

Human Function and Performance Functional Movement Assessment

Disclaimer: The advice provided in this document is not meant to be used or replace medical advice. If you are experiencing pain, consult with a medical provider.

These exercises are designed to moderate long standing low-level back pain. Severe pain should be immediately evaluated by a medical practitioner.

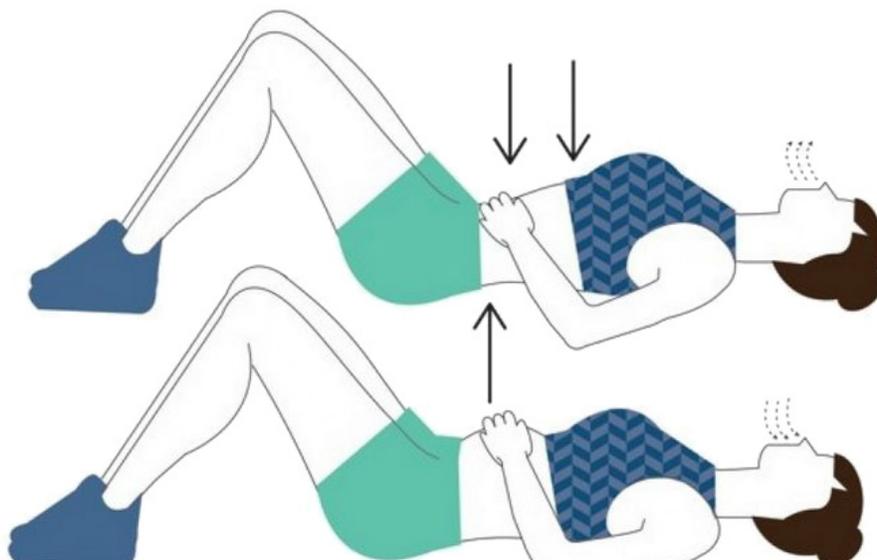
1. Breathe

Lie down on your back, knees bent and your feet flat on the ground. Lightly press your feet down into the floor, starting back at the heel and maintaining the heel pressure while your whole foot presses down lightly. This should turn on your hamstring muscles.

Gently roll your hip bone up toward your navel so that your low back flattens into the floor. Be sure not to brace your abs, simply flatten your back while keeping your belly relaxed.

Now look straight up at the ceiling while you breathe in slowly through your nose, feeling the air expand your stomach and rib cage, starting at the bottom and moving up toward the chest. Exhale through your mouth for twice the duration of your inhale. Do not hold air back as you attempt to exhale, simply exhale more than you inhale. You should feel your abs tighten as you exhale the last of your breath.

Repeat this sequence for 5 consecutive breaths, all while keeping the back flat, then relax. Repeat this activity 2-3 times before reassessing pain.



2. Activate hamstrings in a 90-90 Position

Lie down on your back with your feet on a wall or chair so that your hips and knees form 90 degree angles.

Engage your hamstrings by pulling down on the wall or chair with your heels, be sure not to press hard on the ball of your feet.



With hamstrings engaged, push knees slightly up toward the ceiling so that your tailbone curls up between your legs. Be sure to keep your back flat on the floor.

Hold this position while performing the breathing pattern discussed in tip number one.

3. Train alternating hip flexion/hip extension

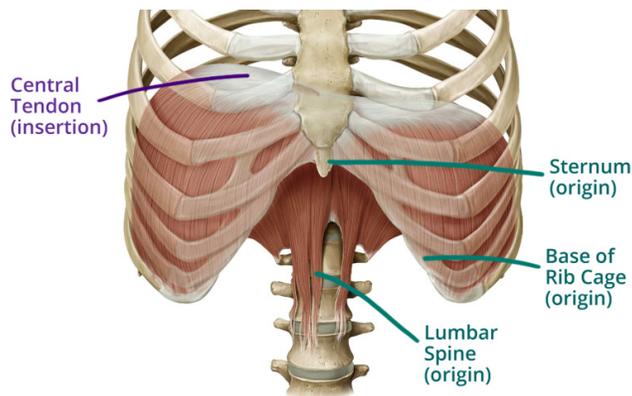
Activities such as step ups, box step ups, single leg bridges, lunges, split squats, Bulgarian split squats, single leg deadlifts, single leg reach outs and other alternating hip flexion/hip extension exercises can help to improve flexibility and motor control over the muscles that produce anterior and posterior pelvic motion. Restriction of these muscles can produce the need for compensatory activity of the low back musculature to produce motion in the low back and pelvis structures.



4. Train control over your Zone of Apposition (ZOA)

If the Zone of Apposition is a novel term, you will benefit from exploring the concept further. Essentially, the area where your rib cage covers your diaphragm moderates the internal forces on your spine. Similar to how the psoas muscle (hip flexor) pulls forward on the spine, the diaphragm does as well. If your abdominals do not pull the ribs down well enough to cover the diaphragm this forward pull of the spine can go unchecked, creating low back pain. Activities such as planks (performed properly with the low back flat and not sagging) can help to strengthen the ZOA. Activities such as squats, deadlifts, pull-ups, and push-ups all require an appropriate amount of

control over the ZOA to not produce unwanted force at the spine.



The Diaphragm — Origin & Insertion

5. Train the lateral plane

Often forgotten in many exercise programs is the ability to abduct and adduct the legs and trunk. Outside hips and inside thighs help to stabilize our body while performing all activities. Weakness in these muscles often leads to a compensatory extension response from the low back musculature.

Additionally, the outside abdominals create and control rotation of our spine. Weakness or asymmetry in these muscles can increase the demand on our low backs for upright posture and dynamic activity. Exercises such as side planks, Palloff press, boxing, single arm forward press, single arm overhead press, and single arm pull down activities can improve balance between the lateral and sagittal plane musculature.

