



SOUTHEASTERN SPINE INSTITUTE

presents

*Symptoms and
Diagnoses*

An eBook for Patients

Symptoms and Diagnoses

Presented by the SOUTHEASTERN SPINE INSTITUTE

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Chapter 1

How Back Pain Begins

One of the most debilitating types of pain is back pain. It can originate in your neck, mid-back, lower back or tailbone. It can affect your arms, legs, fingers and toes. No matter what you do or what position you try, the pain doesn't go away. With back pain, you can't concentrate, can't work — even smiling becomes difficult.



If you're experiencing back pain, Charleston, SC, is home to one of the best spinal medicine practices on the Eastern seaboard with the Southeastern Spine Institute campus in nearby Mount Pleasant. SSI's patients come from all over the region; all leave with less pain and a new lease on life.

Once you and your doctor determine the origin of your back pain, then you can begin to treat it. While the back pain Charleston specialists at SSI have decades of experience reducing and eliminating back pain, it is better to prevent it from ever occurring. To do that, however, you first must understand how back pain originates.

The Anatomy of Your Spine

The spine is composed of vertebrae, or bones, and the vertebral discs, which are the cushions that act as shock absorbers between the bones. The discs have two primary parts: the inner jelly-like substance and the outer, thicker shell. The vertebra and discs work together to allow your spine to bend and twist without pain or damage.

Back pain typically starts in one of three ways: injury, disease or age. Unfortunately, you can control only two of these. Fortunately, with healthful habits and exercise, even age need not cause back pain. Charleston residents are an active group: walking, jogging and swimming — all of which help minimize the risk of back problems. Injury and disease present different challenges.

The Start of Back Pain

Problems begin when the vertebrae constrict the nerve branches that exit your spinal column through your spine. This happens either because the bone expands, from injury or spurs, or the disc ruptures. Bone spurs become more common as you age past 60.

They may have begun years earlier before creating the symptoms that you experience. They can cause pain, as well as numbness in your extremities.

Back pain also can be caused when the outer wall of a disc weakens enough to “deflate” the disc. If the outer wall ruptures, it allows the inner substance to leak out. As a result, the vertebrae above and below the disc compress, often squeezing the nerves in between. This causes back pain and weakness, as well as pain and tingling running down your arms or legs.

The Causes of Back Pain

If you suffer an injury to your back, do not shrug it off, even if you don’t feel any immediate pain. Injuries that lead to back pain, spinal doctors know, can sometimes take years to produce symptoms. Get checked out by a spine specialist immediately following an accident. X-rays, MRIs, and fluoroscope imaging are all available at the Southeastern Spine Institute.

Disease, like degenerative disc disease, can be detected early with the right diagnostic tools. If you’re experiencing back pain at any age, but especially at a more advanced age, consult your doctor and ask for a referral to the Southeastern Spine Institute.

Don’t wait for back pain. Take a proactive approach to your spine care. Eat right, don’t smoke and keep physically active as you age.

Chapter 2

The Role of Genetics in Back Problems

Genetics are proving to hold the answers to many of life's persistent questions. Genetics may even explain the source of your back pain. You probably associate your genes with hair and eye color — as well as other factors related to your appearance, your propensity for developing cancer or dementia, and the odds of living to 100 — but your back problems may be hereditary, too.



But until recently, little has been done in the study of genetics and the spine. Back pain typically is related to lifestyle issues, such as good posture and the quality of your back exercises. And while lifestyle still plays a significant role in preventing back pain, you may want to pay extra-special attention to your back exercises if your mom, dad, aunt, uncle or second cousins have back problems.

In-Depth Research

Researchers have trouble identifying genetic patterns in back problems because back pain is so ubiquitous. Ruling out environmental causes of back pain is difficult since more than 13 million people visit their doctors each year complaining of back pain. Age, posture, working conditions and lifestyle choices like diet, exercise and smoking all play a role in developing back pain.

More than one-third of women between the ages of 30 and 50 experience degenerative disc problems. Nearly eight out of 10 adults report lower back pain in their lives. It's no wonder that researchers have so much difficulty isolating genetic factors.

Reports Coming In

A number of exhaustive studies have begun to shine light on the genetic factors that contribute to back pain:

- The National Institute of Arthritis and Musculoskeletal and Skin Diseases reports that African-American women are two to three times more likely to develop spondylolisthesis than Caucasian women. The condition causes vertebra in the lower spine to slip out of place.
- Ankylosing spondylitis, a form of ongoing joint inflammation that primarily affects the spine, has been linked to heredity, according to the Genetic and Rare Diseases Information Center. Several genes influence the risk

of developing the chronic inflammatory arthritis condition while lifestyle issues exacerbate the risk.

- Scientists have believed for some time that genes are involved in the development of lumbar disc degeneration because as many as four out of five people with LDD have family members with the same condition. In 2012, the *Annals of Rheumatic Diseases* reported that researchers isolated the gene responsible.
- An exhaustive twin-spine study performed over a period of more than 20 years across a number of countries (including the U.S.), also came to the conclusion that genetics play a significant role in the development of lumbar disc degeneration.
- The American College of Rheumatology reported that rheumatoid arthritis is connected to genes in people of European heritage. The gene connected with the chronic inflammatory disease was found in 60 to 70 percent of Caucasian patients of European ancestry, compared with about 30 percent in the general population.

