

Back to Life

A male golfer is captured in the middle of a golf swing on a lush green course. He is wearing a white short-sleeved polo shirt, light-colored trousers, a white belt, a white cap, and white golf shoes. He is holding a golf club with a dark head. The background shows a clear blue sky, distant mountains, and a body of water.

2015

BACK PAIN?
GET BACK
TO GOLF &
AN ACTIVE
LIFE IN 2015

NEW MINIMALLY
INVASIVE SPINE
SURGERY TECHNIQUES
SHORTEN INCISION,
SPEED RECOVERY

Get Back to Golf this year!

by using the right “back swing”

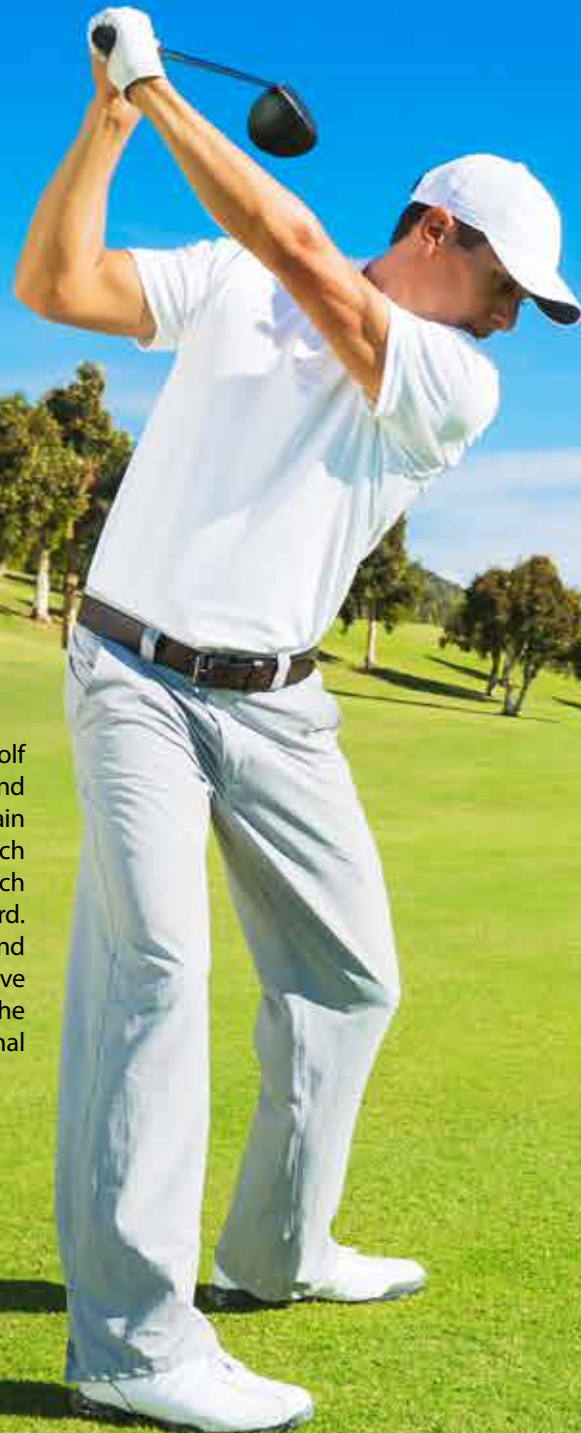
South Carolina is a destination for golfers, with some of the most beautiful golf courses in the nation. “The best part about golf is getting outside with friends and enjoying the sunshine and beauty of a golf course,” explains Mathew Gowan, MD, a specialist in non-surgical treatment of back & neck pain at South Carolina Spine Center. “Propelling a small white ball around the course doesn’t have to be the main objective. Consider changing the focus to fun rather than score. Some people hit to a limit of



six or eight strokes per hole and then pick up and enjoy the rest of the hole as spectator or commentator. Consider letting someone drive the cart with your clubs while you walk. Or start by limiting yourself to 9 holes rather than 18. Golf can be an avenue back to an activity that can be healthy for your weight and your back.”

GET BACK ON COURSE WITH THE RIGHT SWING MECHANICS

Most back strain in golf can be traced to a poor swing. Fact: Golf requires solid swing mechanics to provide the best impact and distance. In the 1970s, the “reverse C” finish put excessive strain on the back. Modern swing gurus like Butch Harmon now preach a finish where the back is perfectly straight at the finish — which lessens strain on the back. Amateurs also swing way too hard. Tour pros achieve huge distance by staying in balance and swinging at 80%. The best investment to save your back is to have a lesson with a PGA-certified teaching pro who can provide the right instruction to lessen strain on the back. Here are additional tips to get you back on course this year.



1 STANCE & ADDRESS
Proper grip and stance at address presets either success or failure. Ideally the feet should be aligned “parallel left” of your target. Your feet and club should be aligned like two railroad tracks aimed at your target. If alignment is off, it will cause a series of compensations to get the club back to the ball. A good PGA pro can help you start with the correct basics.

