

BACK PAIN GUIDE

Causes, Treatments and Prevention

The path to pain relief starts with understanding your condition and knowing your treatment options.

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

To learn more or to schedule a consult, call (386) 951-6684.



Pain Management Center
Jeffrey A. Kidd, M.D.

ABOUT PAIN MANAGEMENT CENTER

At the Pain Management Center, We work on an individual basis to find the source of your pain and recommend the best treatment options, whether that's minimally invasive procedures, physical therapy, behavioral health care or a combination of these treatments. Our priority is exceptional patient care and we're dedicated to getting you back to the things you love.

INDEX

Anatomy of the spine	3-4
Structure of the spine	5
Types of back pain	6
Causes of back pain	7-8
Diagnosing back pain.....	9
Interventional treatments....	10
About pain management.....	11
Keep your back healthy.....	12
Living with back pain.....	13
Other conditions treated	14



80% of people in the United States will experience back pain at some point in their lives.¹



Serious chronic pain affects more people than diabetes, heart disease, cancer and stroke combined.^{2,3}



Roughly 100 million American adults currently live with a chronic pain condition.³

¹ "Low Back Pain Fact Sheet." National Institute of Neurological Disorders and Stroke, December 2014. http://www.ninds.nih.gov/disorders/backpain/detail_backpain.htm

² Institute of Medicine of the National Academies. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. Washington, D.C.: National Academies Press, 2011.

³ "AAPM Facts and Figures on Pain." American Academy of Pain Medicine. http://www.painmed.org/patientcenter/facts_on_pain.aspx

KNOW YOUR SPINE

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

THORACIC SPINE

The thoracic section of the spine is located at 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 connects to the spinal column at the sacrum level.

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 vertebrae and the sacrum. The five lumbar vertebrae, known as 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.

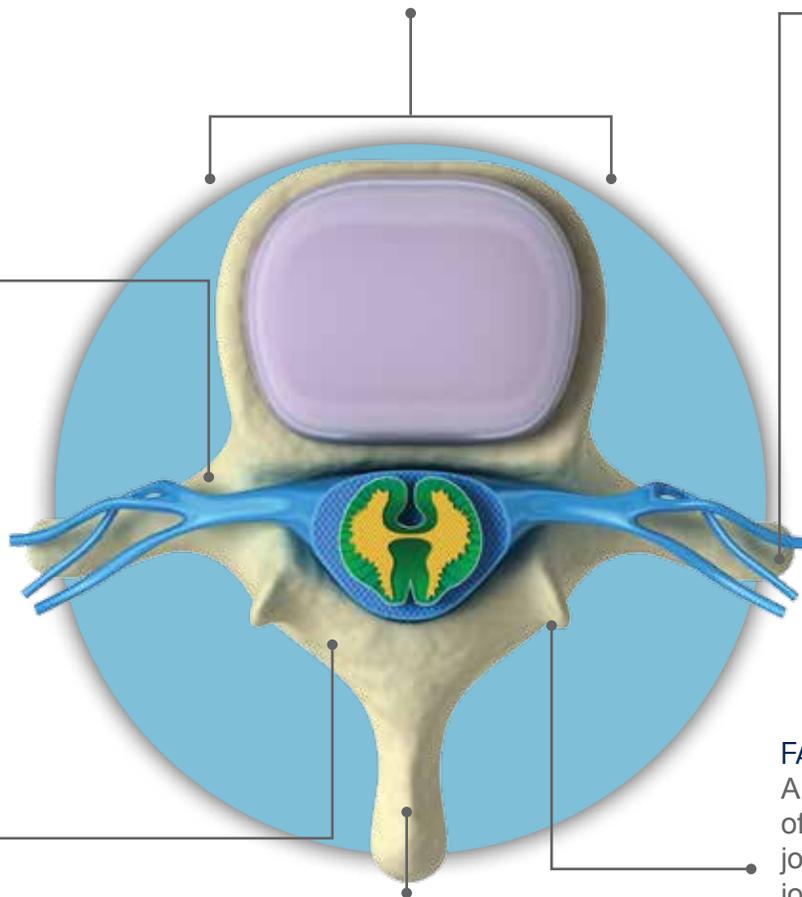


ANATOMY OF THE SPINE

VERTEBRAL BODY
The cylinder-shaped vertebral body is the main weight-bearing structure of the spine.