Keep Up Your Back Exercises

As genetic studies continue and researchers isolate the culprits that put you at risk for developing certain back problems, it becomes more important than ever to maintain effective back exercises — strengthening exercises that support your back — in addition to a healthy diet and proper body mechanics.

Back pain, whether you inherit it from your ancestors or develop it at work, is best treated with a healthy lifestyle. Treatment is the same for various back issues whether caused by genetics, an accident, or a poor diet; and only an experienced team of spine

physicians, like those at the Southeastern Spine Institute, can provide the proper care, treatment and guidance to help you maintain an active, pain-free lifestyle.

Chapter 3

The Best Diagnostic Tools

The best diagnostic tools are those that lead to a realistic explanation for your pain. Diagnosing back pain can be difficult because the causes vary so drastically from one person to the next and the medical conditions that create back pain tend to be complex. When you're looking for answers, you need to know that your spine physician has access to the right tools to make an accurate diagnosis that will help get you back to the quality of life you deserve.

The physicians at the Southeastern Spine Institute rely on a multi-disciplinary approach to diagnoses. That means different specialists use the diagnostic tools within their specialty and then confer to pinpoint the exact cause of your pain. These tools may include:

- CT scan
- MRI
- Digital fluoroscopy
- Ultrasound
- X-rays

Coupled with a complete and thorough medical history, these diagnostic tests — which can all take place on the SSI campus in Mount Pleasant, SC — should reveal the culprit and help define the necessary medical and therapeutic treatment. It's vital that you obtain an accurate diagnosis as quickly as possible. The sooner you find the cause, the quicker you can begin an appropriate treatment and the better chance you have of avoiding surgery.

Bringing It All Together

Alone, X-rays can't fill in the complete picture. Diagnostic X-rays may confirm or negate the doctor's suspicions. At the same time, one medical professional may not have all the answers for your unique problems. That's why the campus at SSI is the ideal spot for the most accurate diagnosis in the least amount time.

A second opinion is priceless, especially when your symptoms are unusual or particularly tricky. When a detailed history, physical exam and extensive X-rays don't always fill in the blanks, you need more eyes on the condition. The most ideal setting, one that you'll find at SSI, is to have a team of spine physicians, each with different and specialized skills, evaluate your condition.



Culmination of Facts

An MRI, or magnetic resonance imaging test, may reveal that you have a pinched nerve or even a tumor, but that's not the whole story. You must relate your symptoms accurately as well. Your spine physician needs to know when your pain began, when it causes you the most discomfort and when you find relief.

Your medical history also plays a role in the diagnosis. Conditions such as osteoporosis, diabetes, cancer and a slew of other conditions can directly impact your spinal health and the condition of your bones. Genetics can affect your diagnosis too, so a thorough exam includes family history information.

The Southeastern Spine Institute Advantage

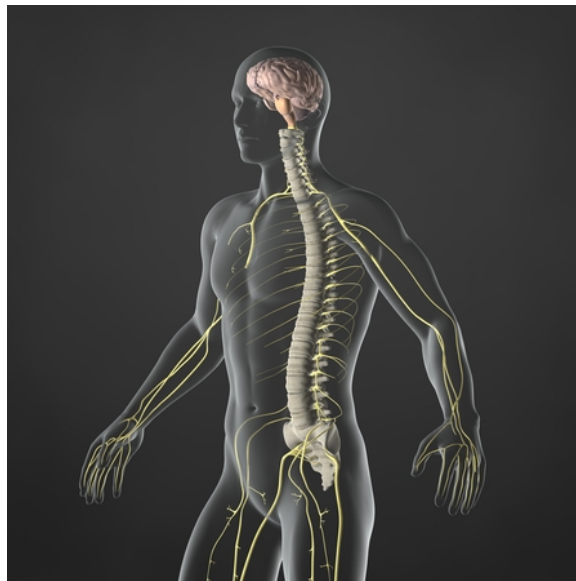
It's this team approach — in tandem with your feedback and state-of-the-art diagnostic tools — that ultimately will determine your condition. And it's only after an accurate diagnosis of your condition that the proper treatments can commence. So if your back is hurting, you owe it to yourself to make an appointment – or get a referral to — the Southeastern Spine Institute. We have the best diagnostic tools in South Carolina.

Chapter 4

Nerve Testing for Diagnosis

Your spinal cord delivers nerve signals throughout your body. You have 31 pairs of spinal nerves that convey signals from your brain to other parts of your body. And they all enter and exit through your spinal column.

The nerve root is the point at which a nerve exits your spine and connects to peripheral nerves. Peripheral nerves constitute both sensory and movement nerves. When looking for the source of your back pain — and often other pain associated with peripheral nerves, such as in your legs or hands — your Charleston spine physician may conduct a series of nerve conduction studies to find that source.