2 CORRECT TAKEAWAY
Most amateurs and beginners snatch the club away from the ball, which causes an “over-the-top” movement where the clubface swipes across the ball creating an undesirable slice that robs distance and accuracy. A good tip for a correct take away is taking the club back with the grip pointing at your stomach for the first few feet of the swing.

3 TRUNK LEADS THE ARMS
In a proper golf swing, the rotation of the trunk pulls the arms and hands around the body like a whip. Instead of hips sliding back and forward, the golf swing is a rotary engine, as if a spike were going through the center of the body. Your hips should not move laterally, but instead should rotate around a pivot point to generate power.

4 NIX THE “REVERSE C”
Back in the 1970s the fashionable swing of young Johnny Miller featured the back bent backward in the follow through which looked like a backward C. Today, the modern golf swing is much better on the back, and positions the back in a more straight up position as the body turns on a straight left leg. Ironically, as Johnny Miller aged, he too changed his swing to a more rotary swing that’s easier on the back.

GOLF STRETCHES ON THE COURSE



STANDING ROTATION

Above: Put a golf club across your back and rotate your trunk in both directions.

STANDING PIRIFORMIS

Right: Lean against a tree for support. Then raise your knee up, and across your body. Hold for 5 seconds and repeat with other leg.

OLD SCHOOL



NEW SCHOOL



THE GOAL IS TO SAVE YOUR BACK, NOT SAVE PAR

1 KICK IT OUT OF THE ROUGH & SAND
Most injuries are from swinging too hard, especially when trying to gouge the ball out of deep heavy grass or sand. Hitting the ball fat also creates resistance with the ground. Adjust your goals: Play for the enjoyment of the game. Tell your playing partners that your goal is to play golf without risk of re-straining your back. They’ll understand and applaud your eagerness to get back on the course.

2 START WITH 9
For someone with back pain, it’s a good idea to start off with just a 9-hole outing and gradually build up your endurance to a full 18 holes.

3 WALK RATHER THAN RIDE
Let your playing partner drive the cart so you can walk at a leisurely pace. Walking is good for your back. A bumpy ride in a golf cart can also put some strain on a back.

4 THE SWING’S THE THING
Tour pros spend hours on the range refining very efficient swings. Most beginners, however, never invest in learning a proper swing. Many times, back injury at golf stems from swinging too hard with a violent out of balance swing. A lesson with a PGA pro can get you back on the course in a way that lessens risk of future injury.

WANT TO TACKLE BACK PAIN?

Paradoxically, when a back spasm strikes, the natural reaction is to stop what you are doing. This is good advice in general for the first 48 hours after a back strain.

But beyond that, the key is movement. Research studies in the 1980s and 1990s conclusively proved that too much rest actually hurts your back. For example, a landmark study in the New England Journal of Medicine in 1986 found that people did worse with extended bed rest beyond two days. Another 1995 study in Finland found that persons with back pain who continued their activities without bed rest recovered faster than those who rested in bed for a week. Other studies linked bed rest to other problems like depression and weakened muscles. Some researchers went as far as saying that bed rest may be the most harmful treatment for simple acute back strain.

“When you have a charley horse in your calf, the immediate natural reaction everyone has is to get up and walk on it to relieve the muscle spasm,” explains Karl Boellert, MD, a specialist in Physical Medicine & Rehabilitation at South Carolina Spine Center. “On the other hand, when we have a back spasm, the immediate reaction is to stop all movement. Rest, ice and heat might be okay for the first day or so, but beyond that, inactivity creates problems. A short walk on flat ground can be great therapy for a back strain because it improves circulation in the tissues and loosens up strained ligaments. The other benefit is that for simple back strain, a walk outside can change a person’s focus from their pain symptoms to enjoying the outdoors. You have to convince yourself that getting moving will actually help relieve your pain symptoms.”

Just what the doctor ordered

So in fact, a little hike outdoors may be just what the doctor ordered for your simple back strain. But first, it’s important to understand what may be causing your back pain. For example, 80% of back pain is related to strain of the muscles in the back. The other 20% of back pain can come from disc-related problems. How do you know the difference? Disc-related problems create symptoms that radiate into the leg or arm. For disc problems in the back, the symptoms of pain, numbness or weakness can radiate down into the leg or foot.

“A back strain can be excruciating and drop you to your knees,” adds Dr. Boellert. “While a disc problem in the back is more serious, the symptoms are typically felt in the leg, which in turn may be treated with drugs or spinal injections to reduce inflammation on the nerve root. Weakness

or numbness in the foot are emergency symptoms that need to be seen within a week to prevent nerve damage which would cause these symptoms to become permanent. So while watchful waiting can be used for radiating pain in a leg or foot, that is not the case with numbness or weakness in a leg or arm.”

