

from Suboptimal Biomechanics

Chronic pain will visit most of us at some point in our lives. It comes and goes, or is it constantly nagging, despite our efforts to deal with it. A trip to your doctor, and maybe to a specialist, may reveal that nothing is seriously wrong—which is good to know. You might be offered an injection to the painful area or a prescription for physical therapy.

Chronic pain could start from a variety of possibilities such as an old injury that may have occurred years or decades in the past. You have long since dismissed it as irrelevant, since the old injury was in one location and the pain you are now experiencing is in another.

An old injury will often alter our biomechanics—the way we move or hold ourselves. One day you twist your ankle (or worse) followed by weeks of slight limping, or you get a back injury stepping off of a curb you didn't realize was there. You had to change the way you sat, stood or walked to minimize the pain. The injury healed and the pain went away.

However, as you did this your nervous system began to adopt a new movement pattern in your biomechanics and placed it into your "autopilot" subconsciously. Now some muscle groups pull too much and other groups pull less to hold your frame together and propel you forward.

Ten years later here comes pain from out of the

blue. It could manifest as tendinitis, muscle spasm, fascial pain or joint pain. Now you have a "hitch" in your gait, or you can't reach overhead or to the floor without pain, or your back "seizes up" during a one-hour car ride.

Over the years, I have learned some pearls of wisdom from seminars and other therapists. One is that if you look for the problem where the pain is, you probably won't find the problem. This is because the pain is from an imbalance in the pattern of movement and the weak muscles are not causing the symptoms—the strong muscles are! Why? Because the strong muscles are compensating for a weakness and they are overused.

The injury alters the movement pattern, and the biomechanics become suboptimal, resulting in symptoms. It doesn't do much good to insist on strengthening the overused muscles. The trick is to strengthen the weakness in the movement pattern by improving the biomechanics.

Another pearl of wisdom is this: The biggest muscles should do the most work. What is the biggest muscle? The gluteus maximus! As a group maybe we should say the "glut max" and company. These muscles are the core of the "core" and both sides often work simultaneously in different direc-



Take a medium step forward. Each knee must remain in-line with the second toe. This is the glut max and company stabilizing the knee and controlling foot pronation. Pull a dowel to your sternum (or pretend to) so your elbows stay back.

tions during standing activities. The glut max (and company) should provide the most power when walking or climbing stairs, maneuvering bags of groceries, reaching...and literally everything. The gluts supply power for often under utilized hip extension and stability of the spine on the pelvis, plus stability of the knees and feet through the long tendon that extends from the hip to the knee, called the I-T band. The gluts keep the pelvis level so the spine can maintain a neutral position without too much sway in the low back, a common problem.

The glut max should be integrated into all of our movement patterns for optimal biomechanics and the treatment of many chronic pain issues.

Integrating the gluteus maximus into movement patterns is an important part of my physical therapy practice. I am probably most known to my patients as a Myofascial Release oriented physical therapist, which I am. I find that



Keep the shin of the front leg vertical and the foot of the back leg pointed straight ahead. Rotate the pelvis toward the lead foot. Bow your naval over the front foot with spine straight. This increases the bend in the hips, controlled by the glut max on both sides. Return. Take 10-15 seconds to complete each repetition. Switch feet.

biomechanics to be controlled consciously. Repetition over multiple sessions, in the clinic and at home, helps to adopt a pattern without compensatory movement. Progressing the level of difficulty and speed, such as with brisk walking, allows the subconscious to take back the control of the movement.

Follow the instructions in the captions of these pictures for an exercise of moderate difficulty called "Diagonal Stick Bowing" to simultaneously integrate both glut maxes into a movement pattern that is useful for walking, stair climbing or reaching. There are many anatomical landmarks to consider, but if you can focus on three, you will have optimal biomechanics. Do this in front of a mirror for self-feedback. ■

the wonders of MFR work best if optimal biomechanics and movement patterns are combined to keep the fascia supporting optimal biomechanics, not compensatory patterns

The goal is to perform every-day and recreational activities pain free. Patients progress to higher levels of difficulty, but only as long as they can hold the form of the exercise accurately. Not staying in optimal biomechanics only serves to reinforce the suboptimal biomechanics and compensatory movement patterns. There's

often a fine line between optimal and suboptimal. My job is to see the difference and guide the patient into the more optimal option.

Moving in slow motion allows the



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