Understanding Causes,
Treatment and Prevention

Understanding the spine – an amazing structure of bone, intervertebral discs, nerves and soft tissue – can be difficult. You may have been diagnosed with a herniated disc, but did anyone take the time to explain what a spinal disc is and what your injury means? Use this guide to understand how your spine is constructed and how best to treat your injury.

Advanced Pain Management is a caring organization that is committed to providing patients with innovative pain management services.

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ABOUT APM

Currently, Advanced Pain Management (APM) is one of the largest pain management groups in the United States, offering the broadest array of pain management treatments administered by the nation’s top physicians.

Our expert team of physicians has been trained at the nation’s most prestigious institutions. We focus on pin-pointing the source of pain and finding the right treatment option for each individual patient. At APM, we focus exclusively on pain management and our multidisciplinary team of physicians has experience in the diagnosis and treatment of pain to help you restore your quality of life. Our priority is exceptional patient care and we mean it when we say, we know your pain.

Pain affects more Americans than diabetes, heart disease and cancer combined.¹

Workers lost an average of 4.6 hours per week of productive time due to a pain condition.²

An estimated 20% of American adults (42 million people) report that pain or physical discomfort disrupts their sleep a few nights a week or more.³

The average adult spine consists of 33 bones or vertebra, divided into 5 regions: the cervical (C1-C7), the thoracic (T1-T12), the lumbar (L1-L5), the sacrum with fused vertebra (S1-S5) and the coccyx or tailbone. About 10% of the population has a 6th lumbar vertebrae and only four fused sacral vertebra.

**THORACIC SPINE**
The thoracic section of the spine is located at the chest level, between the cervical and lumbar vertebrae, known as T1 to T12, these vertebrae also serve as attachments for the rib cage.

**SACRUM**
The sacrum section of the spine is located near the base of the spine. The sacrum consists of five fused vertebrae known as levels S1 to S5. It does not have discs separating the bones. The pelvis is connected to the spinal column at the sacrum section.

**CERVICAL SPINE**
The cervical or neck section of the spine consists of seven vertebrae known as C1 to C7. The top cervical vertebra is connected to the base of the skull.

**LUMBAR SPINE**
The lumbar section of the spine is located between the thoracic vertebra and the sacrum. The five lumbar vertebrae, known as levels L1 to L5, are the main weight bearing section of the spinal column.

**COCCYX**
The coccyx, also called the tailbone, is at the base of the spinal column. It has four small vertebrae that are fused together.
When you look at it in detail, the human spine is an amazing structure. You can think of it figuratively as scaffolding that holds together the human body and more literally, as a complex structure of bone, intervertebral discs, nerves and soft tissue. As a result, it is understandable that protecting and maintaining a healthy spine is important to your overall wellbeing.

– Jeremy Scarlett, MD, APM Sheboygan
UNDERSTANDING THE SPINAL STRUCTURE

Before we can understand how to diagnose, treat and protect the spine, let’s break down the spinal structure to help you better understand how it is built.

INTERVERTEBRAL DISCS
Intervertebral or spinal discs, are flat, round cushioning pads that sit between each vertebra or back bone. You can think of discs as the shock absorbers of the spine. The spinal discs are structured much like a jelly donut, with a tough outer ring called the annulus fibrosis, and a soft central region called the nucleus pulposus.

SOFT TISSUE
The soft tissue in the spinal region include tendons, which connect muscles to bone, and ligaments, which connect bones together and add strength to joints.

NERVES
The spinal cord is a column of nerve fibers that are responsible for sending and receiving messages from the brain to the rest of the body. Nerve roots extend between the vertebrae on each side of the spine. These nerve roots are used to transmit information regarding what is being felt and what is being directed to move. The nerves that branch off the cervical spine control the upper torso and arms. The nerves of the thoracic spine control the central torso and abdomen and the nerves of the lumbar spine control the legs, bowel and bladder.
UNDERSTANDING DISC INJURY

WHAT IS A HERNIATED DISC?
Herniated discs are caused when the outer ring of a disc ruptures and the soft center of the disc begins to push through and release chemicals that are irritating to the surrounding nerve tissue. A herniated disc can result in localized pain nearly anywhere in the body and can also cause not only pain, but numbness or weakness in an arm or leg. All of these phenomena result from the disc herniation pushing on a nerve root which sends pain signals down the nerve.