TRANSVERSE PROCESSES
Bony points that project out laterally from the junction of each laminae and spinous process.

PEDICLES
The connecting bone between the lamina and the vertebral body that surrounds and protects the spinal cord.



LAMINA
The flat, outer plates of the vertebrae that combine with the pedicles to surround and protect the spinal cord.

SPINOUS PROCESS
This bony ridge, which can be felt down your back, provides an attachment point for the muscles and ligaments that move and stabilize the vertebrae.

FACET JOINTS
A joint is a connection of two bones. Facet joints are spinal joints that connect neighboring vertebrae. They're covered in cartilage, allowing movement.

"When you look at it, the human spine is an amazing structure. You can think of it figuratively as a frame that holds together the human body. Literally, it is a complex structure of bone, inter-vertebral discs, nerves and soft tissue. Protecting and maintaining a healthy spine is an important component of your overall wellbeing."

UNDERSTANDING THE SPINAL STRUCTURE

Before we get into diagnosing, treating and protecting the spine, here is a breakdown of 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). They act like shock absorbers for the spine. The spinal discs are structured much like a jelly donut, with a tough outer ring called the *annulus fibrosus* and a soft central region called the *nucleus pulposus*.

SOFT TISSUE

The soft tissue in the spinal region includes tendons, which connect muscles to bone, and ligaments, which connect bones together and strengthen joints.

NERVES

The spinal cord is a column of nerve fibers that are responsible for sending and receiving messages between the brain and the rest of the body. Nerve roots extend between the vertebrae on each side of the spine and 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, while 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.



WHAT ARE THE TYPES OF BACK PAIN?

1

Acute pain can be categorized as pain with a specific, identifiable cause, like a slip or fall. Pain from an acute injury should resolve itself in two to four weeks with the help of rest, ice, heat and a visit to your primary care provider.

2

Chronic pain is pain that lasts longer than three months. An acute injury can lead to chronic pain, but sometimes chronic pain does not have an identifiable cause. If your pain persists for four to six weeks, you should consider seeing a pain management physician, who can help pinpoint the cause of your pain and work with you to find an appropriate treatment plan.

3

Axial pain is often called mechanical pain and can be localized, meaning you feel the pain where the source of the pain is located. The pain is a direct result of some type of injury, disorder or structural breakdown. This pain is often described as sharp or dull and can be constant or intermittent.

4

Radicular pain is caused by a spinal nerve root being compressed, injured, irritated or inflamed. The symptoms classically involve a deep, radiating sensation of numbness, tingling and even weakness in the extremities. Sciatica, a well-known type of radicular pain, shoots down the nerves of the leg, traveling from the back down to the toes.

What can be affected by back pain?



Sleep



Family Time



Work



Exercise



Recreation

WHAT COULD BE CAUSING MY BACK PAIN?

There is a reason that many people suffer with back pain: The back is a complex structure that withstands your body weight during walking, running, lifting and many other everyday activities. Not only that, but your back is comprised of bone, muscle, cartilage, tendons and ligaments, all supported by nerves and blood vessels. This means that there are many areas in the back that have the potential for injury or damage.

Many instances of back pain are the result of overused or injured muscles. These types of injuries and muscle strains can be caused by a poor lifting technique, repetitive movements or even weak back and abdominal muscles that cannot appropriately support the spinal structures. Lack of exercise and poor back and abdominal muscle tone can also have an impact on back pain levels.

SOME OF THE CAUSES OF LOW BACK PAIN CAN INCLUDE:

- Degenerative disc disease
- Poor posture
- Standing or sitting for long periods of time
- Damaged spinal discs
- Osteoporosis/osteoarthritis
- Being overweight
- Arthritis
- Smoking
- Fibromyalgia
- Trauma from an accident or fall

Back pain can arise from many different sources, and it is not uncommon for pain from different sources to have overlapping symptoms. Many times, clinical information such as a patient's history, physical exam and imaging will pinpoint the source of the pain. However, this is not always the case and further testing may be required.