Take a hike

Even disc problems can benefit from movement, adds Dr. Boellert. “Studies have concluded that for rehab of injured tissues to occur, you need blood circulating oxygen to the injured tissues. You need movement to get circulation and nutrients to the disc and ligaments in the back. The less movement you have, the more you impair the back’s ability to recover from strain.”

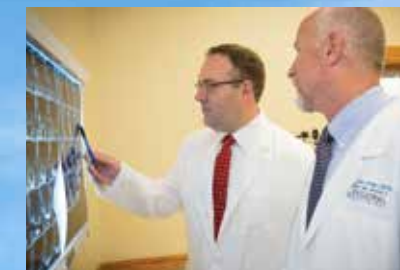
The second common by-product of back strain can be depression. Back pain can prevent a person from enjoying normal recreational activities, or it may knock them off their job, all of which can raise stress. The longer a person is off the job,

the more they worry about losing their job which in turn affects their financial security. Back pain if not addressed quickly can create a disability spiral.

The journey back to activity requires a first step off the couch. “For simple strains, we often will recommend that the person begin with a walk in the neighborhood,” says Dr. Boellert. “Start with several blocks, and you gain confidence that your back strain didn’t return. You didn’t hurt yourself. Then work up to longer walks. Ultimately, you should strive toward a mile or more.”

For longer distances, those with back pain should have good shoes, hike with a very light backpack at most and use a walking stick or hiking poles to help with balance. “Hiking poles or a walking stick can help distribute body weight to the shoulders and arms especially going uphill or downhill when balance can be difficult,” Dr. Boellert adds.

“Secondly, we recommend that people stick with even surfaces, like a



Dr. Karl Boellert and Wayne Mounts PA-C review MRI scans at South Carolina Spine Center.

sidewalk, dirt road or foot path, rather than rocky, uneven ground that increases the risk of falling,” according to Dr. Boellert. “For those who are overweight or sedentary, taking a hike can be a new experience. Try not to push yourself too hard at the beginning. Work up your distance until you can take an hour long hike. Take someone along. You’ll enjoy your conversations as you enjoy nature. Pretty soon, you’ll be focused on all the things you can do with your back, instead of all the things you can’t do. That’s when you are on the road to recovery.”

TAKE A HIKE

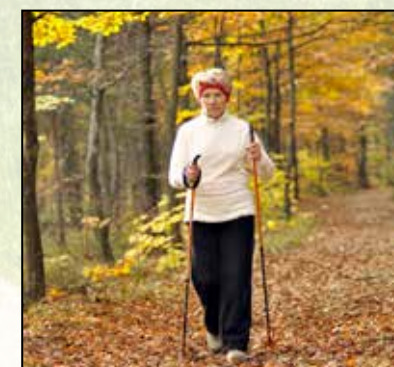
Walking can be a great way to loosen tight ligaments & relieve symptoms

Smart tips for hiking with a bad back

LIGHT ON THE PACK



USE A WALKING STICK



GOOD SHOES/FLAT ROAD



HOW YOGA CAN HELP YOUR BACK THIS YEAR



Advanced reach
This yoga stretch can be a great stretch for a back. Start on all fours. Reach your left hand out forward as shown, and then raise and extend your right leg upward. Hold the finish position for 5 to 10 seconds, while breathing easily. Exhale as you release back to the floor.

Yoga can be appropriate for everyone, but depending on your back condition, you may need to modify or avoid certain poses. Patients with spinal stenosis should avoid extension stretches. Patients with neck problems should never do yoga headstands or shoulder stands.

Those who diagnose and treat themselves with home remedies and exercises do so at their own risk. **ALWAYS discontinue any exercise that causes pain.** Loss of control of the bowel or bladder or weakness in an arm or leg, or numbness/weakness in a hand or foot are emergency symptoms that need to be seen by a physician within 48 hours to avoid permanent damage.

Yoga is becoming a popular recreational activity for both men and women. Yoga, which has been around for thousands of years, is a form of exercise that involves holding various poses to develop core strength. To the casual observer yoga stretches look easy. Once you try them, you'll feel that a yoga workout can be demanding.

Many moves can actually be helpful to a bad back as they involve extension and flexion of the back muscles. In fact, many of the customized stretches used by spine therapists evolved from yoga poses.

For example the Sphinx or Cobra yoga pose is the common press up extension exercise. The "Cat" and "Cow" poses similarly create flexion and extension of the spine.

A yoga workout can aid in circulation and provide a natural way to bring oxygenated blood and nutrients to the intervertebral discs. Even for

some minor disc herniations, certain flexion or extension movements may relieve some symptoms as well as improve the flexibility of the ligaments in the back. It is important to note that some disc herniation patients may find that spinal flexion worsens their symptoms,

while extension movements offer relief. Those with spinal stenosis — a narrowing of the spinal canal typically associated with those over 60 — may find flexion exercises to be more comfortable. If you have a back problem, it's best to consult a spine specialized therapist to

evaluate your back problem and customize an exercise program for your particular back problem. South Carolina Spine Center has multiple spine-specialized physical therapists that can customize the best exercises for you this year.

