

THE **SPINE HEALTH** JOURNAL

Spring 2022

INFORMED SPINAL HEALTH: From Telemedicine to Technology

ALSO IN THIS ISSUE:

- Hollywood VS. Reality: Q&A About the Spine You See on TV
- The Schroth Method: Scoliosis-Specific Exercises in Adolescent Idiopathic Scoliosis
- What Should Patients Know About Scoliosis?
- When Should I See a Spine Surgeon?
- The Latest Rehab Tool: Blood Flow Restriction



The National Spine Health Foundation is a nonprofit organization dedicated to improving spinal health care through education, research and patient advocacy. We educate Americans about the treatment and prevention of neck and back disorders, prove what works, drive innovation, and support patients on their journey to spinal health.

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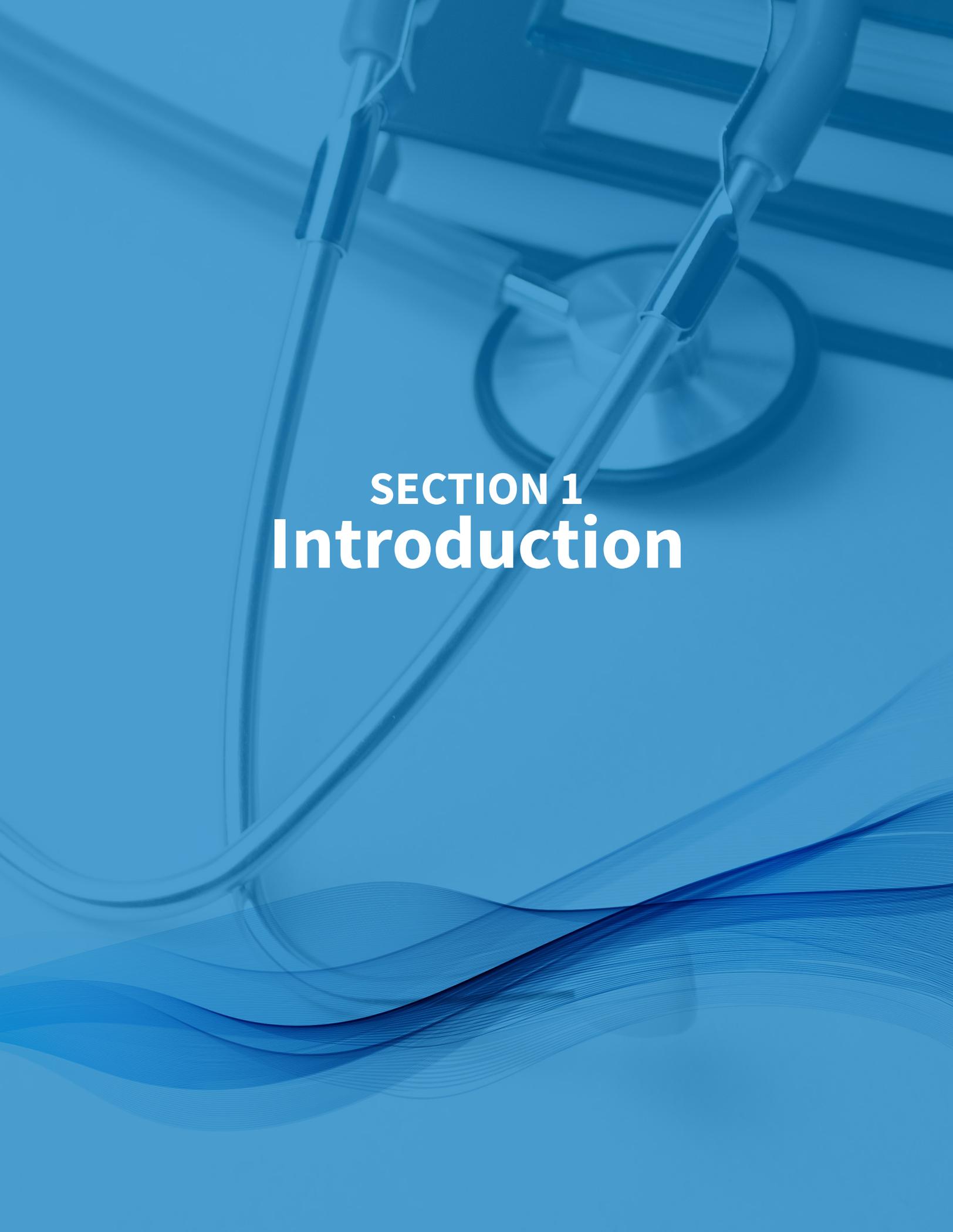
ARE YOU A Spinal Champion®?

If you've achieved an improved quality of life through spinal health care, share your story!



Scan the QR code to
share your story.



The background of the page is a solid light blue color. Overlaid on this are several elements: a stethoscope is visible in the upper half, with its chest piece and tubing clearly shown. At the bottom of the page, there are several overlapping, wavy lines in various shades of blue, creating a sense of motion and depth. The text is centered in the middle of the page.

