

# Epidural Injections for Pain Management

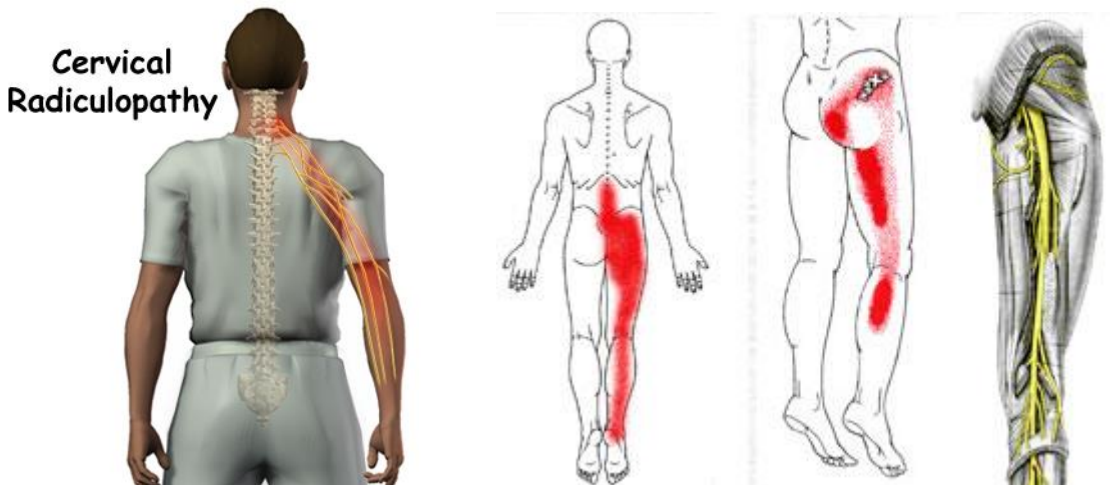
## What is an epidural injection?

An epidural injection in pain management is a minimally invasive, outpatient procedure performed to relieve pain from a pinched nerve in either the neck or the back.

When the injection is performed, the needle goes into the epidural space which is the area surrounding the spinal cord. That is where the nerve root comes out from the spinal cord and has a tendency to get pinched.

Epidural steroid injections have been a mainstay in pain management for over 50 years. The epidural space is the area situated around the spinal cord. The covering of the spinal cord is called the dura, so the area around it is called the “epidural” space. The injections of steroid medication are placed where the nerve roots are getting pinched, which is in the epidural space.

## Why do the pain management doctors perform epidural injections?



There are various conditions which benefit immensely from epidural steroid injections. The most common of these is a herniated disc that is causing a pinched nerve and sciatica pain. In the neck this is called radiculopathy.

Additionally, spinal stenosis can lead to multiple nerve roots being pinched in either the neck or the back. In this situation, arthritis leads to overgrowth of bone and soft tissue around the spinal canal which pinches nerve roots as they try to get out from the spinal canal.

One additional indication for epidural injections is when degenerative disc disease leads to a tear in the outer part of an intervertebral disc. This can lead to significant inflammation around the area and nerve root irritation and pain. However, in this instance no disc herniation is present.

### How does an epidural steroid injection provide pain relief?

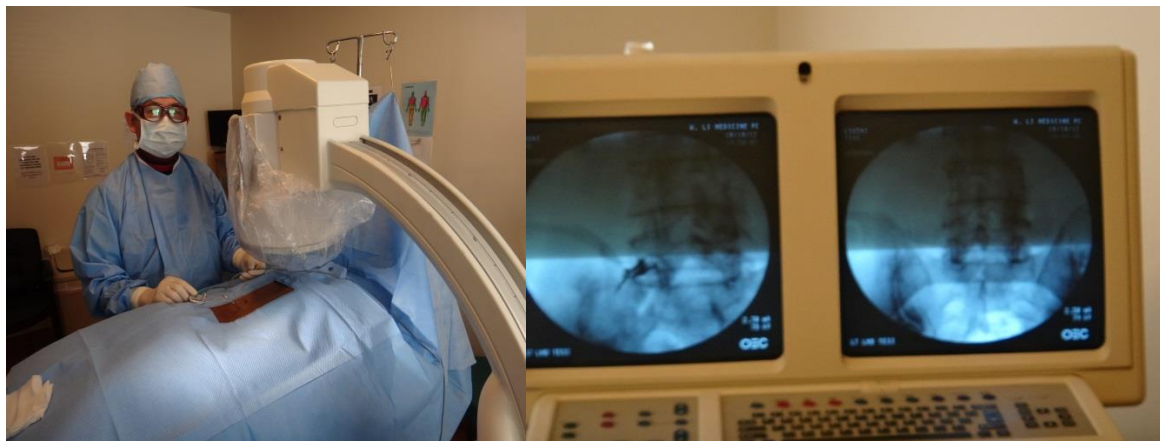
When a nerve root gets pinched in the neck or the back, it may not lead to pain at all. However, it may spark up a significant inflammatory reaction and that is what leads to sciatica or radiculopathy associated pain.

