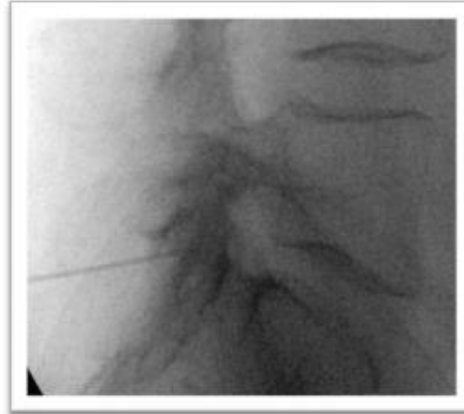


# Lumbar Epidural Injection

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## OVERVIEW AND INDICATIONS FOR PROCEDURE

A lumbar epidural injection is recommended for patients who have lower back pain that radiates to the leg. Lumbar Epidural Steroid Injections (With X-ray Guidance) are used to reduce pain, improve function and enable patients to pursue physical therapy/rehabilitation and return to work, sports, and daily /leisure activities. Its main indication is to decrease the inflammation associated with a variety of spinal conditions, such as herniated disc, sciatica, spinal stenosis, degenerative disc disease with nerve root impingement. There seems to be a better response when the injections are coupled with an organized therapeutic exercise program, activity modification, and ergonomic corrections.

### Risk Associated with the procedure

It is important to know the risks associated with any medical or surgical treatment. There are a few risks associated with Lumbar epidural steroid injections but they tend to be rare. The potential risks include:

- Immediate or delayed allergic reaction to medication used
- Infection
- Bleeding
- Nerve Injury

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- Dural Puncture
- Temporary increase in pain
- High blood sugar levels
- Transient vaginal spotting
- Transient facial flushing
- Vascular uptake of a particular steroid, cord ischemia

The infection rate is less than 1% in patients receiving spinal injections performed under sterile conditions. The bleeding complication is more common in patients with a history of a bleeding disorder. This includes patients being treated with anticoagulant/antiplatelet medications and patients taking over-the-counter medications like Motrin and Aspirin. The frequency of injury to the nerve roots or spinal cord has substantially reduced with the use of fluoroscopy and contrast material. It is rare to encounter nerve root or spinal cord injury with epidural injections. The rate of nerve injury and spinal cord injury is higher in obese patients due to poor visualization of the target on lateral X-rays. Dural puncture is an infrequent complication and may cause a positional headache (headache in seated and standing positions but not in laying down position). This type of headache is often self-limiting, although in persistent cases, a blood patch may be necessary to alleviate the headache.

Elevated blood sugar is a known effect of steroid medication and may last for 2-4 days after the injection of steroids. Patients on insulin will need to follow a sliding scale to adjust for elevated sugar levels. Patients on oral medication should follow primary care advice regarding the temporary increase in oral medication to accommodate for blood sugar levels.

The following side effects tend to be rare, though they become more common when steroids are taken daily for several months. These risks and side effects may include:

- A transient decrease in immunity
- Stomach ulcers
- Severe arthritis of the hips
- Avascular necrosis of joints
- Cataracts
- Increased appetite
- Agitation and irritability
- Negative effect on bone density and fractures

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## Who should avoid Epidural Steroid Injections?

Lumbar Epidural Steroid Injections should not be performed on persons with the following conditions:

- Individuals with known allergies to local anesthetics, steroids or contrast material
- Patients with local or systemic bacterial infection
- Pregnant patients
- Patients with bleeding disorders
- Patients suffering from a tumor or infection of the spine
- Uncontrolled congestive heart failure or diabetes
- When the risk of holding certain medications (Aspirin, antiplatelet drugs/blood thinners) outweighs the benefit of the epidural procedure

## Prepare for your Procedure:

Certain medications have to be held before elective spinal procedures. We will provide you with the list of medications that have to be held with the exact number of days it needs to be held. Do not hold such medication on your own. Consult your Primary Care Physician (or Cardiologist) before stopping those medications. Ask your PCP if it is safe to stop the medication. Continue to take all other medications, especially your Blood Pressure medications.

