

# Your Practice Online

Integrated web marketing

## What is Sciatica All About ?

Multimedia Health Education



## Disclaimer

This movie is an educational resource only and should not be used to manage sciatica. All decisions about the management of sciatica must be made in conjunction with your physician or a licensed healthcare provider.

MULTIMEDIA HEALTH EDUCATION MANUAL  
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## Introduction

### What is Sciatica?

Sciatica is a painful condition caused by the irritation of the sciatic nerve. The sciatic nerve is the longest nerve in our bodies. It begins in the lower back and extends through the buttocks down the back of each leg to the thighs and feet.

Sciatica can be acute (short term) lasting a few weeks, or chronic (long term) persisting for more than 3 months. It is important to understand that most sciatica will resolve itself within a few weeks or months and rarely causes permanent nerve damage.

To learn more about sciatica, it is important to first understand normal spine anatomy and function.

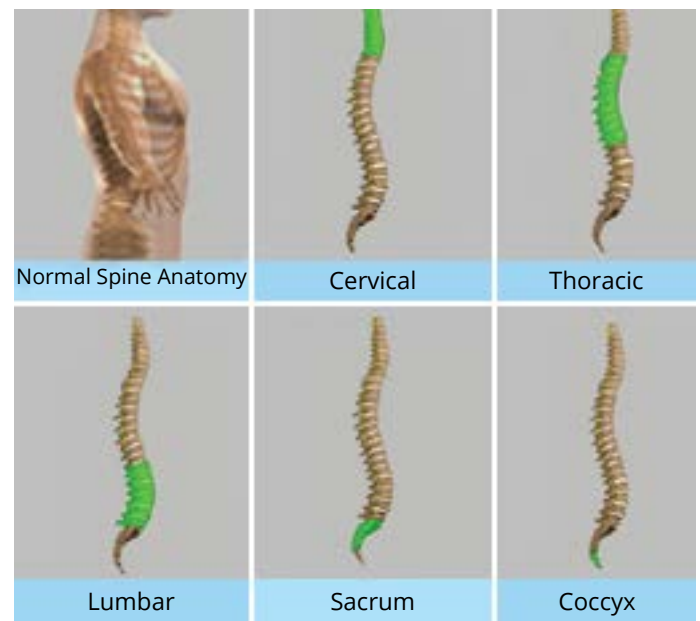
### Normal Spine Anatomy

The spine, also called the backbone, is designed to give us stability, smooth movement, as well as providing a corridor of protection for the delicate spinal cord. It is made up of bony segments called vertebrae and fibrous tissue called intervertebral discs. The vertebrae and discs form a column from your head to your pelvis providing symmetry and support to the body. The spine can be divided into 4 parts. The uppermost is the cervical region, consisting of 7 small vertebrae that form the neck.

As we move down the body, the next 12 vertebrae make up the thoracic region or mid back from which the ribs are hinged.

The 5 lumbar vertebrae are the largest of the mobile vertebrae and supports 2/3 of the body's weight. The lowest region of the spine is the sacrum and coccyx.

The sacrum is a triangular plate made up of 5 fused vertebral segments while the 4 coccyxes terminate the bony spine. *(Refer figure. 1)*



**(Figure. 1)**

### Vertebra

A single vertebra is made up of two parts; the front portion is called the body, cylindrical in shape, and is strong and stable. The back portion of the vertebra is referred to as the vertebral or neural arch and is made up of many parts. The strong 2 pedicles join the vertebral arch to the front body.

The laminae form the arch itself while the transverse process spread out from the side of the pedicles like wings to help anchor the vertebral arch to surrounding muscle.

The spinous process forms a steeple at the apex of the laminae, and is the part of our spine that is felt directly under the skin.

### Laminae

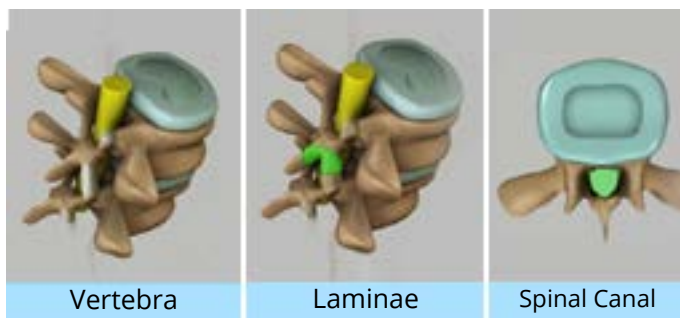
The laminae of the vertebra can be described as a pair of flat arched bones that form a component of the vertebral arch.

