

Sciatica

Sciatica, sciatic neuritis, sciatic [neuralgia](#), or [lumbar radiculopathy](#) is a set of [symptoms](#) including [pain](#) caused by general compression or irritation of one of five [spinal nerve roots](#) of each [sciatic nerve](#)—or by compression or irritation of the left or right or both sciatic nerves.

There are two common causes of lumbar nerve root pressure: from a lumbar herniated disc or lumbar spinal stenosis.

This type of pain is usually referred to as a [radiculopathy](#), or [sciatica](#).

The Hippocratic physicians knew the signs and symptoms of [lumbar disc disease](#), which they then called "[sciatica](#)". But, they subsumed different disorders, like hip diseases under this term.

In the mid-18th century, it was the Italian physician [Domenico Felice Antonio Cotugno](#) (1736-1822), who first brought clarity in the concept of radicular syndromes; he recognized, that the so-called "sciatica" could be of neurogenic origin.

Etiology

Sciatica is a condition characterized by [radicular pain](#) that can be secondary to a [lumbar disc herniation](#) (LDH).

The causes of sciatica are variable and include musculoskeletal, dermatologic, infectious, neoplastic, and vascular disorders. In many cases, the symptom is usually caused by degenerative disease in the spine with the compression or irritation of spinal nerve. On the other hands, there are also several announced extra-spinal causes including aneurysm, diabetes, and radiation for sciatica in a low rate. Among the extra-spinal cases, aneurysms arising from iliac vessels are sometimes developing a diagnostic confusion with the spinal causes, and delayed diagnosis can lead to poor prognosis. It is very important to pay attention whether the aneurysmal cause is involved in the symptom of sciatica ¹⁾.

Smoking is a modest risk factor for lumbar radicular pain and clinically verified [sciatica](#). Smoking cessation appears to reduce, but not entirely eliminate, the excess risk ²⁾.

Moderate to high level of leisure physical activity may have a moderate protective effect against development of lumbar radicular pain. However, a large reduction in risk (>30%) seems unlikely ³⁾.

[Heterotopic ossification](#) around the hip ⁴⁾.

Pathophysiology

The underlying mechanisms of postoperative sciatica remain unclear.

It is debatable whether a local inflammatory tissue response caused by [lumbar disc herniation](#) contributes to sciatic pain and/or sensorimotor deficits. The impact of inflammatory changes on local tissue remodelling, the healing process and the clinical course of disease remains unclear.

Symptoms

Include lower back pain, buttock pain, and numbness, pain or weakness in various parts of the leg and foot. Other symptoms include a “pins and needles” sensation, or tingling and difficulty moving or controlling the leg. Typically, symptoms only manifest on one side of the body. The pain may radiate above the knee, but does not always.

Sciatica is a relatively common form of lower back and leg pain, but the true meaning of the term is often misunderstood. Sciatica is a set of symptoms rather than a diagnosis for what is irritating the root of the nerve to cause the pain. Treatment for sciatica or sciatic symptoms often differs, depending on underlying causes and pain levels. Causes include compression of the sciatic nerve roots by a herniated (torn) or protruding disc in the lower back.

The first known use of the word sciatica dates from 1451.

The natural course of healing must be considered carefully, especially when evaluating treatment effects in patients with disc herniation. The symptoms often vary over time and many discs heal spontaneously and the symptoms cease. Approximately 75% of patients with sciatica, without an MRI-verified disc herniation, recover within 3 months, and approximately one-third of patients recover within 2 weeks after the onset of sciatica ⁵⁾.

Diagnosis

Quantitative measurements by magnetic resonance imaging of disc and canal morphology of 188 patients with sciatica indicate a wide range of herniation and canal sizes, with significant differences between men and women. In a cohort of 135 patients followed for more than 2 years, demographic and clinical features appeared to predict outcomes of nonoperative treatment, whereas morphometric features of disc herniation and the spinal canal seen on magnetic resonance imaging were much more powerful predictors of surgical outcomes ⁶⁾.

Differential diagnosis

Some possible differential diagnoses of sciatica include:

Lumbar disc herniation: A herniated disc in the lower back can compress the nerve roots that make up the sciatic nerve and cause similar symptoms as sciatica.

Spinal stenosis: This condition occurs when the spaces within the spinal canal become narrowed, which can put pressure on the nerve roots that make up the sciatic nerve.

Piriformis syndrome: This is a condition in which the piriformis muscle, which is located in the buttocks, becomes tight or spasms and compresses the sciatic nerve.

Sacroiliac Joint syndrome: The [sacroiliac joint](#) is located in the pelvis and connects the spine to the hips. Dysfunction of this joint can cause pain that radiates down the leg and may be mistaken for sciatica.

Lumbar spinal canal stenosis: This is a narrowing of the spinal canal in the lower back that can put pressure on the sciatic nerve and cause similar symptoms as sciatica. **Tumors:** In rare cases, tumors in the lower back or pelvis can cause sciatica-like symptoms.

1)

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