PROCEDURE

Epidural injections for back pain

An epidural injection delivers anti-inflammatory medicine around irritated spinal nerves to reduce radiating pain.

PURPOSE
Reduce pain caused by inflamed or irritated spinal nerves

PROCEDURE TYPE
Therapeutic, minimally invasive

WHERE IT IS DONE
Outpatient clinic

ANAESTHESIA
Local anaesthesia; sometimes moderate sedation

HOW LONG IT TAKES
About 15 to 30 minutes

PREPARATION
Medication review; fasting only if sedation is planned

RECOVERY
Same day; arrange a ride and avoid driving afterward

MAIN RISKS
Bleeding, infection, spinal headache, nerve injury

RESULTS
Pain response assessed over several days to two weeks

Overview

An epidural injection places medicine into the epidural space, the area surrounding the nerves inside your spine. For lower back problems, the medicine is usually a corticosteroid like prednisone or hydrocortisone , which reduces inflammation. A local anaesthetic may also be included for short-term numbing.

The injection is mainly used for pain that travels from the back into a buttock or leg. This is often called sciatica or lumbar radicular pain. It can happen when a disc or narrowed spinal canal irritates a nerve.

An epidural injection does not repair a damaged disc or remove pressure from a nerve. Its goal is to reduce inflammation and pain, sometimes making it easier to stay active or take part in physiotherapy. Relief may be modest and temporary, and some people do not improve.

Corticosteroids are widely used for epidural injections, but they are not approved by the US Food and Drug Administration specifically for injection into the epidural space. Your clinician should explain this use, the expected benefit, and the risks before you consent.

Why the procedure is performed

An epidural injection may be considered when nerve pain continues despite treatments such as activity changes, physiotherapy or appropriate pain medicines.

Reasons for offering the procedure include:

The procedure is generally more useful for pain travelling along a nerve than for back pain that stays only in the lower back. Your symptoms, examination and imaging should support the same likely source of pain.

- A herniated or bulging disc irritating a spinal nerve
- Narrowing around the spinal nerves, called spinal stenosis
- Persistent pain after some types of spine surgery
- Radiating leg pain that limits sleep, walking, work or rehabilitation

Who should and should not have it

You may be offered an epidural injection if you have ongoing nerve-related pain and less invasive care has not provided enough relief. It may also be considered when pain is preventing you from taking part in rehabilitation or when surgery is not currently appropriate.

An injection may need to be delayed or avoided if you have:

New loss of bladder or bowel control, numbness around the groin, or rapidly worsening leg weakness requires urgent assessment. An epidural injection is not a substitute for emergency evaluation of possible severe nerve compression.

- An infection near the injection site or an active infection elsewhere
- A bleeding disorder or blood-thinning treatment without a safe medication plan
- A serious allergy to a planned medicine or contrast material
- Poorly controlled blood sugar, because steroids can raise it temporarily
- A recent steroid injection or other reason to limit steroid exposure
- A possible pregnancy, because X-ray guidance may be used

How to prepare

Your treating facility's own instructions take priority because preparation differs according to the injection technique, your medicines and whether sedation is planned.

Give the team an up-to-date list of prescription medicines, over-the-counter medicines and supplements. Tell them about blood thinners like warfarin or apixaban , diabetes medicines, allergies, previous reactions to contrast material, infections and any chance of pregnancy.

Do not stop a blood thinner on your own. The clinician performing the injection and the clinician who prescribed the medicine should make a plan that balances bleeding and clotting risks.

You may be allowed to eat normally if only local anaesthetic is used. If sedation is planned, the facility may ask you to stop eating and drinking for a set period. Follow its exact instructions.

Arrange for an adult to drive you home. Wear comfortable clothing and leave valuables at home.

What happens during the procedure

You usually lie face down or on your side. The team checks your identity, the planned injection site, allergies and medications. Your blood pressure and oxygen level may be monitored.

The skin on your back is cleaned, and sterile drapes are placed around the area. Local anaesthetic is injected to numb the skin. This can sting briefly.

The clinician guides a needle toward the epidural space. X-ray imaging, called fluoroscopy, is commonly used. A small amount of contrast dye may be injected to confirm that the needle is in the intended location and not inside a blood vessel.

The medicine is then injected. You may notice pressure, tingling or a temporary increase in your usual leg sensation. Tell the team if you feel severe or unexpected pain.

The route may be:

You are usually awake. Sedation may be offered in some settings, but general anaesthesia is not normally needed.

- Interlaminar: between the bones at the back of the spine
- Transforaminal: near the opening where a specific nerve exits
- Caudal: through an opening near the bottom of the spine

Recovery and what to expect afterward

Pain: The injection site may feel sore for a day or two. Your usual pain can briefly flare before the steroid begins working. An ice pack wrapped in cloth may help if your facility recommends it. Temporary numbness or heaviness can occur from the local anaesthetic.

Eating: You can usually return to your normal diet after leaving. If you received sedation, start with light food if you feel nauseated.

