

# Back to Life

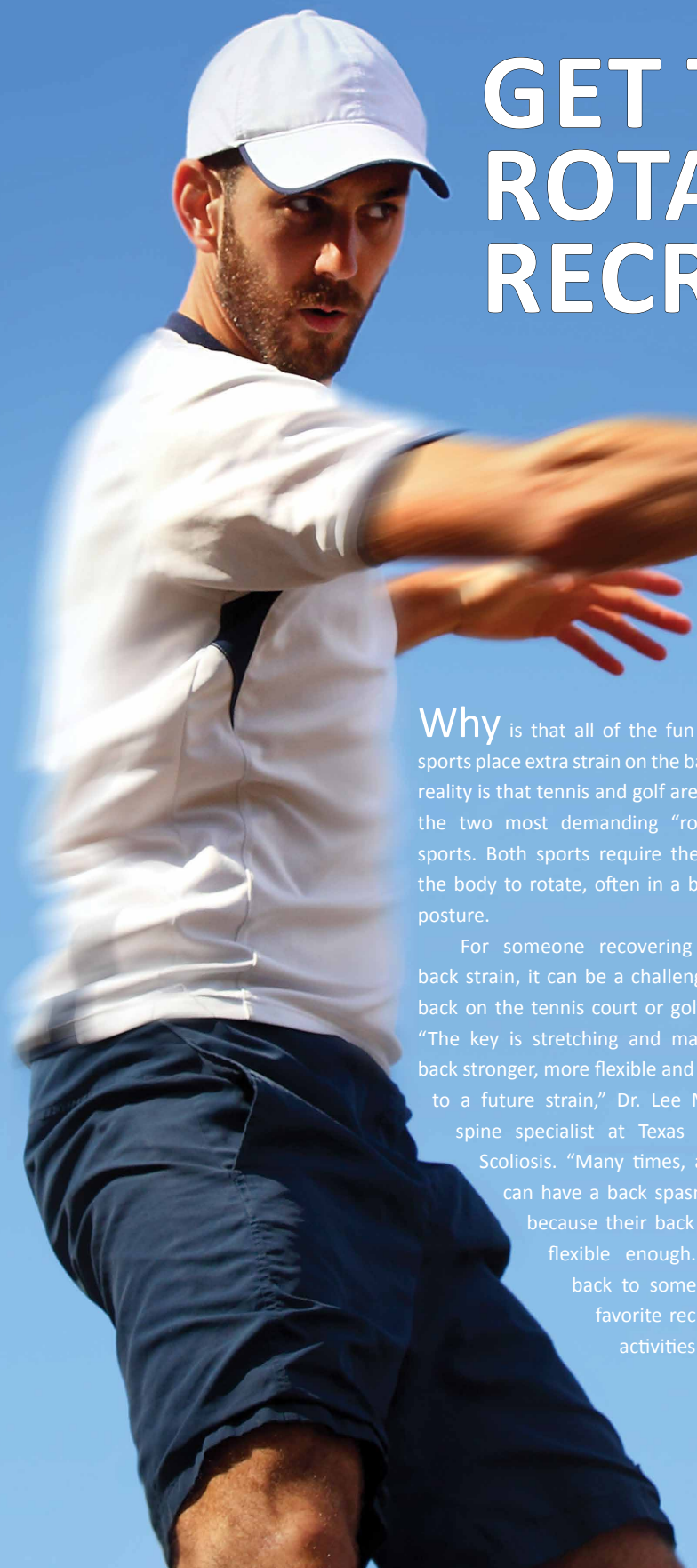
BACK PAIN? NECK PAIN?

New artificial discs  
retain motion

CUSTOM STRETCHES TO  
GET YOU BACK TO GOLF  
& BACK TO TENNIS

HOW TO GET BACK  
TO AN ACTIVE LIFE





# GET THE Rx FOR ROTATION IN RECREATION

**Why** is that all of the fun outdoor sports place extra strain on the back? The reality is that tennis and golf are perhaps the two most demanding “rotational” sports. Both sports require the core of the body to rotate, often in a bent over posture.

For someone recovering from a back strain, it can be a challenge to get back on the tennis court or golf course. “The key is stretching and making the back stronger, more flexible and resistant to a future strain,” Dr. Lee Moroz, a spine specialist at Texas Spine & Scoliosis. “Many times, a person can have a back spasm simply because their back was not flexible enough. To get back to some of your favorite recreational activities you’ll

need to improve your back’s ability to handle rotation. Secondly, phase back into the sport. With golf, kick the ball out of deep rough. With tennis, start with doubles rather than singles.”

Here are some rotational exercises to help get you back outside and into your favorite recreational activity.

“If surgery ultimately is necessary, get informed about the latest artificial discs that retain the rotary motion of the spine,” Dr. Moroz adds.



**DOUBLE KNEE TO FLOOR:**  
Start with your knees together pointed up. Next slowly let both knees fall to the left toward the floor. Hold for 5 seconds. Return to starting position and rotate to the right.



**PIRIFORMIS STRETCH:**  
This is a great back stretch. With arms spread out against the floor, bring your right knee up and across your body toward the floor as shown. Hold for 5 seconds, return to start, and then move your left knee over to the right.



**STANDING SIDE STRETCH:**  
With your hands above your head as shown, slowly lean to the right and hold for 5 seconds, then return to upright position. Repeat to the left side.



**ADVANCED STRETCH:**  
On all fours on the floor, raise and outstretch your right arm while extending your left leg backward. Hold for 5 seconds. Return to start and reach out with the left arm, and extend the right leg backward.



**ROTATION STRETCH:**  
Put a golf club or racquet behind your back as shown. Rotate your upper body to the right as far as you can go without discomfort. Then repeat with a rotation to the left. Give yourself several weeks to improve your flexibility.