EXTENSION STRETCH

Cobra

This is a common back extension stretch, also referred to as the sphinx or press up. Start by lying flat on your stomach, with your hands on the floor under your shoulders. As you inhale, begin to raise your upper body slowly, while keeping your pelvis flat to the floor. Try to create an arch in your low back. Go up as far as you can without experiencing discomfort. Work up to the position shown here. Hold your finish position for 10 seconds, breathing easily. Exhale as you release back to the floor.



Start position



Finish position

Cat & Cow

Start on all fours in the START position shown below keeping your back straight. Your head should be in a neutral position, eyes looking to the floor.
CAT FLEXION: Arch your back UPWARD, and lower your head at the same time. Hold for 10 seconds
COW EXTENSION: Arch your back DOWNWARD without arching your neck upward. Hold for 10 seconds.



Start position



CAT position



COW position

OTHER STRETCHES

Bridge

Start by lying on your back with hands to the side. Knees should be bent with heels close together. Exhale and raise your hips upward so your back forms a straight line. Tighten your stomach muscles as you do so. Keep your thighs and feet parallel. Lift your buttocks so that thighs are almost parallel to the floor. Raise your chin slightly away from your chest, this will result in your shoulder blades moving toward your back. Press the top of your chest toward your chin. Remain in this pose for 30 seconds. Exhale and bring your spine back down to the floor.



Start position



Finish position

Head-To-Knee Forward Bend

Begin in a seated position with right leg extended. Slowly lean forward into a comfortable stretch, make sure the bent leg doesn't go under the extended leg. Hold for 30 seconds and relax. Inhale as you return to the start position, repeat the instructions with the legs reversed.



Start position



Finish position

HOW SPINE THERAPISTS RESOLVE SYMPTOMS AND PREVENT BACK PAIN ATTACKS



"Passive, palliative modalities like ice, heat and massage may feel good on a sore back, but they don't cure anything long term," notes Mathew Gowan, MD. "That's why health insurance companies won't pay for those things. The key is to make the back stronger, more flexible and resistant to future strain. Consequently the best spine therapists use custom stretches and movement."

Sadly, many back and neck pain sufferers travel from doctor to doctor to find relief from recurring back pain symptoms and spasms. Along the way, a physician may have recommended physical therapy as a non-surgical treatment option. Unfortunately, for too many back pain sufferers this first experience with therapy is a bad one.

The reason is that spine therapy is a specialty unto itself and general therapists simply do not know how to care for back or neck problems. As a result, a back or neck pain sufferer can come to the conclusion that therapy won't resolve their back problem. However, that's not necessarily the case.

Part of the problem is that general therapists spend too much time on palliative, passive things like ice, heat or massage that may feel good at the time, but long term they cure nothing because they aren't changing the physiology of your back, explains Dr. Karl

Boellert, a specialist in physical medicine & rehabilitation who is fellowship-trained in spine.

"The only things that actually permanently change the physiology of your back or neck is surgery or exercise that strengthens muscles and ligaments in your back, makes them more flexible and then more resistant to strain. Surgery is the last resort. So active therapy is our least invasive treatment option that can cure back or neck pain long term."

This active therapy involves participation and commitment from the patient who goes to a spine center for an approach that works. "From the beginning, we have to explain what to expect at South Carolina Spine Center," adds Dr. Boellert. "There is a reason the other approaches didn't work, and it's because they were the wrong approach."

The first step at South Carolina Spine Center is an evaluation by a spine physician. "If we believe you

haven't received the right kind of therapy, you may meet with a spine-specialized therapist who may provide some hands-on manual therapy," says Dr. Boellert. "This manual therapy can manipulate and loosen up the vertebrae and ligaments. This can actually feel good, and set the stage for you to move into a customized exercise prescription. The result is that pain relief is achieved not passively, but through active movement of the joints and tissues."

"The back pain sufferer needs to understand that pain pills only mask symptoms," Dr. Boellert adds. "Exercises and stretches repair and strengthen soft tissues and tendons. Simply put, movement is like lubricant for your back or neck. Bed rest and inactivity merely helps weaken bones and muscles. Even a simple 20 minute walk can be good for a sore back. Research has shown that the more you restrict movement, the harder and longer your rehabilitation. Some research notes that you need a 20 minute walk just to counter the effect of three hours lying down."

At South Carolina Spine Center, an exercise program will be customized to the person. Some back or neck problems respond to extension exercises, some respond to flexion, and some need a combination of flexion, extension and rotation exercises to make the back stronger, flexible and more resistant to injury.

"At South Carolina Spine Center, we want the patient to be well-informed about the causes of back and neck pain and what really works to free yourself from recurring back pain attacks," summarizes Dr. Boellert. "We focus on a more permanent relief of back pain, rather than a temporary one."