What to Expect at the Southeastern Spine Institute

Testing your nerves, a process called NCV or nerve conduction velocity, is relatively painless. Depending on the degree of the stimulus your doctor gives you, you may feel a slight discomfort for a moment. The pain never lasts, though.

You'll have patches placed on your body to deliver the electricity. These are electrodes similar to those you get when you have an electrocardiogram (ECG). After stimulating a nerve, the doctor can tell how quickly the nerve signals from your spine reach the electrode, thus determining the health of your nerves.

Follow-Up Test

An NCV often is followed by an electromyography test (EMG). This nerve test involves placing tiny needles in your muscles. This test is a little more uncomfortable and you may experience slight muscle soreness afterwards. While the acupuncture-like needles may cause a bit of discomfort, they can provide a truly useful source of information for your diagnosis.

Your Charleston spine physician can determine if you have nerve and/or muscle damage — or if you are at risk for a more serious disease such as:

- Lambert-Eaton syndrome, an autoimmune system disorder
- Myopathy, a muscle disease
- Myasthenia gravis, a neuromuscular disease

Better to Know

Successfully treating your pain relies on an accurate diagnosis that comes from the right kind of nerve tests, alongside your medical

history, your symptoms and your spine physician's observations. All work in tandem to get you back to your daily routines as quickly and effortlessly as possible. Your spinal doctor doesn't want to perform surgery any more than you want to undergo a surgical procedure, so surgery is often the last option.

The earlier your physician at the Southeastern Spine Institute can find the source of your back pain and discomfort, the better chance you have of arresting the disease in the first place. Tests take about 45 minutes each. After you undergo nerve tests at the Southeastern Spine Institute's main campus in Mt. Pleasant, South Carolina, you can return to work and your normal activities immediately.

Chapter 5

Where Does Your Back Hurt?

Before you undergo a slew of tests and examinations for back pain in Charleston, you may be able to limit the amount of probing your spinal doctor needs to do if you can present him with specific symptoms. Track your pain so you can give your doctor a clearer picture of where your back hurts. If your neck or spine specialist knows where your pain is located, when your discomfort first started and what kinds of activities seem to aggravate your pain, it can point the doctor to the cause of your pain.

Upper Back Pain

Pain located in your upper back often involves your neck and the seven cervical vertebrae at the top of your spine. People who work at computers all day often complain of upper back pain caused by irritation to the large shoulder muscles.

Upper back pain rarely points to a herniated disc or a degenerative disc disease. Instead, simple lifestyle changes, physical therapy and mild medication can reduce or eliminate your pain. Trauma from an injury could be another source of upper back pain. Let your back doctor know immediately if you've suffered an injury.

Middle Back Pain

If your pain occurs at the chest level, it affects the thoracic area of your spine. Discomfort in this area often is related to other health issues, such as heart or lung problems that place pressure on the middle part of your back.

Athletes, people with arthritis and people in physically demanding jobs often suffer from injuries to the middle back. Tell your Charleston back doctor when the pain first started, how strong it gets and when it hurts the most. Also let him know if you have any other health issues, such as heart or lung problems, kidney stones or a history of aneurysms.



Lower Back Pain

If your pain emanates from your lower back, but you can't pinpoint the exact location, it can be difficult to diagnose. Several organs

could be causing the discomfort, or it could be from your lumbar or sacrum spinal regions.

The pain could be from damaged soft tissues such as tendons, muscles and ligaments or from bones, discs or nerves. Tests such as an MRI or digital X-ray provide your back doctor with clues, but he'll need a detailed medical history and a succinct description of the pain to complete his diagnosis.

When you can tell your spinal doctor exactly where it hurts, when it started and how it really feels, he will have a head start in finding the cause of your pain even before he runs any tests.

Chapter 6

Why Are My Fingers Tingling?

Very often, common symptoms like tingling in your fingers are simply the result of sitting at your desk too long. At other times, however, those same symptoms could signal a serious condition that needs immediate attention. The tingling also may be the first signs of a chronic illness that, if caught early, could prevent further complications. Don't let seemingly simple symptoms fool you into complacency.



When you start to feel tingling or numbness in your fingers and you worry that something's seriously wrong, follow your instincts and call your doctor at the Southeastern Spine Institute. It's always better to be safe than sorry. Meanwhile, here are a few checklists to consider. The more you can describe the nature of your issues to the doctor, the quicker he can find a diagnosis.

Common Causes

First, calm down. Just because your fingers are tingling, it doesn't necessarily point to a serious ailment or injury. However, if you've recently been bitten by an animal or insect, seek medical attention immediately if your fingers start tingling. Here are some other simple and common reasons that may be behind your numb digits:

- Staying in the same position too long
- A vitamin B12 deficiency
- Sodium, potassium or calcium levels are askew
- Restricted blood flow to your hands because of your position
- Taking specific prescription medication

More Serious Causes:

- A herniated disk
- Nerve damage from chemical abuse or exposure
- An injured nerve from an accident involving your neck or shoulder
- Abnormal pressure from a tumor, infection or scar tissue

These conditions often have other symptoms too. For example, if you experience upper back or neck pain, that may point to a herniated disk. When in doubt, consult a back specialist, such as one of the doctors at the Southeastern Spine Institute.