Dr. Lee Moroz, a specialist in Physical Medicine & Rehabilitation at Texas Spine & Scoliosis, is also a competitive tennis player. He helps patients explore non-surgical treatment options for back and neck problems. “Exercise is like lubricant for your spine,” he explains. “Rotary sports like tennis and golf require a strong and flexible core. Golfers sometimes take excessive risk trying to chop a ball out of deep rough which can strain the low back. If you have a back problem, simply move it out of deep rough. It’s not worth the risk.”



# Spine therapy

relieves pain and makes the back stronger, more flexible & resistant to future strain

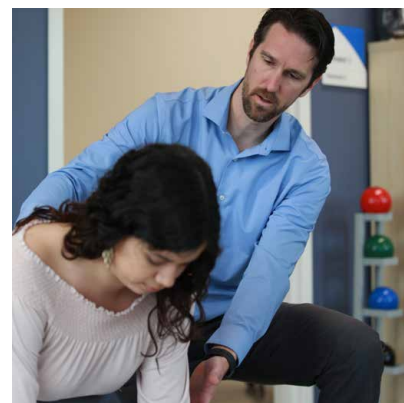


Passive, palliative “modalities” like ice, heat and massage may feel good on a sore back, but they don’t cure anything long term. That’s why health insurance companies won’t pay for those things. The key is to make the back stronger, more flexible and resistant to future strain. Consequently the best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

Sadly, many back and neck pain sufferers travel from doctor to doctor trying to find relief from recurring back pain symptoms and spasms. Along the way, a doctor may have recommended therapy as a non-surgical treatment option. Unfortunately, some people may be disappointed with the result.

“Part of the problem is that people want immediate symptom relief and are attracted to passive things where they lay on their stomach and someone applies ice, heat or massage,” explains Dr. Enrique Pena, a fellowship-trained specialist in Physical Medicine & Rehabilitation at Texas Spine & Scoliosis. “That may feel good at the time, but long term it cures nothing because they aren’t changing

the physiology of your back. The only thing that changes 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.”



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Dr. Pena notes that a spine center should hold surgery as the last resort, after non-surgical treatment options like therapy and spinal injections have been exhausted.

“Manual therapy and manipulation can relieve pain symptoms which enables the patient to move into a customized exercise prescription and stretches,” Dr. Pena explains.

“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. Customized stretches can help repair and strengthen soft tissues and tendons. Simply put, movement is like lubricant for your back or neck. Bed rest and inactivity merely weakens bones and muscles and causes further disability. 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 Texas Spine & Scoliosis, 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. Pena. “We focus on a more permanent relief of back pain, rather than a temporary one.”



Dr. Enrique Pena

## Movement strengthens the back & neck for long term relief

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.

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.



# How injections

## RELIEVE BACK & NECK 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 are often recommended because they have a dual purpose. “The purpose of a spinal injection is both therapeutic and diagnostic,” explains Dr. Eric Mayer, a fellowship-trained specialist in Physical Medicine & Rehabilitation at Texas Spine & Scoliosis. “If back pain symptoms respond to the injection at a certain disc level, we can then confirm that particular disc is the pain generator. So even if the relief is temporary, the injection can provide the surgeon valuable information that will help ensure a successful surgery if and when it becomes 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.

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 injected.

“Years ago, a spine physician

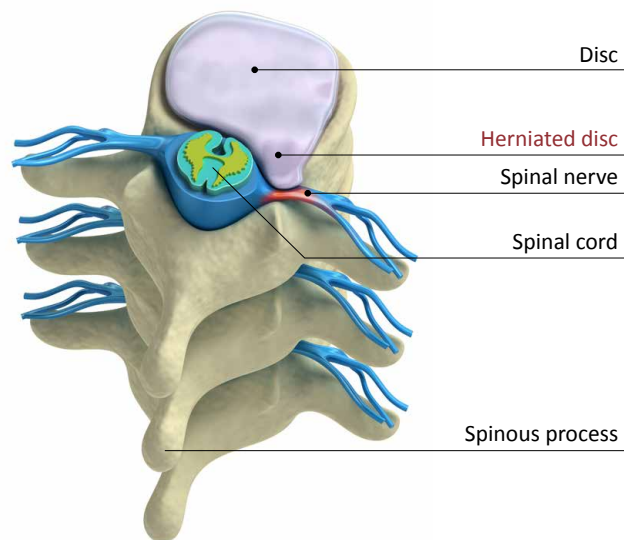
might arbitrarily perform a series of three injections,” explains Dr. Lee Moroz, a specialist in Physical Medicine & Rehabilitation. “That is no longer the case. Typically, you are unlikely to benefit from repeated epidural steroid injections if the first or second does not provide relief.

“If the injection provides relief of

symptoms, we may refer the patient to a spine therapist,” adds Dr. Moroz. “This may include some customized stretches to strengthen the back, make it more flexible and resistant to future strain. In many cases, these injections can bridge many patients back to activity without surgery.”



In advance of surgery, Dr. Eeric Truumees, spine surgeon at Texas Spine & Scoliosis, consults with Dr. Lee Moroz on a patient’s diagnostic injection to determine which level is the likely cause of pain symptoms.



### 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.

# The Artificial Disc

## OFFERS NEW HOPE FOR THOSE WITH HERNIATED DISCS

While most back or neck pain is caused by either a muscle or ligament strain, which never requires surgery, some people can herniate a disc which can require spine surgery to relieve the symptoms. In some cases, the presence of a herniated disc can imply that the patient is at risk of degenerative disc disease, meaning that they may experience herniations at other levels as well.

