over 200 scientific journal papers that address the issues of low back functions, injury prevention and rehab and performance training. Collectively this work has fetched numerous scientific awards. He sits on the editorial boards of the Journal Spine, Clinical Biomechanics and Journal of Applied Biomechanics.

#### DR. LESLIE LUNDT:

Welcome to ReachMD, Dr. McGill.

#### DR. STUART MCGILL:

Thanks, Leslie. It is nice to be here.

#### DR. LESLIE LUNDT:

Dr. McGill, work us through how you identified the best treatment for a given patient with back pain?

#### DR. STUART MCGILL:

I really don't that. It is interesting. I act as a consultant. I deal with the failures. So, as physicians have a very difficult case. They may ask me to provide them with a consult and I provide back a consultant's report, which may have a treatment plan and so that is just to clear that up how I work, but there are all sorts of possible treatments, but before we even get into discussing the treatment first and foremost the dark has to describe what is the cause of the back problem is and then work to get rid of the cause. That is 50% of the

battle right up there; no one's treatment will work until you get rid of the cause.

**DR. LESLIE LUNDT:**

How do we do that then?

**DR. STUART MCGILL:**

That is first and foremost and you know that is so often a failure. Think of the patient who shows up that has got forward flexion antalgia, a bulging disk and more often or not they might get, oh I don't know, Methocarbamol or sort of muscle relaxant and yet that is not what is causing the muscle to spasm and it will work until the person stands up and gets the center of mass over the upper body over the hips, then their muscles shut down. So you see how a postural change addresses the cause, not the pill. So, there is just an example right up from how important it is to address the cause, but how do we get determining the best treatment? Simply put we do provocative testing. What we do is try and identify the postures, the motions and the loads that get the person to say ouch. It is incredible to me when I get a patient in, they have been to 12 different flavors of physicians and I say would you show me what causes your back pain and they say, what you want me to do this and show you my pain, I said yes, haven't the other physicians asked you to show them what causes your pain and they say, no and that to me is a bit of an enditment. I need to know what posture, motion and load makes them worse. Correspondingly I need to know what postures, motions and loads are tolerable for them and then we can go into all sorts of stability testing to see which joints are stable and unstable, which joints have faulty movement patterns which are causing overload not only at those joints, but at other ones as well and go from there. If they have an unstable joint in their back, we try and stabilize it with stabilization exercises. We tested immediately to see if that reduces their pain. Immediately, it should show that. If their hips are tight and they cannot move their back properly, then obviously the treatment plan would have to involve some dedicated exercise for hip mobilization. Sometimes soft tissue work can be very magical for certain patients, but my bias there is not too much of it. It is a passive therapy and it does not help people to move in different ways, which again goes back to removing the cause. If I was to give the most popular example that family doctor having to deal with, which will be probably diskogenic back troubles:

1. Remove the cause. Stop bending the disk.
2. Would to stabilize the joint and to do some therapeutic exercise and repatterning some of the movement patterns.
3. Address mobility issues where that is required and for bad disks, diffusely tight hips.

**DR. LESLIE LUNDT:**

Now, you didn't mention surgery on that list.

**DR. STUART MCGILL:**

No, for several reasons and again my bias is probably caused by me seeing the surgical failures. I don't see the surgical successes, so I have to give my next statements under that a caveat. When I see some surgical failures, I realize right away they never should have been operated on in the first place. When I take their history and find out what conservative therapy they did prior to the surgery some only did very misappropriate therapy. So, they had no chance for the conservative therapy to get better. For example, they might have had an unstable disk, a bulging disk and they went into a program that was all stretching or a Pilates based program, for example. Well, of course, if they were already too mobile with an unstable disk, more mobility exercise wouldn't have helped. So, there is an example where sometimes surgeons would say, we will go to PT, we will go to Pilates class and it that fails then we will operate, not realizing that these are all different types of physical therapies, some are stabilizing, some are mobilizing, I also see a failure in surgery in that rarely the surgeons discuss with the patient what the cause was. So, I see patients, for example, with a posterolateral disk bulge on the left.

We know from our laboratory work the most potent way to create that is forward flexion to the right. So, this person had something very dominant in their life, where they repeatedly flexed forward and a bit to the right. Now curiously enough that person in 2 or 3 years after having the disk surgery or the fusion will come back with exactly the same only the level above because the surgeon failed to tell them what the cause was and again this should not happen, but I am afraid it does. Now, having said all of that there're some really nasty cases with people losing bowel and bladder control with nerve impingement and what not. In those cases, yes surgery is indicated, of course.

**DR. LESLIE LUNDT:**

But it sounds like that really should be the minority of cases.

**DR. STUART MCGILL:**

I am afraid it is.

**DR. LESLIE LUNDT:**

If you are new to our channel, you're listening to The Clinicians Roundtable on ReachMD, The Channel for Medical Professionals. I am Dr. Leslie Lundt, your host, and with me today is Dr. Stuart McGill, the author of Low Back Disorders, Evidence-Based Prevention and Rehabilitation. We are discussing the treatment of back pain.

