Interventional Pain Management Procedures for Back and Neck Pain

If you have experienced pain in your back, neck, legs or arms that has not been relieved with conservative therapies,interventional pain management procedures may help. These procedures are minimally invasive and do not involve surgery on your spine. This guide will help you understand when to consider these procedures, how each procedure works, and the potential benefits.

Neurosurgery One

neurosurgeryone.com
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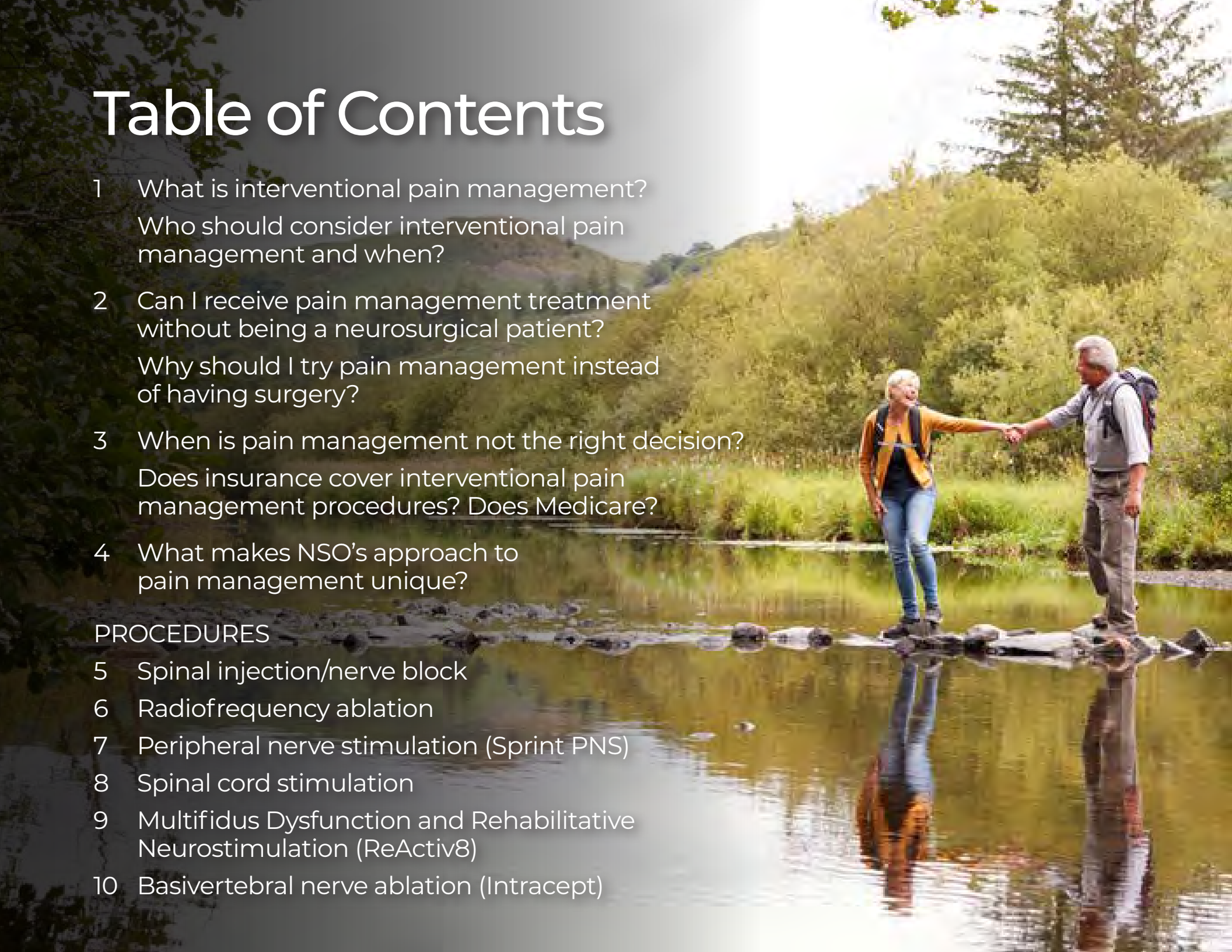
Table of Contents



What is interventional pain management?