How physical therapy is different at a spine center

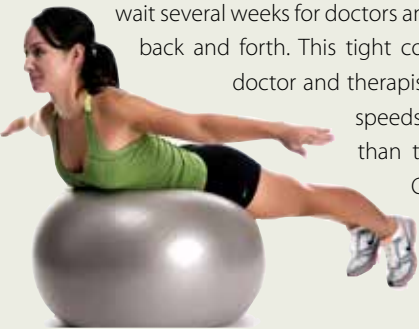
The bad news is that 4 out of 5 Americans will have an attack of back pain at some time in their lives. The good news is that about 80% of the time, back and neck pain can resolve without surgery. The problem is the other 20% of cases, which can quickly become complex and expensive. If you've had physical therapy before, you may have had a bad experience. That's understandable. However, general therapists simply don't have the training in the specialty of spine to successfully resolve back and neck pain.

Assessing the type of soft tissue injury and strain to a back or neck, and then customizing an exercise program, requires extensive training and experience. For example, certain spine problems like stenosis can be made worse with standard exercises that might otherwise be recommended for other back pain cases.

South Carolina Spine Center is different from other therapy providers in that the therapists have advanced training in spine. In addition, South Carolina Spine Center therapists can access an Exercise Library that enables them to customize a Home Exercise Program from an archive of more than 250 special back or neck exercises.



Lastly, South Carolina Spine Center has an advantage over other therapy clinics in that the therapists have immediate access to the spine center doctors who specialize in non-surgical spine care, as well as fellowship-trained spine surgeons, since they are under the same roof. Instead of having to wait days for therapists to communicate with your physician, feedback can happen same day. This team of spine physicians and therapists can quickly conference and resolve questions and issues that may arise, without the patient having to wait several weeks for doctors and therapists to send notes and reports back and forth. This tight communication loop between patient, doctor and therapist, represents a critical advantage that speeds the patient along to recovery faster than the outside therapy clinics. At South Carolina Spine Center, everything is under one roof for the benefit of the patient.



HOW INJECTIONS

RELIEVE BACK & NECK PAIN SYMPTOMS

Back and neck pain can sometimes be caused by a disc bulge or herniation that presses on a nearby nerve root branching off from the spinal cord. This can cause painful inflammation around this nerve root. The symptoms can include pain that radiates into an arm or leg, or weakness/numbness in a hand or foot. For these symptoms, a spinal

injection can relieve inflammation and symptoms long enough for the person to bridge back into therapy and activity.

Injections can be therapeutic and diagnostic. They may relieve symptoms permanently, or just temporarily for a few months. Injections also provide the spine surgeon important information that can improve the likelihood of a successful spine surgery. For example, if an injection at a certain disc level fails to provide relief, the surgeon may then question if that disc level is what is really causing your pain. In that way, the physical medicine MD and spine surgeon work as a team to ensure you are exhausting non-surgical treatment options and ensuring a more successful surgical outcome when surgery is necessary.

How injections work

When a disc herniates it can press on adjacent nerve roots that branch off from the spinal cord. Surgery doesn't repair the disc wall, but rather removes the herniated tissue which in turn relieves the pressure on the nerve root. Another way to relieve pressure on a nerve root is to inject pain medication directly to this area which reduces inflammation and pain symptoms. When spine physicians choose to use injection therapy, their ultimate goal is to relieve pain long enough to enable the patient to begin physical therapy.

"Relief from such injections can last several months to even longer, especially if therapy is used to strengthen muscles in the back," explains



Dr. Karl Boellert uses C-arm fluoroscopic imaging to visualize the precise area around the disc to apply pain relieving medication to reduce inflammation.

Dr. Karl Boellert at South Carolina Spine Center. "Sometimes a injection can make back pain symptoms disappear for years."

During an injection procedure, the patient lies on his or her stomach to enable a C-arm fluoroscopic device to provide X-ray images of the spine. Local anesthetic may be injected into the skin and underlying tissues to reduce discomfort from the injection.

Next, a thin needle is inserted into the epidural space, with the vertebrae serving as landmarks. The physician views images from the C-arm to make sure the needle is positioned correctly. Once the needle enters the epidural space, a syringe containing corticosteroid solution is connected to it and the solution is slowly injected. During this time, you will be able to communicate with the doctor, and the most common sensation reported

is one which resembles the feeling of "pins and needles."

There are risks involved in any operation or injection procedure. Injections involve less risk than surgery. In the case of epidural steroid injections, risks are minimal. Lumbar (low back) epidural injections involve less risk than cervical (neck) injections, because lumbar injections are performed away from the spinal cord and focus on the nerve roots.