A sample of medications that have to be held includes:

1. Aggrenox® (dipyridamole)
2. Aspirin
3. Coumadin® (warfarin)
4. Effient® (prasugrel)
5. Fragmin® (dalteparin)
6. NSAIDS (see sample below)
7. Herbal blood-thinners
8. Heparin
9. Eliquis® (apixaban).
10. Lovenox® (enoxaparin)

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11. Plavix® (clopidogrel),
12. Pradaxa® (dabigatran)
13. Ticlid® (ticlopidine)

Examples of NSAIDS to be held: Ibuprofen, Motrin, Naproxen, Advil, Nabumetone, Diclofenac, Etodolac, Indomethacin, Ketorolac, Meloxicam, Piroxicam, Ketoprofen, Oxaprozin

Please let us know if you have had fevers, antibiotic treatment, any illness, or hospitalization within the last 4 weeks. You must be healthy and off all antibiotics on the day of the procedure.

Make sure you are not pregnant at the time of the procedure. Do a Urine Pregnancy Test the night before your spinal injection and report the results to the nurse before the procedure. Exposure to X-ray (used during spinal procedure) is known to result in birth defects and possible miscarriage. If in doubt, cancel and reschedule your procedure until you can confirm that you are not pregnant.

## Day of your Procedure

- Please take a shower, wash the skin with normal soap, and DO NOT put skin lotions or mediated creams in the area of the injection. Wear dark and loose clothing and undergarment.
- Arrive 30 minutes early and come with someone that can give you a ride home. Your procedure should take less than 30 minutes and your total time from greeting to end should be less than 90 minutes.
- Bring an updated list of your medications and allergies. Please point out if you are allergic to Contrast, Iodine or Latex.
- Bring your latest MRI /CT /imaging studies and the report with you.
- Do not eat or drink for 2 hours before your appointment. Diabetics may have a light meal.
- After check-in, an ID wristband containing your name and allergies will be placed on your wrist. A nurse or medical assistant will go over your meds and allergies and ask a few screening questions. Then a nurse will go over the final preparation before the procedure. If necessary, an IV line will be placed, particularly if this is your first spinal procedure.

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- In rare cases, oral sedation is needed to reduce anxiety associated with the procedure. This will slow down the entire process. Take medication 1 hour before the procedure and you must have someone drive you to and from the procedure. Without the ride, the procedure would likely be canceled.

## During the Procedure:

- You will change into a gown. You will be escorted to the procedure by a nurse and a consent form will be reviewed/ signed before the procedure. You will be asked to lay on your stomach
- Blood pressure and heart rate monitor will be placed on your arm/finger. All the medical equipment produces loud noises (beeping, alarms) and you should not be concerned.
- Intermittently your doctor will talk to staff in the procedure room and instruct them to perform a task. Your physician will guide you step by step through the procedure.
- After standard time out, your skin will be disinfected with a cool solution, and sterile sheet of paper or plastic will be placed on your skin.
- When your physician is ready, X-ray unit is placed over your spine to identify the target.
- Skin will be marked and anesthetized (you will feel a small pinch and burning sensation at each spot). It is normal to feel pressure or muscles twitching as needles are advanced to the final target.
- Once needle is at radiographic target, a small amount of contrast is injected to confirm final needle position before injecting steroid medication. You may feel transient pressure in your spine or arm.
- Once procedure is completed, needle is removed, skin is cleaned and bandage is applied. You are then transferred back to the recovery area for observation.

## Right after the Procedure

- You will be observed for 15-45 minutes.
- If you have an IV line, it will be removed.
- A nurse will check your vitals and review the discharge instructions with you and will answer any questions you may have. A responsible adult must be present to drive you home after discharge.

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- You will leave with a pain log and a copy of the discharge instruction which contains Emergency contact numbers. Please do not discard your discharge instructions.
- A responsible adult must drive you home.

## Discharge instructions

- Make a follow-up 2-3 weeks after the procedure and bring your pain log with you.
- For 24 hours after the procedure, do not drive or operate machinery
- If sedation is used, for 24 hours after the procedure, do not make financial or important life decisions until the effect of such medication is cleared
- For 24 hours after the procedure, do not participate in strenuous activity
- It is okay to shower after the procedure. No bathing /submerging under water for 24 hours.
- You may remove the bandages 24 hours after the injection. Call if there is excessive redness or signs of infection like warmth, discharge or collection of pus at the site of injection.
- You may resume your normal diet and medications after the procedure.
- Resume your Blood Thinners/ Anticoagulants / Antiplatelet as instructed by PCP or Cardiologist. You may need to check INR/PT/PTT 2-3 days after your procedure. Contact your primary care and ask when you should have the blood work.
- Diabetics should monitor blood sugar levels 3 times a day for 3 days after the procedure.