Interventional pain management is a medical subspecialty devoted to the treatment of chronic and acute pain. It involves the use of a variety of minimally invasive procedures to diagnose and treat various types of pain. At Neurosurgery One, our interventional pain management physicians are board-certified physiatrists who specialize in the treatment of back, neck, and joint pain.

Who should consider interventional pain management and when?

The majority of people with back or neck pain will find relief with time and/or conservative treatment. Every person with back or neck pain who is not experiencing emergency symptoms should follow a well-researched path of care that begins with home care, then conservative treatments including physical therapy.

Patients who have seen a medical provider for spine pain and tried medically managed conservative treatments such as physical therapy also may want to consider an interventional pain management procedure to delay or avoid spine surgery, if possible.

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Can I receive pain management treatment without being a neurosurgical patient?

Yes. Neurosurgery One has physiatry teams on staff who are dedicated to pain management. Our physiatrists and neurosurgeons work closely to devise the best treatment plans for our patients. You can be referred to a pain management specialist from your primary care physician, physical therapist, chiropractor or other provider. You also can make an appointment directly, if your insurance allows. If you have questions about whether you should make an appointment with a Neurosurgery One physiatrist or neurosurgeon, call our main number at 720-638-7500 and ask to speak with one of our spine clinic nurse practitioners who can help you determine the best next step for you.

Why should I try pain management instead of having surgery?

Interventional pain management can be very effective for the treatment of back, neck, and joint pain. Many patients find their pain is eliminated or greatly reduced after undergoing pain management procedures. And often, that relief is permanent or long-lasting. When compared with surgery, interventional pain management techniques are less invasive, have shorter recovery times, and come with lower risks of side effects such as bleeding and infection. Pain management procedures also can provide relief from your pain to allow you to exercise and make other lifestyle changes that can help improve your underlying condition.

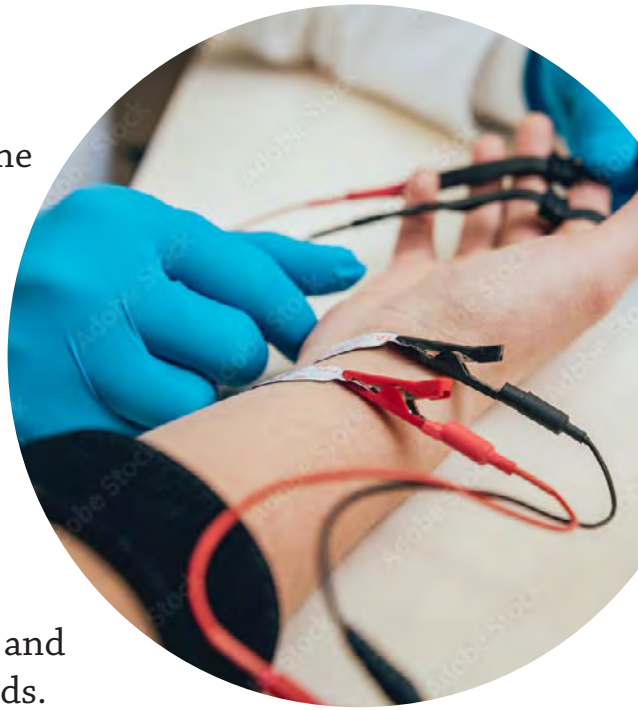
When is pain management *not* the right decision?

Interventional pain management isn't for everyone. There are times when our physiatrists refer patients for surgical evaluation without trying pain management procedures first. Patients exhibiting signs of neurologic deficits will be referred to a neurosurgeon for evaluation. Neurologic deficits include persistent or worsening weakness in an extremity, and bladder or bowel changes. These symptoms may be indicative of significant nerve damage or spinal cord compression and should be evaluated by a neurosurgeon right away to prevent further loss of function.

Does Medicare and private insurance cover interventional pain management procedures?

Yes, Medicare and most insurance plans cover interventional pain management procedures. The office staff at Neurosurgery One will obtain prior authorization from your plan provider and can estimate your out-of-pocket costs upon request. To see a list of insurance plans accepted by Neurosurgery One, please visit us online at **neurosurgeryone.com/insurance.**

What makes Neurosurgery One's approach to pain management unique?