SECTION 1
Introduction

LETTER FROM EDITOR



Ehsan Jazini, MD
Editor-in-Chief

Informed Patients in the Post Covid Era

Due to the explosion of telemedicine during the COVID-19 era, patients are no longer restricted to their local town or doctor. Thanks to the internet, geographical boundaries have evaporated. This has pushed providers to be at the forefront of their specialty, as patients are coming to their telemedicine appointments with better prepared questions. Patients are expecting more of their physicians, and they want research-based answers regarding their care. The era of telemedicine brings a new healthcare consumer, one who looks for informational resources to locate the best care and make better informed decisions about that care. By using the computer for health care, patients are one click away from being able to access educational information that can help them have the best outcomes from their treatment.

The National Spine Health Foundation (NSHF) utilizes Spine-Talks® to help fulfill the need to educate patients. Spine-talks brings unparalleled access to world class experts who discuss key topics in spinal healthcare. By tuning in to this free resource, patients can hear directly from some of the

nation’s most recognized spinal health experts to get information firsthand regarding their options, including non-operative options. Sometimes, patients may need surgery to correct the problem, and Spine-Talks can help patients better understand when surgery may be the right choice. This can help them ask their doctor better questions at their visit, either in person or through telemedicine.

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The National Spine Health Foundation (NSHF) utilizes Spine-Talks® to help fulfill the need to educate patients.
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A recent example in my practice involved a patient from Michigan seeking care for a complicated spine problem. Her local doctors were not giving satisfactory answers to her questions, advising that her issue was too complex for surgery. She had been bedridden for more than three years due to the severity of her pain and she did not want to continue living that way. She had a prior scoliosis surgery when she was a teenager, but now she had structurally broken down below her fusion. She sought three different surgeons around the country using telemedicine. When she contacted me, I shared the educational resources from NSHF with her, and together, we made an informed decision about her course of treatment. We were able to solve her issue and get her back to her life.

COVID ushered in the era of telemedicine. And with that, comes the paradigm of using your computer for your healthcare. With increased connectivity, providers need to help educate patients. One way to do so is by pointing them to high quality, trusted information directly from the authorities in spinal care, where they can learn the most recent advances and use data driven options to make informed choices. NSHF provides just this information. Given that most people will suffer from back and neck issues at some point in their lifetime, educating the public about spinal health is of the utmost importance.

We are proud to be leading the efforts in patient education and advocacy through Spine-Talks and at spinehealth.org, as well as investigating clinical outcomes to prove which treatments give the best patient outcomes. An educated patient will have the best outcomes. There is data to prove this*!

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PRESIDENT'S NOTE



Thomas C. Schuler, MD
President

He Saved My Life

Recently, while Dr. Rita Roy and I traveled to Las Vegas to film a Spine-Talks panel session with members of our Medical and Scientific Board, we were blessed with a wonderful story from an unexpected Spinal Champion. A member of the film crew in Caesar's Palace, hired through the hotel, approached Dr. Roy and myself to tell us an amazing personal story of triumph. He had been involved in a motor vehicle accident and developed severe neck pain that failed extensive nonoperative management, and was suffering to the point that he was unable to do his job. He was distraught and felt that his life was over. Fortunately, he met with an expert who counseled him that the best way to solve his problem would be a cervical disc replacement surgery. After undergoing the surgery, his pain was immediately resolved and he regained his full and active life. Ironically, he was so much better that he was there filming our Spine-Talks! When I asked him about his recovery, he told me, in reference to his surgeon, that "he saved my life."

On the surface, this seems like an exaggeration. Nobody performed CPR on him, nobody pushed him out of the way of a speeding locomotive, and nobody pulled him from a raging river, yet he felt his life was saved. The

deleterious impact that chronic pain has on one's mind, psyche and ability to function makes people feel that life as they know it has ended. But the miracles of modern spinal treatments can return patients to the people and activity they enjoy. That is what we at the foundation are passionate about sharing: knowledge about treatments that are available that could help people overcome their disability, their pain, and end their suffering so that they regain their quality of life.

.....
When I asked about his recovery he told me that (in reference to his surgeon), "he saved my life."

The National Spine Health Foundation educates Americans about prevention and treatment options so that they can make the best decisions for their spinal health care. Oftentimes, people suffering from a debilitating spinal condition are confused, isolated and feel that their life has ended. However, when learning about the promise of modern spinal treatments, they begin to understand that they can overcome their challenge and get back to their lives. We believe that the power of hope comes through knowledge.

By providing unparalleled access to world class experts through our Spine-Talks web platform, people can hear directly from nationally recognized leaders in spinal care. We are excited to have 50 of the nation's top spinal experts on our Medical and Scientific Board who are available for

Spine-Talks. Our goal is to give people the most thorough and up to date information so that they can make the best decision about their treatment options and get back to doing the things they most enjoy.

