

Iliopsoas

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Do you routinely evaluate the iliopsoas muscles? Their relationship to the lumbar spine, pelvis and hip joint is critical. Its effect on the pelvis influences structures both above and below it. The psoas major arises from the bodies, discs and transverse processes of the twelfth thoracic and five lumbar vertebrae. The iliacus originates from the iliac fossa and inner sides of the anterior spines of the ilium covering the anterior side of the hip joint and femoral neck as it inserts into the lesser trochanter of the femur with the psoas major.¹ The iliopsoas is most important as an active postural or stabilizing muscle of the hip joint, and as a flexor.² Surgeons found that the iliopsoas substituted for paralyzed abductor muscles when it was attached to the greater trochanter, proving that stability to the pelvis was more important than the reduction of hip flexor power.² The iliopsoas was found to be constantly active in the erect posture and served as a vital ligament to prevent hyperextension of the hip joint while standing.²

Shortening and eventual weakening of the iliopsoas appears to be directly related to low back pain. The constant activity of the iliopsoas in the erect posture and most activities of life, especially in movements requiring hip flexion, along with the shortened position of sitting and sedentary life (all with a lack of specific stretching of this muscle), is a probable cause of shortening.

What are the probable results of chronic shortening? Increase of lumbar lordosis resulting in separation of the pubes and costal arch, causing stretching and weakening of the abdominal muscles, jamming of the apophyseal lumbar joints, stress on the posterior discs and eventual compensatory posture of a thoracic kyphosis and forward head with all of its related consequences (see "Forward Head," October 23, Dynamic Chiropractic). A tightened overactive iliopsoas substitutes for the abdominals during a sit-up exercise.³

With the anterior tilt of the sacrum and anteriorly rotated innominate the sacroiliac joints are more mobile, possibly explaining the alternating sides of sacroiliac pain. In this situation the posterior sacroiliac ligaments are looser with more strain on the anterior ligaments and pain.⁴

Unilateral psoas shortening resulting in pelvic torsion may increase torsional/shearing forces increasing disc degeneration and strain. The constant pull of the iliopsoas on the lumbar spine may be related to spondylolysis and listhesis.

Clinically, pain may occur at the groin, thoracolumbar, lower lumbar or sacroiliac areas alone or in combination. Pain may be provoked by bending away from the pain, forward bending and less in extension. Sitting may relieve the pain and the pain is usually never in the mid-line.⁴

The major finding of a shortened iliopsoas is discovered by having the patient sit at the edge of a table,

bring the knee to the chest and lie supine with the opposite lower extremity off the table. If the femur is not horizontal, i.e, above 90 degrees, or if horizontal with a hard end-feel and unable to extend 10 to 15 degrees, then the iliopsoas is considered short.

Soft tissue techniques work extremely well in normalizing this muscle. In the acute condition techniques such as post-isometric relaxation stretch and counterstrain are excellent while in the chronic phase post-facilitation stretch, active release, fascial stretch, and muscle energy techniques are applicable. It is necessary as experts in the neuromusculoskeletal approach to our structure to have as many tools as possible in order to adequately treat our patients. As the saying goes, if you only own a hammer, you only see the nail.

References

1. Smith LK, Weiss EL, Lehmkuhl DL. Brunnstrom's Clinical Kinesiology. Philadelphia, F.A. Davis Co., 5th ed., 1996.
2. Basmajian JV, De Luca CJ. Muscles Alive, Their Functions Revealed by Electromyography, 5th ed., Baltimore, Williams & Wilkins, 1985.
3. Jull GA, Janda V. Muscles and motor control in low back pain. In: Twomey LT, Taylor JR, eds. Physical Therapy of the Low Back. New York: Churchill-Livingstone, 1987.
4. Bachrach RM, Micelotta J, Winuk C. The relationship of low back pain to psoas insufficiency. J of Orthopaedic Medicine, Vol 13,2:1991.

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