Consequently, those who have a herniated disc at one level in their low back or neck, can sometimes have additional herniated discs appear in the future. For these people, the newest FDA-approved artificial discs available now can be of great benefit.

### The role of the healthy disc

A healthy disc acts like a shock absorber in between the bony vertebrae of the spine, enabling the spine to rotate. The disc itself resembles a jelly donut. If the disc is compressed or ruptures (from trauma or the stress of lifting something heavy) the jelly center, called the nucleus pulposus, can break through the wall of the disc.

This disc nucleus can then press on nearby spinal nerves causing radiating pain and numbness. Herniated discs in the low back typically cause radiating pain or numbness or weakness in a leg or foot. Herniated discs in the neck conversely cause radiating pain or numbness or weakness into an arm or hand.

While a person can use watchful waiting for three to six months for radiating pain into a leg or arm, that is not the case when the symptom is numbness or weakness in a leg or arm. This symptom is called "neurological deficit" and signals that the

herniated disc is pressing on a nerve root off the spinal cord.

Those with symptoms of numbness or weakness in a foot or hand need to be seen by a spine surgeon within 48 hours. Left untreated these symptoms can become permanent and lifelong. Another emergency symptom that appears less frequently is "cauda equina," where the person experiences loss of control of bowel or bladder because of a herniated disc in the low back.

If these symptoms are not treated promptly, the nerve root can be permanently damaged by the pressure on the nerve root, much like a car parked in the driveway for several days on a garden hose. Even if the car is moved, the hose may be permanently crimped.

### Fixing a herniated disc

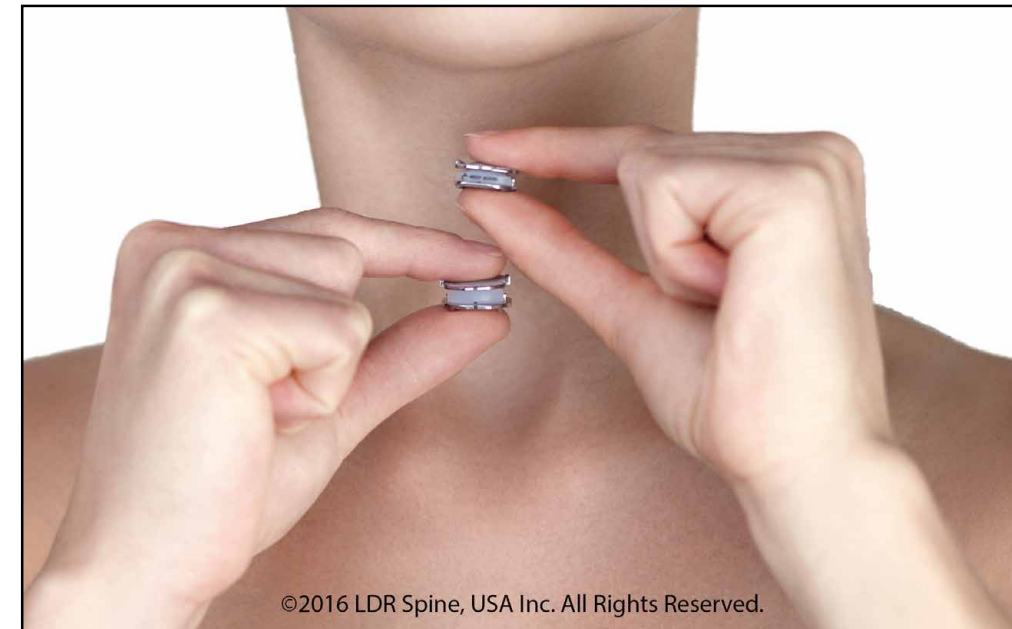
When a disc herniates, it's important to understand that the surgeon cannot repair the disc wall. The surgeon instead removes the part of the disc that is pressing on a nearby nerve root. If the

disc has been compressed, the surgeon must restore the disc space between the vertebrae by inserting a spacer between the two vertebrae.

The spacer could be a piece of bone harvested from the patient's own hip bone, or a sterilized piece of cadaver bone from a bone bank. The process of removing the damaged disc and inserting the bone spacer is called a spinal fusion.

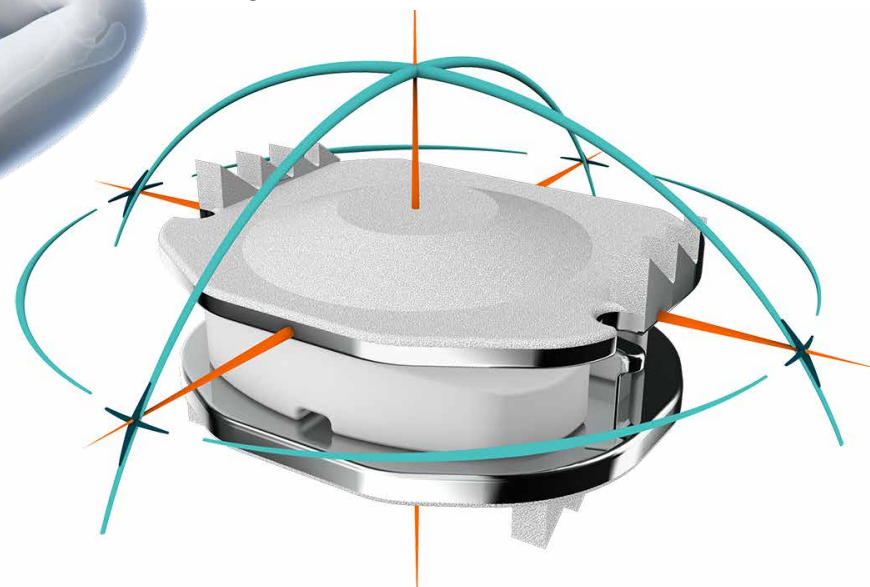
Each year in the U.S., more than 200,000 spinal fusion surgeries are performed to relieve pain or numbness caused by damaged discs in the low back and neck.