Activity: Take it easy for the rest of the day. Follow the facility's instructions about exercise, lifting and bathing. Most people can resume ordinary activity the next day, but strenuous activity may need to wait longer.

Driving: Do not drive yourself home. Avoid driving for the rest of the day and longer if you remain numb, weak, sleepy or affected by sedative medicine.

Work: Many people return to desk-based work the next day. You may need more time if your work involves heavy lifting, climbing, driving or operating machinery.

Risks and possible complications

Temporary effects can include injection-site soreness, a short pain flare, flushing, disturbed sleep, mood changes or a temporary rise in blood sugar. People with diabetes may need a specific monitoring plan.

If the needle punctures the thin covering around the spinal fluid, you may develop a spinal headache. This is typically worse when sitting or standing and improves when lying down.

Other risks include bleeding, infection, allergic reaction and temporary numbness or weakness. A collection of blood near the nerves, called an epidural haematoma, can place pressure on them and needs urgent treatment.

Nerve injury is uncommon. Very rarely, medicine entering or affecting a blood vessel can injure the spinal cord or brain. Imaging, contrast dye and careful selection of the injection technique and medicine are used to reduce this risk.

Repeated steroid exposure can have effects elsewhere in the body. Your clinician should consider your previous injections, other steroid treatment, bone health, blood sugar and overall health before recommending another injection.

Results and follow up

Local anaesthetic may provide relief for a few hours, but this does not show how well the

steroid will work. Steroid benefit usually becomes clearer over several days and may take up to two weeks to assess.

Keep track of changes in leg pain, back pain, walking, sleep and daily activity. Relief can last for weeks or months, but some people have little or no benefit.

Routine follow-up is used to review your response and decide what comes next. Another injection should not be automatic. The decision should consider whether the first injection produced meaningful improvement, how long it lasted, and the risks of further steroid exposure.

Alternatives

You do not have to choose an epidural injection. Reasonable alternatives depend on the cause and severity of your pain.

Choosing among these options involves balancing the likely amount and duration of relief against recovery time and risk.

- Time, activity and physiotherapy: Avoids injection risks and can improve movement and strength, but progress may be slower while nerve pain remains active
- Pain medicines: Easier than a procedure, but may have side effects and do not remove pressure from a nerve
- Continued observation: Appropriate for some stable symptoms, but may mean living with pain while the nerve settles
- Surgery: Can remove disc material or create more space around a compressed nerve, but involves anaesthesia, a larger recovery and surgical risks
- Other targeted procedures: Treatments for spinal joints, such as medial branch blocks or radiofrequency treatment, may help a different type of back pain but do not replace an epidural injection for nerve pain

When to call your healthcare team

Seek emergency medical help for:

Contact the treating team urgently the same day for fever, increasing redness or drainage at the injection site, severe worsening pain, or numbness or weakness that lasts longer than they told you to expect. A severe headache that is much worse upright and improves when lying down also needs prompt advice.

For routine follow-up, contact the team if soreness is not settling, medication side effects concern you, or you need help recording your response. If you have diabetes, follow the action plan provided for blood sugar readings above your usual range.

- New loss of bladder or bowel control
- New numbness around the groin, genitals or inner thighs
- Rapidly worsening leg weakness or inability to walk
- Trouble breathing, facial swelling or another severe allergic reaction

Common questions

Will I be asleep?

Usually not. Local anaesthetic numbs the skin, and you remain awake. Some facilities offer moderate sedation to help you relax.

Can I drive home?

No. Arrange for someone to drive you. Numbing medicine, weakness or sedation can make driving unsafe.

How painful is it?

The numbing injection may sting. You may then feel pressure or a brief reproduction of your usual leg sensation. Severe pain is not expected and should be reported immediately.

When will I know if it worked?

The local anaesthetic may work quickly, but steroid benefit is usually assessed over several days to two weeks.

How long will the relief last?

Relief may last weeks or months. Some people have only brief improvement, and others do not improve.

Will the injection cure my back problem?

No. It reduces inflammation but does not repair a disc or widen a narrowed spinal canal. Its value is often in improving pain enough to support activity and rehabilitation.

Sources

- US Food and Drug Administration. FDA Drug Safety Communication: Label changes to warn of rare but serious neurologic problems after epidural corticosteroid injections for pain . 2014.
- Oliveira CB, Maher CG, Ferreira ML, et al. Epidural corticosteroid injections for lumbosacral radicular pain . Cochrane Database of Systematic Reviews. 2020;4:CD013577.
- Armon C, Narayanaswami P, Potrebic S, et al. Epidural Steroids for Cervical and Lumbar Radicular Pain and Spinal Stenosis: A Systematic Review Summary . American Academy of Neurology Guidelines Subcommittee; Neurology. 2025.
- Narouze S, Benzon HT, Provenzano DA, et al. Interventional spine and pain procedures in patients on antiplatelet and anticoagulant medications: Second edition . Regional Anesthesia and Pain Medicine. 2018;43:225-262.
- American College of Radiology, ASNR, ASSR, SIR and SNIS. Practice Parameter for the Performance of Image-Guided Epidural Steroid Injection . Revised 2024.