Nerve root injection

Facet joint injection

Stellate ganglion block

Lumbar sympathetic block

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Trigger point injections.

Joint injections

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Peripheral nerve stimulation PNS

Radiofrequency ablation

Kyphoplasty

M ILD–minimally invasive lumbar decompression for spinal stenosis

Vertiflex procedure

Epidural Steroid Injection (ESI)

What is an ESI?

When inflamed spinal nerves cause pain, and epidural steroid injection gives you the relief you need to get back to an active life. To learn if you are a candidate for an epidural steroid injection, schedule an appointment today using the online booking feature or calling the office

An epidural steroid injection relieves the pain caused by inflamed spinal nerves. The injection contains steroids and a local anesthetic.

Your provider inject the medications into the epidural space, the area that surrounds and protect the spinal cord. With the medications into the epidural space, they flowed freely around several nerve roots, reaching several segments of the spine.

The anesthetic quickly with temporary relieved her pains. The steroids take longer to reduce the inflammation. Once the steroids take effect, most people find that they get longer lasting relief. If your first injection is effective, you may receive another injection.

When would I need an ESI?

We recommend epidural steroid injections for patients who have neck, back, leg, or arm pain caused by nerve inflammation. The inflammation is often brought on by spine conditions like:

Disc herniation
Facet joint arthritis
Bulging disks
Sciatica
Spinal stenosis
Radiculopathy
Degenerative disc disease

In some cases, a neck or back injury causes nerve inflammation that can be effectively treated with an epidural steroid injection.

What are the different ESI approaches?

When inserting the needle the provider uses one of the 3 approaches:

Interlaminar
The interlaminar technique refers to inserting a needle between the vertebra, approaching the epidural space from the backside of your spine.
Transforaminal
Using a transforaminal approach, the provider inserted the needle through the bony opening on the side of the vertebra with nerve roots travel out of the spinal canal.

Caudal
The bottom of your spine connects with a triangular–shaped bone called the sacrum. Below the sacrum, a few vertebra form the tailbone, coccyx. When using the call approach, your provider insertion needle between the tailbone and the sacrum. This root allows the needle to reach the nerve roots in the sacral epidural space.

What happens during an ESI?
Your provider uses fluoroscopy, a type of x-ray that provides images in real-time, to guide the epidural steroid injection. Fluoroscopic imaging allows the provider to see the spine and precisely insert the needle.

After he received a topical anesthetic, the pain provider guided the needle into the epidural space. They first inject dye and watch as it flows through the epidural space. The path of the dye verifies the medication will reach the inflamed nerves. Your provider then injects the medication and removes the needle. You should start feeling some pain relief within a few days, but it takes 7 to 10 days for the steroid to take full effect.

To learn more about the benefits of epidural steroid injections, book appointment online to

day or call the office.

Nerve Root Injections

What are the symptoms of nerve pain?

Nerve pain can feel deep and burning, sharp, and sudden, or somewhere in between. Unlike some other kinds of pain, for example, muscle or tendon pain, nerve pain tends to come with other symptoms, including:

Tingling
Pins-and-needles sensation
Numbness
Decreased sensation
Weakness

If you are suffering from what you think might be nerve pain, schedule your appointment as soon as possible. Untreated nerve pain can become a chronic condition, but you are potentially healed the nerve damage if you take the right steps now.

What causes nerve pain?

Nerve pain has many causes, including:

Nerve entrapment

Nerve entrapment, or a pinched nerve, happens when pressure squeezes the effective nerve. This can happen in many areas of the body, including the risks, elbow, arm, groin, knee, ankle, and foot.

Examples include:

Ilioinguinal nerve

Gentle genitofemoral nerve branches–also growing–genital or pubic tubercle.

Lateral Femoral Cutaneous nerve–upper thigh between sartorius/Tensor Fascia Lata

Common Peroneal nerve–lateral knee/upper fibula

Posterior Tibial nerve–inside ankle, post tarsal tunnel–bottom of the foot pain

Deep Peroneal nerve–top of ankle/anterior tarsal tunnel–top of foot pain/first 2 toes

Superficial Peroneal nerve–anterior lateral ankle pain

Sural nerve–lateral foot pain

All of these may be considered for steroid injections. Most can be considered for peripheral nerve stimulation. Many can be considered for radiofrequency ablation.

