



## Quadratus Lumborum

Often simply referred to by its initials, QL, quadratus lumborum is a large, flat, rectangular muscle that spans from the pelvis up to the 12th rib. Lying deep to erector spinae on the posterior of the abdominal wall, QL is enclosed by the anterior and middle layers of the thoracolumbar fascia.

### The attachments and actions

QL has lateral and medial fibres, both of which emanate from the posterior inner lip of the iliac crest and the iliolumbar ligament. The lateral fibres connect to the lower border of the 12th rib; the medial fibres to the transverse processes of the upper four lumbar vertebrae. Due to their direct attachment to the lumbar transverse processes, the medial fibres are often considered to be a segmental stabiliser of the spine.

When working unilaterally, QL laterally flexes the spine and/or tilts the pelvis laterally; in this action it is capable of producing a large amount of torque. By comparison, its role in extension of the spine and/or anterior tilting of the pelvis, when working bilaterally; is not as strong.

Studies have shown significant QL activity during: lateral flexion; upright standing, particularly when linked with one handed carries; during one legged stances, where it acts on the non weight bearing side to prevent the pelvis from dropping.

During deep inspiration, the lateral fibres steady the 12th rib; fixing the attachment of the diaphragm.

### Points to consider

QL is often found to be tight in sedentary individuals and those who have recently experienced a bout of back pain, in which case lateral flexion to one or both sides may well be limited. Tightness can either contribute to or be caused by a lateral tilt of the pelvis, where QL is tighter on the high side. If QL is tight and overactive there may be a tendency to extend the spine during side lying lateral flexion.

There are a variety of stretches available for QL, from standing side bends, to side lying over a support. Side lying, propped up on an elbow to produce lateral flexion, is probably most useful if QL is very tight and overactive.

#### What the experts say

The widely renowned Osteopath and author, Paul Blakey, recommends starting stretching sessions with a side stretch. We take this advice and include QL stretches in warm ups whenever it's appropriate.

Professor McGill advocates training QL with side supporting exercises, such as a side plank or bridge. He considers the normal value for endurance in this action to be 86 seconds.

#### What the experts say

Achieving bilateral symmetry with regard to the length and strength/endurance of QL should be the initial goal of any exercise prescription. Once parity is achieved, range of movement and muscular strength/endurance can be enhanced as needed, bilaterally.