

# Quadratus Lumborum

## Overview

Quadratus lumborum is a quadrangular muscle that fills the space between the 12<sup>th</sup> rib and the iliac crest along the lumbar spine. As the individual ages, it is common that this muscle becomes shorter and tighter so that it is often only a 3-4 inches across and 3-4 inches high.

The muscle can be quite variable in its size, shape and configuration. It has 3 sections; the iliocostal sections, the iliolumbar section and the lumbocostal section. The iliocostal section is always present and most prominent. The iliolumbar section weaves through the deeper fibers of the iliocostal section. The lumbocostal section, when present is usually the deepest and least developed.

Cross sections of the abdomen shown in MRIs consistently show that the medial sections of the muscle are small and thin. The lateral bellies are consistently fuller and, sometimes, be a thick section of muscle. Still, it is usually much smaller than the multifidi, spinal erectors and iliopsoas that surround it.

## Innervation

Quadratus lumborum is innervated by the ventral rami of T12, L1, L2, L3, L4, (L5)

## Attachments

It has 3 sections; the iliocostal section, the iliolumbar section and the lumbocostal section.

The iliocostal section is consistently the largest and extends from the crest of the ilium to the medial two-thirds of the 12<sup>th</sup> rib. The iliolumbar section originates on the crest of the ilium and often inter-digitates with the iliocostal section as it extends medially and superiorly to attach to the transverse processes of T12-L4 as well as the iliolumbar ligament. The lumbocostal section, extends from the transverse processes of L1-L4 to the medial half of the 12<sup>th</sup> rib. The quadratus lumborum attaches the iliolumbar ligament when it is present, between the 2<sup>nd</sup> and 5<sup>th</sup> decade of life.

## Function

The iliocostal section draws the ribs toward the hip, indirectly creating lateral flexion of the spine or, elevation the ilium when the ribs are fixed.

The iliocostal section laterally flexes the spine. The lumbocostal section pulls down on the 12<sup>th</sup> rib, much like serratus posterior inferior. It is active in stabilizing the ribs for heavy breathing, sneezing and coughing.

The muscle is positioned posteriorly enough to assist in extension of the spine.

Travell describes it as primarily being a stabilizer for lateral flexion. She cites studies by Knapp that say that it is so significant that walking is not possible when it is paralyzed, even with braces.

## Neuromuscular considerations

Quadratus lumborum and splenii muscles have several similarities. They both generate a significant amount of pain. They are smaller muscles surrounded by larger, thicker muscles. They are closely connected to the sharp, debilitating trigger points of the nearby multifidi

and rotatores. Their trigger points are strongly governed by the displacement of local vertebrae.