The steroid medication acts as a hefty anti-inflammatory medication. It bathes the inflamed nerve root that is getting pinched and relieves pain.

It does not, however, fix the problem at all. It simply acts as a great proverbial “Band-Aid” until hopefully the body itself will disintegrate the piece of disc that is not supposed to be there. That frequently happens.

### How does a pain doctor perform an epidural injection?

These procedures are performed as an outpatient either in a procedure room or surgery center. The pain doctors may use intravenous sedation, but it is not truly necessary. It may be that taking a Valium 30 minutes prior to the procedure, or simply using numbing medicine in the skin and soft tissues is all that is needed.



Patients lay flat down on their belly for the procedure, which is called the prone position.

Modern pain management doctors use fluoroscopy, which is a real time form of x-ray that increases accuracy. Studies looking at epidural injections performed without fluoroscopy have shown a 40% miss rate.

The skin is numbed up along with the soft tissues down to the epidural space. There are three different types of epidural injections. The first is called an interlaminar epidural injection, and entails the doctor using a “loss of resistance” technique to achieve entry into the epidural canal.

The second type of epidural injection is called a transforaminal epidural steroid injection. This involves the needle going out the neural foramen, which is where the nerve root exits from the spinal canal. For this type of epidural, the steroid medication is able to be placed much closer to where the nerve root is actually being compressed.

The third type of an epidural is termed a caudal epidural injection. These are placed from the very bottom of the lumbar spine in an area called the sacral hiatus. This allows pain doctors to inject a larger amount of steroid medication, which can travel upward and reach multiple compressed nerve roots.

Regardless of the epidural injection variety used, once the needle has been satisfactorily placed, the pain doctor will inject some contrast to ensure appropriate positioning. The steroid medicine is then injected along with some numbing medicine. The numbing medicine will start right away and wear off within about a day. The steroid medicine will “kick in” usually within three days and last hopefully for months.

Once the injection is completed, the patient is monitored for an hour or so to make sure vital signs are stable and there’s no allergic reaction. Patients are then allowed to go home, but will need a ride.

### How well do epidural steroid injections work?

There is a reason these procedures have been a mainstay in pain management for over 50 years. And that is because they work very well. Multiple studies have been performed looking at the effectiveness of epidural steroid injections and have shown over a 75% good to excellent outcome.

There was a landmark study Published in the Journal of the American Medical Association years ago which showed epidural injections at an outcome equivalent to surgery at the one year endpoint. Therefore, if patients can tolerate their baseline pain and avoid surgery, the outcome should eventually be no different.

A recent study looked at epidural injections for professional athletes and found that successful outcomes were achieved in 90% of those injections. Truly, the benefits of these procedures well outweigh the risks. Epidural injections may need to be performed as a series of three injections, and this can be repeated every few months. The initial series is usually performed one to two weeks apart.

### What are the risks of an epidural steroid injection?

The risks of these injections are small but real. There is a small risk of infection, nerve injury, bleeding, and the biggest risk is that the injection may not work for pain relief. There’s also a risk of an allergic reaction to the medication used and a small possibility of a dural puncture from the needle which can cause a dural headache. Overall, the risks are at about 1%.

There's also a small risk that the steroid itself may cause transient weight gain or water retention. This usually resolves over a period of a few days uneventfully.