WHAT IS A BULGING DISC?
A bulging disc occurs when the outer ring of a spinal disc extends beyond the space it normally occupies, like a tire that is starting to flatten, bulging to the side. Bulging discs are common as we age and they are usually asymptomatic, but may cause pain and should be taken seriously in someone with corresponding pain.

WHAT ARE THE SYMPTOMS OF A HERNIATED/BULGING DISC?

ARM OR LEG PAIN
The location of a disc herniation will dictate where pain may be felt. A disc herniation in the neck will typically cause pain to radiate down the arm or into the shoulder. A disc herniation in the lower back will result in more intense pain radiating to your buttocks, thigh, calf or even in the foot and toes.

BURNING, NUMBNESS OR TINGLING
Individuals with a herniated disc will often describe feelings of burning, numbness or tingling in the region of the body served by the affected nerves.

WEAKNESS
A herniated disc can often cause the affected nerves to malfunction. This may result in muscle weakness. Individuals with a herniated disc may find that they are unable to lift heavy items, continually drop items or sporadically stumble.

INCREASED PAIN WITH PRESSURE
In many instances, pain from a herniated disc increases with sneezing, coughing, laughing or any movement that increases pressure on the nerve.
WHAT CAUSES A HERNIATED DISC?

Herniated discs are often the result of normal, age-related wear and tear. With age, spinal discs will lose some flexibility, which makes them more prone to tearing and rupturing. Unfortunately, pinpointing the exact cause of a herniated disc is difficult. In many instances, repetitive movements and heavy lifting can be contributing factors, in addition, twisting or turning while lifting can also lead to disc herniation. In rare cases, a fall, injury or blow to the back can cause a herniated disc. Other factors such as tobacco abuse which deprives discs of critical oxygen or genetically inherited weak glycoprotein structures within the disc may lead to early onset disc herniation.

RISK FACTORS FOR HERNIATED DISCS

When it comes to risk factors for herniated discs, there are some that you can control and others that you cannot.

**Age:** Individuals who are between the ages of 35 and 45 are at risk for a herniated disc. Age-related degeneration of spinal discs is the major contributing factor to increased risk.

**Weight:** If you are overweight, your bones, joints and spinal discs are under extra stress. This is especially true of the low back region.

**Medical History:** If you have a history of back pain or injury, back surgery or previous herniated discs, you are more at risk for a herniated disc.

**Sex:** Studies have shown that men are more likely to experience herniated discs than women.

**Occupation:** Individuals with physically demanding jobs have a greater risk of developing back pain and injury, including herniated discs. In addition, if your occupation requires repetitive lifting, bending, twisting, pushing or pulling, you may be at an increased risk of developing a herniated disc.

**Tobacco Abuse:** In case you needed another reason to stop smoking, studies have proven tobacco abuse to be causative in depriving intervertebral discs of much needed oxygen and causing early onset disc herniation.
Many cases of herniated discs heal over time on their own. Within a month or two, displaced discs or herniated portions of the disc often return to normal and pain symptoms subside. In rare cases, it can take up to one year for the disc herniation to heal.

The good news is that while you wait for your body to heal, the pain associated with a herniated disc can be treated separately. Your doctor will likely recommend over-the-counter pain medications for mild pain, along with ice and rest. Since a disc herniation often compresses a nerve, addressing the pain from the nerve root can provide significant pain reduction. Minimally invasive pain treatments, like an epidural steroid injection, can reduce your pain for many weeks or months and allow you to undergo physical therapy and continue with work or recreational activity as tolerated.

**WHY CHOOSE MEDICATIONS TO HELP WITH PAIN?**

- Mild localized pain
- Mild nerve pain
- Mild muscle spasm or shooting pain

Medications, like ibuprofen or acetaminophen can help improve mild pain symptoms associated with a herniated disc. Talk to your doctor if you have any questions about over-the-counter medications.

**WHY CHOOSE INJECTIONS TO HELP WITH PAIN?**

- Reduce pain quickly
- Allow you to participate in physical therapy and rehabilitation programs
- Allow you to return to work and leisure activities
- No pill will allow you several weeks or months of relief that will equal the duration of possible relief with an injection.

