

How to Treat Chronic Lower Back Pain Using the Joint-by-Joint Model

Marc Heller, DC

Let's delve a little deeper into the discussion initiated in my [previous article](#), "Low Back Pain: Global Patterns."¹ The joint-by-joint model says that the neck, lumbar spine and pelvis need stability, and that the hips and thoracic spine typically need additional mobility. The thoracic spine is obviously built for stability. It has the connection of the ribs reinforcing it. So, it has inherent stability, but tends to get stiff and need mobility.

Our cervical spine allows us to turn our head quite far. The typical degenerative changes seen in the lower cervical spine mean that this area often requires extra buttressing. We need to train the patient for stability here. The lumbar spine and pelvis also allow good movement, and are the transition zone from the legs to the spine. The lower lumbar often degenerate prematurely. Again, they need stability.

I am talking about chronic lower back pain here, or lower back pain that does not respond when you mobilize or release the painful area. I am *not* asking you to change what is working in your practice; I am asking you to keep learning, to keep improving. Does using the joint-by-joint concept mean you should not adjust the SI or lumbar spine? No. Now we get into interpretation. I would say that the joint-by-joint approach is a general rule. It does mean pay attention; don't adjust, mobilize or rub just because a place hurts. If you are adjusting the same segment over and over, it probably is hypermobile at worst, and irrelevant or insignificant at best.



If the joint-by-joint approach has validity, if the core stability model has utility, what does it mean for us? First, let's look at diagnosis. This model is implying that the pain is being generated, at least in the lower back, by excessive movement. If the pain generator is an area of instability - if the hypermobile joint is the cause of pain - how can we treat this?

Let's take two examples. If the SI is unstable or sloppy, how can we change this? From a rehab perspective, look at the active straight-leg raise. Does the pelvis shift uncontrollably when the patient lifts one leg? If so, train them to control this. There is no magic mobilization, no brilliant soft-tissue work that is going to completely change this pattern without rehab.

My previous article attempted to describe how core inhibition creates the muscular patterns that unlock or destabilize the SI, with multifidi weakness allowing a posterior sacral base and erector spinae hypertonicity pulling the ilium anterior. This combined muscular pattern puts the two sides of the SI into an unusable excessively mobile position.

From a manipulation perspective, look at the surrounding joints. How often is right [SI pain](#) caused by left SI restriction? How often is right SI pain contributed to by restriction in the hips or restriction in the lumbar joints above the SI, all the way up to the thoracolumbar junction?

The third useful perspective here is looking at ligaments and tendons that are not working well. Whether we call this ligamentous laxity or chronic tendinosis, our soft-tissue work can be most effective when we embrace a specific, pro-inflammatory, deeper form of work. I love instrument-assisted soft-tissue massage (IASTM). I appreciate what Luigi Stecco and his team have added to the research and the conversation regarding fascial manipulation. Do deep soft-tissue work on the main ligaments and tendons that attach the lower back and pelvis together.² You can use soft-tissue work to go beyond just releasing the tight areas, to also enhance stability through increasing fibroblastic activity.

For another example, let's look at the lumbar discs, which can cause both sciatica and lumbar axial discogenic pain. If the disc is causing pain, the pain will inhibit the segmental muscles that are directly connected to that segment. That includes the multifidi and the psoas at the involved level, and possibly at levels above and below. So, rehab-wise, train the [inner core](#). You may need to pay attention to these local muscles and go beyond just functional training, or at least be very specific.

One of the ways the disc causes pain is directly connected to this deep muscle inhibition. The vertebral segments that surround the disc are moving too much, irritating the already damaged disc. When the patient suddenly twists or flexes and gets a jolt, what is happening? The local stabilizers are both inhibited and have timing delays.

In the non-back-pain patient, when they twist or bend, the local stabilizers fire just before the activity begins, directly stabilizing the area that is moving. These small muscles are designed to dampen the movement. In the back-pain patient, these muscles are not firing effectively and/or are delayed, allowing excessive movement, irritating the already inflamed area. Again, the take-home is rehab.

From a manipulation perspective, when I find midline tenderness, which usually correlates with discogenic pain, I have several strategies. The most immediate is to decompress the area. I can use flexion distraction; I can use my vertebral distraction pump; I can do manual decompression. I always show the patient simple decompression exercises. I have written about this³ and have [a YouTube video](#)⁴ on these basic, but poorly understood exercises.

I am also going to check above and below. Let's use an example of the L5-S1 disc. If L4 is not moving, if the SI is not moving, if the hips are not moving, what happens to L5-S1? The painful segment is required to move excessively if the segments above or below are fixated. So, be as precise as you can

be in your palpation. Pay attention to tenderness and pain, but remember that the tender segment may just be irritated. Assess for fixation and restriction.