We are specialists in finding the root of your pain and performing interventional procedures to help reduce or eliminate the pain so that you can return to doing the things you love. We look deeper to determine the causes of your condition and help you understand lifestyle changes or other treatments that could improve your health long term. Here are a few of the many ways our approach to pain management is unique:

- Our physiatrists are specially trained in Electromyography (EMG), which helps us determine if there is damage caused by a pinched nerve in the spine. With this added information, our physicians can then determine the best course of action for your spine or back pain.
- We offer a wide variety of minimally invasive procedures to relieve pain, including spinal injections, neurostimulation therapy, nerve blocks, ablation, and spinal cord stimulation. We can customize treatment to your unique pain needs.
- We provide sedation for injections to make the process more comfortable.
- We help you understand the things you can do to decrease inflammation naturally, which helps relieve chronic pain.
- Our pain management team is part of a comprehensive spine center and works alongside spine neurosurgeons, offering a continuum of care should your pain require neurological assessment or surgical intervention.

On the following pages, we provide an overview of the interventional pain management techniques available at Neurosurgery One.

PROCEDURE:

Spinal injection/nerve block

How it works: At Neurosurgery One, we offer our patients sedation before a spinal injection to make the procedure more comfortable. Once the patient is sedated, we insert a needle and use X-ray guidance to locate the exact source of the patient's pain, which was identified at an earlier visit. Local anesthetic and a steroid or other medication is injected to provide pain relief.

Where it's done: Outpatient surgery center

How long it takes: A few minutes for the injection, but patients must wait until the sedation is worn off before leaving

When you'll feel relief: Within a few hours or days

When you can return to activity: Day after procedure

Conditions Used For:

- Facet joint pain, sacroiliac (SI) joint pain, osteoarthritis, spinal stenosis, bulging disc, herniated disc, sciatica, failed back surgery syndrome

Patient Criteria:

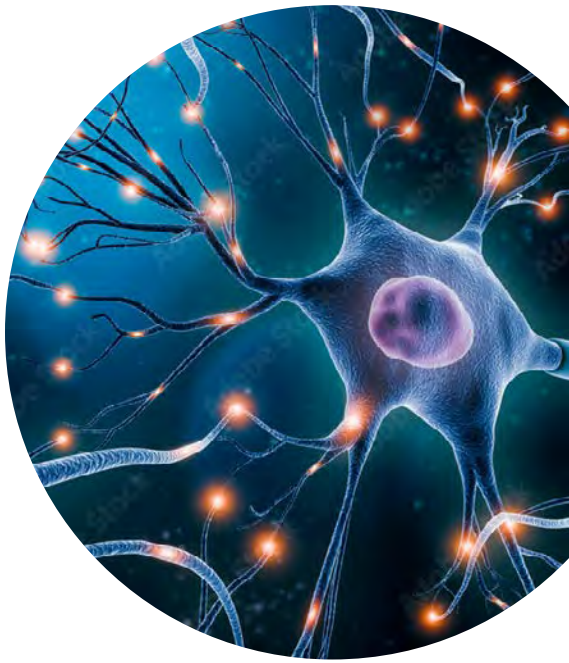
- Conservative or surgical treatment has not relieved pain
- Patient has participated in at least 6 weeks of physical therapy

Benefits:

- Non-surgical pain relief
- Reduced inflammation
- Increased range of motion
- Delay or eliminate need for surgery
- Can be repeated

PROCEDURE:

Radiofrequency ablation



How it works: Once the patient is sedated, the physician uses X-ray guidance to insert a needle into the affected nerve. The physician then heats the nerve ending to destroy the portion of the nerve that transmits pain signals to the brain.

Where it's done: Outpatient surgery center

How long it takes: 30–40 minutes; patient will spend 2–3 hours total at surgery center

When you'll feel relief: You will likely experience increased pain for 1–2 weeks and then diminished pain thereafter.