Complex Regional Pain Syndrome (CRPS)

CRPS has 2 types and is felt to be due to nerve injury, resulting in the dysfunction of the sympathetic nerves–which are part of the ‘fight or flight’ response.

The pain does not follow the pattern of a peripheral nerve or the pattern of a nerve root. The pain will cover a region of your body, most commonly the distal extremity. There will be autonomic symptoms with edema, stiffness, color changes, swelling or dry skin. The most common hallmarks of CRPS or allodynia and hyperalgesia, which is being extremely sensitive with severe pain with only quotation light touch quotation and quotation light pressure quotation on your skin, respectively.

CRPS Type I, historically called (RSD-reflex sympathetic dystrophy) occurs commonly after extremity injury/fractures or surgeries for such persistent problems. It is felt this is due to undetectable injuries at the end of the nerve fibers.

CRPS Type II historically called (Causalgia), commonly occurs with peripheral nerve or plexus injuries. Thus, with type II there is a known nerve injury, yet the pain pattern does not follow the nerve pattern. What is the best treatment for nerve pain?

Nerve pain is an extremely very bad condition and individual, so treatment is very as well.

Sympathetic blocks

Sympathetic blocks are often a suitable treatment option to help provide lasting relief.

Peripheral nerve stimulation

Peripheral nerve stimulation may be a good option for some nerve entrapment and neuroma cases.

Spinal cord stimulator SCS

An implant SCS or dorsal root ganglion DRG stimulator can be a good treatment if the chronic neuroma leads to CRPS type II. Similarly, you might need SCS or DRG if you have CRPS type I arising from chronic neuropathy.

Find relief from neuropathy pain by reaching out today by phone or through online booking now.

Facet joint injection

There are 2 facet joints (1 on each side) between every vertebra. Each vertebra is like a tripod with the front of the vertebral resting on the disc in the back of the vertebra resting on the 2 facets. The facet joints can develop arthritis like any other joint in her

body. Arthritis can occur from trauma, such as with whiplash injury causing cervical facet arthritis. However, most often facet arthritis is seen in the lower lumbar segments, which bears most of the weight. Injection of the facets require use of x-ray. The injectate is again a local anesthetic/steroid combination. As with most steroid injections, if the initial injection is helpful, he may receive more injections.

Stellate ganglion block

A stellate ganglion block is done most often for people with RSD, also called CRPS of the arms. RSD may result from an impaired sympathetic nervous system (the fight or flight part of the nervous system). Typically, RSD occurs after an injury, fracture, or surgery to the arm resulting in a very sensitive upper extremity with vascular changes such as edema and/or color changes and often decreases the range of motion. The stellate ganglion lives in front of the lower cervical spine on each side of your voice box. Blocking the ganglia interrupts the sympathetic nervous system to 'reset' the sympathetic nervous system. With a sympathetic block, you should not experience numbness or weakness, however, you should feel a warmth in your extremity. Asymptomatic block allows less pain and better movement of the extremity.

Lumbar sympathetic block

Lumbar sympathetic blocks are done for people with RSD (Reflex Sympathetic Dystrophy), also called CRPS (Complex Regional Pain Syndrome) of the legs. RSD may result from impaired sympathetic nervous system (the fight or flight part of the nervous system). Typically, RSD occurs after an injury, fracture or surgery to the leg resulting in a very sensitive lower extremity with vascular changes such as edema and/or color changes and often decreased range of motion. Lumbar sympathetic ganglia live in front of the L2, L3, and L4 vertebra. Blocking the ganglia interrupts sympathetic nervous system in an attempt to ‘reset’ the sympathetic nervous system. With a sympathetic block, you should not experience numbness or weakness, however, you should feel a warmth in the extremity. A sympathetic block allows less pain and better movement of the extremity.

Celiac Plexus Block

The celiac plexus is a series of ganglia at the top of your lumbar spine. We inject a celiac plexus block to treat pancreatic cancer upper abdominal pain. This group of ganglier serves many parts of your body, including the:

Lower esophagus
Stomach
Small intestines
Most of the large intestine
Liver
Pancreas
Spleen
Kidneys

Chronic or severe pain originating in any of these organs can be improved with a celiac plexus block.

