



CHIROPRACTIC (GENERAL)

Flexibility and Mobility Training: The Ease of Helping Patients Who Sit Too Much

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The principal elements of the rehab practice, including bodywork, breath awareness, posture, movement, cardio, diet, sleep, attitude, etc., can have wide-ranging health effects. Flexibility is the physiological maximal range of motion of a given movement performed passively without producing pain or severe discomfort. Stretching increases flexibility, but flexibility is far more than just static stretching. Flexibility is done to restore tissue length and to prevent long-term overuse injury. Stretching one muscle can make it easier to activate an opposing muscle.

In day-to-day practice, performing soft-tissue work using cross-friction massage, deep muscle stimulation, shockwave therapy, IASTM, ischemic compression, foam roll, stick work, etc., and then immediately having the patient stretch, can break down adhesions and scar tissue, and properly realign new tissues. Stretching helps to improve your static (non-moving) flexibility and may not do such a good job at preparing your body to move quickly and efficiently, which is why it's not recommended immediately before sports participation. Here are the current sports medicine recommendations for stretching (based on Kay AD, et al. *Med & Sci in Sports & Exer*, 2012):

- Static muscle stretches from 30-45 seconds can be used in pre-exercise routines without risk of significant decreases in strength-, power- or speed-dependent task performances.
- Longer stretch durations (e.g., 60 seconds) are more likely to cause a small or moderate reduction in performance.



I still recommend having patients perform static stretches at the end of the workout; we imagine that this helps the body come back to a state of rest and recovery. In my office during a session of "experimental" exercise, we stretch to concentrate on lengthening the muscle. I also encourage my patients to perform static stretching before bedtime. The use of static stretching elongates a particular muscle or group of muscles.

Common Stretching Methods

The following are commonly used therapeutic stretching methods. It's good to know what each one is used for:

- Sustained stretch for connective tissue and collagen, e.g., fascia, capsule contracture, scar tissue.
- Post-isometric relaxation (PIR), hold-relax, contract-relax for contractile tissue that is atrophied and short (post-immobilization muscle shortening); GTO changes.
- Active inhibitory stretch (AIS) for overactive or hypertrophied contractile tissue, e.g., muscle imbalance; based upon reciprocal inhibition.

- After a manipulation or mobilization, I teach patients mobility drills. Mobility = tissue length + neural control / stability + joint architecture.

I hope this helps clear up some of the confusion in terminology. When you read some of the literature, you find authors refer to mobility as "active flexibility." Mobility, or joint mobility, is the ability to move a limb through the full range of motion *with control*. Mobility is based on voluntary movement, while flexibility involves static holds and is often dependent upon gravity or passive forces. Mobility demands strength to produce full-range movement, whereas flexibility is passive; thus not strength-dependent. It is possible to have good mobility without being especially flexible, just as one can be flexible with poor mobility, i.e., control. Of the two, mobility is more important. It is better to be inflexible with good mobility than flexible with poor mobility.

Integrating Training

How do we integrate manipulation, soft-tissue work, static stretch, dynamic flexibility and strength training into our practice? It all starts with using static postural analysis, orthopedic and neurological testing, and functional movement assessments. I find starting a treatment with soft-tissue work (deep-tissue laser therapy, lymph / fascial decompression, vibration / percussion) with acute cases helps to decrease spasm, hypertonicity, rigidity and swelling. In chronic cases I use soft-tissue work to re-stimulate the inflammatory response and improve the quality of tissues by breaking down adhesions and scar tissue.

Soft-tissue work has shown me that I need to get the "knots" out of the tissues if I want flexibility training to work optimally. It is easy for us as chiropractors to do soft-tissue work using our skilled hands, radial shockwave therapy (Zimmer), and vibration and percussion devices like the deep muscle stimulator. It is also important to instruct patients to use foam rolls, roller sticks and similar devices at home to continue the benefits of the in-office treatment.

I typically spend one of my first treatment sessions with a new patient to teach them how to do self-myofascial release soft-tissue work using a foam roll or other device. Then I must couple this with teaching them static stretches and/or dynamic flexibility warm-ups. These are significantly more effective than static stretching in terms of reducing injury rates.

Dynamic mobility trains stability and range of motion simultaneously. Dynamic mobility prepares your body for workouts and stimulates the nervous system, muscles, tendons and joints in a dynamic manner. Having a lot of range of motion without stability actually *increases* your risk of injury.

A Sample Exercise Program

Consider a patient who is sitting day-in and day-out, and who relates sitting to the cause of their low back pain. Let's create a simple exercise program that will take you 5-10 minutes per office visit to teach them what to do as home care. In addition to providing soft-tissue work, modalities, mobilization and manipulation in the office, provide time within sessions or schedule separate office visits that teach the patient strategies to warm up and activate or "turn on" the neuromusculoskeletal system.

Your mobilization and manipulation will loosen up joints and muscles. The dynamic mobility movements that you teach will warm up the body and increase ROM. If the patient already works out, remind them at the end of a workout to spend time to recover and regenerate to prepare for tomorrow's workout.

- *Visit #1:* Perform the modified Thomas test to objectify tight / overactive hip flexors from

prolonged sitting. Let's say this test reveals that the patient has overactive quads and psoas muscles. On the first visit, teach them how to foam roll the quads and also how to place a weighted ball over the psoas muscle in the prone position to mobilize the psoas muscle belly. These maneuvers will change the pliability of the muscle tissue; enhance the ability of the muscle fibers to slide and glide; decrease the amount of friction and adhesions in the muscle tissue; and change the neural feedback loop. Have the patient purchase a foam roll and a small weighted ball so they can do this on a daily basis at home.

- *Visit #2:* Teach the patient how to perform a quad stretch, a standing psoas stretch and a yoga-pose lunge stretch. Have them perform two sets of these hip flexor stretches for 60-second static holds, progressing deeper into the stretch as time passes.
- *Visit #3:* Teach the patient how to perform repetitive backward lunges with a twist (dynamic stretch). Have them perform repetitions on each side for a minute or two. Also teach them how to perform gluteal bridges and the birddog exercises (isometrics). Have them perform two sets of 10 reps with a five-second isometric hold up top.
- *Visit # 4:* Teach the patient how to perform side-lying hip abduction exercises (isometrics). Have them perform two sets of 10 reps with a five-second isometric hold up top.
- *Visit #5:* Teach the patient to perform single-leg bridges and the birddog (progress with one end of a resistance band wrapped around the right foot and the other end held in the left hand). This session is used to explain the benefits of gluteal muscle firing timing and hypertrophy. Have them perform two sets of 10-20 reps on each side.

You can continue this progression with reps of standing leg abduction with resistance loops and glute-hamstring exercises (gluteal strength). Have the patient perform three to four sets of five to six reps. I hope this discussion helps you build a practice that stretches you and your patients!

Resource

- Clark M, Lucett S. *NASM Essentials of Corrective Exercise Training*. Lippincott Williams and Wilkins; Baltimore, MD, 2010.

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