When you can return to activity: Day after procedure

Conditions Used For:	Patient Criteria:	Benefits:
› Facet joint pain, sacroiliac (SI) joint pain	› Pain in the spine that's worse with standing, extension, or rotation, and relieved by sitting	› Provides 6–12 months of pain relief and in some cases longer › Can be repeated

PROCEDURE:

Peripheral nerve stimulation (Sprint PNS)

How it works: Under image guidance, a thin wire is placed directly next to the affected nerve through a needle. The other end of the wire is connected to a small generator that is adhered to the outside of the body. The device delivers gentle electrical pulses to the nerve to interrupt pain signals from being sent to the brain. After the nerve is conditioned for 60 days, the device and wire are removed.

Where it's done: Outpatient surgery center

How long it takes: 20-30 minutes

When you'll feel relief: Once the device is activated, some patients experience pain relief immediately

When you can return to activity: Same day

Conditions Used For:	Patient Criteria:	Benefits:
› Chronic spine pain (neck, mid back, and low back) or nerve pain in the arm or leg	› Conservative treatment has failed OR › Desire to avoid pain medication or surgery	› Temporary treatment that provides long-lasting pain relief for up to two years or longer › Removable

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PROCEDURE:

Spinal cord stimulation

How it works: A stimulator, a device similar to a pacemaker, is implanted under the skin and connected to leads that deliver mild electrical impulses to the sensory pain fibers of the spinal cord. The impulses mask the pain signals being sent to the brain. The device is programmed by the physician, and the patient uses a remote to control the stimulation as needed. To ensure this treatment will work before surgery to implant the device, the patient will be equipped with an external stimulator for a trial period.

Where it's done: Outpatient surgery center

How long it takes: 1–2 hours; patient goes home the same day

When you'll feel relief: Once the device is programmed, you can begin using it immediately following surgery.

When you can return to activity: Rest for two weeks after surgery then light activity for four weeks

Conditions Used For:	Patient Criteria:	Benefits:
› Back or neck pain, failed back surgery syndrome, post-surgical pain, spinal cord injury, diabetic neuropathy, complex regional pain syndrome	› Conservative or surgical treatment has failed › Trial stimulation provides relief	› Reduces pain 50%–75% in nearly all patients who pass the trial stimulation › Long-lasting pain relief › Removable

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PROCEDURE:

Multifidus Dysfunction and Rehabilitative Neurostimulation (ReActiv8)

How it works: ReActiv8 is an implantable neurostimulator, similar a pacemaker, that forces the multifidus muscle which supports the low back to go back to work. Two very thin electrical leads are placed near the nerves that control the multifidus muscle, and the leads are connected to the implantable pulse generator. Once implanted, patients use a wireless remote to start daily ReActiv8 therapy sessions, which generate painless electrical pulses to the multifidus muscle throughout the two 30-minute sessions.

Where it's done: Outpatient surgery center

How long it takes: 1–2 hours; patient goes home the same day

When you'll feel relief: Once the device is programmed and receiving therapy, within a few months.

When you can return to activity: Rest for two weeks after surgery then light activity for four weeks

Conditions Used For:	Patient Criteria:	Benefits:
› Mechanical chronic low back pain; pain primarily in the low back that is greater than pain in the leg	› Chronic mechanical low back pain for at least half of the last year › Conservative treatment has failed › No prior lumbar spine surgery or clear indications for spine surgery	› Rehabilitation of the underlying muscle dysfunction that can provide long-lasting pain relief and improvements in disability

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PROCEDURE:

Basivertebral nerve ablation (Intracept)

How it works: Two small incisions are made on lower back while patient is sedated, then the neurosurgeon accesses the affected target area and destroys the pain-causing nerve with radiofrequency energy.

Where it's done: Ambulatory surgery center or outpatient surgery in hospital

How long it takes: 1 hour; patient will spend 3-4 hours total at surgery center

When will I feel relief: Most patients will feel immediate pain relief; some may have temporary pain from incision.