As we explore the causes of back pain in more detail, we can explain back pain in two general categories: disorders that affect the spinal cord or spinal nerves and disorders of the structures of the spine, including discs, vertebrae, soft tissues and joints.

DISORDERS THAT AFFECT THE SPINAL CORD AND NERVES:

DISC HERNIATION

In general, herniated discs occur 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 pain at the location of the disc problem itself, but commonly the pain will radiate, or travel, to the area supplied by that nerve. This radiating pain is due to a bulge in the disc, which causes compression of the nerve. Numbness, tingling or weakness may accompany the pain. If you have a herniated disc in your spine, you may have pain in your back that shoots down one leg or feelings of weakness or tingling in your buttocks, leg or foot. The medical term for this is radiculopathy.

SCIATICA

The classic symptom of sciatica is pain that starts in the lower back and radiates (travels) to the buttock and down the back of the leg, possibly including the foot and toes. Pain may be felt anywhere along this path, but it will typically follow the path from the back to the buttock and the back of the thigh or calf. Pain levels can vary from mild to severe and are usually described as shooting, burning or electric shock-like. Sciatica may also include cramping sensations in the same pattern. Usually only one side is affected and the pain can worsen with prolonged sitting, bending, twisting and even coughing or sneezing. There may also be associated numbness in the same distribution pattern.

SPINAL STENOSIS

Lumbar spinal stenosis is a condition involving any type of narrowing of the spinal canal or nerve root canals. Narrowing of the spinal canal results in compression of, or pressure upon, the spinal nerves and nerve roots, causing a number of

Continued on the following page. ->

There is a reason that many people suffer with back pain: The back is a complex structure that withstands your body weight during walking, running, lifting and many other everyday activities.

symptoms, including lower back and lower extremity pain and feelings of cramping or weakness in the back. Most patients feel more pain when walking or standing and less pain when walking with a shopping cart or sitting down. People over 50 are more at risk of developing spinal stenosis. The issue is diagnosed with a physical exam, patient history and imaging tests, like an MRI.

ARTHRITIS

Arthritis, or inflammation within a joint, can occur in the joints of the back much like any other joint in the body. When joints are inflamed over a long period of time, bone can begin to grow around the joint, a condition sometimes known as bone spurs. This can also cause nerve irritation (or radiculopathy), resulting in back pain, numbness, tingling or weakness.

DISORDERS OF THE STRUCTURES OF THE SPINE:

DISC DEGENERATION

Disc degeneration is a natural part of aging, and over time all people will exhibit changes in their spinal discs. It is not necessarily a painful process. Pain associated with disc degeneration is caused when the soft, cushion-like discs between spinal vertebrae begin to break down or decay and the irritating chemicals from the inner portion of the disc are released to the outer portion. Disc degeneration affects millions of Americans from all age groups. It is more common in people who smoke cigarettes, are obese or who regularly perform heavy physical work.

BACK SPRAIN OR STRAIN

A back sprain involves stretching or tearing the ligaments, while a back strain is the stretching or tearing of muscles or tendons. Since the back

has a tremendous range of motion, it's very susceptible to injury. A back sprain may cause pain, swelling, bruising and limited mobility. A back strain will cause the same symptoms, but may also include muscle spasms.

COMPRESSION FRACTURE

Compression fractures in the spine occur when there is a collapse of one or more spinal vertebrae. Symptoms are wide-ranging and involve not only pain, but also weakness and tingling sensations. This is because the fractured bone(s) can sometimes impinge upon the spinal canal, creating pressure on the spinal cord and nerves. These fractures may occur as a consequence of aging, but can also be associated with trauma. Symptoms can include sudden, severe back pain evolving to chronic back ache sensations in the injured area. Pain may subside as the fracture heals, but some individuals may continue to feel pain even after healing.

ARTHRITIS

Back joints are a common source of pain. This pain may remain limited to a small, focal area or may "refer," or spread, to a larger area. Back pain due to arthritis may be worse with certain movements, such as turning at the waist, bending or lifting. X-ray or radiographic imaging and a physical exam can provide some clues as to whether back pain is due to a problem in the joints, but nerve blocks are typically used to make a definitive diagnosis.