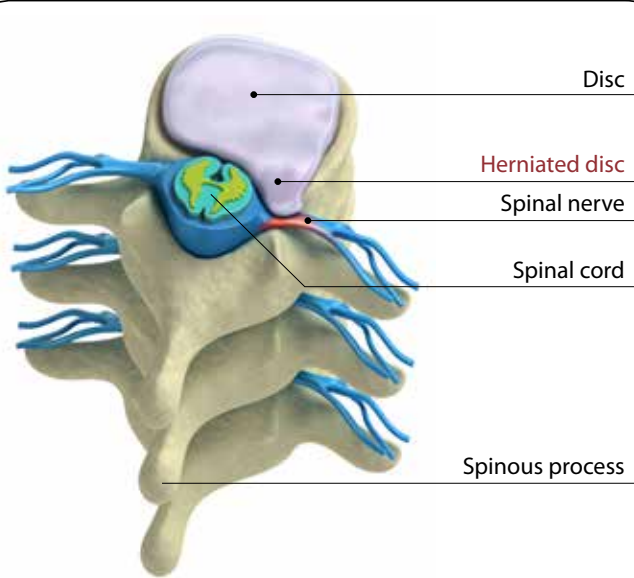
There are some potential side effects and complications to any spinal injection, most of which relate to the way in which the injection is administered rather than the actual steroid itself. As with any injection into the skin, it is possible for an infection to form if bacteria enters the puncture, but the risk of this occurring in the case of an epidural injection is low.

Years ago, a spine physician

might arbitrarily perform "a series of three" injections. That is no longer the case. You are unlikely to benefit from repeated epidural steroid injections if the first or second does not provide relief.

After the injection

"If the injection provides relief of symptoms, we encourage the person to return to some limited movement to make ligaments and muscles more flexible and resistant to future strain and recurrent symptoms," explains Dr. Boellert. "This may include some customized stretches with our spine therapists. In many cases, these injections can bridge many patients back to activity without surgery. And if surgery is necessary, the surgeon will have a lot more information to ensure a more successful surgical outcome."



Herniated Disc

HOW INJECTIONS WORK

Medication is injected into the area surrounding a nerve root, which reduces inflammation and relieves pain. Relief from such injections can last anywhere from a few weeks to a few months and sometimes longer, especially if therapy is used simultaneously to strengthen muscles in the back.

How minimally invasive surgery shortens incision, speeds recovery



"New techniques and instrumentation enable the fellowship-trained spine surgeons at South Carolina Spine Center to reduce the length of the incision, shorten time in the hospital and speed the return to activity with a less painful recovery," according to Wayne Mounts, executive director of the spine center based in Greenwood, South Carolina.

At South Carolina Spine Center, the spine specialists try to exhaust all non-surgical treatment options in advance of surgery. But when back and neck pain symptoms are caused by herniated discs, spinal fractures, or narrowing of the spinal canal (stenosis), surgery many times must be done quickly to prevent permanent paralysis of nerves.

"Watchful waiting CAN be used for radiating pain into a leg or arm for a few months," explains Dr. Karl Boellert at South Carolina Spine Center. "But weakness or numbness in a hand or foot is an emergency red flag symptom where spine surgery may need to be

done quickly to prevent these symptoms from becoming permanent. Thankfully, minimally invasive spine surgery can enable many patients to be home later the same day."

Minimally invasive spine surgery presents many benefits to the patient. With that said, there are some surgeons who are more comfortable doing traditional back and neck surgery with longer incisions because of the time involved to be trained and experienced in minimally invasive spine surgery.

Consequently, a patient needs to be well informed to select a surgeon who is trained to use the new instru-

mentation involved with minimally invasive spine surgery.

A patient should ask if a minimally invasive approach will be used, the length of the incision involved, and the length of time in the hospital and in recovery after surgery.

Minimally invasive spine surgery reduces the hospital stay, reduces pain, results in less blood loss during surgery which can lessen the need for donated blood and the risks inherent in that. A smaller incision can often translate into a faster return to work and activities, and less chance of infection than traditional open back surgery.



What makes South Carolina Spine Center unique is the multidisciplinary team. Two physical medicine MDs first try nonsurgical treatment options. Those who ultimately need surgery are triaged to a team of three fellowship-trained spine neurosurgeons who use minimally invasive spine surgery instruments where possible. The operating suite at Self Regional Healthcare includes the most advanced surgical navigation technology.

South Carolina Spine Center: One of only five locations to have the most advanced spine surgery suite

South Carolina Spine Center gained access to one of the most advanced spine surgery suites in the nation. In July 2010, Self Regional installed the new iCT BrainSuite®, the first of its kind in the Southeast and was only the fourth in the nation. This surgical navigation system integrates 3-D images from a CT scanner in the operating room with real time guidance of instrumentation that functions much like a GPS system, but is incredibly more accurate.

Spine surgeons can see images of the spine, discs and nerves during surgery and confirm placement of surgical instruments within 1 millimeter. It provides the highest level of precision and accuracy available anywhere in the world.

BrainSUITE® is an ultra-advanced neurosurgical operating room that combines

surgical and diagnostic tools such as intra-operative CT scanning (iCT). This state of the art technology can give surgeons feedback in real time during complex spine and brain surgeries. Multiple CT scans are taken throughout the surgery and give surgeons a better picture of the progress of the surgery. The real time feedback can help a surgeon know if 100% of the surgery is complete, or if there are more problematic areas. The 3D surgical navigation system helps surgeons plan on the best path to the problem site, monitor the progress in real time throughout the surgery, and is often less invasive which translates to faster recovery time. The BrainSUITE technology provides several tools for visualizing and interacting with the data prior, during, and after surgery.