Your doctor may recommend an injection at the source of pain to help reduce inflammation and reduce pain. An epidural steroid injection administered at the nerve root can reduce or even eliminate pain and radicular pain (shooting pain) symptoms. Oral anti-inflammatories are taken by mouth and distributed and diluted throughout the body and only allow a weak dose of medication to reach the point of inflammation and may cause an increased risk for stomach ulcers, kidney or even liver damage.

The risk of these side effects is minimal with a few pills, but the risk significantly increases with the increased dosing and duration that is required for a herniated disc over time. Providing an epidural steroid injection bypasses the stomach and kidneys and provides the anti-inflammatory...
effect of nearly a thousand ibuprofen tablets directly to the source of the problem. The ability to reduce or eliminate pain from a herniated disc will allow you to continue work and leisure activities while your disc heals and potentially avoid surgery with its associated complications and time away from work and pleasure.

**WHY CHOOSE A BRACE TO HELP WITH PAIN?**

- Limit motion to help disc heal

Your doctor may recommend the use of a short-term brace to help you limit range of motion and increase the peripheral strength of your lumbar spine while your injury heals. A brace can help provide both support and structure to your spine and can help stop you from performing painful twists or turns.

**WHY CHOOSE PHYSICAL THERAPY TO HELP WITH PAIN?**

- Improve rehabilitation efforts
- Improve strength and stability
- Injury prevention

Your doctor may recommend physical therapy to help you manage the pain associated with a herniated disc. A physical therapist will recommend movements and exercises that can help you minimize your pain and help you rehabilitate and strengthen your muscles to help prevent future injuries. Increasing strength of the paraspinal muscles will decrease the amount of force placed on the intervertebral discs and help them heal from injury.

**WHY CHOOSE A CHIROPRACTOR TO HELP WITH PAIN?**

- Correct vertebra positioning to reduce nerve pressure
- Initiate therapy and rehabilitation programs

If the position of your vertebra is causing your pain, a chiropractor could help provide spinal adjustment to alleviate pain. Your doctor can help you determine if chiropractic care is right for you.

If you have questions about your spinal injury or the treatments available to you, please contact Advanced Pain Management today. You can find more information about our pain management experts online at APMhealth.com or call us directly at 888-901-PAIN (7246).
To provide relief for a herniated disc, a multidisciplinary treatment approach could involve:

- Expertise and experience.
- The ability to prescribe pain relieving medications, physical therapy, and chiropractic care.
- The expertise to provide a steroid injection to decrease pain from a herniated disc and knock out the sensation to the painful facet and sacroiliac joints.
- Multidisciplinary approach and the connections to refer to excellent spinal surgeons if less invasive and debilitating treatments prove to be ineffective.

If a herniated disc is causing your pain, there are many treatment options available to you. However, only a pain management physician can provide the majority of the available treatment options for you over the course of a few appointments – we call this a multidisciplinary approach. A multidisciplinary approach to patient care means that you are offered a number of different treatment options that work together to provide you with the maximum benefit.

Why Choose a Pain Management Physician?

- Appropriate diagnosis and education to help you understand what is causing your painful symptoms
- Prescription medications and guidance on proper medication use
- Minimally invasive injections, pin-pointing the source of your pain and reducing localized and shooting, radicular pain
- Bracing options to help prevent further injury and to stabilize the spine
- Recommendations for at-home therapy that can help you minimize pain
- Referrals to physical therapy, chiropractic care or a spine specialist for surgical options

- Jeremy Scarlett, MD
MULTIDISCIPLINARY PRACTICE

Highly trained at esteemed institutions such as Harvard, Cleveland Clinic and Johns Hopkins

Fellowship training in pain management

Board certified physicians from diverse subspecialties

Conditions Treated
- Back and Neck Pain
- Joint Pain
- Herniated Disc
- Sciatica
- Spinal Stenosis
- Work and Sports Injury
- CRPS and more

Available Treatments
- Minimally invasive procedures
- Discogenic procedures
- Implantable therapies
- Medication management
- Psychological services
- Biofeedback
- Alternative therapies
ADVANCED PAIN MANAGEMENT
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