### Spinal Canal

This canal is formed by the placement of single vertebral foramina, one on top of the other, to form a canal. The purpose of the canal is to create a bony casing from the head to the lower back through which the spinal cord passes.

### Pars Inter Articularis

Known as the Pars, it is the part of the vertebral arch where the pedicle, transverse process, and articular process transect. *(Refer figure. 2)*



(Figure.2)

### Intervertebral Disc

The intervertebral disc sits between the weight bearing vertebral bodies, servicing the spine as shock absorbers.

The disc has fibrous outer rings called the annulus fibrosus with a watery jelly filled nucleus called the Nucleus Pulposus.

### Spinal Cord

The spinal cord is the means by which the nervous system communicates the electrical signals between the brain and the body.

It begins at the brain stem and is held within the spinal canal until it reaches the beginning of the lumbar vertebrae.

At L1 the spinal cord resolves down to a grouping of nerves that supply the lower body.

### Facet Joint

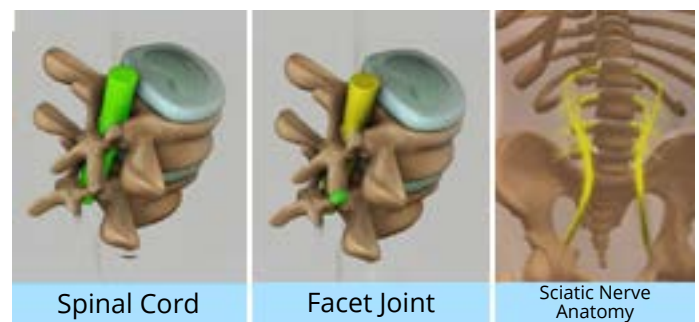
Facet joints are the paired articular processes of the vertebral arch.

These synovial joints give the spine its flexibility by sliding on the articular processes of the vertebrae below.

### Sciatic Nerve Anatomy

The sciatic nerve is the longest nerve in the body. Starting in the pelvic area and continuing through the buttock and hip areas down the back of the legs, the sciatic nerve enables you to feel sensation in your lower extremities.

It is also responsible for the control of muscle movement in both legs. *(Refer figure. 3)*



(Figure.3)

## Overview of Sciatica

### Risk Factors

Anyone can develop sciatica at some point in their lives; however there are certain risk factors that may predispose you to developing sciatica.

These include the following:

### Age

Increasing age causing degenerative changes in the spine is the most common risk factor for sciatica. These changes can cause pressure on the sciatic nerve.

### Physical Fitness

Inactive lifestyle and lack of exercise can lead to weight problems and obesity causing stress on the spine. People who sit for long periods of time or lead a sedentary lifestyle are at increased risk of developing sciatica.

### Occupational Risks

If you are working in a job that involves heavy lifting, frequent twisting of the body, or long periods of driving a vehicle, you are at higher risk for developing sciatica.

### Genetics

Genetics can play a role in back problems. Research has identified two genes that may predispose some people to disc problems.

### Diet

An unhealthy diet high in fat and calories can lead to overweight or obesity increasing your risk of living a sedentary lifestyle, a factor in sciatica development.

### Medical Factors

Certain medical conditions such as diabetes or cancer that has metastasized to the spine can cause sciatica.

### Smoking

Although smoking is not a direct cause of sciatica, smoking decreases circulation which can affect the delivery of nutrients to the discs. Smokers also don't heal as well as non-smokers which can prolong pain after back injury or surgery.

## Causes

**It is important to know sciatica is a symptom not a medical diagnosis. Some medical conditions that can cause sciatica include:**

### Herniated Discs

Herniated discs in the low back area are the most common cause of sciatica.

A herniated disc is a condition caused by a tear in a disc allowing the disc contents to bulge outside of the disc.

Sciatica occurs when the disc contents put pressure on the sciatic nerve.

Symptoms related to herniated discs in the lumbar region include sharp, continuous back pain, weakness in the legs, and some loss of sensation to the leg and foot.

