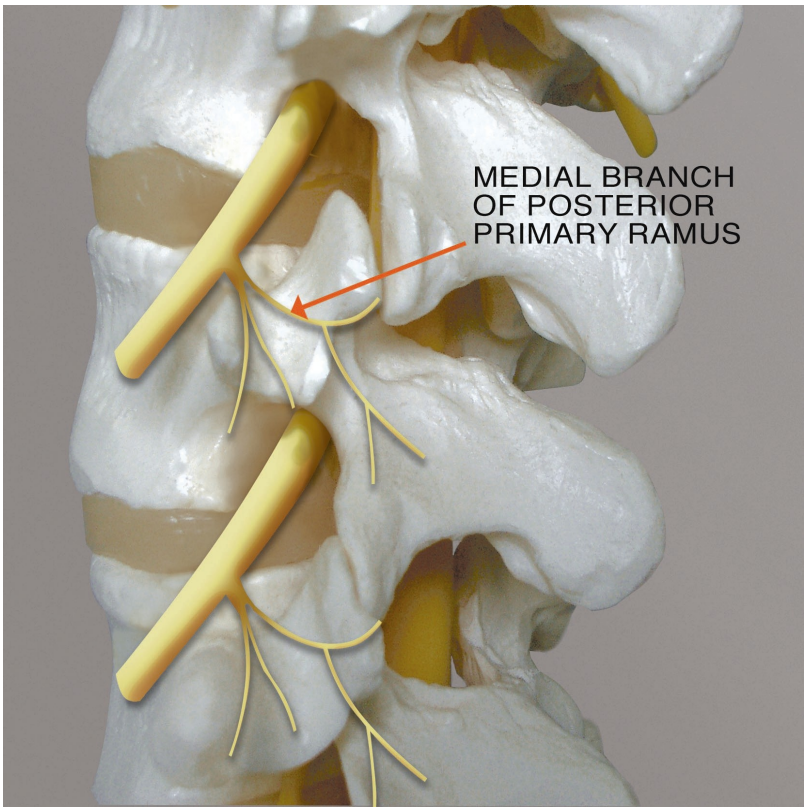
Lumbar facet joint



The lumbar spine is lined with small joints called lumbar facet joints. These joints contain medial nerves of the lumbar medial branch, that submit pain signals to the brain when the joint has become inflamed.

One risk of established decompression techniques for lumbar spinal stenosis is the resection of facet joints, especially if they are steeply configured, promoting destabilization.

In the lumbar spine, facet joints provide about 20 percent of the twisting stability in the low back. Each facet joint is positioned at each level of the spine to provide the needed support especially with rotation. Facet joints also prevent each vertebra from slipping over the one below. A small capsule surrounds each facet joint providing a nourishing lubricant for the joint. Also, each joint has a rich supply of tiny nerve fibers that provide a painful stimulus when the joint is injured or irritated. Inflamed facets can cause a powerful muscle spasm.

Facet joints have synovial linings and capsules and are highly innervated by free nerve endings in the tissues [1)].

There are two facet joints in each spinal motion segment.

The biomechanical function of each pair of facet joints is to guide and limit movement of the spinal motion segment. In the lumbar spine, for example, the zygapophysial joints function to protect the motion segment from anterior shear forces, excessive rotation and flexion. Zygapophyseal joints appear to have little influence on the range of side bending (lateral flexion). These functions can be

disrupted by degeneration, dislocation, fracture, injury, instability from trauma, osteoarthritis, and surgery.

Importance

The lumbar facet joint has long been considered a significant source of low back pain (LBP).

The facet joint and its capsule are key structures for spinal stability. Major structures that resist shear forces are the facet joints (33%) and discs (67%) [2].

While loaded in full flexion, simulated by combined bending and compression, approximately 70% of the bending moment is resisted by facet joint capsules and only 30% by discs [3].

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see Lumbar facet joint block.

see Lumbar facet joint denervation.

1)
McLain RF, Pickar JG. Mechanoreceptor endings in human thoracic and lumbar facet joints. Spine (Phila Pa 1976) 1998;23:168–173.
2)
Adams MA, Hutton WC. The mechanical function of the lumbar apophyseal joints. Spine (Phila Pa 1976) 1983;8:327–330.
3)
Adams MA, Hutton WC, Stott JR. The resistance to flexion of the lumbar intervertebral joint. Spine. 1980;5:245–253.