We performed a diagnostic block using an anesthetic. If that injection effectively reduces your pain, they recommend a neurolytic block using alcohol. An alcohol injection damages the nerves and provides long-lasting pain relief.

Joint Injections

Corticosteroid injections are used to treat conditions such as bursitis, tendinitis, and arthritis. Intra-articular or joint steroid injections provide prompt and effective reduction in local inflammation. Steroid injections are often given into the joint cavity. Common examples are the shoulder, hip, knee, AC, SI(Sacro-Iliac) joints. Injections into the bursa are used to reduce pain and inflammation of the bursa (which is a close fluid-filled sac that functions to provide a gliding surface to reduce friction between tissues of the body). This injection does not go into the joint cavity itself. Examples are subacromial bursa (Shoulder). Trochanteric bursa (Hip), ischial tuberosity bursa (Buttocks), and the has anserine bursa (Knee). Tendon injections are commonly done for tendinitis or tendinopathy problems to decrease the pain and inflammation. Common examples are tennis elbow and golfer's elbow, rotator cuff, runner's knee, jumper's knee, and others. All of the above injections are done with ultrasound guidance, along with allowing us to see the intended structure.

Trigger Point Injections

Trigger point injections are done for people with myofascial pain syndrome. When your muscles are chronically sensitive to touch and painful with movement, you may have inflamed areas of her muscles or trigger points. Injecting the muscles with a local anesthetic/steroid may reduce the inflammation and allow better range of motion. Typically, stretching and exercise, especially with physical therapy, will assist you with

this process. Also, may require electrical stimulation with a TENS (transcutaneous electrical nerve stimulation) unit.

Sacroiliac joint treatment

What is the sacroiliac joint?

The sacroiliac (SI) joints connect your left and right hip bones to your sacrum, a triangular–shaped bone at the base of your spine. Though most joints in your body enables movement, the sacroiliac joints have a different function. Your SI joints are supported by strong ligaments that limit movement. These joints are designed to provide stability rather than mobility. When you walk, run, or jump, the SI joints absorb the shock and distribute the force between upper and lower body.

What causes sacroiliac joint pain?

SI joint pain happens because of sacroiliitis or sacroiliac joint dysfunction. Sacroiliitis refers to joint inflammation. Sacroiliac joint dysfunction develops when the joint moves too much. Though not as common, dysfunction can also happen when a small amount of normal movement is restricted.

Both conditions can be caused by:

Arthritis
Sports injuries
Ligament sprains
Traumatic injuries
Scoliosis
Prior lumbar fusion surgeries
Prolonged lifting or bending
Repetitive, high impact activities like jogging
Women often have SI joint pain when they are pregnant because of ligaments naturally relax to prepare for the baby's delivery.

What symptoms suggest that I need sacroiliac treatments?

Problems in the SI joints can cause pain in your lower back and hip. You might also have groin and pelvic pain or pain that extends into your legs.

Some people develop leg instability, changes in the gait (the way they walk present), or pain when going from sitting to standing. You could also feel pain when you sit or lie on the affected side.

What type of sacroiliac treatment might I receive?

Sacroiliac joint pain is initially treated with NSAIDs, physical therapy, and chiropractic care. When these treatments fail, the team can help with advanced interventional treatments and regenerative medicine.

The team has expertise to diagnose SI problems by listing listening to your symptoms, completing a physical exam, and reviewing your previous x-rays. They then developed a customized treatment that can include 1 or more of the following:

Steroid injections
Radiofrequency ablation
Prolotherapy
Platelet rich plasma (PRP) injections
Stem cell injections

The team uses prolotherapy to trigger healing weak ligaments. You could be a candidate for PRP and stem cell therapy if you have SI joint arthritis. If you still have pain after one of these treatments, your provider might then recommend a minimally invasive procedure that fuses the bones.

Radiofrequency ablation

What is radiofrequency ablation?