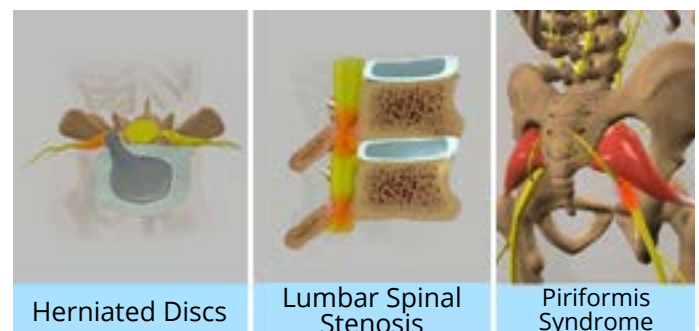
### Lumbar Spinal Stenosis

Spinal stenosis is a narrowing of the spinal canal as we age, most commonly due to degenerative arthritis. This narrowing can cause pressure on the spinal cord or nerve roots. If stenosis is in the lumbar area, the lower back, sciatica can occur.

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(Figure.4)

### Piriformis Syndrome

The Piriformis muscle lies over the sciatic nerve, originating in the lumbar region and ending in the back of the thighs. Common in female runners, Piriformis Syndrome occurs when the Piriformis muscle in the buttocks spasms putting pressure on the sciatic nerve. Other causes of this condition include prolonged sitting, auto accidents, and falls.

### Spondylolisthesis

A condition in which one vertebra has slipped out of place onto the vertebra below it. If this occurs in the lumbar area, the sciatic nerve may be compressed causing Sciatica.

### Degenerative Disc Disease

A condition caused by wear and tear on the discs between the vertebrae causing them to lose their cushioning ability and can cause pressure on the sciatic nerve.

### Diabetes

Diabetics are at increased risk of nerve damage, including the sciatic nerve.

### Tumors

Although spinal tumors are rare, cancer can spread from other parts of the body to the spine. Tumors that are pressing on the spinal cord or nerve roots can cause sciatic pain.

### Trauma

Injury to the sciatic nerve can occur from an injection, car accidents, gunshot wounds, or fall.

### Symptoms of Sciatica

The most common symptom of Sciatica is pain. The pain can vary by patient, from mild to debilitating, depending on the degree of pressure to the sciatic nerve.

### Common symptoms of Sciatica include:

- Pain in the buttock area and leg
- Sharp, intense, shooting pain down the leg
- Numbness, burning or tingling to the leg or foot
- Weakness of the leg or foot
- Low back pain that radiates down to the buttock and leg
- Pain increases with coughing, sneezing, or straining
- Pain increases with bending backward
- Pain intensifies with prolonged sitting or standing

If you are experiencing progressive weakness in the legs or loss of bowel or bladder function, seek immediate medical attention. This may be symptoms of Cauda Equine Syndrome, a medical emergency.

## Diagnosis

Evaluating the source of sciatic pain is important in determining your treatment options for relief of the pain. Your physician will perform the following:

- Medical history
- Physical examination with special attention on assessing neuromuscular function in the lower extremities.

Your doctor may order medical tests to determine the cause of your sciatica depending on the results of the history and physical, how long you have had the pain, the severity of the pain, or if you have other serious illnesses such as cancer.

### Diagnostic Studies may include:

#### X-rays

A form of electromagnetic radiation that is used to take pictures of bones.

#### MRI

Magnetic and radio waves are used to create a computer image of soft tissue such as nerves and ligaments.

#### CT Scan

This test creates 3D images from multiple x-rays and shows your physician spinal structures not seen on regular x-ray.

#### CT Scan with Myelogram

A type of medical imaging which is done by injecting contrast medium into the affected area of the spine followed by CT scan of the area that creates 3D images from multiple x-rays.

#### Electromyogram (EMG)

A test involving the placement of small needles into the muscles to monitor electrical activity. This test is used to detect the level of nerve root damage related to chronic pain.

#### Nerve Conduction Tests

A non-invasive test to assess the speed of conduction in a nerve. Electrodes are placed on the skin and nerves are stimulated with a weak electrical impulse.

## Treatment Options

### Conservative Treatment Options

Treatment for sciatica will depend on the cause of the pain and whether the pain is acute (short term) or chronic (long term). The goal of treatment is to alleviate pain and improve mobility.

Acute sciatic pain will usually get better on its own. Treatment guidelines for acute sciatic pain include:

#### Physical Activity

Continue your normal daily activities as much as possible, avoiding any activities that worsen the pain. Bed rest is not recommended and in fact can make your pain worse.