While the intent of a spinal fusion is to relieve the symptoms of pain or numbness, the downside of spinal fusion surgery is that it causes two vertebrae to become locked in place. This in turn puts additional stress on discs above and below the affected area, which can



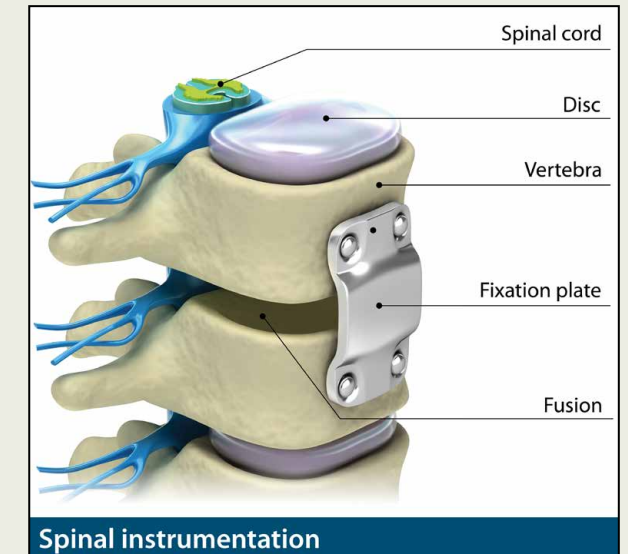
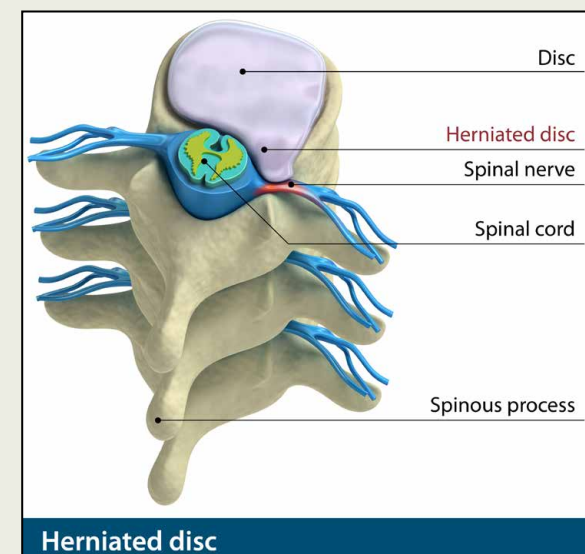
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*The benefit of an artificial disc is that it retains the natural rotation of the vertebrae in the neck, which would otherwise be locked together in a traditional spine fusion surgery. By preserving motion, this lessens the risk that other adjacent discs might also herniate.*



## The problem with fusion & instrumentation

Surgery to relieve the symptoms of a herniated disc involves removing some or all of the damaged disc. But something has to be inserted between the two vertebrae in the place of the disc tissue that is removed. For the majority of patients a spinal fusion is the typical surgery. A piece of bone is inserted and often a fixation plate holds the fusion in position. However, this is less than ideal in that two vertebrae are then locked together, which can stress other discs above and below. The artificial disc, conversely, is designed to retain natural motion.



lead to further disc herniation with the discs above and below the damaged disc. This process is called “adjacent segment disease” and it’s one of the main issues why artificial discs were designed.

**How an artificial disc works**

An artificial disc replacement is intended to duplicate the rotation of a normal, healthy disc and retain motion in the spine, which lessens the risk of herniation at the other disc levels. Artificial discs have been used in Europe since 1987. Because of the FDA’s approval process, artificial disc use in the U.S. did not begin until 2004.

Future development of new artificial discs attempt to not only mimic and reproduce the function of the normal

disc by providing rotational movement but also up and down shock absorption. Other issues in artificial disc design try to take into account the possibility of revision and replacement surgery if an artificial disc wears out over 10 to 20 years.

**Artificial discs for the low back**

There is a big difference in the artificial discs used in the lumbar (low back) area, and the artificial discs used in the cervical (neck) area. Because of the weight of the body and the rotational stress that the trunk places on discs in the low back (lumbar) area, more stress is placed on artificial discs in the lumbar area than in the neck (cervical) area, which only supports the weight of the

head.

A second issue relates to the ease of the artificial disc surgery and any necessary revision surgery to replace a worn out artificial disc. Because the surgeon must access the front of the spine, an incision is made in the abdomen for lumbar discs. This can require navigating around internal organs to access the discs at the front of the spine in the low back.

Conversely, the surgeon can easily access the cervical discs through a small incision in the front of the neck.

Dr. Eeric Truumees, spine surgeon at Texas Spine & Scoliosis notes that the criteria for artificial disc surgery is tighter for the low back. The lumbar disc technology is still rapidly evolving and there is the issue of complex revision surgery for discs that wear out.

“Not every patient is a candidate for an artificial disc, as the guidelines and

indications are narrow,” says Dr. Eeric Truumees. “The spine surgeon evaluates each patient’s case, with selection criteria relating to the disc level in the neck that needs replacement and the extent of the disc herniation.”

There are a variety of FDA-approved artificial discs available for the neck. The Mobi-C disc is the first disc approved by the US Food and Drug Administration (FDA) for use at two levels in the neck. This can be of great benefit to those people with degenerative discs at more than one level in the neck and would otherwise need a fusion at the other level which in turn would restrict rotation. Other FDA-approved discs include: Prodisc-C; Prestige Disc; M6-C Disc; PCM disc; and Bryan Disc.

