Epidural Steroid Injections and Selective Nerve Root Blocks

What are epidural steroid injections?

An epidural steroid injection is a spinal procedure in which a steroid and usually an anesthetic are injected in the spinal region called the epidural space. The nerves, spinal fluid, and spinal cord are enclosed within a membrane sack called the dura. The injection is outside this membrane. It is useful to reduce inflammation from nerve roots or intervertebral discs. Decreasing the inflammation may decrease the pain originating from these structures.

What are the different types of epidural steroid injections?

- **Caudal**: the injection is placed through a small opening (sacral canal) just above the tail bone.

- **Interlaminar**: the injection is usually midline and placed directly between two vertebrae (similar to the approach a woman undergoes during labor for epidural anesthesia).
**Selective Nerve Root Blocks**

**What are selective nerve root blocks?**

A selective nerve root block is a spinal procedure in which anesthetic is placed on a specific nerve root of the spine to help identify the exact source of leg or arm pain. The injection usually also contains steroid to decrease inflammation and pain. The injection is similar to a transforaminal epidural steroid injection, but in a selective nerve root block there is no attempt to have the medication enter the epidural space. Rather, the aim is strictly to cover
the offending nerve root.

**How are selective nerve root blocks and epidural steroid injections done?**

The procedure is usually done with the patient lying on his or her stomach under fluoroscopic X-ray. The skin is cleaned thoroughly with antiseptic solution before the injection is performed. After the skin has been numbed with local anesthetic, a small spinal needle is inserted under fluoroscopic guidance to the appropriate position within the spine.

![L5 Spinal Nerve Root Block](image)

For selective nerve root blocks and the transforaminal approach for an epidural steroid injection, the final needle position is just above the target nerve root.

In the caudal approach for an epidural steroid injection, the needle is passed through a small opening (sacral canal) just above the tailbone.

With the interlaminar approach of an epidural steroid injection, the needle is passed between two vertebrae, usually midline. Contrast dye is injected to confirm proper needle position.

The medication is then injected. The patient’s vital signs are closely monitored during the procedure, which takes about 15 to 30 minutes. After the injection, the patient is taken to the post-procedure area for continued monitoring.
What is actually injected?
The injection usually consists of a mixture of a local anesthetic (e.g., Marcaine®, Lidocaine) and the steroid injection (e.g., Dexamethasone).

Is the procedure painful?
Not usually. Most patients say it is about as painful as a routine blood test.

What should I expect after the procedure?
If anesthetic is placed around a nerve root or epidural space, you may experience a period of numbness in that region or limb for 3 to 8 hours. The steroid medication may begin working anywhere from 6 hours to 3 days after the injection. Some individuals do experience a period of soreness 1 to 2 days after the injection. An application of ice may help during this period. Within one to five days, you may start noticing significant pain relief.

What should I do after the procedure?
After the procedure, you should have someone drive you home. It is advised that patients minimize their activity and take it easy for a day or so after the procedure. If there is soreness at the injection site, you can apply ice to the area.

How soon can I return to work?
The day after the procedure, you can perform normal activities as long as they are not uncomfortable.

How many injections should I have?
We generally do not perform more than three injections within a 12-month period. Very frequent injections may increase the likelihood of side effects from the steroid.
Are there any risks with this procedure?

This is considered a very safe procedure. However, as with any procedure, there are risks and possible side effects or complications.

The complications from the selective nerve root blocks and epidural steroid injection include:

- Pain at the injection site — common
- Worsening of symptoms — occasional
- Infection — rare
- Bleeding — rare
- Serious nerve or spinal cord injury — extremely rare

Other side effects are generally related to the steroid medication and may include:

- Fluid retention — uncommon
- Weight gain — uncommon
- Elevated blood pressure — uncommon
- Mood swings — rare
- Insomnia — rare
- Suppression of the body’s own natural production of cortisone — rare

Can I have this procedure if I am on Coumadin®?

No. You should not have the procedure if you are currently taking blood-thinning medication such as Coumadin® or Plavix®. You may be asked to temporarily stop your blood-thinning medication, but do not do so without discussing this with your doctor.

Who should not receive a selective nerve root block or epidural steroid injection?

You should not undergo a selective nerve root block or
epidural steroid injection if:

- You are prone to excessive bleeding or you are taking anticoagulant (blood thinning) medication.
- Your back pain has been diagnosed as being the result of an infection or malignancy.
- There is any systemic bacterial infection or local skin infection near the injection site.