Over one-third of our nation suffers with significant neck or back pain. We can do better, and the Foundation is working to deliver education not only from our experts on Spine-Talks, but also through sharing patient success stories from our Spinal Champion community through our award

winning 'Get Back To It' Podcast as well as our website, spinehealth.org.

NSHF is here to educate the public and to advocate for everyone to have access to the best quality spine care so that everyone can live a full and active life. We welcome all interested people and organizations to join us on our mission to improve spinal health care for all Americans through education, research and advocacy.





SECTION 2
Discover Your Spine



TO SEE THE SPINE: MRI AND CT MYELOGRAMS



Luis Manuel Tumialán, MD
Barrow Neurological Institute

Imaging of the spine is obtained to identify the source of a patient's symptoms, and more often than not, pain is at the top of the list. Pain may be due to poor alignment or instability within the spinal column or an area of compression of a spinal nerve. Advanced, high quality imaging is essential to finding an explanation for persistent symptoms that have not responded to physical therapy, injection therapy, or the good old fashioned tincture of time. The vast majority of patients who present with spinal issues typically have an element of neural compression from a disc herniation or bone spur. Therefore, the ideal imaging modality gives a clear picture of both nerves and bone.

Since the advent of magnetic resonance imaging (MRI), no other imaging modality has demonstrated spinal anatomy as precisely. Few spine surgeons would argue that a patient who presents with symptoms causing disability and decreased functional mobility should have an MRI for evaluation of their condition. Still, there are occasions where an MRI is not the ideal study for the diagnosis to be made and there are even occasions where an MRI cannot be obtained. Patients who have cardiac pacemakers and some types of implantable stimulators simply cannot undergo MRIs because their implanted device is not compatible with the magnetization involved.

Other times, patients may have an implant that is compatible with an MRI but the artifact generated from the implant is so significant that it distorts the image in a manner that makes the image impossible to interpret. The metallic alloy often found in artificial discs for the cervical and lumbar spine are perfect examples of implants that cause such distortion to

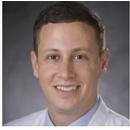
the image that interpretation is significantly limited. Other times, there is distortion from implants such as pedicle screws and rods that may make interpretation difficult.

Patients with devices that limit, or prevent, MRIs need not be disheartened. Again, the goal of spinal imaging is to identify the structures that may be compressing the neural elements. Before the advent of MRI, radiologists used myelography, which is injecting a contrast agent that will show up on x-ray to reveal an area of compression. After CT scans came along, it did not take long for radiologists to combine the CT scan and myelogram for even more precise imaging. Furthermore, multiple different views of the spine (called multiplanar reconstructions) are available with a CT scan.

A CT myelogram is a perfectly reasonable spinal imaging option for patients who cannot obtain an MRI. The downside of a myelogram is the need to inject a contrast agent into the spinal canal during a lumbar puncture, which may be painful or cause a spinal headache. Again, the name of the game is being able to distinguish bone from nerve and identify areas of compression. The injected contrast highlights boundaries of the spinal canal and allows for meaningful interpretation, even in those circumstances where metallic artifacts distort an MRI image or when an implanted device is not MRI-compatible.

The good news is, there are a number of advanced imaging modalities available to the clinician that complement routine x-rays, allowing for an accurate diagnosis to be made and comprehensive treatments to be offered.

HOLLYWOOD VS. REALITY: Q&A ABOUT THE SPINE YOU SEE ON TV

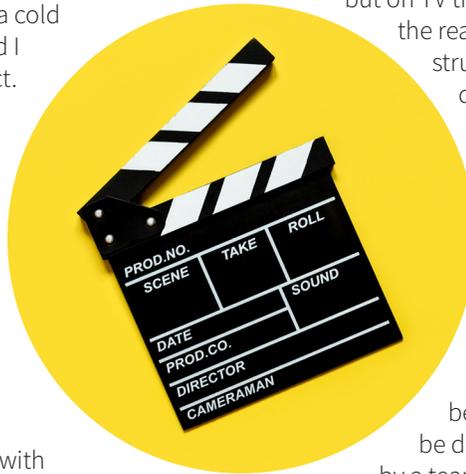


Oren Gottfried, MD
Duke University Health

Dr. Oren Gottfried is a fellowship-trained spinal neurosurgeon at Duke University who also serves as a TV medical advisor, actor, and writer for medical TV shows such as The Good Doctor. The National Spine Health Foundation spoke with him about his unique expertise in the Q&A below.