**The lifespan of an artificial disc**

As with knee or hip joint replacement, surgeons try to postpone the implantation of an artificial joint until it is absolutely necessary so that you do not outlive your artificial joint, which may last from 15 to 20 years. But unlike knee and hip replacement patients, who are typically in their 50s or 60s when arthritis can become common, many spine patients can benefit from artificial disc technology at a much younger age — in their 20s or 30s.

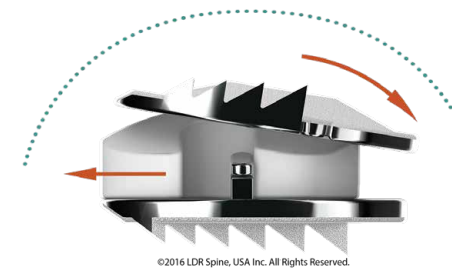
As with any artificial joint replacement, the earlier an artificial joint

is implanted, the greater likelihood that it will need to be revised in the future because of normal wear and tear.

Secondly, not all disc herniations are suitable to be replaced by an artificial disc. As part of the medical exam and qualification process, Dr. Stokes reviews the patient’s medical history, MRI films that show the location of the herniation, the extent of the herniation and the patient’s symptoms.

Spine surgery is evolving and holds great promise with innovation. It is important to remember that artificial disc technology is still evolving with new implants continually in development. Your spine surgeon is the best resource to discuss if it is appropriate for you, and what model of artificial disc is best suited for your case.

To see if you are a candidate for artificial disc replacement, or for a second opinion on spine surgery, call Texas Spine & Scoliosis at 512-324-3580 for a physician evaluation.



*The Mobi-C artificial disc is designed to replicate the natural motion of the vertebrae in the neck. During surgery, the trained spine surgeon installs the disc through the front of the neck.*

**PROS & CONS**

Benefits of the artificial disc:

- Retains motion of the vertebrae.
- Prevents damage to other levels.
- No bone graft required.
- Quicker recovery.
- Less painful surgery than a fusion.
- Less blood loss during surgery.

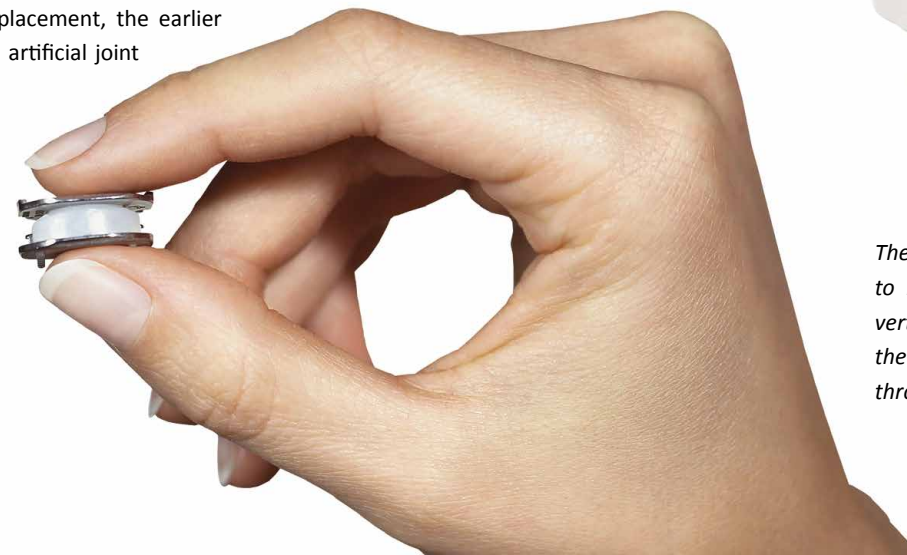
Spine surgeons may be cautious about artificial discs because:

- Wear and tear on artificial disc can require revision surgery in 10 to 20 years which can be complex.
- Disc implants only address rotational forces, not the up and down shock absorbing of the natural disc.
- Overweight people can wear out a lumbar disc prematurely.
- Newer artificial discs are in development that may be better.

*“The person with a herniated disc in their neck needs to locate a spine surgeon who is trained and proficient in artificial disc technology,” advises Dr. John Stokes, spine surgeon at Texas Spine & Scoliosis in Austin, Texas. “Motion preservation is now the new standard.”*



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# How minimally invasive spine surgery shortens the incision, speeds recovery

Spine surgery has evolved greatly over the last 10 years. Using special instrumentation about the width of a thick ballpoint pen, surgeons can repair a herniated disc and have the patient home later the same day.

“Operating through a 1-inch incision can mean covering the area with a medium size Band-aid and enabling the patient to be home later that evening,” explains Dr. John Stokes, a spine neurosurgeon at Texas Spine & Scoliosis.

With that said, there are still some surgeons who are more comfortable doing traditional back and neck surgery through 3-inch long incisions because of the time involved to be trained in minimally invasive spine surgery. With the 3-inch incision, the hospital stay is longer; there is the potential need for donated blood with the inherent risks of that; and a longer time in recovery along with more discomfort from the larger incision.



“While it involves extensive training for a spine surgeon to become proficient in minimally invasive spine surgery, the main beneficiary is the patient,” says Dr. John Stokes, spine neurosurgeon. “The patient can go home the same day and have a faster recovery with less pain.”

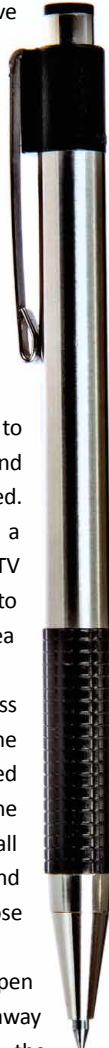
Consequently, a patient needs to be cautious to select a surgeon who is able to use the new instrumentation involved with minimally invasive spine surgery. A patient should ask if a minimally invasive approach will be used, the length of the incision involved, and the length of time in the hospital.

