

Long Island Spine Rehabilitation Medicine, P.C.
801 Merrick Ave
East Meadow, New York 11554

Jason S. Lipetz, M.D.
Jeffry R. Beer, M.D.

Phone (516) 393-8941
Fax (516) 393-8870

A GUIDE TO SPINAL INJECTION PROCEDURES

What is a spinal injection?

The injection you will receive is also known as a fluoroscopically guided selective spinal injection. Following your evaluation at Long Island Spine Rehabilitation Medicine, it will be determined if such an injection procedure is appropriate for you. This determination is made after a careful review of your history, physical examination findings, radiographic images, and electrodiagnostic studies. All of this data is considered in determining your candidacy for injection procedures.

Injections are performed under x-ray guidance, also known as fluoroscopy. This enables the physician to visualize your anatomy during the injection procedure and ensure accurate needle placement. It is our goal with each injection to introduce medication to the specific location of your pain source. The benefits of using fluoroscopy include an increased likelihood for positive results and a reduced risk for complications. Previous published studies have demonstrated that, even in experienced hands, spinal injections performed without fluoroscopy may result in medication not reaching the target in up to 25-40% of cases.

What medications are given during an injection procedure?

Generally, three substances are injected during the injection. These include a local anesthetic (to numb both the skin prior to injection and the underlying pain source), a contrast agent or dye (to outline the target structure prior to administering medication), and a steroid (to reduce inflammation and the local pain generating activity).

You must report any known allergies to any of these agents to a member of our team immediately. If your allergy is to the contrast agent, or if you have a known history of reaction to seafood or iodine, you may require an allergy protocol prior to your injection procedure. A member of our Long Island Spine Rehabilitation Medicine team will supply you with the appropriate pre-procedural prescriptions and instructions.

What are the different types of injection procedures?

A variety of injections are performed at our practice, and each is directed toward the structure in your spine believed to be responsible for your pain. Our clinical impressions in your case will be carefully reviewed with you following your initial evaluation.

All injections fall into two general categories.

1. **Diagnostic** – only a contrast agent and local anesthetic are utilized.
2. **Therapeutic** – a contrast agent, local anesthetic, and *steroid* are utilized.

A **diagnostic injection** is utilized when even after considering the information gathered through your history, physical examination, spine images, and electrodiagnostic studies, your pain source is still not clearly identified. It is a test used in an attempt to clarify which structure in your spine is the cause of pain. In order to be effective, the diagnostic injection must be performed while you are experiencing your typical discomfort. This will require you to avoid the use of pain medications for approx. 12-24 hours prior to the diagnostic injection procedure. If you are pain free on the day of your scheduled diagnostic injection, please call in advance to reschedule. Upon return of your typical pain complaints, we can be flexible in rescheduling your appointment on relatively short notice. During the diagnostic injection procedure, a local anesthetic agent will be placed at the site which is suspected to be responsible for your pain. Approximately 20-30 minutes after the injection, you will be assessed by a member of our team. At that time, you will be asked to perform any activities which typically provoke your pain, and your pre-and post-injection pain drawings and pain ratings will be compared. A determination will then be made if your pain generator has been identified. It is important to remember that diagnostic injections are tests. They are not intended to treat your problem. Once the local anesthetic has worn off, after about 1 hour, your typical symptoms will return. In some cases, it is possible that additional diagnostic injections will be required. If you have a positive response, i.e. – your pain was at least 80% relieved after your first diagnostic injection, you will then be scheduled for the appropriate therapeutic injection at the same site. Otherwise, an additional diagnostic injection will be performed at the site of the next most likely pain source.

Therapeutic injections differ from diagnostic injections in that a corticosteroid agent is administered. The steroids utilized in these injections do not build muscles, and they are not the kind of steroid used by bodybuilders or athletes. The purpose of the steroid is to reduce local inflammation, stabilize membranes, and diminish local pain generating activity. When administered during a fluoroscopically guided injection procedure, the minimal amount of steroid can be placed specifically at the site of the suspected pathology. The steroid effect begins anywhere from 4-6 hours to one week after your injection procedure. It is intended to provide a gradual but steady reduction in your pain. It is not a quick fix. Typically, therapeutic injections are scheduled two weeks apart, and your progress is reviewed prior to scheduling a third.

What can I expect during my scheduled injection day?

All patients will require an available driver on the day of their procedure. If your procedure is scheduled for the morning, you may have a light breakfast such as toast and juice, but nothing heavy. For afternoon procedures, you may have a normal breakfast, but only a light lunch.

