

Posture Evaluations, Part 8: Corrective Exercises for Excessive Thoracic Kyphosis

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In previous articles, I have written about normal postural alignment versus abnormal postural alignment, and how abnormal postural alignment can be detrimental to muscle function, is aesthetically unpleasing and might contribute to joint pain. Now let's discuss lengthening, dynamic mobility and strengthening exercises that can help improve faulty posture related to [excessive thoracic kyphosis](#).

Since kyphosis is natural in the thoracic spine, we have to identify what excessive kyphosis is, which is typically the problem. Generally speaking, normal for a thoracic kyphotic curve measures 30-35.* Excessive kyphosis is greater than 35.* As doctors, we are used to looking at the static spine from the side to determine kyphosis. Using the Functional Movement Screen (FMS) or other movement analysis, we begin to see the interrelationships of muscle and fascial tissue attachments that may contribute to hyperkyphosis.

For treatment of hyperkyphosis, I often take the "bottom up" approach and teach patients how to lengthen the lateral column of the body, the peroneal group, [iliotibial band](#), tensor fascia lata, lateral gluteal complex, quadratus lumborum, oblique complex, latissimus dorsi, and shoulder musculature to influence the kyphosis. When treating hyperkyphosis, always check the flexibility of the ankles, hips, adductors and anterior shoulder complex. The hip flexor tissue is fascially attached to the abdominal fascia, which connects to the external obliques, connecting to the pectorals, joining to the deltoids. As these structures become tight, they can influence thoracic kyphosis.

"What Can I Do About My Posture?"

Most patients are aware of having increased round-shoulder posture (thoracic flexion), and forward head posture (cervical flexion). The overall treatment plan begins with advice, foam-roll training, stretch therapy, and strengthening exercises. Step one (advice) is always to provide your patient with active awareness exercises. Simply help them see and feel what being in good posture is like.

Advice: We all know that prolonged sitting at the computer is contributing to increased kyphosis. Therefore, make sure your heavy computer users are not spending workout/exercise time doing benching, curling and biking. These are the last activities they need with an increased kyphosis. I teach my clients how to perform Brugger's maneuver with and without the resistance of an exercise band. Every person serious about improving posture needs to know how to do Brugger's maneuver properly.

In addition, I teach my patients to perform targeted standing thoracic extension arches while at work: Place your own thumbs under your armpits with your fingertips pointing up to the ceiling. Now lift your thumbs up as high as possible. This extends the thoracic spine and lifts the sternum.

Foam rolling is essential therapy for patients with poor thoracic spine mobility. It never hurts to gain mobility, especially in the thoracic spine. The most useful foam roll exercise for the thoracic spine is to lay the foam roller across the thoracic spine in the stiff, hypomobile areas, knees bent with feet on the floor, and then arch back over the foam roll. Foam rolling can be performed daily and is best performed before stretching as a way to self-mobilize the joints.

Stretch and Strengthen: After I teach the patient how to use the foam roll, I teach them how to stretch the anterior shoulder region, especially the pectoral muscles, in combination with strengthening the posterior region. Strengthening the [scapular retractors](#) can alter the position of the scapula at rest in individuals with abducted scapulae. Here are some specific flexibility exercises to lengthen:

- *The static latissimus stretch* is accomplished with the patient on all fours with one arm outstretched, the hand and forearm on a stability ball. Tightness through here can often pull the shoulders forward and increase the kyphosis. Hold this pose for 30 seconds, twice per side.
- A similar stretch is the *90-degree table top back stretch*. This works out the latissimus muscles and at the same time allows the patient to move the apex of the kyphosis to a more neutral position, loosening up the stiff joints. The only equipment you need for this stretch is a table or countertop. Plant your feet shoulder-width apart, tighten your stomach muscles and keep your shoulders back and straight. Bend forward at the hips with your arms out straight in front of you. Place your palms and forearms on the table to give you support as you strive to arrange your body in a 90-degree angle. Your arms should remain straight with your ears aligned with the arms. Keep your back as straight as you can in a horizontal (tabletop) position. Hold the position for as long as you can, aiming for 60-120 seconds.
- The *chest stretch* will provide a deep stretch throughout your tight chest muscles. Lie on your back with your knees bent and feet flat on the floor. With your elbows bent and pointing out to the sides, place your hands at the base of your head. Keeping your back and rib cage pressed into the floor gently push your elbows into the floor until you feel a stretch across the front of your chest. Hold the stretch for 30 seconds. Repeat two times.

Dynamic Mobility Movements

The *repetitive arch-up*, targeting the hyperkyphotic segments, can help postural kyphosis improve. Lie down on your stomach, bend your elbows and place your palms down (one on top of the other) on the floor, resting your forehead on the top of your hand. Your face is straight down and your legs remain flat on the floor throughout. Lift your head, arms and chest off the floor with your hands still touching your forehead. Lift the top half of your body up as far as you can without lifting your legs. Hold the pose for at least 10-15 seconds; repeat 10 times daily. You'll feel the stretch in your chest, stomach and back.

To perform *prone elbow lifts*, lie face down on a mat. Slightly turn the head to one side. Bring arms to 90-degree angles at either side. Gently lift the head and chest off the mat. Maintain this position and bring the elbows up and slightly in toward the midline of the body. Hold in this position for 15 to 30 seconds. Return to start position and repeat 10 times.

