

Don't Freak Out: Treating Pain with Simple Fundamentals – by Greg Lehman, BKin, MSc, DC, MScPT

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During our roundtable discussion on [Pain: Where Does Biomechanics Fit](#) on MedBridge, a good question came up: “How do you keep up with the literature to guide your practice?”

The daily volume of publications can make it difficult. My solution is to regularly refer to my fundamentals of treatment, which stay the same, and occasionally “redecorate” them with new ideas. This way, new research complements my fundamentals and rarely throws me for a loop.

For your own practice, I'd recommend writing down what you consider to be your fundamentals of treatment. What do you hope to accomplish within your treatment session? What are your views of the body? What can you do to affect your patient?

My Fundamentals of Treatment (aka Axioms of Function)

1. Rule out red flags

When dealing with pain, I want to be sure that pain is the primary problem. Pain – secondary to cancer, autoimmune disorders, infections or anything sinister – must be dealt with appropriately.

2. Rule out serious tissue pathology

Although hurt doesn't equal harm, sometimes harm equals hurt. I like the biopsychosocial approach to treating pain and injury, as it recognizes the importance of *bio*. Dealing with a runner who has experienced months of anterior hip and groin pain, I can't automatically assume that they have chronic pain and a sensitized nervous system. They could have a stress fracture of the femoral neck, a tissue pathology to be addressed. Yet, recognizing the *bio* doesn't mean freaking out about rotator cuffs tears, hip labral tears, degeneration, etc. – we know they can co-exist in healthy, pain-free individuals.

3. The body is strong and adaptable

After ruling out the pathologies, I can view the body

positively. Regardless of pain levels, I can tell the patient that their tissue is strong and start treating the whole person. I want to change their beliefs about their body and convince them in the above axiom. The human body isn't a stack of blocks that will fall apart if there's something slightly off.

4. Pain is more about sensitivity than about injury

In my treatment, I use every opportunity to show that pain is modifiable, to prove that it's more about sensitivity than damage. The patient learns that their connective tissue is robust and their pain is due to a sensitive ecosystem meant to protect them. The pain often has little to do with their structure or strength; it's more of an allergic response by the body. People don't die because of a bee sting, but because of their allergic reaction to it. Pain is the same way. You can remove the stinger (i.e. heal the tissue) but still be left with the protective responses driving the dysfunction.

When you modulate a patient's pain in 5 minutes and contrast it with the obvious fact that they didn't heal in 5 minutes, these ideas start to click.

5. Treatment is about finding the appropriate stressor

I put stress on tissues because I know those tissues will adapt. But the body is an ecosystem, and there will be responses to that stress elsewhere. I have no idea which components of the biopsychosocial model I'm influencing with an exercise program, but I assume all might be involved and try to maximize it. Therapeutic neuroscience education is a stressor (see [Adriaan Louw's great course](#)). We're not teaching patients to pass a test, but to actually change their opinion of their body and ecosystem.

Do you think a spine stability program really needs to change spine stability to influence pain? Of course not. If proposed in the right manner, it can change a patient's views on their strength, adaptability of their body, and malleability of their pain. I think exercise is a BPS intervention. I think the tissue is important, but I don't fully know how it influences pain. Exercise is a great psychosocial intervention if we frame it so. We're challenging (a form of stress) the patient's view of their body. If patients view themselves as weak, the pain-free exercises help them to change opinions about their body.

As patients progress, I might even have them poke the bear – confront the pain. They learn that it can hurt – and they modify the movement to change the sensitivity – but then they persist with the activity with no flare up and no harm. We find the right stress at the right time.

This can work the other way, too. We challenge the patient's beliefs about pain and injury, influencing how they experience pain and how they choose to move. Suddenly, you've changed their beliefs and they pass a spine stability test.

6. The patient is an active participant in their own care

My job is to do nothing that makes the patient rely on me. I don't tell patients that they have scar tissue, adhesions that need breaking up, shifted ribs that need correcting, or anything that requires outside help – it would contradict the axiom that the body is strong, robust and adaptable. I can't have patients thinking they're an inherently unstable stack of blocks.

So those are my fundamentals. Then, I add decorations.

Decorations: Useful Though Not Fundamental Axioms

1. Gauge your treatments by assessing sensitivity

Treatment at its core is about desensitizing and then building back up. We find aggravating variables and modify them (e.g. a squat hurts the knees so we change the

biomechanics to unload the knees temporarily) but at the same time, we also build the tolerance to the offending activity. Some patients are so sensitive that we need to resort to imagined movements ([Graded Motor Imagery](#)), but then we still increase the load incrementally (Graded Exposure).