When can I return to activity: Day after procedure

Conditions Used For:	Patient Criteria:	Benefits:
› Chronic lower back pain caused by vertebrogenic pain syndrome	› Failed 6 months of conservative treatment › MRI findings of Modic changes	› Relieves pain in 75%-100% of properly selected patients; minimally invasive; does not require hospital stay; long-lasting pain relief

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About Neurosurgery One

Neurosurgery One has cared for patients experiencing spine pain for over three decades, building a well-respected and comprehensive spine clinic. Our physiatrists and neuro-spine surgeons work in teams with advanced practice providers (physician assistants and nurse practitioners) to accurately diagnose and most effectively treat your pain. We offer non-invasive conservative therapies, interventional pain management procedures, and spine surgery.

Why choose Neurosurgery One? At Neurosurgery One, you will have access to:

- A comprehensive spine team that follows the latest proven medical guidelines to most effectively treat your pain
- A team of providers, including physiatrists, spine surgeons and advanced practice providers who work together to create the treatment plan best suited to your condition and lifestyle goals
- A physiatry team board certified in interventional pain management who combines experience with the latest technologies to relieve pain
- A team of neurosurgeons who are specially trained in treating both the nervous and orthopedic systems involved in spine pain

Our Locations

Castle Rock 4350 Limelight Ave., Suite 100 · Castle Rock, CO 80109
Lakewood 11750 W. Second Place, Suite 255 · Lakewood, CO 80228
Littleton 7780 S. Broadway, Suite 350 · Littleton, CO 80122
Lone Tree/Park Meadows 9980 Park Meadows Drive, Suite 101 · Lone Tree, CO 80124
Lone Tree/Yosemite 9695 S Yosemite, Suite 377 · Lone Tree, CO 80124
Parker 9403 Crown Crest Blvd., Suite 200 · Parker, CO 80138

Meet Our Physiatrists

Neurosurgery One is pleased to offer comprehensive spine care, including nonsurgical pain management with our three physiatrists and their teams of physician assistants and nurse practitioners.

Erasmus G. Morfe, DO, FAAPMR, is a board-certified physiatrist with 18 years of experience in interventional pain management. He treats spine pain using nonsurgical techniques and performs electrodiagnostic studies (EMG/NCS).

Jason Peragine, MD, FAAPMR, is board-certified in physical medicine and rehabilitation as well as pain medicine. He performs a wide variety of complex pain management procedures, with extensive experience in cervical spine treatments.

Esther D. Yoon, MD, FAAPMR, is a physiatrist fellowship trained in non-surgical spine and musculoskeletal care including interventional diagnostic and therapeutic procedures, ultrasound guided injections, and electrodiagnostic studies (EMG/NCS).

Meet Our Neurosurgeons

Neurosurgery One is pleased to offer one of the top teams of spine surgeons in the nation.

Zain Allison, MD, specializes in neuro-oncology, craniotomy, vascular surgery, and minimally invasive spine fusion and decompression surgeries.

Wissam Asfahani, MD, FAANS, has 12 years of experience treating brain and spine disorders using surgical and nonsurgical therapies, including minimally invasive spine surgery.

Joshua M. Beckman, MD, FAANS, specializes in minimally invasive spine surgery, including lateral access to the thoracic and lumbar spine and other emerging advanced spine surgery techniques.

Angela M. Bohnen, MD, FAANS, specializes in treatment of primary, skull base, and metastatic brain tumors, as well as surgery for spine disorders and deformities.

John Hudson, MD, PhD, is an expert in neuroendoscopic and other minimally invasive approaches to brain surgery. He also provides treatment for general spinal disorders.

Jason E. McGowan, MD, FAANS, specializes in degenerative spinal disorders, including scoliosis, and performs minimally invasive spine surgery and complex spinal reconstruction procedures.

Lloyd Mobley III, MD, FAANS, specializes in nonsurgical management and minimally invasive surgery for spine disorders, as well as complex surgical procedures for spine and brain conditions.

J. Adair Prall, MD, FAANS, is a national expert on trigeminal neuralgia and also specializes in treating complex tumors, vascular malformations, and spinal disorders.

David VanSickle, MD, PhD, FAANS, is one of the country's preeminent surgeons pioneering the use of Asleep DBS surgery. He specializes in functional neurosurgery and also provides treatment for brain tumors, spinal disorders, and neuromodulation for pain.