If you have questions about your spinal injury or the treatments available to you, please contact the Pain Management Center today at (386) 951-6684. You can find more information about these conditions, your treatment options at painmanagementcenterinc.com.

DIAGNOSING BACK PAIN

Making a precise and accurate diagnosis begins with a detailed medical history and physician evaluation. Back pain can be caused by many factors and may be a symptom of other underlying conditions or diseases, so seeing a back pain expert is often a good choice for care.

At your first appointment you will be asked about your medical, family and social history. In many instances, an X-ray or EMG can be helpful in diagnosing the specific cause of your back pain. These imaging tests can show muscle strains, disc damage, fractures and even joint inflammation.

Your pain management specialist will use the information gathered at your appointment to pinpoint the cause of your pain. He or she will then work with you, as a team, to develop an individualized treatment plan to fit your goals and specific needs.

There may also be things you can do at home to help reduce or even prevent future back pain. (See page 12 for some suggestions.)

To reach an accurate diagnosis, your medical provider will ask you a number of questions that can help identify the source of your pain. These questions will focus on:

- ✓ When the pain began
- ✓ Where the pain is located
- ✓ What the pain feels like
- ✓ What causes the pain to increase or decrease
- ✓ Lifestyle factors
- ✓ Whether your pain has responded to other treatments

INTERVENTIONAL TREATMENTS

For some back pain sufferers, ice, heat and a reduction in activity levels, in combination with physical therapy or chiropractic care, can provide relief. More persistent pain that lasts longer than six weeks generally requires more attention and treatment. Medications may be utilized to help treat muscle spasms, pain and inflammation. For persistent pain that lasts longer than six weeks and doesn't improve with conservative care, other interventions may be used.

The most commonly used interventional treatments for back pain are minimally invasive and require little or no recovery time. Recent studies have shown that minimally invasive procedures can help patients regain mobility and function, allowing them to get back to work quickly and return to more active lifestyles.

At Pain Management Center, we offer a variety of services and minimally invasive procedures to help patients with back pain, including:

- A detailed patient evaluation
- Epidural injections
- Diagnostic nerve blocks
- Sacroiliac joint injections/
facet joint injections
- Minimally invasive disc procedures
- Neurostimulation therapy
- Intrathecal drug delivery
- MILD procedure
- Medication management
- Referral to physical therapy or
chiropractic care

WHY CHOOSE A PAIN MANAGEMENT PHYSICIAN?

- Expertise and experience. A Pain Management Physician is trained and receive more instruction on pain and treatment approaches than typical physicians.
- The ability to prescribe pain-relieving medications and the knowledge needed to monitor patients effectively and taper them down if necessary.
- The expertise and advanced technology necessary to accurately diagnose your back pain.
- A multidisciplinary approach and the ability to refer you to excellent physical therapists, behavioral health providers, chiropractors and even spinal surgeons if less invasive treatments prove to be ineffective.



If you have persistent back pain, there are various treatment options available, many of which only a pain management physician can provide. At Pain Management Center, our knowledgeable providers can customize a care plan specifically for you so you can get the maximum pain relief possible. For an in-depth look at the treatments we offer, go to painmanagementcenterinc.com.

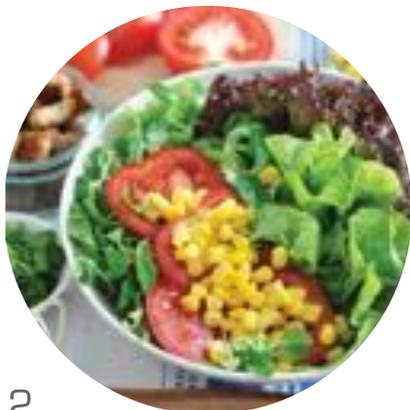
To help you get relief from back pain, your physician will:

- Provide education to help you understand what is causing your painful symptoms.
- Consider medications and monitor you to ensure safety and effectiveness.
- Consider the use of minimally invasive procedures to aid in diagnosing and treating your pain.
- Suggest lifestyle modifications that may help reduce your pain and improve your overall health.
- Make recommendations for at-home therapy that can help you minimize pain.
- Consider referrals to a physical therapist, chiropractor or spine specialist for surgical options.