Radiofrequency ablation (RFA) utilizes electrical energy to disperse heat or create a lesion on the nerve that is placed next to it. This will cause denaturization of the protein within the nerve inhibiting the function of the pain nerve. This will prevent the nerve from sending pain signals to the spinal cord and brain. This will provide more long-term relief than when using some steroids. Some patients will never need another procedure and for others RFA will be repeated 1 to 3 years later.

What type of pain is radiofrequency ablation for?

Neck, mid back, and low back pain

Most commonly done on the joints of your spine called the facet joints. Thus, we can help patients with neck, mid back, and low back pain but denervating the medial branch nerves at the cervical, thoracic, or lumbar facet levels. We can also do innervate your sacroiliac joints. This is done by blocking the sacral lateral branch nerves.

Intracept procedure

RFA of the Basi-vertebral nerve is very new technology for people with low back pain due to vertebral genic pain. This pain is due to Modic, or vertebral genic degenerative endplate/disc changes noted on MRI. This is becoming a more commonly recognized cause of low back pain.

Knee pain

Knee pain is another common joint problem where we can help by blocking the genicular nerves going to the knee joint. This is done for people with osteoarthritis, but also commonly done for people post total knee joint replacement or after other knee surgeries.

Other joints that we can consider denervating other shoulder, hip, and wrist joints.

Is radiofrequency ablation painful?

This procedure typically does not hurt more than any other pain procedure we do, as we numb the nerve prior to doing the lesion.

Of course, we numb the skin prior to placing the thin needle to the nerve. This is done with x-ray or ultrasound guidance to ensure we are in the right place.

A microelectrode is then placed through the needle. Prior to doing the lesion, we typically do motor stimulation to again ensure the needle tip correctly placed. We then placed the local anesthetic on the nerve prior to doing the lesion. We also bathe the nerves with steroid to help prevent post RFA neuritis pain. A radiofrequency current is then sent down the electro to denervate the nerve.

What can I expect after the radiofrequency ablation?

You will typically see immediate benefit. However, the final result can take 10 to 14 days as the denaturization of the protein within the nerve does take some time.

You may have some mild tenderness post procedure. Tylenol or ice (only 20 minutes at a time) may help. Some may require repeat RFA 1 to 3 years later. The soonest we can do it again is in 6 months.

To find out if you are a candidate for radiofrequency ablation, book an appointment online today or call the office.

Regenerative medicine

What is regenerative medicine?

Regenerative medicine covers several treatments, from bone marrow transplant and organ replacements to treatments used and pain medicine. We have 3 kinds of regenerative medicine we offer–stem cell therapy, PRP injection, and prolotherapy.

What type of regenerative medicine options are available?

We offer several regenerative medicine treatments to help find the most suitable method to offer the most effective results. Regenerative medicine options are:

Stem cell therapy
Platelet rich plasma (PRP)
Prolotherapy
What type of regenerative medicine is prolotherapy?

Prolotherapy is an injection of glucose (sugar), which triggers healing by irritating the tissues. Like stem cell and PRP treatments, the provider uses ultrasound imaging when injecting the sugar solution. The real-time imaging ensures that her provider places a regenerative treatment precisely at the site of the damaged tissues.

Prolotherapy is frequently used to treat torn ligaments. It is effective in treating many problems. These include sacroiliac joint strains, ankle sprains, shinsplints, whiplash injuries, and costochondritis, a condition which the cartilage connecting rib to the breastbone becomes inflamed.

Spinal cord stimulation

What is a spinal cord stimulator?

SCS is a similar technology to a pacemaker with the result being an electrode placed in the epidural space, which is connected to the generator placed under your skin (typically upper buttocks/hip/back). This technology is usually reserved for patients with refractory neuropathic extremity pain and not responsive to other conservative treatments. There has been a recent advancing technology using higher frequencies and doing "burst" stimulation. With the older/classic/tonic waveforms people would feel a "tingle" sensation in the area of their pain.

Is using a spinal cord stimulator a good option for me?

For failed back surgery patients experiencing low back and leg pain, you may experience relief from leg pain but sometimes not from back pain. One benefit of the SCS device is that you no longer need to turn it off while driving, as is the case with other options.

SCS is most commonly done for low back and leg pain, but also for CRPS/RSD, phantom pain and sometimes other neuropathic pain problems.