■ **CAN YOU GIVE US SOME BACKGROUND ON YOUR CAREER AND HOW IT INVOLVES BEING BOTH A SPINE SURGEON AND A TV MEDICAL ADVISOR, WRITER, AND ACTOR?**

It started way back in 2010 when I was just getting my spine practice going. I received a cold call from a Hollywood producer and I was asked to help on a small project. I thought, “Wow, education is such an important part of what I do with my patients, when teaching colleagues, and presenting at conferences. What happens if I can educate a bigger audience?” It transitioned from just being the advisor for spine and neurosurgery issues to all of medicine. It’s nice to have this platform, but also it is a lot of responsibility because I’m working with writers that want to tell an interesting story. I feel like I’ve made my impact and I owe it to TV to extend that impact.



times it’s a successful surgery when, in truth, success is a spectrum rather than binary — good or bad. So much of real medicine falls in the gray zone. There’s just not enough time on television to show the gray zone. The truth is, many times it takes months if not years to recover from spine surgery, but on TV things happen very quickly. Understanding the reality of spine disease and witnessing the struggles of my patients creates a heightened desire to avoid alienating or making them feel uncomfortable by an incorrect TV portrayal.

Now on the flip side, where spine on TV is helpful, is when we can talk about spine disease. We can talk about herniated discs and spine trauma, and just put the discussion out there. I’d rather focus on the patient’s struggle and the accuracy of the medicine/treatment, even though it may not be delivered by the person who would actually be delivering it. In reality, spine health is managed by a team. You have physiatrists, physical therapists, occupational therapists, anesthesiologists, etc. Even among spine specialists, you can have orthopedic trained spine surgeons, neurosurgery trained spine surgeons, or orthopedic and neurosurgery trained spine surgeons. There’s just so many experts, but a TV show can’t have 20 experts treating one patient. I think ER and primary care physicians do great jobs with spinal disease.

■ **AS A NEUROSURGEON, WHAT IS MOST CHALLENGING ABOUT THE DRAMATIZATION OF THE BRAIN AND SPINE ON TV AND WHAT DO YOU FIND TO BE HELPFUL ABOUT IT?**

It is easier to portray the extremes, but challenging to depict the more common scenarios. So much of spine care is not about the surgery. You don’t go right off to surgery or proceed to steroids injections. It’s the fundamental things like taking medications and participating in physical therapy that are more realistic but less glamorous. TV is going to depict a really big problem that needs a really big surgery and many

■ **WHEN IT COMES TO YOUR ROLE AS A TV MEDICAL ADVISOR AND WRITER, WHAT DO YOU HOPE TO ADD TO THE MEDICAL TV NARRATIVE?**

I aim to portray things accurately. I educate my patients that some people have outcomes that are so good that I almost



don't want to tell anyone else about them because I don't want other patients to think "why didn't my surgery end up like that?" TV may also depict rare, awful situations with poor outcomes. I don't want that to scare my patient away from surgery if they need it, but do expect an appropriate level of fear over surgery. When someone watches a show that I've helped with, I've thought about all of these issues. I don't provide my notes in a vacuum of me as a doctor, but instead I really think about how a person with that illness would perceive the show. I'm just a member of a team when I help on TV. I'm just the person who understands the medicine, so I'm constantly a proponent of the truth, but I also know that there's only so much truth you can show on a 42 minute show. I will go to bat for every medical illness. That's my role and I will never back down from it.

■ **WHAT SHOULD REAL SPINE PATIENTS KNOW ABOUT THE DEPICTIONS OF SPINE CARE ON MEDICAL TV?**

In general if there's a medical consultant to the writer, they're going to be able to bring the accuracy up to speed much better than any google search. As a consultant, I don't just pay attention to neurosurgery and spine. I talk to a lot of clinicians in the hospital and see what they're doing. I keep up with what's new and exciting in other fields, and that direct knowledge is superior to any google search.

Technology is another interesting topic. Something I've noticed with TV shows is once they've used a certain

technology, they may not want to mention it again. So let's say a robot is being used during one episode — robotics are found in many medical fields these days — yet the show may not want to mention a robot a second or third time in other episodes because they already used it. I think it is nice to showcase technology, but it needs to be put in an appropriate frame of reference. Sometimes the medical community doesn't have all of the clinical data. TV shows may not depict the downside of the technology, but I want the viewer to be aware that unless there's hard data from valid studies and clinical trials, we don't actually know if the technology is offering a better outcome.

■ **GIVE US YOUR 'BEHIND-THE-SCENES' TAKEAWAY MESSAGE.**

I think we're all active viewers of life. We don't just sit back and get information fed to us, we have to go verify it! I would love to have everybody go and learn more about conditions they see on TV. I would argue that any patient suffering from a spine condition that sees something about the spine on a TV show...should go do a little research and see if it's real or not. I think there are so many good resources online, including the information provided by the National Spine Health Foundation. I always encourage patients to find their information from reputable sites that have put in the time and energy to have patient-facing accurate information. I think websites like spinehealth.org are very helpful because the information is presented in a very objective, unbiased way.



■ WHAT SHOULD PATIENTS KNOW ABOUT SCOLIOSIS?



Serena Hu, MD
Stanford University Health

■ WHAT IS ADOLESCENT IDIOPATHIC SCOLIOSIS (AIS)?

