

## Thoracic Round-Back Syndrome

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Do you ever visually differentiate patients as flat-backed or round-backed (kyphotic), as related to the thoracic and thoracolumbar (TL) regions? If your assessment of patients does not start as a visual examination, allow me to encourage such a procedure. I use the word "procedure" because visual, nontactile assessment should be your first assessment. With the patient's shirt or blouse removed, one can observe skin contours; folds; blemishes; rashes; pigmentation changes; and so on.

Chronic segmental facilitation, as described by Dr. Irvin Korr, associates skin changes with spinal segmental dysfunction. With the patient unclothed, the doctor has a starting point in his/her inspection and search for the cause of complaints. The symmetry and overall contours of the back, from a visual context, are important in the proper assessment of complaints. Overall, does the patient's back tend toward flatness, or increased thoracic and TL kyphosis?

Let's consider overly kyphotic thoracic and TL spines by visual, non-X-ray inspection. These kyphotic curves can be separated into three general categories:

1. genetic hyperkyphosis of the thoracic spine (that may extend into the upper lumbar region);
2. acquired increased kyphosis, such as through faulty posture and trauma, creating thoracic and lumbar extension restrictions; and
3. a combination of genetic and acquired kyphotic changes, leading to increased thoracic and TL kyphosis.

Visual inspection of the spine and back is not quantitative - it involves some level of intuitive analysis. One has to integrate a sense of curves with the creation of pressures. To put it another way, one has to develop a sense of symmetry and cause-and-effect. When viewing a patient with low back pain, one can obtain a sense of lumbar and lumbosacral stress in the standing and seated upright positions. If there is significant thoracic kyphosis, increased lumbar lordosis often will be present, accompanied by increased posterior disc and facet compressive stress to the lower lumbar spine. Generally speaking, increased thoracic kyphosis results in increased lordosis in the lumbar and cervical spines. I suggest, therefore, that when a patient with low back pain presents to you, do not immediately treat the low back; instead, assess the thoracic and low-back relationship first.

There are two areas to assess: the low back and the thoracic spine. The low back includes the lumbar spine and sacroiliac (SI) joints; the thoracic spine also includes the thoracolumbar region (T-10 to L-2).

Problems in the thoracic spine to be concerned with are related to overall stiffness. Within that setting, loss of extension at specific intersegmental levels is a critical issue. Next in priority is functional loss of rotation at certain segmental levels of the thoracic spine. The loss of motion would include motion up to endpoint, then endpoint give (the amount of give perceived by the examiner, with applied pressure to the segment or joint being assessed). The procedure used to evaluate motion and endpoint give (or endplay) is motion palpation.

Assessment of the low back can begin with sacroiliac motion and visual assessment procedures.

Based on my day-to-day assessments, sacroiliac functioning can be divided into two categories:

1. posterior-interior (PI) ilium motion; and
2. anterior-superior (AS) ilium motion.

PI ilium motion is motion in the PI direction, with the posterior superior iliac spine (PSIS) as the point of reference; AS ilium motion is in the AS direction.

AS ilium motion is accompanied by counternutation motion of the sacrum, by which the sacral base moves in the posterior superior direction. Such motion decreases L-5/S-1 and L-4/L-5 posterior compartment stress. With rounded-back or even moderately kyphotic thoracic spines, one usually observes bilateral AS ilium fixation (pseudocompensatory).

Assessments of the thoracic and TL spine are best done in the seated and prone positions. The correction of hypomobile dysfunctions can be done according to the preference of the doctor.

As a result of the bilateral or unilateral AS fixations produced by loss of extension capacity of thoracic and TL levels, the various clinical complaints and observations generated are numerous. The following list is representative of the productive capacity of functional motion loss at those levels:

1. low back pain and degenerative disorders;
2. motor-sensory deficits in the legs;
3. buttock muscle complaints/disorders;
4. hip joint complaints and degenerative conditions;
5. groin and anterior knee compartment complaints;
6. anterior thigh complaints;
7. ischial tuberosity and posterior knee complaints; and
8. hamstring complaints or disorders.

Bilateral AS ilium fixations caused by thoracic and TL fixations are the most common type observed; right-sided AS fixations are the second most common. Moreover, when I encounter a right-sided AS fixation and/or its manifestations, the odds are great that it is derived from thoracic and/or TL fixations. The exception would be a traumatically induced AS fixation or a lumbar disc disorder. The thoracic spine exerts a greater effect on the right side of the low back, as far as SI functional AS fixations are concerned.

For assessment and treatment regarding low back and lower extremity complaints, I recommend the following procedures:

1. Assess the low back.
2. Assess the thoracic and TL region.
3. Assess for foot pronation.
4. Assess for cervical dysfunction.
5. Treat the thoracic, cervical, and pronation disorders.
6. Re-evaluate SI functioning and low back status. Assess the effects of non-low-back levels on the low back and SI joints.
7. Adjust or traction the low back, if needed, in relation to the outcome of treating other areas first.

*Author's note:* In this procedural description, I included treatment of cervical and pronation disorders. They are important considerations that merit more comprehensive discussion in a separate article.

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