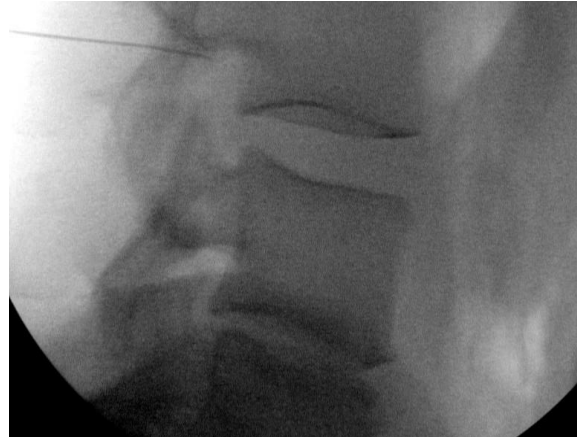
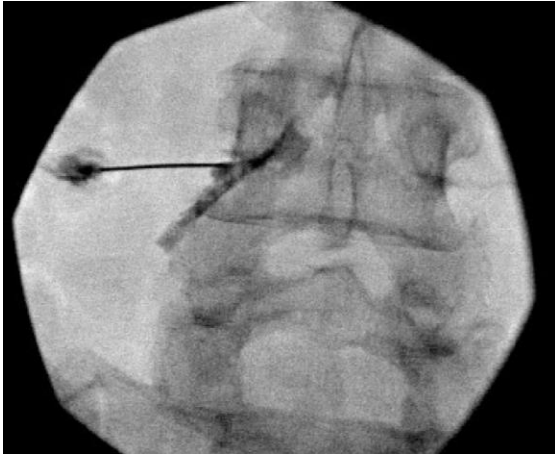


Patient information: Lumbar Transforaminal Injection

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**Overview and Indications for Procedure:**

Lumbar transformational Steroid Injections (With X-ray Guidance) are used to reduce pain, improve function and enabling patient 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 procedure:

It is important to know risk associated with any medical or surgical treatment. , There are few risks associated with Lumbar epidural steroid injections and they tend to be rare. The potential risk includes:

- Immediate or delayed ALLERGIC reaction to medication use
- Infection
- Bleeding
- Nerve or spinal cord Injury
- Dural Puncture
- Temporary increase in pain
- High blood sugar levels
- Transient vaginal spotting
- Transient facial flushing
- Spinal vascular injury or vascular uptake of particular steroid

Infection rate is less than 1% in patients receiving spinal injections performed under sterile conditions. The bleeding complication is more common in patients with history of bleeding disorder, patients being treated with anticoagulant/antiplatelet medications and patients taking over the counter medication like Motrin and Aspirin. The frequency of *injury to the nerve roots or spinal* cord has substantially reduced with 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 position but not on laying down position). This type of headache is often self-limiting, although in

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persistent cassis, 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 be following sliding scale to adjust for elevated sugar levels. Patients on oral medication should follow primary care advice regarding temporary increase in oral medication to accommodate for blood sugar levels

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)
- Cataracts
- Increased appetite
- Agitation and irritability
- Negative effect on bone density and fractures

Who should avoid transforaminal epidural steroid injections?

Lumbar Transforaminal Epidural Steroid Injections should not be performed following conditions:

- In 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 risk of holding certain medications (Aspirin, antiplatelet drugs/blood thinners) outweighs benefit of the epidural procedure

Prepare for your Procedure:

- Certain medications have to be held before elective spinal procedures. A list of such medications is on the last few pages of this educational material. Do not hold such medication on your own and ask your PCP /Cardiologist if it is safe to stop such medication before the procedure. Continue to take all other medications, especially your Blood Pressure and diabetes medications.

A sample of medications that has 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)
11. Plavix® (clopidogrel),
12. Pradaxa® (dabigatran)
13. Ticlid® (ticlopidine)

- NSAIDS to be held (such as Ibuprofen, Motrin, Naproxen, Advil, Nabumetone, Diclofenac, Etodolac, Indomethacin, Ketorolac, Meloxicam, Piroxicam, Ketoprofen, Oxaprozin)

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- 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 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 few screening questions. Then a nurse will go over final preparation before the procedure. If necessary an IV line will be placed particularly if this is your first spinal procedure.
- 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, 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. Every 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 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.
- 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.

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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.
- You will leave along 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 sedated, 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 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 infection sign like warmth, discharge or collection of puss at the site of injection.
- You may resume your normal diet and medications after procedure.
- Resume your Blood Thinners/ Anticoagulants / Antiplatelet as instructed by PCP /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 procedure
- Sudden weakness
- Fever over 101°F within 5 days after procedure
- Persistent redness increased localized pain or discharge from the site of injection.
- Possible allergic reaction within 5 days of the procedure
- Intractable headache
- Significant 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
- Newly developed incontinence of urine or stool following procedure

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Insurance:

Most insurance require prior authorization to cover this procedure. Your doctor will provide information to insurance company for approval. It takes anywhere between 3-15 days for approval (Medicare beneficiaries require no authorization). You would likely have copay and deductible for this type of treatment.

You would also receive two medical bills related to these types of treatments (Hospital bill and Doctors bill). Please call your insurance company to understand your benefits.

The codes used for these procedures are: CPT: 64483, 64484 and 77003

Keywords: Lumbar Transforaminal Epidural Injection, Selective spinal Nerve Block

Patient Instructions for Temporary Holding Medications before Spinal Procedures/Injections

IF YOU HAVE ANY QUESTIONS REGARDING THESE INSTRUCTIONS CALL
617-636.5631

The decision to discontinue or hold medications should be shared between the spine specialist, patient, and prescribing physician (usually PCP, cardiologist or neurologist). These medications are held for specific period of time to limit bleeding complications during and within the 1st 24-72 hours after procedure. We follow nationally recognized guidelines including ASRA, American Society Pain Medicine, the European Society of Regional Anesthesia and Pain Therapy, the American Academy of Pain Medicine, and the World Institute of Pain.

If you are on any of the following medication, please discuss with the prescribing physician whether or not you're allowed to hold the medication for indicated amount of time prior to her procedure. You may resume that medication after your spinal procedure as indicated on next pages

See next page

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Medication Anticoagulant- Antiplatelet	STOP BEFORE Injection/Procedure	RESTART AFTER Injection/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 325	4 Days	24 hours
Aspirin 81	2 Days	24 hours
BRILINTA	5 days	12 hours
CILOSTAZOL	48 hours	24 hours
CLOPIDOGRIL (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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NSAIDS and Others	STOP BEFORE Injection/Procedure	RESTART AFTER Injection/Procedure
Aspirin 500	4 Days	24 hours
Aspirin 325	4 Days	24 hours
Aspirin 81	2 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

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Weight loss and Nutrition Supplements to be held for 5 days

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