



Corrective Exercise Seminar Series Back & Spine

I. How is the Back and Spine intended to move?

Vertebrae's involved:

- Cervical
- Thoracic
- Lumbar

Muscles Involved:

- Latissimus Dorsi
- Rhomboid Major + Minor
- Erector Spinae
- External Obliques
- Trapezius

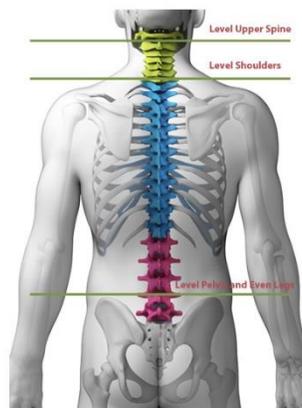


Image Ia.

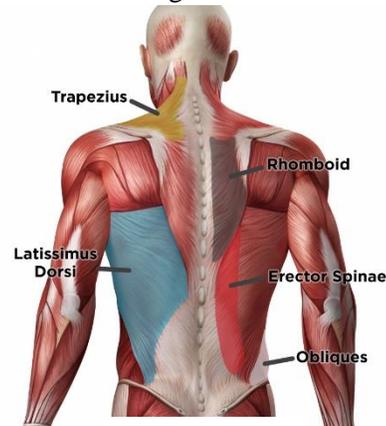


Image Ib.

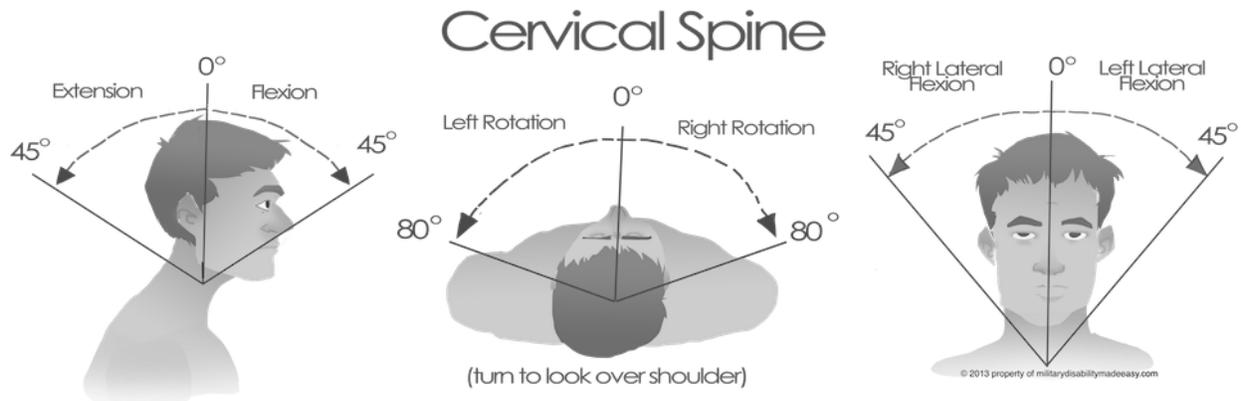


Image Ic.

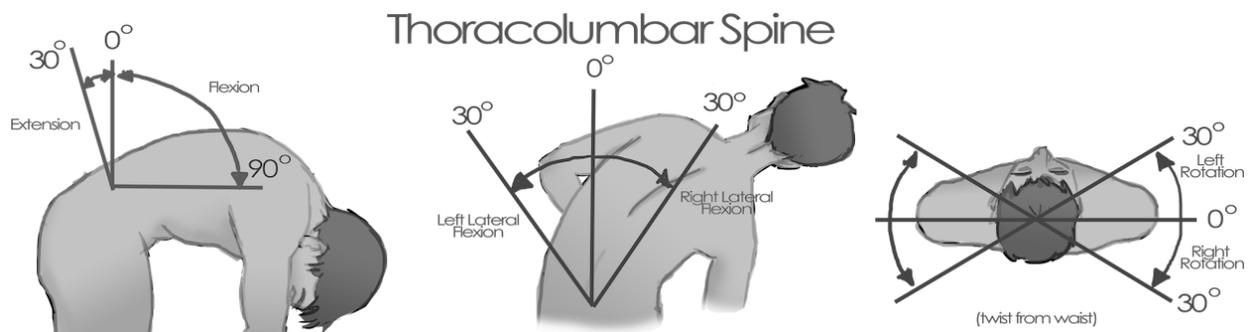


Image Id.

The spine has different range of motion at cervical, thoracic, and lumbar areas. Image Ic and Id above shows all movements at the back and spine.