AIS is the most common type of scoliosis in otherwise normal teenagers. ‘Adolescent’ refers to the time in life when scoliosis develops, in this case it develops during adolescence (age 10 to adulthood). ‘Idiopathic’ means unknown cause. Although there are several theories on what causes scoliosis, we don’t really know all of the factors involved in the development of AIS. Finally, ‘scoliosis’ refers to a sideways curvature (to the left, right, or both) of the spine that should otherwise be straight up and down.

While the spine curve (tilting) is what we measure in degrees on X-rays, what is more obvious to the eye is that the spine and ribcage also rotate (twisting) as the spine curves. This visible rotation is the reason the examination involves bending forward, revealing the asymmetrical appearance of the trunk of the body causing one side to look higher than the other side. We also look to see if the waist looks asymmetric, or for one shoulder to be higher than the other. While no one is completely even on one side compared to the other, scoliosis can cause different amounts of asymmetry.

■ HOW COMMON IS AIS AND IS IT MORE COMMON FOR BOYS OR GIRLS?

AIS is seen in 1-3% of adolescents but is usually mild for most individuals. It is much more common in girls than boys.

■ WHAT ARE THE TREATMENT OPTIONS FOR AIS?

Observation: Many teens with AIS have milder degrees of scoliosis which can be observed and followed with periodic X-rays. AIS has the greatest risk of getting worse (progression of curve size) while the person is still growing. The amount of time that growth is expected to occur for each individual is typically the duration of time AIS is observed on a regular basis.

Bracing: Bracing has been shown to slow or stop the progression of scoliosis if worn appropriately during the growth period. If someone’s curve has shown progression while being observed by periodic X-rays AND there is expected continued growth of the spine, then often the balance tilts towards bracing. Bracing is generally the first option for a person whose potential for worsening (based on how large the curve measures at the time of diagnosis and how much growth is remaining) is significant.

Surgery: If bracing doesn't slow or stop the progression of the curve, or if scoliosis isn't diagnosed until it is more significant, surgery may be recommended to correct the scoliosis and prevent further progression. Surgery usually consists of curve correction and spinal fusion with rods, screws, and bone graft to lock the curve into a better position that can no longer change over time.

■ **DOES BRACING WORK? WHAT CAN I EXPECT TO DO DIFFERENTLY WHILE WEARING A BRACE?**

Bracing is the only proven treatment that has the potential to slow or stop curve progression in young people. Although it may vary from doctor to doctor, most doctors that specialize in treating AIS allow the brace to be taken off for sports or other necessary activities that the brace would otherwise restrict. However, it has also been proven that the longer the brace is worn each day the better the success rates of avoiding curve progression. Finding that middle ground for activity versus brace effectiveness is important to discuss as bracing is initiated.

■ **DOES HAVING AIS CAUSE ANY RESTRICTIONS NOW OR IN THE FUTURE?**

AIS itself should not cause significant restrictions and is often asymptomatic. If a curvature becomes very severe (> 90 degrees), it may affect lung or heart function, but that rarely occurs in the US with the availability of healthcare and the awareness of scoliosis across the medical field. If a curvature reaches 50 degrees or more, the curve is more likely to progress into adulthood, and thus many teens are offered surgery if their curvature reaches this size. After surgery for AIS, the curved part of the spine is fused and becomes stiff which may limit some activities that require more flexibility.

The vast majority of teens with AIS are not treated with surgery but do become adults with scoliosis who can develop wear and tear as part of the curve, which may become painful. Painful scoliosis can be treated with physical therapy, medication, exercise, injections, and sometimes with surgery.

The great news is that scoliosis specialists can provide the correct diagnosis, education, and guide the proper treatment for AIS. If we can literally 'get ahead of the curve' then success rates are high for getting through the adolescent growth phase without surgery, during which time healthy lifelong habits are developed that contribute to the ongoing success throughout adulthood.

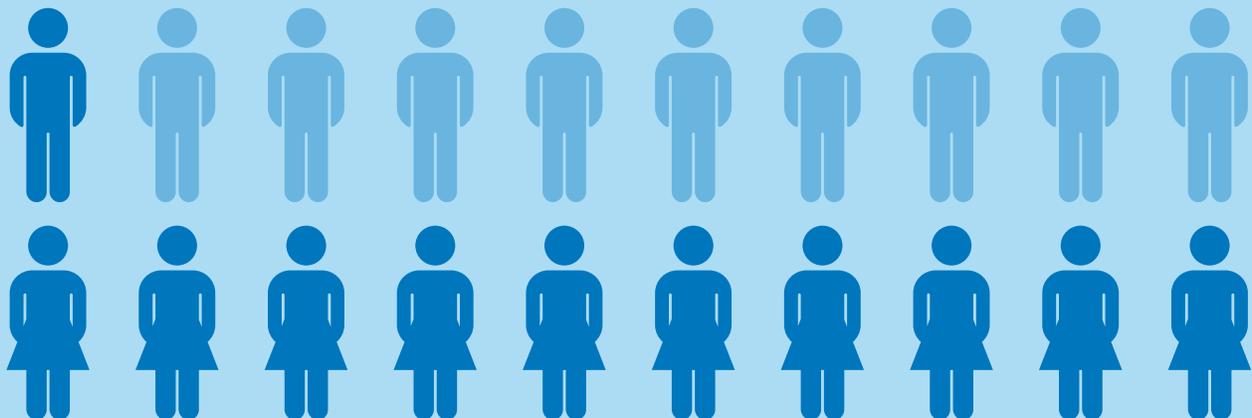
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No matter what phase of treatment the teen is in for AIS, it is critical that they understand the importance of staying fit and flexible, maintaining a healthy weight, and avoiding nicotine to set them up for success both now and in the future.