Dr. McGill, who do we sent our patients to for this kind of evaluation. I don't even know who does that in my town.

**DR. STUART MCGILL:**

Yeah, isn't that interesting? One weekend a month when asked to put on these clinical courses and I do them around the world, I can only do one a month so, because that's all my body can take. These people are being trained and there are a lot of, by the way, I am not the only one doing this. There are a lot of people who are on to this; there are a lot of textbooks about it. After that I know in specific cities who I would refer people to.

**DR. LESLIE LUNDT:**

Is there a website or anything that you find biomechanics people?

**DR. STUART MCGILL:**

Well, it isn't a biomechanics person.

**DR. LESLIE LUNDT:**

Ok.

**DR. STUART MCGILL:**

Not at all, no. It is someone who understands how the spine functions and not only the spine, how the full linkage functions and they can come up with the most appropriate corrective exercise for the movement flaws that are causing the bad disks and the bad facets and ligaments and all the rest of it.

**DR. LESLIE LUNDT:**

So that could be a physical therapist, may be?

**DR. STUART MCGILL:**

There are a lot of tremendously skilled physical therapists, but unfortunately there are tremendous number of ones who just do not get it and every patient who comes in, they are being mobilized sitting on gym balls, pulling the knees to their chest in the morning and all of these kinds of things they get the same sort of mobilizing approach for every patient that will work with a few patients, but it won't work with them all. So, you need to find someone who has what we call a lot of clinical tools in their toolbox and

A. They know how to do the correct assessment.

B. They know how to pull out the proper tool matched to the syndrome whatever it is appropriately.

**DR. LESLIE LUNDT:**

Let us focus the rest of our time today on corrective exercise, you mentioned Pilates, does yoga have a place, what about strength training, what can we tell people?

**DR. STUART MCGILL:**

Yeah, corrective exercise in a nutshell has to do with sparring the joints, they take away the ones that are in pain and enhancing performance and I don't mean not only in an athletic sense, I also mean in for example, probably the primary cause of people seeking long-term care at their age is not really the fear of falling, but the fear of being able to get up off the ground once they have fallen. To do that people need to preserve the ability to squat and to lunge. So, when we work with some older folks it is incredible that they are unable to get off the toilet without the fear of falling forward or they are unable to get off the floor, but with a little bit of corrective exercise, all of a sudden they are doing it and they are doing it very well. So, there is an example where the person had the anatomy, they had the strength, they just did not have the correct motor patterns to do it. Once they were coached on those and shown how to activate muscles in certain ways, all of a sudden, they are able to do this. So, that is an example of corrective exercise, probably in the US, one of the most important deficits is what I call gluteal amnesia. People do not use the back of their hips with their gluteal muscles when they squat and instead they reserve to using their hamstrings and their back muscles, but once you do corrective exercise to re-pattern the gluteal muscles, all of a sudden their knee pain decreases because you are driving the extension through the hip joint and unloading the knee, but the added benefit is it takes the load off the back as well. So, there is an example how we go both that is through 5 stages and I have written quite extensively about this in my recent textbook, but the 5 stages begin with this:

1. Identify the corrupted motion and motor patterns and apply the appropriate corrective exercise.

2. The second stage is to try and build stability in those joints that needed. Generally, the spine needs stability, hips and shoulders need mobility, the knees need more stability, etc.

3. The third stage would be to enhance endurance, so that people can perform these perfect motion patterns throughout the day over and over again and it is interesting when you see people get hurt, quite often they get hurt when they get tired because they lost form in how they are performing their particular motion.

4. The fourth stage is then you can seriously start to train strength. I see that in some of the great athletes that are referred here. I asked myself why are these people being referred for back pain when clearly they have got access to the best physicians in their own country and the reason is oh it is assumed that they are good athletes, we better strength train them to rehabilitate their backs. When it is the faulty motor patterns that cause them to break down after a certain amount of strength training. So they never get past that. They forgot to do stages 1, 2 and 3 to correct those faulty movement patterns so they can seriously train strength again and the fifth stage finally is power and speed, but obviously there are many people who are not interested in that and nor should be they be because there is an extra risk in that. But, I hope that is in encapsulation of what corrective exercise is and does and how you have achieve it.

**DR. LESLIE LUNDT:**

And I would advise our listeners to go to Dr. McGill's website, which is [www.backfitpro.com](http://www.backfitpro.com) for more information. Thank you for being on this show today, Dr. McGill.

**DR. STUART MCGILL:**

Oh, you're welcome.

**DR. LESLIE LUNDT:**

We have been discussing the treatment of back pain and what role corrective exercise has with back expert, Dr. Stuart McGill. I am Dr. Leslie Lundt and I don't know about you, but I am paying much more attention to how I am sitting today.

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