Medical Causes

Other, medical sources may be causing your tingling fingers. Here are several medical conditions known to cause numbness in your fingers:

- Migraine headaches
- Carpal Tunnel Syndrome
- Diabetes
- Raynaud’s phenomenon (when your blood vessels narrow)
- Shingles
- Heart stroke, including a “mini-stroke” (transient ischemic attack)
- Multiple sclerosis

All of these causes require medical attention. Make an appointment with your doctor.

Medical Problems Requiring Immediate Attention

While you most likely don’t need medical attention just because your fingers are tingling, call 9-1-1 or visit your local emergency room if you also experience any of the following symptoms:

- Your fingers tingle after you’ve had a back, head or neck injury.
- You can’t think clearly or you’ve blacked out.
- You’re experiencing weakness or trouble walking.
- You’re slurring your speech or can’t focus your vision properly.
- You can’t move or lose control of your arm or leg.
- You’ve lost bowel or bladder control.

Sometimes, finger tingling can occur for no obvious reason. It could be that your hand has just “fallen asleep.” If you notice any of the following less serious-sounding symptoms along with the numbness, you should still contact your doctor when:

- You feel dizzy or have muscle spasms.
- You’re experiencing pain as well as tingling in your fingers.
- The tingling increases when you move around.
- Your forearm, neck or back hurt.
- You find a rash on your skin.
- You’re urinating more frequently.

Chapter 7

A Pain in the Neck

Neck pain is just that — a pain in the neck. It's rare that neck pain is a sign of serious complications, but when you experience ongoing neck pain, Charleston is the best place for you. Go see one of the spinal doctors at the Southeastern Spine Institute. They'll be able to find the source of the problem and get you on your way to recovery.



Neck pain typically results from:

- Strain from sitting over a keyboard all day or hunching over a steering wheel
- Poor posture while sitting, driving and standing
- Arthritis
- Keeping your head in one position for too long
- Improper support while sleeping

Easy Remedies

When your SSI doctor clears you of any serious complications, there are a number of home remedies you can rely on to ease neck pain. Reduce the pain caused by the activities of daily life:

- Stretch your neck from side to side. Avoid bouncing and instead, stretch as far as you can to one side and hold it for 30 seconds. Bend to the other side and repeat. Do the same routine to stretch your neck forward and backward.
- Relax aggravated muscles with heat. Let the water run over your sore neck while taking a hot shower.
- Cold compresses are better if you're experiencing inflammation. Wrap an icepack in a towel and hold it on your neck for about 20 minutes a couple times a day.
- Lie down and give your neck a break from working so hard to hold up your head. Keep naps short though, because too much inactivity can lead to a stiff neck.

More Serious Conditions

When that pain in the neck haunts you day after day and no amount of rest, stretching or alternating heat and cold gives you

relief, you may be undergoing a more serious complication.

Chronic neck pain can occur as result of a number of conditions:

- A pinched nerve, often referred to as a herniated disc or bulging disc, causes radiating pain from your neck through your arm to your fingers. You may experience numbness or tingling in your hands. This kind of neck pain often is temporary and responds well to conservative treatments, always the first choice by Southeastern Spine Institute doctors.
- Cervical spinal stenosis is a condition that usually develops slowly over years and typically flares up after you do certain activities or following long periods of time in one position. Cervical stenosis usually is associated with aging; it causes pain because of the wear and tear after years of movement.
- Myelopathy is a condition that occurs when you have neck pain or coordination problems with your arms. Pressure on the spinal column from a herniated disc or degenerative processes usually is the culprit. You can go years without any symptoms, experience flare-ups and then go longer with no pain or coordination difficulties. The pain in your neck typically responds to conservative treatments, but myelopathy almost always ends up requiring surgery to fix.
- Degenerative disc disease is a condition many people experience as they age. Those jelly-like discs that keep your vertebrae from rubbing against each other eventually wear away. When it happens in your cervical spine, you end up with neck pain. Charleston spinal doctors advise adjusting your activities to prevent pain as the best course of action.
- Neck arthritis typically is the diagnosis when your neck pain is at its worse first thing in the morning and at night.

Exercise and manipulation often help to remedy the neck pain associated with arthritis.

Lifestyle adjustments often are the best way to reduce the pains in your neck. Simple steps such as setting up your desk with ergonomic equipment, taking frequent breaks, stretching and strengthening your core muscles will help you keep your cervical spine healthy. Neck pain often is avoided with proper posture at all times — while standing, sitting, driving, sleeping and fishing.

Chapter 8

If You Feel Pain Down Your Arm

There's a wide range of problems that could be causing your arm pain. While it may be something as benign as tennis elbow, radiating arm pain also could signal a heart attack, a broken arm, compressed nerves or carpal tunnel syndrome. Knowing the various symptoms and causes of arm pain can help you decide whether to get emergency care or to relieve your discomfort at home.