HOW YOU CAN KEEP YOUR BACK HEALTHY?

While it's not possible to prevent all back injuries or painful conditions, there are some simple steps you can take to lower your risk or prevent the onset of back pain. Here are a few helpful tips from our team of back pain experts:

- 1 Eat a healthy, well-balanced diet** to keep your muscles and bones strong.
- 2 Maintain a healthy weight.** Excess weight puts added stress on your joints and muscles and can cause increased back pain.
- 3 Exercise regularly.** Staying in shape will allow your back to properly support you in various activities. Being active will also help your joints and muscles stay loose and prevent aches and strains.
- 4 Strengthen your back and core muscles.** The best way to avoid back pain is to ensure that the muscles supporting your back are healthy and strong. Doing strengthening exercises regularly for the abdominal, hip and pelvic muscles will not only help improve your posture, but will also help protect your back.
- 5 Choose sports and activities** that are low impact and don't place your back at risk of injury, such as walking, swimming and biking.
- 6 Focus on good posture and body mechanics.** This is a simple tip that will greatly reduce everyday aches and pains. Do not sit or stand in one position for a long period of time. Keep your back straight and your head lifted and never slouch, especially in front of a computer.
- 7 Use proper lifting techniques.** Many back injuries occur as a result of lifting and twisting a heavy load without using your leg muscles. To lift something properly, bend your knees and lift straight upward – never twist or turn with heavy items in your arms.
- 8 Quit smoking.** Studies show that smokers are more at risk for developing back pain. Nicotine interferes with blood flow to the muscles and spinal discs, inflames nerves contributing to pain and can slow healing and reduce recovery.



LIVING WITH BACK PAIN

In some circumstances, patients may have to manage back pain for the long term. The good news is that there are many techniques that can be helpful to minimize flare-ups and keep pain at a tolerable level.

1

Medication compliance is important. If your Physician has prescribed you pain medication for long-term use, it's important that you take it exactly as prescribed. Medications can be used successfully to facilitate an active lifestyle and allow for increased mobility and functioning, but they can also have serious side effects if used improperly. As part of Pain Management Center's medication management program, your doctor will monitor you to ensure your continued compliance with our policies regarding medications.



2

Lifestyle modification can make a big difference. Simple things you do at home can help prevent pain from worsening. These include maintaining a proper weight, eating a healthy diet and quitting smoking.



3

Exercise, stretching and strengthening. Many people find that exercise can actually help reduce feelings of pain. Gentle stretching can help keep joints and muscles loose and strengthening exercises can help support your back structure.



4

Stress reduction. Stress can often increase feelings of pain. Reducing or eliminating sources of persistent stress can help you reduce your overall pain levels.

5

Stay active and involved. One of the best strategies for living with chronic back pain is to maintain relationships and stay busy. Working, hobbies and social outings will allow you to keep a positive outlook on life, maintain self-esteem and may help distract you from pain.

Conditions Treated

We treat a number of painful conditions including:

- Back pain
- Carpal tunnel
- Complex Regional Pain Syndrome (CRPS)
- Diabetic neuropathic pain
- Fibromyalgia
- Headaches
- Herniated discs
- Hip pain
- Knee pain
- Neck pain
- Pelvic and abdominal pain
- Sacroiliac pain
- Sciatica
- Shingles (Postherpetic neuralgia)
- Shoulder pain
- Spinal stenosis
- Work and sports injuries

Treatment Options

- Epidural steroid injections
- Facet joint injections
- Intradiscal electrothermal therapy
- Intrathecal pump implants
- Lumbar and cervical discograms
- Lumbar sympathetic blocks
- Medication management
- Minimally invasive lumbar decompression (MILD) procedure
- Neurolytic blocks
- Percutaneous tenotomy
- Peripheral nerve blocks
- Sacroiliac joint injections
- Spinal cord stimulation
- Stellate ganglion blocks
- Transcutaneous electrical nerve stimulation (TENS)
- Trigger point injections

TO SCHEDULE AN APPOINTMENT PLEASE CALL:

(386) 951-6684 | Painmanagementcenterinc.com