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DID YOU KNOW?

According to the American Academy of Orthopaedic Surgeons, **girls are 10x more likely** to be diagnosed with AIS than boys.





SECTION 3
**Methods of
Spine Treatment**



■ THE LATEST REHAB TOOL: BLOOD FLOW RESTRICTION



Justin Geisler, PT, DPT
Virginia Therapy & Fitness Center

■ WHAT IS BFR?

Blood flow restriction (BFR) training is rapidly gaining in popularity in the rehab setting, but what exactly is BFR and how can it benefit you? Consider these two simple concepts: (1) to maintain muscles, we must use them and (2) to gain muscle strength, we must train them. Traditionally, muscle training to gain strength was done by progressively lifting heavier weights over time. During heavy lifting, there is a reduction of oxygen delivery to the muscles that stimulates the body to respond in ways that ultimately lead to muscle growth. Weight training by heavy lifting may not be an option to many different groups of people: the injured, those having undergone recent surgery, those with medical conditions that put them at risk for injury, the elderly, and the list goes on and on. In BFR training, blood flow to specific muscles is restricted by pressure, which recreates the same environment caused by heavy lifting. When light lifting is combined with

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In BFR training, blood flow to specific muscles is restricted by pressure, which recreates the same environment caused by heavy lifting.
.....

blood flow restriction, the body responds with similar muscle growth and strength gains as seen with heavy weight lifting.

■ THE EVOLUTION OF BFR

This unique discovery was made by Dr. Yoshiaki Sato in Japan in the 1960s. At the age of 18 years, Dr. Sato spent a prolonged amount of time sitting in a traditional Japanese posture and noticed his lower leg muscles were swollen as if he had done a hard workout. After years of investigation and experiments to develop this pressurization technique, Dr. Sato eventually patented the technology, termed “KAATSU” (“additional pressure”) training. The Department of Defense later had success using it on military personnel after limb salvage procedures, traumatic blast injuries and general orthopedic surgeries such as ACL reconstruction. It has since become popular with professional athletes, Jadeveon Clowney being the first NFL player to use it in 2015 after a lower leg injury. Now BFR is found in general orthopedic rehab facilities and hospital settings due to the undeniable benefits established through extensive research.

■ BFR TRAINING

During BFR training a tourniquet is placed on the upper thigh or arm that is set at an individualized pressure to mimic the hypoxic (reduced oxygen) environment that occurs with exercise. What makes BFR so unique is that using a light load or even body weight is all that is needed to have similar effects as lifting a heavy load. Research has also shown significant improvements of lower extremity strength, muscle volume, and functional outcome measures when used during a BFR walking program. Gaining muscle by just walking with a BFR tourniquet on is something to be excited about! During the workout the tourniquet causes a blood pooling effect and increases muscle fiber recruitment that stimulates beneficial growth factors and hormones to the area. This slows down muscle loss and promotes muscle growth and strength.

■ WHO CAN BENEFIT FROM BFR TRAINING?

BFR training experts are in agreement that whenever possible, traditional heavy weight training is best to optimize muscular development and BFR should be introduced when loading heavy is not ideal. Activity reduction is common after a spine injury or surgery, which opens the door for muscle loss to occur. Using BFR with light weight training while an injury heals or before and after surgery can be very effective and complies with post surgical lifting precautions while preventing muscle loss and even building strength.

Muscle loss is one of the biggest problems a physical therapist faces when treating patients, which is a common problem in the geriatric population. The old adage, “if you don’t use it, you lose it” holds true for our muscles; if we don’t give them a reason to stay, they will quickly leave. Muscle wasting has been linked to a loss of independence and increased mortality. Lifting heavier weights has been shown to be safe in the geriatric population but for some it may not be the best option. BFR bridges that gap by allowing the muscles to be appropriately worked without heaving lifting at all.

■ BFR SAFETY & EFFICACY

Safety is a top priority during rehabilitation. Risks concerning blood clots and muscle damage have been studied extensively with BFR training. These studies have shown that BFR does not increase the process of blood clot formation and the risk of developing a blood clot is the same when compared to the risk during traditional exercise training. The risk of muscle damage using light weights with BFR is less than the risk compared to heavy weight training. Although BFR is not for everyone and is safest when directly guided by a physical therapist with BFR training, the technique is generally considered to be safe.