- Benefits of minimally invasive spine surgery include:**
- Smaller incision
 - Smaller scar
 - Less damage to tissues and muscles
 - Less blood loss
 - Less post-operative pain
 - Less painful recovery
 - Quicker return to activity

Minimally invasive surgeries performed by South Carolina Spine Center

MIS Lumbar Fusion

A minimally invasive lumbar fusion can be performed the same way as traditional open lumbar fusion from the back, but using a smaller incision.

Transforaminal Lumbar Interbody Fusion

A common minimally invasive procedure is called the TLIF. This procedure is done by approaching the spine slightly from the side, which reduces the distance spinal nerves must be moved and prevents disruption of the midline ligaments and bone. The surgeon uses a retractor on either side of the spine. By using two retractors, the surgeon can remove the lamina and the disk, place the bone graft into place, and insert screws or rods for additional support.

Percutaneous posterior pedicle screw

A percutaneous posterior pedicle screw fixation is when metal rods are attached along a vertebra to help stabilize the spine.

Anterior cervical discectomy

An anterior cervical discectomy is used to reduce pressure or discomfort in the neck by removing a herniated disc through a small incision in the front of the neck. The space is then filled with bone graft material and plates or screws may be used to increase stability.

Artificial cervical disc replacement or total disc replacement (TDR)

A TDR occurs when most or all of a disc is removed and replaced with an artificial one.

Laminectomy

A Laminectomy is a procedure done to help decrease spinal pressure by removing all of the lamina, which is the thin bony layer that covers the top of the spinal cord.

Laminotomy

A Laminotomy is a procedure done to help decrease spinal pressure by removing part of the thin bony layer that covers the top of the spinal cord called the lamina.

MidLIF

A MidLIF is a midline lumbar interbody fusion where the trained spine surgeon is able to do a single level fusion through a 1.5 inch incision. This significantly reduces the disruption to muscles and tissues. The procedure allows for visualization of familiar posterior landmarks and eliminates the need to work through a tubular retractor.

New COOLIEF* technology achieves pain relief

Radiofrequency Ablation is a common procedure used to reduce pain using a high-frequency radio wave to heat up a small area of nerve tissue, thereby decreasing pain signals from that specific area. Radiofrequency ablation is performed on an outpatient basis and requires only local anesthetic and mild sedation.

A new advance, called **COOLIEF* Cooled Radiofrequency** is a new technology that targets the specific nerves that are sending the pain signal to the brain. The COOLIEF® technology uses cooled radiofrequency energy to safely target the sensory nerves causing pain. The

COOLIEF system circulates water through the device while heating nervous tissue to create a treatment area that is larger than conventional treatments.

This combination targets the pain-causing nerves without excessive heating, which in turn enhances the relief of pain. Some of the benefits of this procedure may include providing back pain patients with up to two years of pain relief, improved physical function, and reduced prescription drug intake. This new technology in pain care became available at South Carolina Spine Center in early 2015 and is now in use by Dr. Boellert.

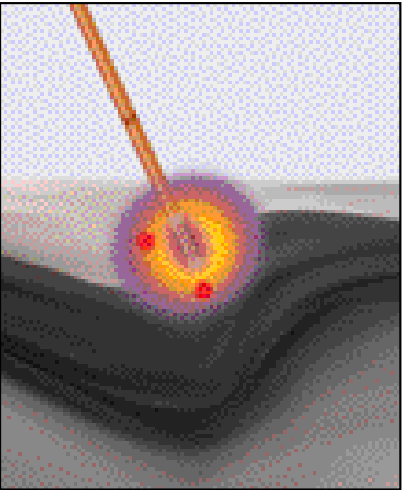


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SOUTH CAROLINA SPINE CENTER

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UNDERSTANDING YOUR BACK OR NECK SYMPTOMS: WHEN YOU CAN USE WATCHFUL WAITING & WHEN YOU CANNOT

NOTE: A person may use “watchful waiting” for a few days for symptoms of muscle strain or even radiating pain into an arm or leg. However, ANY WEAKNESS OR NUMBNESS in an arm or leg, or loss of control of bowel or bladder, are emergency symptoms. You need to see a spine specialist promptly (as noted below) to prevent the symptoms from becoming permanent.

PAIN LIMITED TO THE NECK:

Neck pain can be caused by traumatic injury, like whiplash from a car accident, or muscle or ligament strain. See our Home Remedies section on our Internet site. If pain persists beyond a week, you should see a spine specialist to determine the underlying cause.

FEVER, DROWSINESS, SEVERE HEADACHE, NAUSEA, VOMITING, UNUSUAL SENSITIVITY TO LIGHT?