In general, your medications may be continued on your injection day. There are some exceptions:

1. **Anticoagulants** such as Coumadin, Plavix, and Lovenox must be held prior to the injection day. These medications are typically restarted shortly after the injection, usually on the evening following the procedure. All medication adjustments will be coordinated with the approval and assistance of your primary care physician.
2. **Glucophage and Glucophage containing medications** (for example, Janumet, Glucovance) are to be held on the evening prior, day of, and 48 hours after your injection procedure. This will also need to be arranged with your primary care physician, as steroid injections will often elevate blood glucose levels in both insulin dependent and non-insulin dependent diabetics.
3. **Aspirin and anti-inflammatory agents** – Those patients on aspirin regimens will be requested to hold their medication for 7 days prior to the injection procedure. In some instances, medical clearance will be obtained prior to an aspirin hold. Oral non-steroidal anti-inflammatory agents should be held for 2-3 days prior to an injection procedure. Aspirin and oral non-steroidal anti-inflammatory agents are typically restarted shortly after the injection, usually on the evening following the procedure.
4. **Pain medication** should be held for 12-24 hours prior to a diagnostic but not prior to therapeutic injections or electrodiagnostic studies. Additionally, pain medication and anti-anxiety agents can be prescribed for the injection

day in an effort to maximize your comfort during your procedure.

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Please arrive approximately 10 minutes prior to your scheduled injection. You should anticipate a total time spent at our facility of approximately one hour. Such times may vary depending on the particular daily schedule. We will do our best to remain on schedule and to keep you informed of our daily progress.

Typically, an IV is placed for patients receiving cervical injections. Following your injection, you will be assessed and monitored for approximately 30 minutes. Upon your departure from the facility, you will be provided with additional written instructions. You must have someone drive you home from the office following and injection procedure.

Are there potential complications?

The most common side effect from the procedure is a transient increase in pain for the first 24-72 hours. This occurs because fluid substances are introduced in close proximity to a structure which is already inflamed. You should not be alarmed by this. Such symptoms typically diminish gradually during the days following the procedure. You may also experience tenderness at the needle insertion site. Should you experience this problem, an ice pack applied to the area is often effective.

The above side effects should not result in your cancellation of a subsequent injection. You should cancel any additional scheduled injections if you experience greater than 90% pain relief which is sustained until the day prior to your next scheduled injection. In such an instance, you would contact the office, speak with a member of our team, and likely be rescheduled to see the physician in follow-up consultation.

In addition, as with any invasive procedure, more significant complications are possible but are considered rare. These include: lightheadedness, fainting, allergic reaction, dural puncture, infection, excessive bleeding, permanent nerve damage, seizure, cardiovascular collapse, and death. A recent published review of 5500 injection procedures identified four systemic adverse effects, each of which was self-limited. A retrospective review of 888 injection procedures performed at the University of Pennsylvania Spine Center identified eight short-term and no long-term complications. Two additional recent publications investigating the complications arising from fluoroscopically guided selective

transforaminal cervical and lumbar injections describe no long-term complications in all patients followed. We must always respect the possibility of procedural complications, and if you have any additional concerns, please review them with a member the Long Island Spine Rehabilitation Medicine team.

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Can all spine problems be treated with an injection procedure?

No. The injections we perform are not appropriate for everyone. It is possible that your condition cannot be managed non-surgically. In this scenario, consultation with a spine surgeon might be recommended. In other cases, consultation with a neurologist or more chronic pain management specialist may be appropriate. Our goal at Long Island Spine Rehabilitation Medicine is to utilize the talents of our team members to provide care in a diagnosis specific and comprehensive fashion. We will not recommend diagnostic or therapeutic measures which are unlikely to benefit our patients.

Comprehensive rehabilitation approach.

The injections performed at Long Island Spine Rehabilitation Medicine are only a component of the overall care we offer. In the non-surgical treatment of spinal disorders, injections are provided in conjunction with a spine specific rehabilitation program which is directed by a skilled spine therapist. The communication between your physician and therapist will be continuous. Our goal is to reduce your pain and enable you to fully participate in the appropriate therapies. Ultimately, you will be graduated to an independent home exercise regimen. By employing such a strategy, our chances of helping you heal and preventing future injury are maximized.

For what reasons should I contact the physician following an injection procedure?

- a temperature of greater than 100 degrees
- loss of bowel or bladder control
- pain which is severe and worsening
- loss of motor function in any extremity (-ies)
- headache in the standing or sitting position which is fully relieved upon lying down

