

Low back and leg pain

Pain originating from the lower back may spread to other adjacent areas. The pain may spread up the back, or more commonly down to the buttocks, to the sacrum and coccyx area, and also down into the legs. Pain spreading into the legs may not necessarily be due to pinching or irritation of nerves, but may come from deeper structures in the back that tend to produce a deep, dull aching type of pain spreading elsewhere. The pain may spread down as far as the feet. Thus, there are two types of referred pains; *radicular* (nerve irritation) and *somatic*. It often may be difficult to determine where the pain is coming from, but sometimes the pain may be reproduced by pressing on various tender spots in the lower back and pelvis area. Usually targeted local anesthetic injections under x-ray guidance are required to make a diagnosis.

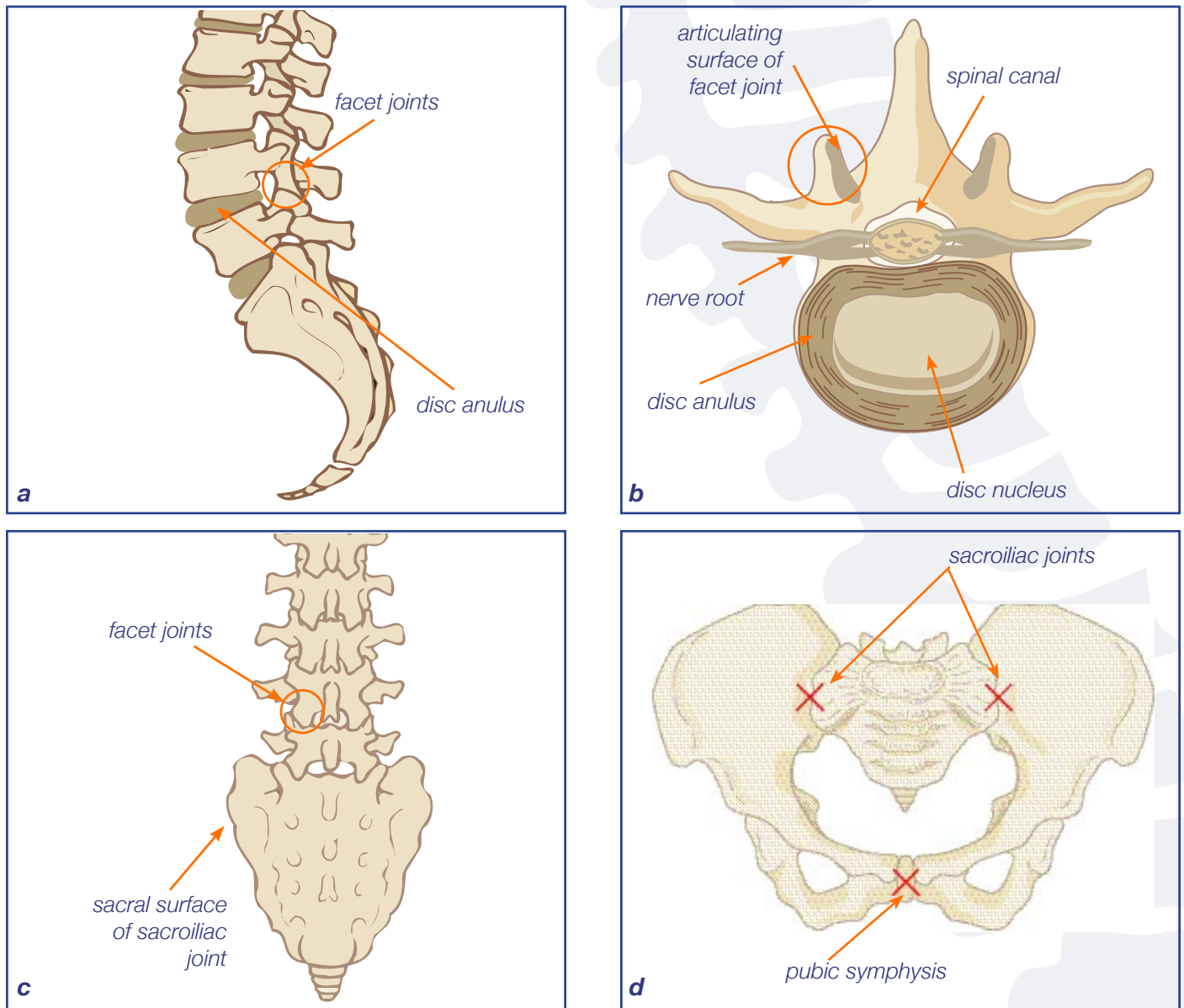


Figure 1a, 1b, 1c & 1d: Key structures of the lumbar spine

1. Nerve Root Pain (Radicular Pain)

Typical nerve pain is a shooting, electric shock like pain that runs down to the lower leg or foot. It is often associated with pins and needles (paresthesiae), numbness and weakness. The pain comes from a chemical inflammation of the nerve and does not cause local back pain. Usually the leg pain is much more severe than the local back or buttock pain. Squashing or compressing a nerve initially is not painful at all, until inflammation sets in.