Compared to a 3-inch incision in traditional spine surgery, a surgeon performing minimally invasive spine surgery accesses the spine through a small hole the size of a nickel to allow special tubular retractors and instrumentation to be inserted. At the end of the instrument is a camera with a video feed to a TV screen, enabling the surgeon to view and enlarge the surgical area through the scope.

Consequently, there is far less disruption to the soft tissue in the back. When the portal is removed at the end of the surgery, the surrounding soft tissues slowly fall back into their normal place and a few stitches are needed to close the area.

By contrast, traditional open back surgery pulls the muscles away from the spine which disrupts the tissue causing more discomfort after surgery.

“While it takes a commitment from the spine surgeon to learn how to perform minimally invasive surgery, the biggest benefactor is the patient,” explains Dr. Eric Truumees, spine surgeon at Texas Spine and Scoliosis. “No one wants to spend several days in the hospital if they could be home faster and ultimately back on the golf course quicker and with less pain.”



Dr. Eric Truumees discusses MIS surgery with a patient at Texas Spine & Scoliosis.

## HOW IT WORKS

In traditional spine surgery, the surgeon makes a three inch incision to access the herniated disc, which can disrupt ligaments and tendons making recovery longer and more painful.

By contrast, a surgeon who is proficient in Minimally Invasive Spine Surgery uses special tools called tubular retractors. A small 1-inch incision is made and the tubular retractor is inserted through the skin and soft tissues to access the spinal column. The surgeon accesses the spine using instruments that fit through the center of the tube. The surgeon also uses fluoroscopy to display real-time x-ray images of the patient's spine on a screen throughout the surgery.

## HOW YOU BENEFIT

- Benefits of minimally invasive spine surgery include:
- Smaller incision
  - Smaller scar
  - Home the same day
  - Less damage to tissues
  - Less pain after surgery
  - Less blood loss
  - Less pain in recovery
  - Faster return to activity
  - Less risk of complications

# Clinical Outcomes

Texas Spine & Scoliosis Center is referred the most complex cases of back and neck pain from across Texas and surrounding states. One of every three new patients coming in the front door had previous back surgery at other clinics.

Additionally, 56% of new patients coming into the spine center had red flag symptoms like numbness into a leg or arm, which implies disc-related symptoms rather than simple acute back or neck strain. This severity of new patients presents a challenge for a spine center. Still, the spine center emphasized non-surgical options first, holding surgery as the last resort.

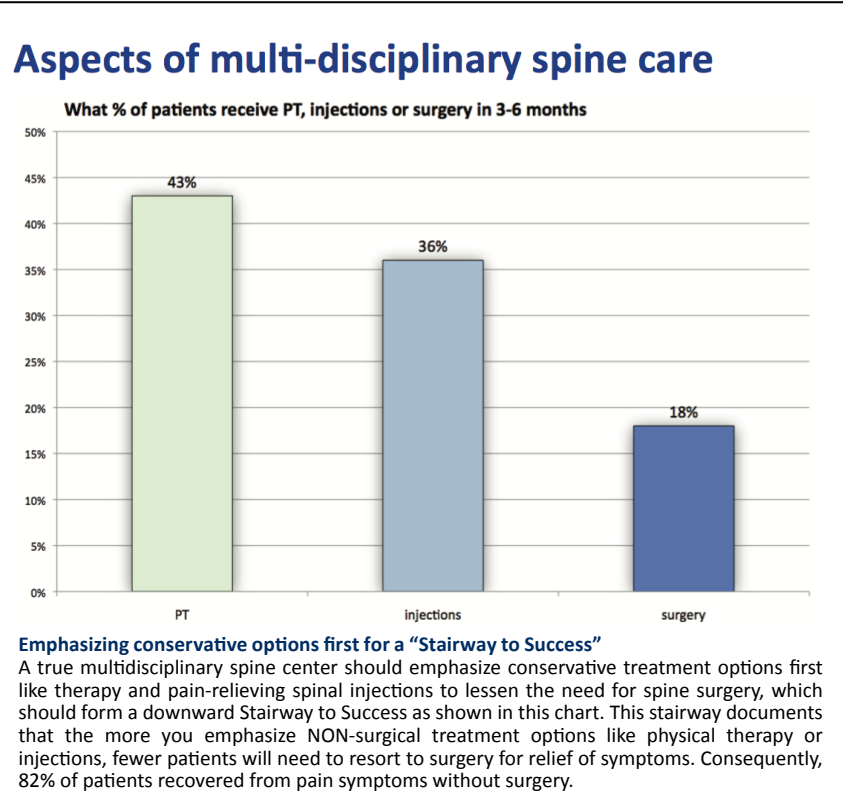
### Patients desire relief of symptoms

The main reason people go to the doctor is for relief of pain. But if spine physicians focus exclusively on pain, they can miss the target of return to function.

For example, spine specialized therapists move the patient quickly into exercise, which reduces pain levels and other symptoms. Significant improvement in functional status does not come from masking pain with opioids either, as the spine center emphasized non-opioids, PT and spinal injections. Case in point: 4 months post first visit, only 7.5% of patients reported they were taking 5 or more pills daily for pain relief.

As to Patient Satisfaction more than 400 patients were ask to report their perceptions on Texas Spine and Scoliosis:

- 91% of patients were SATISFIED OVERALL with their care.
- 96% of patients were satisfied with the doctors EXPLANATION OF THEIR CARE.
- 96% of patients were SATISFIED WITH THE AMOUNT OF TIME the doctor spent with them.
- 92% of patients would RECOMMEND THE SPINE CENTER TO A FRIEND.