2. Manual therapy is an adjunct to fundamentals

I use manual therapy to prove to patients that their pain is about sensitivity. Manual therapy isn't about correcting anything, although it may help in the short run. It's about changing what they feel and helping to believe in their adaptive potential.

I often fake manual therapy. For example, I might "correct" the scapula with a scapular assistance test and then have the patient lift their arm – and it hurts less. After 1-2 repetitions, instead of pushing the scapula, I just twist the skin – still less pain. Then, I twist the skin in another direction – still less pain. Then, as they keep lifting, I stop "correcting" completely – still less pain!

I explain that there is no way I've corrected their scapular motion. Rather, I've changed how they feel – their sensitivity. Perhaps they became more confident, less fearful. Perhaps something happened in the brain (likely, but I don't always

get into it). I use that change as a learning tool and then use exercises to reinforce the new perception (a nice discussion can be found [here](#)).

3. Your assessment reinforces their belief in strength

Patients think they are falling apart. They think they are tight and in need of correcting. I confront those beliefs in my assessment.

Patients often believe they have tight hip flexors and weak glutes. I wonder where they got that pernicious and pervasive idea? Often, their hips extend equally on both sides, yet they only have pain on one side. I ask how can this be if their tight hips are the problem. I point out they don't fall over when they walk or run, so how can their glutes be so weak as to cause problems?

If they feel that they have pain because their core is weak, I ask, "How can that be?" A stable core takes less than 10% of maximum contraction of the anterior abs, even during a loaded barbells squat, and most of their pain is in sitting.

These confrontations help change how patients view their body.

4. Comprehensive capacity trumps

assessment-driven correctives

I wrestle with the relevance of regional interdependence. It seems logical and right, but only if I view the body as a machine or a structure, and not as this complicated ecosystem.

I agree that hip movement will change knee movement. I agree that a thoracic kyphosis will change scapular movement and thus affect shoulder flexion. I question its relevance to pain.

Hip strengthening exercises can be great to treat knee pain (review [here](#)), but so can the old boring knee extension or knee strengthening exercises (a cherry-picked paper [here](#), but you can follow the related articles to get the point) and hip strength may not precede knee pain (review [here](#)). And guess what! The hip strengthening exercises don't even have to change hip kinematics to improve pain (paper [here](#), but ignore the title – there were no changes in kinematics).

So, the hip can influence the knee, but it doesn't have to influence it mechanically to alter pain and function. And don't get me started on the foot influencing knee function. That regional interdependent trope is [pretty weak](#) even when it comes to biomechanical changes that are "driven up the chain" from the foot.

My solution is comprehensive capacity, my term for a shotgun approach. We don't have to just find "flaws" in how someone moves. We can look at the painful joint, at the joints above and below, and say, "I want you to be able to do everything!" I want strength, control in all ranges of motion, a variety of movement options, speed, agility, the ability to bounce and "pop" – all done fearlessly and confidently. After all, if I'm really honest, none of us knows how these mechanical and psychosocial variables interact.

If you have an injured athlete, make them the best athlete and healthiest person they can be. That's good rehab.

5. Postural and movement assessments reveal habits but not flaws

The dominant view is that when joints deviate from a neutral position during rest or physical activity, there's a risk for pain. If a person has an anterior tilted pelvis, hip adduction and weak glutes, the default is to blame this abnormality for their back, knee, foot or shoulder pain.

Those movement patterns can be relevant, but I question why they should be the default. If no previous research or ideas existed, would we still hold this view? Consider how common and varied these movements are in the pain-free population, how incredibly robust and adaptable the body is, how pain can contribute to these movements. Should we

still default to these patterns as the cause for the pain? Will they become the new structural bogeymen we dismiss on radiographs?

I do change the habits of movement, but only to give patients variety and uncouple those movements from pain. It's a temporary fix, akin to a bandage for a cut or a 6-week heel lift for plantar fasciopathy. But I don't want any patient to fear any movement.

If the research makes a strong case that certain movement patterns in certain populations under certain conditions are related to injury (e.g. increased knee abduction moment during landing in females in sports with high ACL prevalence), then I take that research and redecorate my structure. But do I freak out when every girl who runs 2 km twice a week shows up on my treadmill with some knee valgus? No. (More on this [here](#))

So those are my fundamentals. What are yours? Should I be redecorating?