This innovative technology has allowed a wide variety of patients to maintain or regain strength and return to a satisfactory quality of life faster than traditional rehab. At Virginia Therapy and Fitness Center we have seen great success with BFR training for many patients during their rehab journeys. BFR training has evolved since its discovery and it is definitely here to stay.

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■ SCOLIOSIS-SPECIFIC EXERCISES IN ADOLESCENT IDIOPATHIC SCOLIOSIS: THE SCHROTH METHOD



Ron Lasley, PT, DPT
Norton Healthcare



Steven D. Glassman, MD
Norton Healthcare

■ THE HISTORY

Looking back through the history of scoliosis treatment in the United States, physical therapy has played a minimal role in the management of idiopathic (without a definite cause) scoliosis. For many years, patients and parents were confronted with the uncertainty of a ‘wait and see’ approach. Very few options were available as an active intervention, particularly for small curves. To improve on this paradigm, the Leatherman Spine Center built a Schroth-based scoliosis exercise program over the last seven years. Through this experience, it has become increasingly apparent that many patients and parents desire a more proactive treatment approach. The Schroth Method is a comprehensive nonsurgical approach to scoliosis management which includes scoliosis-specific exercises.

The Schroth Method was initially developed by Katharina Schroth and has advanced in its popularity and methodology

over the last 60 years by her physical therapist daughter, Christa Lehnert-Schroth. This functional exercise program uses a three-dimensional approach to balancing the spine by: activating the muscles surrounding each curve, utilizing breathing techniques and trunk elongation to help with rotation, and using the pelvis to stabilize posture.

■ GOALS OF THE SCHROTH METHOD

In a Schroth exercise program, the goal is to provide each patient with the ability to derotate the spine, elongate the trunk, and stabilize the spine in a three-dimensional plane. These goals are addressed by teaching awareness of postural deficits, restoring muscular and postural symmetry, and achieving the ability to breathe into the concave side of the body. Through a comprehensive Schroth program, additional goals are to prevent the development of pain, reduce existing spinal pain, improve postural aesthetics, and prevent or address any respiratory dysfunction. Ultimately,

one of the most important goals is providing the patient with an opportunity to be actively engaged in the management of their scoliosis.

■ **WHAT TO EXPECT**

Initially, a comprehensive Schroth program begins with a thorough review of the patient’s current and past medical history, a complete musculoskeletal examination, and review of X-rays for the purpose of curve classification. The in-depth interaction between patient and therapist promotes an improved understanding of the patient’s spinal curvature and an open dialogue of the goals and treatment options. Some clinics may utilize a surface topography scan to further assess the curve(s) and posture without additional exposure to radiation. This may facilitate the patient’s understanding of their individualized treatment program, the potential use of bracing options, and the rationale for scoliosis-specific exercises. The program can also provide management strategies at home, at school, at work, and during athletic participation.

In the past, many Schroth programs were very lengthy and intense. As programs have been refined over the years, one can expect to complete between 5 to 20 sessions over a 2 to 4 month period. These sessions may be once per week for 45 to 60 minutes depending on the individual patient and their needs. At the end of the program an individual can expect to come away with decreased pain and improved: core

strength, scapular stability, postural symmetry, and body awareness. Patients will gain the knowledge needed to self-manage their scoliosis by maintaining specialized breathing patterns, strength, functional movement patterns, and pelvic alignment.

■ **KEYS TO SUCCESS**

Although Schroth-based programs will differ, there are three key components to success. One must become increasingly aware of all postural asymmetries and how they affect daily life while being mindful of any positions that exacerbate poor posture. One must work toward achieving muscular symmetry by addressing the inherent weakness of one side of the curve and the overworked prominent side of the curve. Finally, one must understand the importance of applying breathing strategies to help derotate the spine through reshaping of the rib cage and the surrounding soft tissues.

A physical therapist trained in the Schroth method can tremendously help those with idiopathic scoliosis understand and achieve these basic components of a scoliosis-specific exercise program. Perhaps most importantly, a Schroth program promotes active patient participation in the management of their scoliosis by providing long-term management strategies that extend beyond the duration of the formal program.

For a list of Scoliosis BSPTS-North America trained physical therapists in your State, go to <https://www.schroth-barcelona-institute.com/>.

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■ WHEN SHOULD I SEE A SPINE SURGEON?



Todd Lanman, MD
Lanman Spinal Neurosurgery

■ THE WAITING GAME

In my experience as a practicing spine surgeon, very often patients come to me for the first time after many months or even years of neck or back pain. When this happens, I think to myself, “Why didn’t you come to me sooner?” The longer that some spinal conditions go untreated, the worse they get. Over time, patients run out of treatment options for neck or back pain until I can only offer them spinal fusion, a true last resort. Waiting can often be detrimental to recovery and consulting with a spine surgeon doesn’t have to be as scary as you might think.