Self-Care

Most types of arm pain subside with a little tender care and the old-fashioned recipe of rest, ice, compression and elevation (or RICE). The home care steps will ease the initial pain of even serious injuries until you can get in to see your doctor. A broken wrist or arm, for example, can be managed with RICE until you get to the emergency room.

While home care is the first line of defense for many people, the rule of thumb is that if the pain worsens or you don't get significant relief after 48 hours, make an appointment and get it checked out. Unresolved radiating arm pain will hamper your everyday activities and can signal a serious condition.



Make an Appointment

When nerves in your neck or spinal column become compressed, it can result in a brachial plexus injury. RICE for two days should relieve the discomfort and ease the swelling caused by the injury. The condition is common among athletes who play contact sports and often relieved after 48 hours of RICE. At the same time, a brachial plexus injury could indicate a more serious injury or even a tumor.

If your arm begins to redden or continues swelling, call the office of your general practitioner or the spine specialists at Southeastern Spine Institute, who are experts in treating compressed nerve pain. If two days of TLC at home don't result in a drastic improvement, call for an appointment.

Get to Doctor Right Away

When and how the cause of your arm pain occurs often determines how quickly you should get to your doctor's office. If you hear a sudden crack, come right in. If your arm hurts when you move it

and then feels better when you rest, see a doctor immediately, because that's one of the early signs of heart trouble that's caused by reduced blood flow to your heart. If your arm pain happens when you turn your palm up and down, get to the doctor's office right away; you very well could have sustained a hairline fracture.

Seek Emergency Care

While many people, especially athletes, eschew the emergency room because they believe they can "tough it out," or "walk it off," call 911 and get there immediately if you see a bone protruding following an accident. If there's any blood involved in your injury that's causing radiating arm pain, go the emergency room of the nearest hospital.

Your primary care physician or spine physician can meet you at the ER when you suspect something serious, can't make it to the office or fear the worse. When severe arm pain comes on suddenly, for example, and you feel pressure or fullness in your chest, you may just be in the midst of a full-blown heart attack and every minute counts.

Chapter 9

What Your Leg Pain Might Mean

Persistent leg pain is nothing to fool around with. Leg pain can be chronic or acute, regular or intermittent, severe or mildly irritating. No matter how bad the pain becomes, however, it very likely gets in the way of you enjoying life as much as you want. Whether you have difficulty walking or disruptions in your sleep, you need to see a medical doctor in Charleston to rule out any major complication that could be causing the pain because leg pain often originates in your back.

Explain Your Symptoms

On your first visit to a spine physician, you need to explain in detail how the pain feels, when it first began and when it becomes most noticeable. Leg pain usually presents itself in a number of ways; your doctor will want to know if it feels:

- Burning
- Throbbing
- Like pins and needles
- Aching

- Searing
- Numb



Spinal surgeons, such as the specialists at the Southeastern Spine Institute, see various medical conditions on a daily basis. Often, they can tell quickly if your leg pain is linked to your back and ensure that you get the proper treatment. Serious conditions associated with leg pain that require immediate attention include:

- Liver failure
- Heart attack
- Kidney disorder
- Deep vein thrombosis (blood clot)
- Osteosarcoma (cancer in the leg)
- Broken bones

Treat the Pain

Treat leg pain seriously, even if you suspect an uncomplicated diagnosis. When it comes to the pain you feel in your legs, it's

always better to be safe now than sorry later. Following an initial examination, your doctor may give you good news and send you home with an easy regimen to follow. Some uncomplicated conditions that cause leg pain include:

- Overuse
- Dehydration
- Muscle cramp
- Medication reaction

Back to the Back

One of the most common sources of back pain, however, is sciatica. The term is used to describe the symptoms that cause your leg pain, including numbness, tingling and pain that run down your buttocks through the large sciatic nerve on the back of your leg. Sciatica may occur infrequently only when you perform certain movements, or it can be a constant companion. The good news is that the pain rarely results in permanent sciatic nerve damage.

While working to manage the pain, your spinal physician will seek to find the source of the sciatica. It's rare that surgery is needed, usually only when a herniated disk is causing the pain. For most conditions, a program of self-care is prescribed. Some of the most common treatments for sciatic pain include:

- Stretching, strengthening and aerobic exercises
- Heat and/or ice applications
- Pain medication such as ibuprofen to reduce swelling
- Epidural steroid injections
- Surgery, after four to six weeks of the alternatives

Chapter 10

When You've Tried Everything Else for Your Back Pain

If your spine physician at the Southeastern Spine Institute has tried more conservative spinal medicine treatments without success to heal your back and stop your pain, you may have to consider surgery. Spine surgery in Charleston is almost always the last resort because it is so invasive; however, there are now minimally invasive techniques that can be effective.



According to the Mayo Clinic, here are other reasons to consider back surgery:

- Your spinal nerves have become compressed, resulting in crippling back pain or leg numbness.
- You have bulging disks or herniated discs. This type of damage to your spine can result in severe pain.
- You have fractured your vertebrae or suffered an injury to your spinal column.
- Your spine has become unstable due to osteoporosis.