What other options may be available?

Dorsal Root Ganglion (DRG) stimulation is a new type of SCS. This type of stimulation is especially helpful for specific body parts, postsurgical pain and for the diagnosis of CRPS. In this procedure with, the electrodes were placed over the nerve root instead of over the spinal cord as with the SCS. Only advanced trained physicians all for this technology.

To learn more about which treatment options may be most suitable for you call or request a visit online today.

Peripheral nerve stimulation

What is peripheral nerve stimulation?

PNS is exciting new technology similar to SCS (spinal cord stimulation). Instead of electrodes being placed in the spine, the electrode is placed next to a peripheral nerve.

What does peripheral nerve stimulation involve?

Prior to the trial and the implant will first do a diagnostic nerve block with numbing medicine only. If this takes away your pain the day of the injection, then we go ahead to the neck step. The neck step is similar to again SCS where we do a trial.

Again, this is what people really like about PNS (and SCS) is you can first. Trial prior to implant. With a trial we placed an electrode next to the peripheral nerve with image guidance. The end of the lead is not tunneled under the skin during the trial.

What does the recovery involve?

You go home for 4 to 10 days doing your normal activities to see if this helps your pain. If indeed you have benefit, then you are scheduled for the implant. With the implant the lead is tunnel along with the generator that is built into the lead. One of the drawbacks with PNS is that it will be required to wear a garment that contains the external transmitter over the lead. Typically, only need to wear the garment for 2 or 4 hours at a time once or twice a day.

MILD–Minimally Invasive Lumbar Decompression for Spinal Stenosis

MILD is a procedure done for people with LSS (lumbar spinal stenosis) due to LFH (ligamentum flavum hypertrophy) who have neurogenic claudication.

LSS is a narrowing of the spinal canal in the lumbar region. The narrowing/stenosis is caused by a number of degenerative changes that occur as we age such as degenerative/bulging disks, excess bone formation, and thickening/hypertrophy of a ligament that runs from the inside of your spinal canal (called the ligamentum flavum).

LFH is thus simply the enlargement of this ligament contributing to the LSS. With the canal being too narrowed we can have compression and irritation of the nerve roots leading to your symptoms.

Neurogenic claudication is a medical term for your symptoms of pain, numbness, or tingling sensation in your low back, buttocks, and legs. Often times it may simply be your back or legs just feel tired or weak when you are standing or walking. The symptoms are typically relieved with sitting or bending forward such as leaning against a grocery cart.

MILD procedure allows us to remove portions of the thickened ligament and some bone for a very tiny incision. You do not even need stitches! YES, no stitches!! Also, no general anesthesia and no hardware placed. We simply used numbing medicine and sedation. This is an outpatient procedure performed in less than an hour.

Studies have shown significant increases in standing time and walking distances and also less pain. To learn more about the MILD procedure to allow you to walk further, stand longer, and with less pain go to www.mildprocedure.com or contact our office.

The Vertiflex Procedure

Treatment and pain relief for lumbar spinal stenosis

Vertiflex treatment offers an innovative way to treat lumbar spinal stenosis. It is a minimally invasive procedure that uses a Vertiflex implant to restore space between the vertebra and left pressure off compressed nerves that cause pain.

This minimally invasive approach does not require the removal of bone or tissue, resulting in minimized blood loss and reduced risk of complications. A small tube is inserted through a small incision in your back. Through this tube, the Vertiflex device–a small spacer- is carefully placed between the vertebrae where the narrowing has

occurred. The spacer gently opens the space within your spinal canal, relieving the pressure on your nerves, which is often the cause of your pain.

Considered a "microsurgery ", the Vertiflex procedure usually takes 15 to 45 minutes. Once implanted, the device has arms that open around the spinous processes, preventing the implant from becoming dislodged.

Immediately following the procedure, you will spend a short time under observation.

In most cases, patients experience significant pain relief almost immediately after the procedure. However, everyone body responds differently, and it may take a few days or weeks for you to feel the full benefits.

There may be minimal soreness at the incision site, and is recommended to avoid strenuous activity for roughly 6 weeks after the Vertiflex placement.