2. Somatic Referred Pain

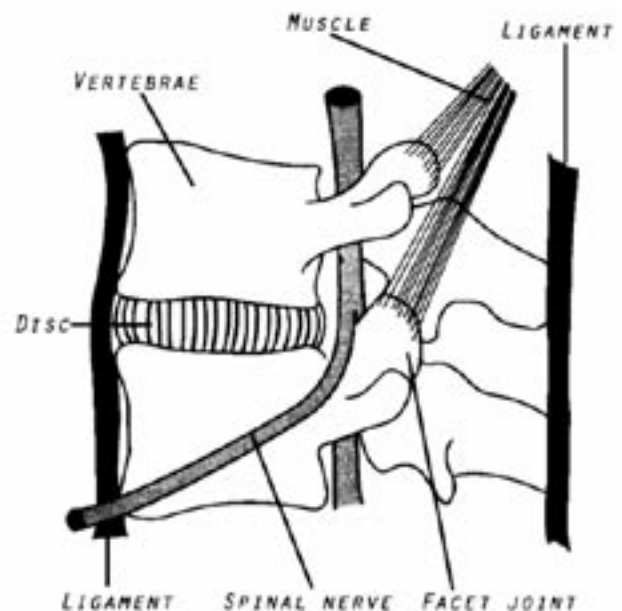
This is the most common form of pain derived from spinal structures. Somatic referred pain is characteristically a deep, vague, diffuse pain, but it can be sharper in a well-defined area, usually in the back or hip area. The pain is usually worse in the back, closer to the origin of pain, and less severe in the leg. This type of pain can arise from any structure that contains a nerve supply. It can come from inside the disc, the facet joint or the muscles. It does not come from pressure on a spinal nerve.

For pains that are not easily reproduced, spinal injection techniques may need to be utilized in order to pinpoint the pain. In the chronic pain population, intervertebral disc disorders are thought to account for about 40% of all chronic low back pain problems. Sacroiliac joint pain accounts for about 15% of chronic low back and buttock pain, while facet joint (also known as *zygapophysial*) pain accounts for about 15% low back pain in the younger age group, and up to 40% in the elderly group.

As the disc and other structures are located deep inside the back, it is not possible to palpate the disc or diagnose disc pain purely from the symptoms or any particular pattern of movement. It was previously thought that pain on bending forwards was most likely due to disc pain and that pain on bending backwards and twisting was more likely to be due to facet joint pain. However, this generalization has been found not to be true.

Disc:

Pain that is located substantially in the midline is more likely to be discogenic in origin. The pain may spread out to both sides and down both buttocks and thighs (somatic referred pain). Alternatively pain may only be on one side radiating down one leg. The only definitive test to determine if a disc is painful is a *discogram*. When done efficiently these are comfortable procedures. They are best done with some sedation in an operating room. Unfortunately, even if the disc is considered to be the origin of the pain, surgical intervention is not necessarily going to help. Techniques currently used to treat disc pain include surgery, such as fusion and disc prosthesis, and percutaneous techniques, such as Intra-Discal Electrothermal Therapy (IDET) and Nucleoplasty. These treatments may lead to excellent results in 20% of cases, and good to substantial improvement in about another 50%. [For related information, see **Discogenic Pain and IDET Patient Fact Sheets**]



Facet joint:

If pain is from a facet joint on one side of the back, it is likely to be more concentrated on that side, and from there it can refer down the leg. If pain is from facet joints on both sides it spreads across the back, and may not localize as centrally as disc pain. The facet joints are more likely to be the cause of pain if bending backwards and to one side reproduces the pain. The diagnosis can be made by injection under x-ray control either into the facet joint (intra-articular injection) or onto the nerve supply of the joint. While the anesthetic is still working the pain should go. Facet joint pain can be treated with percutaneous *radiofrequency neurotomy*, which can give pain relief for at least 9-12 months. [For related information see **Facet Joint Pain**, **Medial Branch Blocks** and **Radiofrequency Neurotomy Patient Fact Sheets**]

Sacroiliac joint:

Sacroiliac joint pain is another example of referred somatic pain. It starts in the sacrum, and can spread to the foot. It is diagnosed with intra-articular injection under x-ray control. The diagnosis is technically difficult, as the joint can be hard to access. C-arm fluoroscopic or CT injection is required for the joint to be confidently accessed by injection. Cortisone may provide relief of pain, often for a few weeks, but sometimes for prolonged periods. Treatment for pain that is not easily relieved includes pelvic brace, sclerosant injections, radiofrequency neurotomy of the nerve supply to the joint and joint fusion.

Hip joint:

Recent research has implicated the hip joint as a source of low back, buttock and somatic referred pain.

Muscles and fascia:

All of the above conditions may present with features that seem as if the muscles are affected. In reality, primary muscle pain is rare in chronic pain. It is common in acute pain, where treatment options include stretching, massage, heat, local anesthetic injections and acupuncture.

For related information see: **Radiofrequency Neurotomy**, Discography

Remember:

- The primary goal is to help you find ways to manage your pain and return to your usual activities.
- It is important to work with your health practitioner to manage your pain and address your concerns.
- If pain persists it is important to follow up with your doctor or health practitioner as you may need further assessment.

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