### Spine surgery outcomes for herniated disc



# Ascension Texas Spine & Scoliosis

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 1600 West 38th St., Suite 200  
 Austin, Texas 78731  
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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. To be safe, radiating pain should be seen by a spine specialist within 2 days.

**+ 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 2 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.

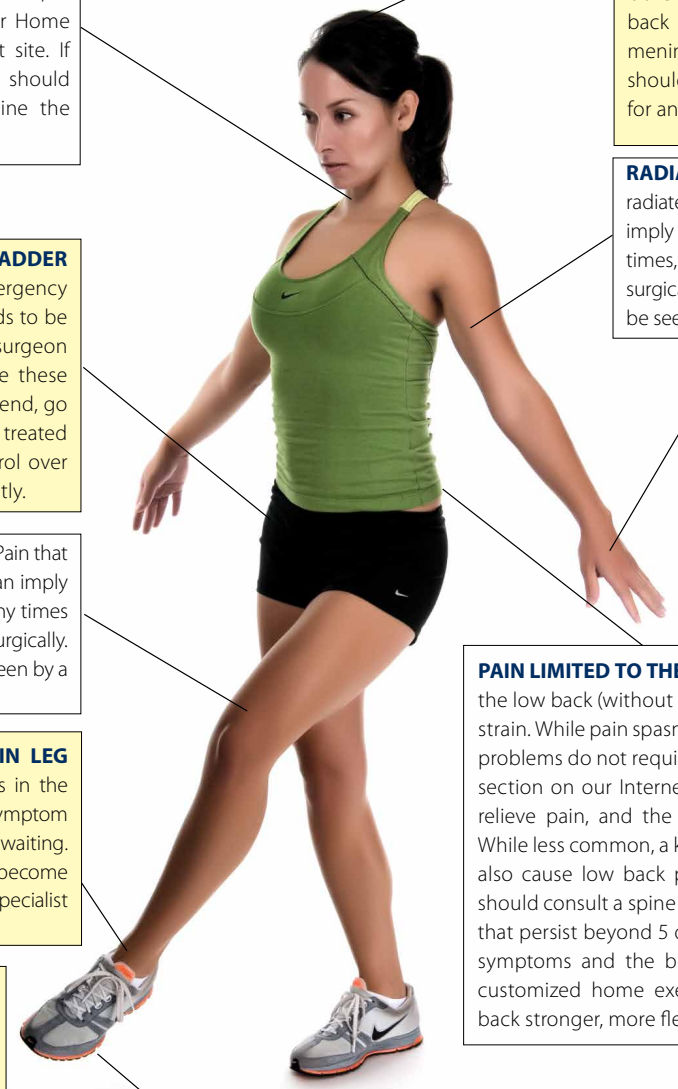
**RADIATING PAIN INTO THE LEG:** Pain that radiates into a leg below the knee can imply a herniated disc in the low back. Many times radiating pain can be treated non-surgically. To be safe, radiating pain should be seen by a spine specialist within 2 days.

**+ 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 2 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!

**PAIN LIMITED TO THE LOW BACK:** Pain that is limited to the low back (without trauma) may be the result of muscle strain. While pain spasms can be excruciating, muscle strain problems do not require surgery. See our Home Remedies section on our Internet site for special stretches that can relieve pain, and the proper use of anti-inflammatories. While less common, a kidney injection or kidney stone may also cause low back pain symptoms. Consequently, you should consult a spine specialist accordingly for symptoms that persist beyond 5 days to determine the cause of your symptoms and the best treatment options, including a customized home exercise program that will make the back stronger, more flexible and resistant to future strain.

**+ 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 2 days. If not treated promptly, it could lead to permanent weakness in the foot.



## PHYSICIAN BIOS

### NON-SURGICAL SPINE CARE

**KUNJ B. AMIN, MD.**  
**Board-Certified Physical Medicine & Rehabilitation • Fellowship-trained Interventional Spine and Musculoskeletal Medicine**  
 Dr. Amin is board certified in Physical Medicine and Rehabilitation and completed an Interventional Spine and Musculoskeletal fellowship at Ascension Texas Spine & Scoliosis. He is experienced in non-surgical, image guided spinal and musculoskeletal procedures. Dr. Amin has a special interest in Hip-Spine Syndrome in pregnant and postpartum patients.



**ERIC MAYER, MD**  
**Board-Certified Physical Medicine & Rehabilitation • Fellowship-Trained in Spine Medicine**  
 Dr. Mayer is board-certified in Physical Medicine & Rehabilitation and in Sports Medicine. He completed a Fellowship in Interventional Spine and Musculoskeletal Medicine (ISMM) at the Cleveland Clinic. He has special expertise in clinical outcomes measurement systems, spinal interventional procedures, spine health, sports medicine and functional restoration.



**LEE E. MOROZ, MD**  
**Board-certified Physical Medicine & Rehabilitation**  
 Dr. Moroz is board-certified in Physical Medicine and Rehabilitation. At Ascension Texas Spine & Scoliosis, Dr. Moroz specializes in helping patients return to activity without surgery. His focus of care is the diagnosis and assessment of back and neck pain problems. Dr. Moroz is proficient in pain relieving spinal injections.



**ENRIQUE PENA, MD**  
**Board-Certified Physical Medicine & Rehabilitation**  
**Fellowship-Trained in Interventional Spine, Musculoskeletal & Electrodiagnostic Medicine**  
 Dr. Pena is board-certified in Physical Medicine and Rehabilitation. Dr. Pena specializes in the non-surgical treatment of back and neck problems. Dr. Pena completed a fellowship in Interventional Spine, Musculoskeletal and Electrodiagnostic Medicine at The Spine Center at New England Baptist Bone & Joint Institute in Boston.



