



## THORACIC EPIDURAL STEROID INJECTIONS

### **What is a thoracic epidural steroid injection?**

A thoracic epidural steroid injection (ESI) is an injection of corticosteroids (similar to cortisone) into the space just outside the covering (the dura) of the spinal cord in your lower back. Because the injection is outside (epi) the dura, it is called an epidural injection.

### **What are the indications for a thoracic epidural steroid injection?**

These injections are performed when it is thought that spinal nerve inflammation is part of the process that is causing the pain. Common indications for thoracic ESI include upper back pain and pain traveling to the front of your chest.

### **How do epidural steroid injections help my pain?**

The spinal cord travels from the brain to the waist in a tunnel in the back part of the spine. About every inch along the way, the spinal cord gives off branches (spinal nerves) to the right and left. These spinal nerves carry sensations and pain signals from the various parts of the body back to the brain.

Corticosteroids are very potent anti-inflammatory medications that work best when they are injected into the area where the inflammation is occurring. Because the spinal nerves pass directly through the epidural space, a thoracic ESI allows the medication (steroid) to come into direct contact with the inflamed spinal nerves, reducing the pain associated with the inflammation.

### **How do I prepare for the procedure?**

A thoracic ESI is a minor surgical procedure that is typically performed at an ambulatory surgery center. You should not eat or drink anything for at least 2 hours before your procedure. You should take all of your medicines except blood thinners the day of your procedure. Please contact our office for questions regarding specific medications.

### **Can I have sedation for the procedure?**

The vast majority of patients do not require sedation for the procedure, however, we will provide light sedation (Valium) for the procedure at your request. Patients who are receiving sedation **must** have a responsible adult with them to drive them home.

### **What should I expect during the procedure?**

You will be lying face-down on an X-ray table during the procedure. You may have pillows placed under your chest to help your surgeon with optimal positioning. Live X-rays (called fluoroscopy) will then be taken to ensure proper positioning. Your upper back will then be cleaned with an antiseptic solution and a sterile drape will be placed over this area to keep it clean for the procedure. A local anesthetic will then be injected into your skin to make it numb. The epidural needle will then be inserted through the numbed skin and slowly advanced into the epidural space using fluoroscopy (live X-rays) to guide the needle. When the needle enters the epidural space, it is common to feel either a cold sensation or increased pressure in your upper back. Once the needle is in the epidural space, a small amount of contrast will be injected under live X-ray to ensure that the medication will spread properly. You will feel increased pressure during this injection. After this, the corticosteroid will be slowly injected into the epidural space. Again, it is very common to feel increased pressure during this part of the procedure.

If the pressure becomes too painful, you should let your surgeon know immediately. Once the injection is complete, the needle will be withdrawn and a dressing will be placed over the injection site.

### **How soon can I go home after the procedure?**

Your blood pressure, pulse, and breathing will be checked frequently over the next 15 to 20 minutes. Once your vital signs are stable, you will be able to go home.

### **Can I drive myself or do I need a ride?**

Most patients prefer to have a family member or friend drive them for their procedure, however, you may drive yourself to the procedure as long as you are not requesting sedation.

### **How long will it take for the pain relief to take effect?**

Some patients will experience immediate relief; however, it usually takes 24 to 72 hours for the effects of the steroid medication to take effect and it may be up to 1 week before the maximum benefits are achieved. Very often more than 1 injection is necessary to achieve a good level of pain relief.

### **Can the procedure make my pain worse?**

Some patients will experience mild pain with the procedure that will ease up in a very short amount of time. On rare occasions, patients have experienced a prolonged increase in pain after the procedure. If this occurs, please contact our office to discuss.

### **What if the procedure does not improve my pain?**

Epidural steroid injections target the pain being caused by the inflamed nerves in your upper back and may not relieve pain caused by spinal and muscular problems, which can continue to cause pain after the procedure. You may continue to require oral medications or other interventional procedures to achieve better pain relief.

### **How many injections do I need? How often can I have an injection?**

In general, you will receive a series of up to 3 injections, given at least two weeks to achieve maximum pain relief. If the injections are successful, most patients will experience at least 6 months of pain relief after the initial series of injections. You may return for future injections when the pain returns. A maximum of four injections can be done within a six month period.

### **Are there any restrictions following the procedure?**

We ask that you not immerse in water for 24 hours after the steroid injection. This means that you can shower, but not take a bath or go swimming for the rest of the day. There are no other specific restrictions on activity however, we recommend that you "take it easy" the rest of the day and slowly resume your normal activities. Due to the numbing medication, many patient's experience a period of time immediately following the injection where they are pain free. During this time, it is important to not over extend yourself with activity.

### **What are the risks of the procedure?**

Overall, epidural steroid injections are a very safe procedure. Serious side effects or complications are rare with epidural steroid injections. However, like all injection procedures, possible adverse effects are possible. The most common complications include bleeding and bruising at the needle puncture site, post-procedure headaches, and lightheadedness or dizziness immediately following the procedure. Other very rare complications include epidural infection, epidural hematoma (bleeding into the epidural space), transient numbness or weakness, paralysis (partial or complete), contrast or allergic reactions, and sexual dysfunction. If you experience any concerning symptoms after your injection, you should call your doctor immediately or go to an emergency room for evaluation.