Y-T-V-L: A simple exercise strategy to transform a hypomobile thoracic region into a mobile thoracic spine is to position the patient into a posterior lunge with the right leg. Make sure the right heel remains on the ground. It's more like a step than a lunge. Notice how the right pelvis becomes anteriorly tilted to the lumbar spine. Place the back of your hand at the lumbar spine and observe the

increased lumbar lordosis.

To improve shoulder and thoracic mobility, extend the left arm to a Y position, then repeat the step and move the left arm into the T position, repeat the step and move the arm into a V position and finally into an L position. Notice how this movement pattern creates scapular retraction (adduction) of the left scapula, the thoracic spine extends, the lumbar spine gains relative lordosis, the cervical spine improves its lordosis while the head draws back, resulting in greatly improved posture.

If desired, have the patient hold a band or stretch strap to add resistance as they extend the arm. This will add resistance for the parascapular muscles, posterior shoulder and latissimus dorsi. As a functional alternative, use a lightweight dumbbell in the left hand. Perform 5-10 repetitions of each Y-T-V-L, two to three sets, and then repeat on the opposite side. Be sure to change leg positions to address both sides of the back.

Another thoracic spine self-mobilization exercise for kyphosis is "*thread the needle*." Put the patient in the quadruped position with a neutral spine. The weight is on the knees. Bring the right arm out to the side, level with the shoulder and chest, and rotate the thoracic spine using the opposite shoulder blade. Perform 10-15 reps.

Seated thoracic rotation works best with your patient sitting "Indian style" (cross-legged on the floor or on a chair) with a ball squeezed between the knees. Interlace the hands behind the head, then rotate the elbows and thoracic spine to the right and left. Then laterally bend to the right and left. Then combine rotation and lateral bending. Sitting in the cross-legged position blocks the pelvis and minimizes the motion in the lumbar spine so you can target the thoracic region.

Another thoracic spine self-mobilization is a modification to the yoga pose called "*child's pose*." Kneel back with buttocks on heels, body resting on thighs, arms outstretched in front on the floor. I like to roll the palm up and lift the right hand off the floor. This also helps get the lower traps. Repeat this maneuver 10 times and do both sides.

Strength Training

The most remedial strength exercise I give for hyperkyphosis is to the *lower trapezius*. This strengthens the [postural muscles in the back](#) as well as lengthens the chest muscles. Lie face down with your legs extended and hip-width apart. Keep your arms by your sides and your shoulders pulled away from your ears. Take a deep breath in and stabilize your lower abdomen. As you exhale, draw your shoulder blades down your back and lift your head and chest off of the floor. Inhale as you hold this position. Exhale to relax back to the floor. Perform 10 repetitions of 10-second holds.

I think the thoracic spine appreciates vigorous exercise, so the following list is my advanced exercise program for increased kyphosis:

Pull-ups: These actually are an effective exercise that I use to help kyphosis.

Single-arm dumbbell rows: Holding a dumbbell in your right hand, place your left hand and left knee on a bench. Hold the weight with your arm straight. Use your upper-back muscles to pull the dumbbell up and back toward your hip. Pause, then slowly lower the weight. Pull the weight up so your elbow passes your torso.

Barbell bent-over row: Stand holding a barbell with an overhand grip, your hands slightly more than shoulder-width apart. Push your hips back and bend forward until your torso is almost parallel to the floor. Draw the bar toward your rib cage. Pause, then lower the bar. Maintain a slight bend in your knees throughout the movement.

Seated wide-grip row: Sit on a bench or the floor and bend forward to grab the lat-pulldown bar from a low pulley cable or use an exercise band. Using a wide overhand grip, pull the bar or band toward your midsection. Resist the weight as you extend your arms back out in front of you. Keep your back straight as you pull the bar to your abs.

Cable or band scapular retraction: Attach a bar to a low pulley cable or use an exercise band. Sit on a bench or the floor and grab the bar with an overhand, shoulder-width grip. Without bending your elbows, pull your shoulder blades back as far as you can and squeeze them together. Return to the start. This is a slight movement. The bar should move back only a few inches.

Exercise ball back extension: Lie face down on a ball and push your feet against a wall or hook them under a bench. Your chest should be off the ball. Cross your arms and bend forward at the waist until your midsection covers the ball. Then raise your torso up off the ball. Your torso should be in line with your lower body at the top of the move.

Reverse fly: To perform this exercise, you will need a set of lightweight dumbbells. Sit on the end of a weight bench with your back straight and your abdominal muscles tight. Lean forward, bringing your chest over your knees. Lift both arms to shoulder level, squeezing the shoulder blades together. Lower your arms down on either side of your body. When performing this exercise make sure that your elbows are slightly bent and you do not raise your arms higher than shoulder level.

The strength exercises are performed in a circuit fashion, one exercise after another, with a 20-30-second rest between sets. I recommend 10 reps per set and at least two rounds of the circuit performed three times per week. I get my patients to commit to doing this program for at least eight weeks (at least 24 sessions of at-home-care). I recommend you take before and after photographs. I welcome your comments and thoughts on this topic.

This is part 8 in an ongoing series on posture evaluation / correction that began with the publication of part 1 in the March 12, 2010 issue. Visit www.dynamicchiropractic.com and search for parts 1-7 using the search phrase "Tucker posture evaluation."

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