In addition, a number of diseases may require back surgery, including: cervical radiculopathy, degenerative disc disease, scoliosis, spinal stenosis and spondylolisthesis. While the goal is to get you back to your normal life as quickly as possible, surgery can require a lengthy recuperation, which is another reason it is not the first option at the Southeastern Spine Institute.

If You Need Surgery

If your spine physician in Charleston determines that surgery is the best option in your case, he still has many options, depending on the location, cause and severity of your condition. When appropriate, he can choose minimally invasive surgery, in which a small incision allows access to the problem area. Because of the latest developments in surgical instruments, a small incision often is sufficient to perform the procedure.

When a minimally invasive procedure won't work, your spine surgeon may opt to access your spine from your side, which still minimizes the muscle trauma during the operation. The point is that the spinal surgeons at the Southeastern Spine Institute do whatever they can to protect you even if you need surgery.

The Ambulatory Surgical Center

If you need back surgery, you don't have to check in to a hospital. SSY has its own accredited ambulatory surgical center. That means your spine surgeons can perform your surgery on the Mt. Pleasant campus. Having a separate spinal medicine surgical center provides advantages to you:

- It's more private.
- It's geared to spinal surgeries.
- It's less expensive than checking into a hospital.
- The surgeons work with a team they trust.
- It's outpatient surgery, so you may return home on the same day.

You will receive excellent care before, during and after your operation at the SSI Charleston ambulatory surgical center. You can recuperate onsite; you will not be released (into the care of a friend or family member) until you are ready. You will leave with specific instructions to continue your recovery.

Your surgery will be explained to you so you know what to expect. From the day before your scheduled appointment to the day you can return to your normal life, you will be treated with respect and dignity. The goal, as always, is to guide you safely back to a pain-free life.

Chapter 11

Diagnosing Stenosis

Even for the spine specialists at Southeastern Spine Institute, spinal stenosis is one of those rare illnesses that are hard to diagnose. It's not because the symptoms are difficult to locate or identify. When you're in pain from spinal stenosis, you know it. The problem is that its symptoms often look like the symptoms of other, more common conditions.

As a result, your spine physician has to rule out other diseases before determining that your problem is indeed spinal stenosis. Often, that means you have to undergo a series of tests. Of course, if you're in pain, relieving it becomes the doctor's first priority. Making an accurate diagnosis is then the second priority, but your spine physician needs to do it before he can develop an effective treatment plan.

What Is Spinal Stenosis?

Stenosis occurs when your spinal cord or the nerves that extend out from your spinal cord become compressed, irritated or pinched. In a healthy spine, the spinal canal — the protected space in your spine for the spinal cord — has sufficient space to carry signals

back and forth from your brain. If any bones, discs or ligaments impinge on the spinal canal, you'll feel pain and tingling.

Many conditions can cause spinal stenosis, including a back injury, a herniated disc or even a tumor. Age is another factor, since your spine endures a lot of wear and tear over the years. An injury that occurred at a young age may not slow you down then, but over the years, you may feel it more and more.

Confusing Symptoms

If you're suffering from spinal stenosis, you'll probably have a numbing or tingling sensation in your lower back. The feeling may radiate down your legs (or just one leg), maybe all the way down to your feet. You likely will feel pain as well, accompanied by a burning sensation.

Symptoms of the condition can vary from person to person. Some people don't feel any pain. Others may feel numbness in one extremity only, like a hand or foot. You may have leg pain or cramping if you stand for too long. Spinal stenosis even can cause loss of bladder or bowel control. The problem for doctors is that these symptoms resemble those of other conditions, making an accurate diagnosis difficult.



Testing for Stenosis

Making an accurate diagnosis for spinal stenosis requires several tests to narrow down the cause of your symptoms. Your spine physician may start with a simple set of X-rays. This test won't confirm your condition, but it is effective at ruling out other conditions, so it is an excellent starting point.

The next step is an MRI (magnetic resonance imaging) test. This is the one where they put you into a large chamber to take a series of dissecting images. For an MRI to be most effective, your physician has to know where in your spine to look. An MRI can find tumors as well as expose damaged discs in your spine. Most importantly, an MRI can show your back specialist exactly where your nerves or spinal cord are compromised.

If necessary, your physician can order a CT scan. This is the test where they have to inject you with a dye. During the test, they take a number X-rays at multiple angles. The dye shows the contour of your spinal canal. A CT scan can confirm whether or not you have spinal stenosis, so it is the final test once your spinal specialist has eliminated other illnesses as the cause of your symptoms.

Chapter 12

Does a Bulging Disc Require Surgery?

Discs are the cushions that lie between the vertebrae in your back. They are made of soft cartilage in the center surrounded by a tougher, outer layer of cartilage, somewhat like a miniature jelly donut. When a disc expands outside its given space, it's said to be bulging, much like a hamburger that's too big for the bun.