**\*Diagnostic injections will follow the same protocol. The only exception is the absence of the corticosteroid during the procedure. If the anesthetic appropriately numbs the area, there is an indication that the needle placement was appropriate and that the issue is in that area.**



## TRANSFORAMINAL THORACIC EPIDURAL STEROID INJECTIONS (TFESI)

### **What is the epidural space?**

The dura is a protective covering of the spinal cord and its nerves. The space surrounding the dura is called the epidural space. In the upper back, it is called the thoracic epidural space.

### **What causes pain in the epidural space?**

The thoracic area of the spine has twelve bones, called vertebrae. Soft discs found between these vertebrae cushion them, hold them together, and control motion. If a disc tears, chemicals inside may leak out. This can inflame nerve roots or the dura, and cause pain.

A large disc tear may cause a disc to bulge, inflaming nerve roots or the dura, and cause pain. Bone spurs, called osteophytes, can also press against nerve roots and cause pain.

### **How do I know if I have disc and nerve root pain?**

If you have pain in your upper back when you move, you may have thoracic disc and dural inflammation. If pain travels to the front of your chest when you move your back, you may have nerve root inflammation.

### **What is a transforaminal lumbar epidural steroid injection?**

A transforaminal thoracic epidural steroid injection (TFESI) is an injection of corticosteroids (anti-inflammatory medication) into the epidural space. When it is done from the side where the nerve exits the spine, it is called a transforaminal injection. It puts medication near the source of the inflammation.

### **What happens during an injection?**

A local anesthetic will be used to numb your skin. The doctor will then insert a thin needle directly into the epidural space. Fluoroscopy, a type of moving x-ray, must be used to ensure the safe and proper placement of the needle. A dye may also be used to make sure the needle is at the correct spot and the medication will spread properly.

### **How do I prepare for the procedure?**

A thoracic transforaminal epidural steroid injection is a minor surgical procedure that is typically performed at an ambulatory surgery center. You should not eat or drink anything for at least 2 hours before your procedure. You should take all of your medicines except blood thinners the day of your procedure. Please contact our office for questions regarding specific medications.

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When the needle enters the epidural space, it is common to feel either a cold sensation or increased pressure in your low back. Once the needle is in the epidural space, a small amount of contrast will be injected under live X-ray to ensure that the medication will spread properly. You will feel increased pressure during this injection. After this, the corticosteroid will be slowly injected into the epidural space. Again, it is very common to feel increased pressure during this part of the procedure. If the pressure becomes too painful, you should let your surgeon know immediately. Once the injection is complete, the needle will be withdrawn and a dressing will be placed over the injection site.

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### **How long can I expect pain relief?**

The extent and duration of the pain relief may depend on the amount of disc, dural, or nerve root inflammation. Other coexisting factors may be responsible for your pain. Sometimes an injection brings several weeks to months of pain relief and then further treatment is needed. Other times, a single injection brings long term pain relief. If your pain is caused by injury to more than one area, only some of your symptoms will be helped by a single injection.

**\* Diagnostic injections will follow the same protocol. The only exception is the absence of the corticosteroid during the procedure. If the anesthetic appropriately numbs the area, there is an indication that the needle placement was appropriate and that the issue is in that area.**



## THORACIC RADIOFREQUENCY ABLATION (RFA)

*A thoracic radiofrequency ablation (RFA) is an outpatient procedure for treating upper and middle back pain. It is also called thoracic facet thermal coagulation or rhizotomy.*

### **What are thoracic facet joints?**

Facet joints connect the vertebrae, the bones of the spine. They help guide your spine when you move. The upper back area of the spine is called the thoracic region. It contains twelve vertebrae.

Facet joints are found on both sides of the spine. Each is about the size of a thumbnail. Thoracic facet joints are named for the vertebrae they connect and the side of the spine where they are found. The right T2-3 facet joint, for example, joins the 2<sup>nd</sup> and 3<sup>rd</sup> thoracic vertebrae on the right side.

Medial branch nerves are found near facet joints. They communicate pain from the facet joints. They tell the brain when a facet joint has been injured.

### **How do I know if I have thoracic facet pain?**

Thoracic pain may present as muscle tension or as severe pain. Thoracic facet joint pain can occur in an area from your upper back and shoulder down to your hips. If this pain lasts more than two months, you may have thoracic facet pain. Common tests such as x-rays or MRIs may not show if a facet joint is causing pain. The best way to diagnose facet pain is to block the pain signal in the medial branch nerve with a local anesthetic (numbing medication).

### **What is a thoracic RFA?**

RFA uses radiofrequency energy to disrupt nerve function. When this is done to a thoracic medial branch nerve, the nerve can no longer transmit pain from the injured facet joint.

### **What happens during an RFA?**

A local anesthetic will be used to numb your skin. Your doctor will then insert a thin needle near the facet joint. Fluoroscopy, a type of x-ray, must be used to position the needle. The doctor will then check to make sure it is at the correct nerve by stimulating it. This may cause muscle twitching and provoke some of your pain.

Once the needle is properly placed, the nerve will be numbed. Radiofrequency energy will then be used to disrupt the medial branch nerve. This is often repeated at more than one level of the spine.

### **What happens after an RFA?**

You will be monitored for up to 30 minutes after the RFA. When you are ready to leave, the staff will give you discharge instructions. Take it easy for the rest of the day. You may feel sore for one to four days. It may be due to muscle and nerve irritation. Your upper back may feel numb, weak, or itchy for a couple weeks. Maximum pain relief normally comes in two or three weeks.

### **How long can I expect relief?**

Nerves regenerate after an RFA, but how long this takes vary. Your pain may or may not return when the nerve regenerates. If it does occur, another RFA can be done.