How should I adjust these segments? When I suspect discogenic pain, I am most likely to avoid rotation and flexion in my mobilization or adjustment. I would do this especially when, in the McKenzie model, the patient is extension biased, and flexion makes them worse. This is another useful reason to know how to perform low-force mobilization. I can adjust even very acute lower backs using low-force mobilization, within the patient's movement tolerance.

If the patient responds quickly, if they are helped by your lumbar or pelvic adjustment, great. I tend to be a bit skeptical of clinical prediction rules, as they are often an oversimplification, but there is a fascinating piece of research within Flynn, et al.'s article in *Spine*.⁵ They looked at basic lumbar manipulation and tried to determine in which patients manipulation was most effective for acute back pain. One of the key findings was that patients who had limited internal rotation of the hip did not do as well. This is consistent with the whole joint-by-joint model. When the hips are stuck, address them first. Releasing [the hip](#) takes the load off the lower back.

In chronic lower back pain, I suggest you check above and below the painful complaint area, in addition to your assessment of the painful area. We need to remember that our exam findings, our palpation interpretations, are an art. We can easily perceive restriction and be fooled. If your entire model is based on finding fixated areas, guess what? You are going to interpret every abnormal tissue texture as restriction.

I will always remember a particular patient, a lean, tall woman, who had chronic SI pain. I thought her SI joints were stuck. After I failed miserably, she went to an osteopath, who diagnosed her as having a hypermobile SI. In hindsight, I was looking at her compensatory muscular guarding, which gave the impression of joint stiffness.

If the patient tends to go "out" in the same places over and over, what does this tell you? To me, it might mean I am misinterpreting the exam. What I may be seeing as joint fixation may really be muscular hypertonicity, a guarding around the hypermobile joint. Look above and below. Try to find a position in which the patient can relax, and then repalpate in that position.

Take-HomePoints

1. In your chronic lower back patients, check the areas above and below the lower back and pelvis.
2. Within the lower back and pelvis, check the ligaments and tendons, and consider doing soft-tissue work that will initiate the repair processes.
3. Be very selective in your mobilization in the painful area; don't adjust the pain over and over.
4. For this population of patients, rehab is absolutely critical.

I totally appreciate that a good adjustment, aimed at the right place, can make a huge difference, can initiate healing, and can do what nothing else can do. I am always assessing for lumbar and pelvic restriction in my lower back pain patients. I do expect that the pattern will change after a couple of treatments. If nothing is changing, if the patient is getting either no changes or just temporary relief, I will always widen my search.

Ongoing pain is attributed to many things, including degenerative arthritis or bulged discs. In my opinion, this is usually a garbage-can diagnosis. Imaging often creates a false confidence in the practitioner, leading them to think they know what is wrong. Imaging results also "install" a harmful picture into the mind of the patient. The patient thinks that they permanently have a "bad disc" or "arthritis" as the definitive cause of their pain.

I think this is poor-quality care. This model is not only expensive; it is also worse than useless - it is harmful. If you don't know what to do for a patient, find some pre-existing condition you can blame it on. Trust me, it's there.

We need to address these muscular changes. Manipulation, when it provides lasting relief, will start to change the musculature. And almost everyone who develops any degree of chronicity, even four weeks of pain, needs to retrain their muscles. It does not have to be complex; it doesn't require a gym. What it *does* require is a doctor who is willing to teach simple exercises or delegates this task effectively.

What kind of compliance are you getting? Do you expect your patients to do the exercises? Do you provide enough support for them, such as good handouts and/or videos? Do you hold the patient accountable; do you have any idea if they are doing their home routine? It's not hard to tell.

Ask them, "Are you doing your exercises?" Ask them to show you the exercises. Are they getting smoother? Are they getting stronger and improving their form? If not, they are not doing the exercises, you have given them the wrong exercises or they are doing them wrong. Fine-tune the program.

So, what are the take-home concepts here? One, in your chronic lower back patients, check the areas above and below the lower back and pelvis. Two, within the lower back and [pelvis](#), check the ligaments and tendons, and consider doing soft-tissue work that will initiate the repair processes. Three, be very selective in your mobilization in the painful area; don't adjust the pain over and over. And four, for this population of patients, rehab is critical.

References

1. Heller M. "Low Back Pain: Global Patterns." *Dynamic Chiropractic*, Feb. 26, 2012.
2. Heller M. "Sacroiliac Revisited: The Importance of Ligamentous Integrity." *Dynamic Chiropractic*, July 2, 2005.
3. Heller M. "Decompression Myths and Models." *Dynamic Chiropractic*, Jan. 1, 2007.
4. You Tube video on back pain (www.youtube.com/marchellerdc): "Back Pain, Decompress Your Back."
5. Flynn T, Fritz J, Whitman J, et al. A clinical prediction rule for classifying patients with low back pain who demonstrate short-term improvement with spinal manipulation. *Spine*, 2002 Dec 15;27(24):2835-43.