#### Over the Counter Drugs

NSAIDS (non-steroidal anti-inflammatory drugs) such as aspirin, ibuprofen, acetaminophen, can help ease the pain until it resolves.

#### Ice or Heat Packs

Ice packs or heat is often used for 20 minute intervals and repeated every 2 hours. Some patients find alternating between heat and ice is helpful. Always place a towel over the area before applying heat or ice. Never apply directly over the skin.

#### Exercise

Your doctor may refer you to a physical therapist to instruct you on exercises to strengthen your trunk and back muscles. Stretching exercises done passively without jerking movements can also be helpful.

#### Prescription Medications

Your doctor may prescribe anti-inflammatory medications such as steroids. For severe pain, you may be prescribed narcotic pain medications, or muscle relaxants.

#### Epidural Steroid Injections

Epidural steroid injections are administered into the spine to deliver anti-inflammatory medications directly to the painful area around the nerve.

### Therapeutic Massage

Massage by a trained therapist can decrease muscle spasms.

### Manual Manipulation

Spinal adjustments to straighten the spine can be performed by chiropractors, osteopathic physicians, and appropriately trained physical therapists.

## Treatment Options: Surgery

**Your doctor may refer you for a surgical consultation if:**

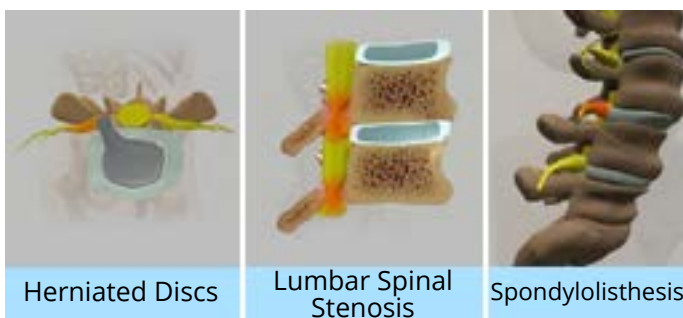
Your sciatic pain persists for more than a few months

Your pain is severe and interferes with your sleep and daily activities.

Your pain does not respond to conservative treatment measures as described previously.

Some of the medical diagnoses that may need surgical intervention for sciatic pain include:

*(Refer figure. 5)*



(Figure.5)

Your surgeon will decide which options are best for you depending on your specific circumstances.

### Postoperative Care

- After back surgery, you will be taught how

to use proper body mechanics to turn in bed, reposition, and stand up, sit, and walk while the incision is healing.

- You will be given oral and/or intravenous pain medications for the discomfort.
- You will be encouraged to walk as much as tolerated and avoid prolonged sitting.
- Avoid pulling, pushing, or lifting.
- A postoperative rehabilitation program may be prescribed by your doctor
- Keep the incision area clean and dry and report any signs or symptoms of infection to your surgeon such as redness, swelling, increased pain, excess drainage, odorous drainage, fever, or chills.

## Risks & Complications

As with any major surgery there are potential risks involved. The decision to proceed with the surgery is made because the advantages of surgery outweigh the potential disadvantages. It is important that you are informed of these risks before the surgery takes place.

Complications can be medical (general) or specific to spinal surgery.

Medical complications include those of the anesthetic and your general well being. Almost any medical condition can occur so this list is not complete.

### Complications include:

- Allergic reactions to medications
- Blood loss requiring transfusion with its low risk of disease transmission
- Heart attacks, strokes, kidney failure, pneumonia, bladder infections



- Complications from nerve blocks such as infection or nerve damage
- Serious medical problems can lead to ongoing health concerns, prolonged hospitalization, or rarely death.
- Spinal instability
- Nerve root injury/damage
- Failure to improve
- Discitis, a rare occurrence involving infection of the disc.

**Specific complications of Back Surgery include:**

- Skin infection at the incision line
- Spinal fluid leak

**YOUR SURGERY DATE**

**READ YOUR BOOK AND MATERIAL**

**VIEW YOUR VIDEO /CD / DVD / WEBSITE**

**PRE - HABILITATION**

**ARRANGE FOR BLOOD**

**MEDICAL CHECK UP**

**ADVANCE MEDICAL DIRECTIVE**

**PRE - ADMISSION TESTING**

**FAMILY SUPPORT REVIEW**

Physician's Name : \_\_\_\_\_

Patient's Name : \_\_\_\_\_

Physician's Signature: \_\_\_\_\_

Patient's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