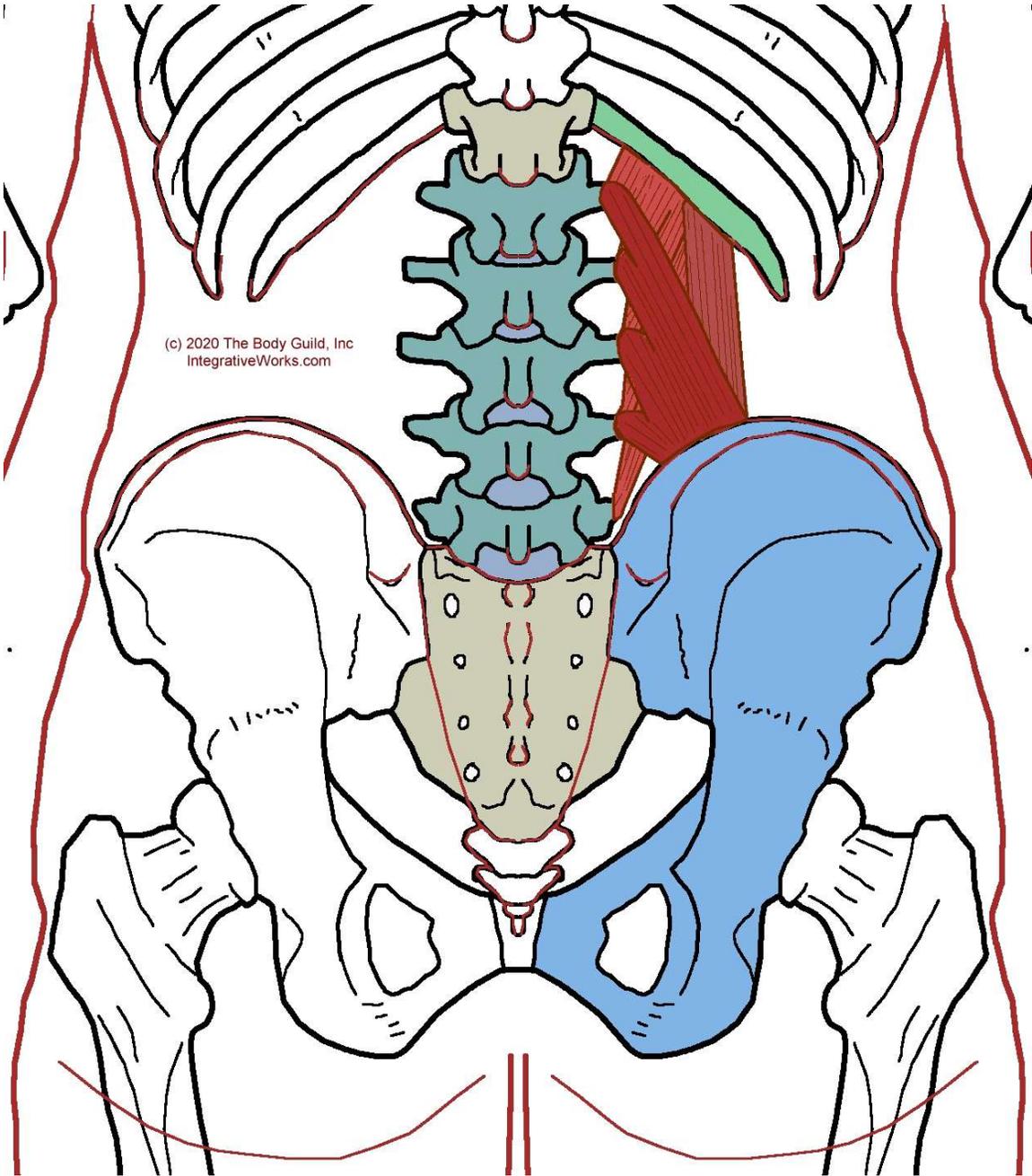
Treatment is further complicated by the fact that the buttock has over 20 distinct trigger point patterns. Many times, when the client describes hip pain, the bodyworker has the ready retort, "oh, that's your QL."

Before quadratus lumborum is treated directly, evaluate it's trigger points with palpation. Follow the hierarchy of governors in treatment. Balancing the pelvis and resolving displaced lumbar often resolves the quadratus lumborum problem without direct treatment. Resolve governing trigger points in the lats, and erectors too. The trigger points along the lateral floating ribs can strongly govern the low back without producing referral that draws the attention of the client.

Psoas, multifidi, and erectors are large pillars of muscle that have much more structural influence on the low back than quadratus lumborum. Along with obliques, these need to be addressed before quadratus lumborum to create lasting structural change.

The iliolumbar ligament develops from fibers of the quadratus lumborum and is a nest of proprioceptors that influence its tone. Quadratus lumborum torques the 5<sup>th</sup> lumbar and sacrum between it's attachments on L4 and the iliac crest. Those bones also connect to the quadratus lumborum via this ligament. The iliolumbar ligament should always be addressed before quadratus lumborum.

Direct treatment of the quadratus lumborum before addressing proprioceptive, trigger point and structural governors is usually difficult, less effective and not lasting.



- quadratus lumborum

These illustrations will be updated to show individual sections when time permits

Origin

- Iliac crest

### Insertion

- medial 2/3rds of the 12<sup>th</sup> rib
- Transverse processes of L1-L4 (L5)

### Function

- **Lateral flexion of the trunk**
- **Elevation of the hip**
- **Slight extension of the lumbar spine**

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