### FELLOWSHIP-TRAINED SPINE SURGEONS

**MATTHEW GECK, MD**  
**Board-certified Orthopedic Surgeon • Fellowship-Trained Spine Surgeon • Co-Chief, Ascension Texas Spine & Scoliosis**  
 Dr. Geck is a board certified orthopedic surgeon, fellowship-trained in spine surgery. Since 2003 Dr. Geck has developed the largest spinal deformity practice in central Texas treating adult and pediatric scoliosis, kyphosis and other complex spinal problems. He has performed more than 2,000 scoliosis surgeries and more than 100 mini scoliosis surgeries. Dr. Geck completed two fellowships in spine surgery, the first in adult and pediatric spine surgery and a second fellowship on scoliosis and kyphosis surgery. Dr. Geck is the co-founder of the SpineHope program, a non profit organization that transforms the lives of children with spinal deformities worldwide through surgery, education and research.



**JOHN STOKES, MD**  
**Board-certified Neurological Surgeon • Fellowship-Trained in Spinal Neurosurgery • Co-Chief, Ascension Texas Spine & Scoliosis**  
 Dr. Stokes is a board certified neurosurgeon, fellowship-trained in spinal neurosurgery with a practice 100% focused on spine surgery. He has performed more than 2,000 spine surgeries. He completed a fellowship at the Cedars Sinai Institute for Spinal Disorders in Los Angeles and UCLA. Dr. Stokes has published numerous scientific articles in peer reviewed journals and has authored book chapters relevant to spinal surgery. Dr. Stokes was a principal investigator in a FDA IDE (investigational device exemption) study of the Mobi-C artificial cervical disc.



**EERIC TRUUMEEES, MD**  
**Board-Certified Orthopedic Surgeon • Fellowship-Trained Spine Surgeon**  
 Dr. Truumees is a board-certified orthopedic surgeon, fellowship-trained in spine surgery. Dr. Truumees has more than 20 years' experience and specializes in cervical, thoracic and lumbar spine disorders. He is a Professor of Orthopaedic Surgery at the University of Texas, Dell Medical School, and served as the 2020 President of the North American Spine Society. Dr. Truumees has published more than 150 peer reviewed articles and textbook chapters. Recently, Dr. Truumees and his partners have won several awards for their research and he has presented this work in conferences around the world. He seeks to bring the latest, proven spine treatments to his patients.



**RORY MAYER, MD**  
**Board-Certified Neurological Surgeon • Fellowship-Trained Spine Surgeon**  
 Dr. Mayer is a board-certified neurosurgeon with dual fellowship training in complex and minimally invasive spine surgery and neurotrauma. He has additional sub-specialty training in neurosurgical oncology. He has been a consulting neurotrauma surgeon to the National Football League. He specializes in adult scoliosis and spinal deformity surgery.







# Ascension Texas Spine & Scoliosis

**Appointments & Referrals:**  
**512-324-3580**

**Ascension Texas Spine & Scoliosis**  
 1004 West 32nd Street, #200  
 Austin, TX 78705



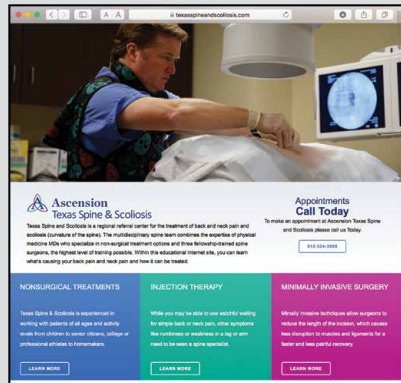
## SATELLITE OFFICES:

**ROUND ROCK:**  
 301 Seton Pkwy, #402, Round Rock, TX 78665

**KYLE:**  
 5103 Kyle Center Drive, #103, Kyle, TX 78640

**BURNET:**  
 200 John Hoover Pkwy, Bldg 3, Burnet, TX 78611

**BASTROP:**  
 630 State Hwy 71 W Bastrop, TX 78602



## HOME REMEDY BOOK & EDUCATIONAL INTERNET SITE

Texas Spine and Scoliosis believes the best healthcare quality comes from a well-informed health care consumer. As a community service, the spine center produces an educational Back to Life Journal, a free 36-page Home Remedy Book and an online spine encyclopedia at [TexasSpineandScoliosis.com](http://TexasSpineandScoliosis.com). Patients can request the Home Remedy Book by calling **512-324-3580** or online at [TexasSpineandScoliosis.com](http://TexasSpineandScoliosis.com). The Internet site has symptom charts, home remedies for back problems, medical illustrations and video animations on spine conditions and surgeries.



## SECOND OPINIONS

Patients can submit a second opinion form at [TexasSpineandScoliosis.com](http://TexasSpineandScoliosis.com), or request an appointment by calling 512-324-3580.

Texas Spine & Scoliosis Center was created to take a specialized approach to back pain, neck pain, scoliosis and spinal deformity with an integrated approach that combines the expertise of fellowship-trained spine surgeons, physical medicine MDs, spine therapists & diagnostics — all under one roof. It is also one of only two spine centers in the State of Texas to be included in [SpineCenterNetwork.com](http://SpineCenterNetwork.com), a national listing of credentialed spine centers of excellence. Similarly, in 2019,



Ascension Texas Spine & Scoliosis Center was designated as a Blue Distinction regional spine center by Blue Cross Blue Shield. The spine surgeons perform the majority of their surgical procedures at Ascension Seton Medical Center Austin which has obtained The Joint Commission Disease Specific Care Certification for Spine Surgery.