Bulging discs are a common part of the aging process. They also can result from repetitive motion jobs that require lifting, driving, standing or bending. A sports injury or other traumatic accident can lead to a bulging disc, as can improper lifting techniques.

Bulging discs may run in your family. They can result, surprisingly enough, from excessive alcohol or tobacco consumption.

When Pain Occurs

Bulging discs don't always cause problems. Many people have them and don't even realize it. A bulging disc causes pain, however, when it presses against an adjacent nerve. If the bulge occurs in your lower back, you may feel pain in your legs or buttocks. An upper back bulging disc may cause radiating pain in your neck, down your arms and to your fingers.



When your pain gets bad enough to see a medical doctor, such as the spine physicians at the Southeastern Spine Institute, surgery is rarely the first option. The spinal physicians at SSI almost always prefer to treat the pain associated with a bulging disc with conservative non-surgical methods first. Such treatments might include:

- Exercises
- Non-steroidal anti-inflammatory drugs such as ibuprofen
- Steroid injections
- Lumbar sympathetic block
- Heat
- Massage
- Physical therapy

When Treatment Fails

If conservative treatment doesn't alleviate your pain within a few months, surgery may be an option. Back surgery may be the best

option, in fact, when you have that radiating pain down your legs or arms as a result of a compressed disc. When bulging discs are compressed so tightly that your normal functions are affected, then surgery may be your best bet for relieving the pain and removing its source.

Ideally, you'll see a number of spine specialists on campus at the Southeastern Spine Institute before resorting to surgery. Back pain is a complex issue, which is why it's important to be seen by a range of back specialists. When surgery is required, you might undergo one of a number of different procedures, depending on your general health, your age and the level of disc damage.

- *Artificial Disc Replacements*

State-of-the-art polyethylene or metal implants are used to replace the damaged disc. Total disc replacement relieves the pain and allows you to return to all your normal functioning after your recuperation.

- *Dekompressor Discectomy*

A discectomy is a minimally invasive procedure that allows the surgeon to remove only that part of the disc that's causing the pressure on your nerves. The back surgery does not require an incision. Instead, your spinal doctor inserts a small probe in your back to scrape away the excess cartilage that's bulging.

- *Inter-Body Fusion*

This is another minimally invasive back surgery that's especially effective when your condition is the result of degenerative disc disease that occurs with aging. The damaged disc is replaced with bone grafts and metal that is then fused above and below to the attached vertebrae.

- *Selective Endoscopic Discectomy*

Avoid general anesthesia with this procedure too. With a small tube attached to a light and camera, your spinal physician views the damage, removes the bulging cartilage, and then cauterizes the area with a laser.

It's normal to experience some pain as you recover from your back surgery, but in many cases when you haven't undergone total anesthesia, as in the case of minimally invasive procedures, you can go home the day of the surgery.

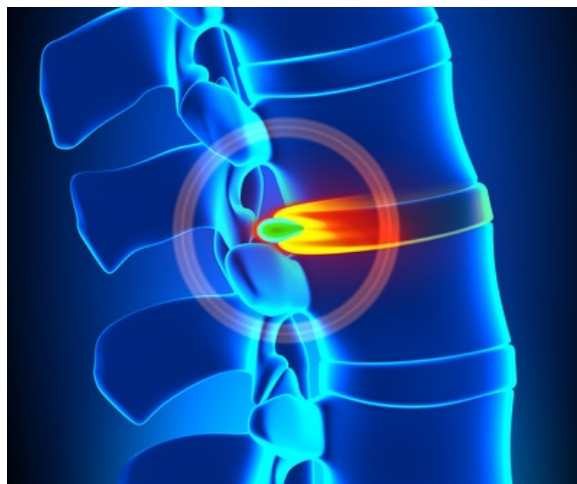
You'll leave with complete recovery instructions that include diet, exercise and pain management. The goal of the Charleston spinal surgeons at SSI is to get you back to full functions as quickly as possible.

Chapter 13

Degenerative Disc Disease Treatments

In a healthy spine, discs act as shock absorbers between the vertebrae, so the bones of the spine never actually touch. That padding not only allows the flexibility you take for granted, but it also opens space for nerves to leave your spinal column and spread to the rest of your body. Your spine is a marvel of engineering.

Degenerative Disc Disease Beginnings



Spinal discs have a tough outer shell and a jelly-like interior, which gives them their cushion properties.

Degenerative disc disease develops from a back injury or from normal wear and tear.

The disc shell tears or ruptures, and when it heals:

- The shell isn't as strong as it once was, which leads to further injury.
- The inflamed area causes extrusions that can pinch the nerves in the area.

If you leave degenerative disc disease untreated, you can develop chronic pain from the pinched nerves. Furthermore, the weakened disc is in danger of fully collapsing over time. Bone spurs from this condition can cause spinal stenosis.

Treatment Options

Once your spinal physician has determined that you are suffering from degenerative disc disease, the first step is to ease your pain and other symptoms. The doctors at the Southeastern Spine Institute employ a conservative approach, which means that they try non-invasive treatments before considering surgery.