Call your doctor if you develop these symptoms. You may be directed to ER:

- Shortness of breath or palpitation after the procedure
- Sudden weakness
- Fever over 101°F within 5 days after the procedure
- Persistent redness increased localized pain, or discharge from the site of injection.
- Possible allergic reaction within 5 days of the procedure
- Intractable headache
- Significantly increased pain not responding to ice, NSAIDs, and pain meds or associated with fever
- Newly developed weakness in the legs, face, or arm following procedure

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- Newly developed incontinence of urine or stool following procedure

See Next Page for the list of medication to Hold

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**New England Spine Care**

Spine Care  
Sports Medicine  
Regenerative Medicine  
Minimally Invasive MSK Procedures

Medication Anticoagulant- Antiplatelet	STOP BEFORE Procedure	RESTART AFTER Procedure
ABCIXIMAB	5 days	12 hours
Acenocoumarol	5 days-INR 1.3	24 hours
AGGRASTAT	24 hours	24 hours
APIXABAN	72 hours	24 hours
ARIXTRA	4 days	24 hours
Aspirin	4 Days	24 hours
BRILINTA	5 days	12 hours
CILOSTAZOL	48 hours	24 hours
CLOPIDOGRL (Plavix)	7 days	12 hours
COUMADIN (warfarin)	5 days- INR 1.3	24 hours
DABIGATRAN	4 days	24 hours
DALTEPARIN	24 hours	12 hours
Dipyridamole	48 hours	24 hours
EFFIENT	7 days	12 hours
ELIQUIS (Apixaban)	72 hours	24 hours
ENOXAPARIN	24 hours	12 hours
EPTIFIBATIDE	24 hours	24 hours
FONDAPARINUX	4 days	24 hours
FRAGMIN	24 hours	12 hours
HEPARIN IV	8 hours	24 hours
HEPARIN SQ	8 hours	12 hours
LOVENOX	24 hours	12 hours
PERSANTIN	48 hours	24 hours
PLAVIX	7 days	12 hours
PLETAL	48 hours	24 hours
PRADAXA	4 days	24 hours
PRASUGREL	7 days	12 hours
REOPRO	5 days	12 hours
RIVAROXABAN	72 hours	24 hours
TICAGRELOR	5 days	12 hours
TICLID	14 days	24 hours
TICLOPIDINE	14 days	24 hours
TIROFIBAN	24 hours	24 hours
Vorapaxar	7 days	12 hours
WARFARIN	5 days-INR 1.3	24 hours





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**New England Spine Care**

Spine Care  
Sports Medicine  
Regenerative Medicine  
Minimally Invasive MSK Procedures

NSAIDS and Others	STOP BEFORE Procedure	RESTART AFTER Procedure
Aspirin	4 Days	24 hours
Bufferin	4 Days	24 hours
Celebrex	Do not stop	Do not stop
Daypro	5 Days	24 hours
Diclofenac	2 Days	24 hours
Dolobid	4 Days	24 hours
Ecotrin	4 Days	24 hours
Etodolac	2 Days	24 hours
Exedrin	4 Days	24 hours
Fiorinal	4 Days	24 hours
Ibuprofen	2 Days	24 hours
Indocin	3 Days	24 hours
Indometacin	3 days	24 hours
Ketorolac	2 Days	24 hours
Lodine	2 Days	24 hours
Meloxicam	5 Days	24 hours
Midol	4 Days	24 hours
Motrin	2 Days	24 hours
Nabumetone	7 days	24 hours
Naprosyn	4 Days	24 hours
Naproxyn	4 Days	24 hours
Oxaprosin	5 Days	24 hours
Percodan	2 Days	24 hours
Relafen	7 days	24 hours
Salasate	4 Days	24 hours
Sulindac	4 Days	24 hours
Talwin	4 Days	24 hours
Tordol	2 Days	24 hours
Trilisate	4 Days	24 hours
Vicoprofen	2 Days	24 hours
Voltaren	2 Days	24 hours

### *Weight loss and Nutrition Supplements to be held for 5 days*

Alpha Lipoic acid	Acetyl 1 1. Carnitin	Cinnamon	Chamomile	Creatinine
Echinacea	EPHEDRA	Fish oil	Garlic	GINGER
GINKGO BILOBA	Ginseng	GLUCOSAMINE	Glutenin	Goldenseal
L-Carnosine	Licorice	Kava Kava	Milk Thistle	
Omega-3	Resveratol	Skullcap	St Joh's Wort	Vitamin E