Other symptoms may be unrelated to a back or neck problem, like cervical meningitis. This can be serious. You should consult a physician immediately for any of the above symptoms.

RADIATING PAIN IN THE ARM: Pain that radiates into an arm below the elbow can imply a herniated disc in the neck. Many times, radiating pain can be treated non-surgically. Radiating pain should be seen by a spine specialist within 2 weeks.

NUMBNESS OR WEAKNESS IN ARM OR HAND: Numbness or weakness in the arm or hand is a more serious disc-related symptom that is NOT appropriate for watchful waiting. Left untreated, the symptom can become permanent. You should see a spine specialist within 3 days.

LOSS OF BOWEL OR BLADDER CONTROL: This is a SERIOUS emergency symptom (cauda equina) that needs to be treated immediately by a spine surgeon within 24 hours. If you experience these symptoms at night or on the weekend, go to the emergency room. If not treated quickly, the person may lose control over their bowel and bladder permanently.

RADIATING PAIN INTO THE LEG: Pain that radiates into a leg below the knee can imply a herniated disc in the low back. But many times radiating pain can be treated non-surgically. Radiating pain should be seen by a spine specialist within 2 weeks.

NUMBNESS OR WEAKNESS IN LEG OR FOOT: Numbness or weakness in the leg or foot is a SERIOUS disc-related symptom that is NOT appropriate for watchful waiting. Left untreated, the symptom can become permanent. You should see a spine specialist within 3 days.

TRAUMA / FALL/ACCIDENT: Any time you fall, are in a car accident, or could have fractured a bone in your back, you should see a spine specialist immediately!

FOOT DROP / WEAKNESS IN FOOT: If pain, weakness or numbness extends into the foot so that you are unable to lift your toe as you walk, that is called Foot Drop, which is an emergency disc-related symptom. You need a spine specialist within 48 hours. If not treated promptly, it could lead to permanent weakness in the foot.



SOUTH CAROLINA SPINE CENTER

Advanced spine care services of
SELF REGIONAL
HEALTHCARE

115 Academy Avenue, Unit A
Greenwood, S.C. 29646

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SOUTH CAROLINA SPINE CENTER

115 Academy Avenue, Unit A | Greenwood, S.C. 29646
888-526-8806 | SCSpineCenter.org

Recognizing the national trend toward a Center of Excellence approach for complex health problems, South Carolina Spine Center was created by Self Regional Healthcare to improve how back and neck pain is provided. South Carolina Spine Center is located in Greenwood, SC, and cares for patients across the region. The Spine Center includes a fellowship-trained MD who specializes in non-surgical treatment options for back and neck pain, including therapy and spinal injections. If spine surgery is needed, the Spine Center has three fellowship-trained neurosurgeons — the highest level of medical education possible. South Carolina Spine Center is the only spine center in the State of South Carolina to be included in an exclusive national listing of credentialed spine centers by SpineCenterNetwork.com. It is consistently ranked in the top 10 percent of all spine programs in the U.S. by CareChex® for medical excellence in spinal fusion and spinal surgery and is recognized as a Blue Distinction Center by BlueCross BlueShield.



Priority Consult

South Carolina Spine Center provides a Priority Consult for referring physicians that can triage the patient to the appropriate spine specialist at the Spine Center. The patient can call 888-526-8806 and speak directly to our Priority Consult representative for guidance and referral to one of our spine care specialists.



Second opinion

A second opinion can help you determine if you have considered all possible treatment options and if there are any other non-surgical options that can relieve symptoms. Our spine team composed of three fellowship-trained spine surgeons and a physical medicine MD can review your symptoms and provide a second opinion.

Call: 888-526-8806 • Email: SCSpinecenter@selfregional.org



KARL BOELLERT, MD

Board-certified in Physical Medicine & Rehabilitation
Fellowship-trained in Interventional Spine
& Musculoskeletal Medicine



MATHEW GOWAN, MD

Board-certified in Physical Medicine & Rehabilitation



Home Remedy Book

The Spine Center, as a community service, provides a free 36-page Home Remedy Book to those in their community with spine problems. SCSpineCenter.org is an online spine encyclopedia with symptom charts, home remedies for back problems, medical illustrations and video animations on spine conditions and surgeries.

The South Carolina Spine Center is consistently ranked in the top 10 percent of all spine programs in the U.S. by CareChex®.



CareChex®
A Division of COMPARION

Top 10 percent in the nation for Spinal Fusion
Medical Excellence, 2011-2015.

Designated as a
**Blue
Distinction
Center®**
for Spine Surgery



BlueCross BlueShield:
Blue Distinction Center for Spine Surgery®.

BlueCross BlueShield of South Carolina is an independent licensee of the BlueCross BlueShield Association. Designation as a Blue Distinction® Center means these facilities' overall experience and aggregate data met objective criteria established in collaboration with expert clinicians' and leading professional organizations' recommendations. Individual outcomes may vary. To find out which services are covered under your policy at any facilities, please call your local BlueCross and/or BlueShield plan administrator.