Other treatment options for degenerative disc disease include:

- Physical therapy
- Anti-inflammatory medicine
- Chiropractic care
- Osteopathic manipulation
- Spinal injections

Therapeutic Treatments

Physical therapists at the Southeastern Spine Institute can control, if not cure, degenerative disc disease. A run of physical therapy appointments can give you daily stretches and exercises to do that will minimize your pain. Also, you may learn when to apply cold

or heat for best results. If your case is severe enough, you may need a brace or even traction.

Another therapeutic treatment option is chiropractic care.

While it doesn't show results for everyone who suffers from degenerative disc disease, regular sessions can relieve pain and increase your mobility.

Chiropractors increase blood flow to the affected area, which aids healing and helps your nervous system function better.



Like chiropractic treatment, osteopathic manipulation therapy (OMT) has proven results in treating degenerative disc disease. OMT is an additional therapy to try if the others have not had any positive outcome. OMT can consist of:

- Soft tissue pressure
- Energetic muscle movement
- Direct “thrust” pressure
- Counterstrain movement

Medicinal Treatments

Nonsteroidal anti-inflammatory drugs, known collectively as NSAIDs, relax your muscles to prevent twitching and ease your

pain. NSAIDs include aspirin, ibuprofen and naproxen. While they work for short-term relief, you shouldn't take them continually for long periods of time, as they can cause serious side effects.

Steroids also can be effective for relieving pain and reducing swelling. The spine specialists at the Southeastern Spine Institute don't prescribe steroids lightly, but if you do need them for degenerative disc disease, you can take them orally or via a spinal injection, which puts the medicine directly where it's needed.

Surgical Treatment

Back surgery is the final option. Most people can find relief without resorting to surgery, but your spine physician might suggest this option if you haven't seen any improvement after six weeks of the other treatments. Your doctor might recommend surgery if you:

- Have trouble standing up or walking
- Feel weakness, tingling or numbness in your back or legs
- Lost control of your bladder and bowels

Depending on your case, you can have spinal fusion surgery, which joins two of your vertebral bones. This surgery bypasses the bad disc. Another procedure is replacing the damaged disc with an artificial disc. Artificial disc replacement is still in the clinical trial phase, but the surgeons at the Southeastern Spine Institute are among the 30 spine surgeons in the country who perform the procedure.

Chapter 14

Does a Ruptured Disc Require Surgery?

The term “ruptured disc” is one of those medical phrases that’s often used interchangeably with other terms, such as herniated disc, bulging disc, pinched nerve, slipped disc or disc disease. Rather than getting caught up in the words used to describe your back pain, it’s better to concentrate on the cause and treatment, which can range from simple lifestyle changes to back surgery.

At the Southeastern Spine Institute (SSI), you’ll find a number of back surgery alternatives. So, long before your spine physician recommends back surgery to treat your ruptured disc, you’ll undergo a series of extensive tests and alternative treatments. The tests help your doctor make a diagnosis. An effective treatment plan requires an accurate diagnosis.

Stay in the Process

The process of diagnosing your back pain begins with a thorough physical exam. While your doctor examines you, he will ask you to explain your symptoms, when they started and how seriously you

are affected. You then may undergo a series of tests that could include:

- Nerve tests that involve tapping areas of your body with a reflex hammer
- A muscle strength gauge, during which your doctor watches your nerves, looking for twitching, atrophy, or any other abnormal movements
- Pressure to determine the level and location of your pain
- Medical history review
- Diagnostic tests such as an MRI, CT scan or discogram

Once your spine physician determines the cause of your pain, he will try a host of alternatives before resorting to back surgery.

Those options can include:

- Physical therapy
- Pain medications
- Injections

When Back Surgery Is Required

The best course of treatment is determined by first considering your clinical situation. Your doctor takes into account the amount of pain you're experiencing, how much disability is occurring as a result of that pain and how long you've had the symptoms. A rupture or bulge usually requires immediate surgery only if it is pinching a nerve.

Where the rupture is located and the size of your spinal canal are other important factors. A very small spinal canal can lead to a pinched nerve even when the bulge is minor, whereas a sizable rupture can cause very little pain in a large spinal canal.

The goal of back surgery is to remove the part of the disc that's pressing on your nerves. And the gold standard for that surgery is a minimally invasive procedure called a microsurgical discectomy. In the past 10 years, the procedure for back surgery has improved so much that your spine surgeon can perform the surgery with a relatively small incision and much less soft tissue damage than previous surgical treatments caused.



Even More Updated

Your spine surgeon at the Southeastern Spine Institute may rely on an even more updated surgical technique called microendoscopic surgery to perform your back surgery. The results are similar to those you'll receive from a microdiscectomy. The back surgery is done through a tube rather than through a traditional incision.

Very often, you'll be able to go home the same day of the back surgery. With sufficient rest and a recovery plan that includes daily walking, you should be back to your normal life in as little as a few weeks — pain-free.

For more information on preventing back pain and avoiding spinal surgery, contact the specialists at the Southeastern Spine Institute:

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