- Flexion/Extension
- Lateral Flexion/Extension
- Rotation

II. Why do we have pain?

Limitations in any of these primary movements can be caused by muscle restriction and impaired proper function. Improper muscle function in the back and hip complex is a major cause of all limitations. This is part of your trunk stability and mobility. If your back and spine do not function properly, your body won't either. We use this musculature in every move we make and therefore, it is very exposed to overuse and atrophy. Most back pain is caused from ligaments and muscle, not trauma to bone.

Disc herniations are another reason pain occurs in the back. Disc herniations occur when the space between your vertebral discs narrows and the gelatinous material in the intervertebral disc leaks out (see image IIa). Excessive improper motion/lifting, any sport activities, etc. can cause this to occur. This usually develops overtime from repetitive activities, but can occur from impact as well. See image IIb for a straight leg raise test. If you have pain, address with your health care provider.



Image IIa.

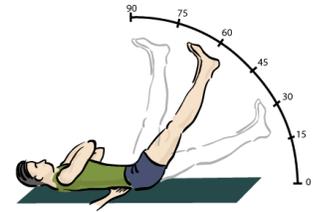


Image IIb.

Nerve pain is not uncommon in patients with lumbar or cervical pain. See Image IIb for nerve pathways and where the pain could be originating from. Please be aware of referred pain. This is when you feel pain in one location, but it is originating in another location.

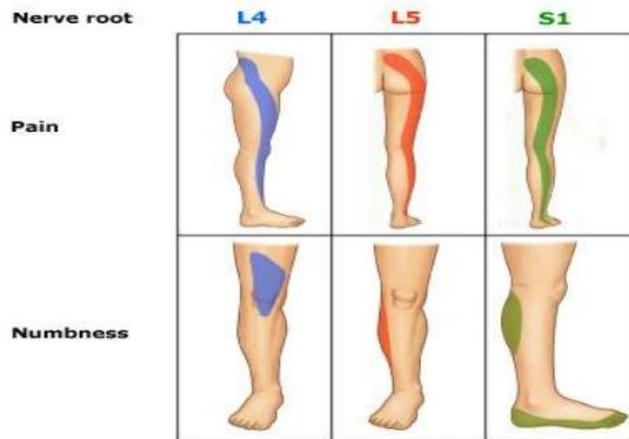


Image IIc.

- a. What are some exercises to avoid and some exercises to do more often?

If you experience back pain some exercises to avoid are: toe touches, leg lifts, sit ups, hyperextensions, and deadlifts.

Exercises to focus on for a healthy back and spine: swimming, plank, lateral raise, bird dog, and pelvic tilts.

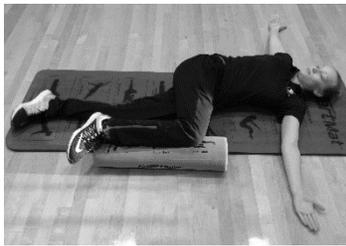
III. How do we improve discomfort?

We can improve discomfort by addressing the movement patterns that are inhibited and work to create motor patterns for proper movement. Thoracic movement training, motor control learning, and corrective exercise will help alleviate pain as well as prevent injury.

IV. Mobility to Stability

Mobility to stability is a process that is imperative for motor learning. We need to activate our muscles then learn how to integrate the proper movement into daily life. Doing both mobility and stability exercises is ying and yang for our musculoskeletal system. If we have excess of either mobility or stability we risk injury. Everyone is different, find out where your focus should be and make sure to do both types of movements. See the exercises below.

a. Mobility Exercises



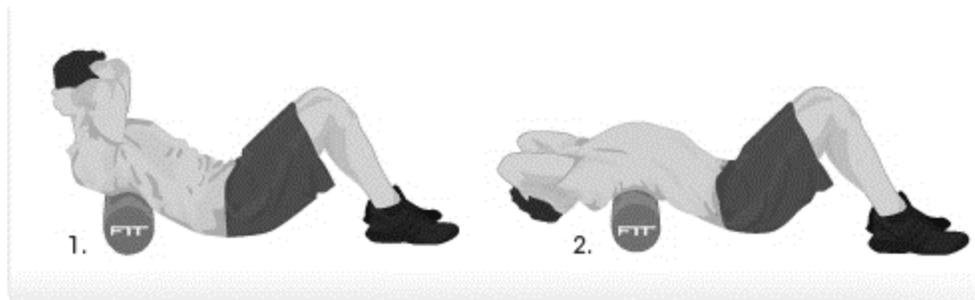
Side Lying
Windmill



Unilateral Thoracic
Rotation



T-Spine Dowel
Mobility



Active Scapulothoracic
mobility

b. Stability Exercises



Straight Arm Lat
Raise



Lumbar Stabilization Plank



Bird Dog