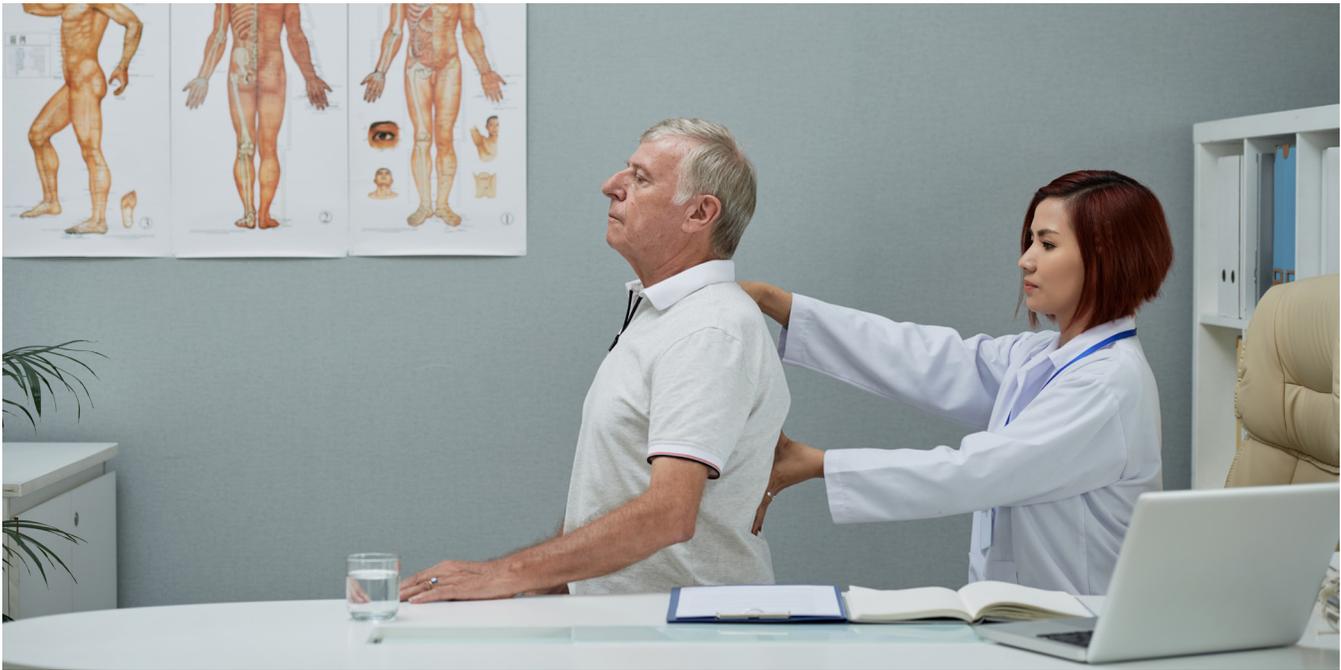
■ SPINE SURGERY IS THE LAST RESORT, BUT SEEING A SPINE SPECIALIST SHOULD BE ONE OF THE FIRST

In the majority of cases, spine surgery is only indicated after patients have suffered with symptoms for several months to years and conservative treatments have failed. It is understandable that patients with short term symptoms may ask, “Why would I see a spine surgeon now if I am not yet a candidate for spine surgery?” However, the spine wellness practice I have built over the past several decades (and other practices like it) is dedicated to all forms of spine health and wellness. I am a spine surgeon, but I am also

a spine health specialist. Spine health involves nutrition, exercise, weight management, physical therapy, metabolic and hormonal management, injections, and spine surgery. Perhaps surprisingly, most of the patients I see in my practice ultimately do not require spine surgery; they find relief with other spine health treatments. The earlier a spine health specialist is involved, the better chance at improving overall spine health and reducing symptoms.

■ SOME SPINE SURGEONS PRACTICE HOLISTIC SPINE HEALTH MANAGEMENT

It is certainly true that most patients with neck or low back pain should see their primary care physician first. According to some estimates, four out of five patients with neck or low back pain will get better solely with simple treatments like NSAIDs or muscle relaxants and some modest exercise, making a trip to the spine surgeon unnecessary. However, if your neck or low back pain does not resolve within a few weeks, consider seeing a spine surgeon who practices holistic spine care. A holistic approach to spine care is one in which a person’s age, lifestyle, nutrition, hormone status, exercise routine, overall physical health, and spine health are considered together to develop a customized, comprehensive therapeutic plan. In my practice, for example, I provide diet and exercise advice including weight loss



medications, anti-inflammatory injections, stem-cell derived regenerative therapy, osteoporosis and osteopenia treatments including supplements and bioidentical hormone management, and of course, spine surgery. I have also developed close professional relationships with other trusted spine health specialists (e.g., physical therapists) to whom I gladly refer patients when it can be of benefit to them.

■ **THE BENEFITS OF AN EARLY(ISH) VISIT TO A SPINE SURGEON**

I recall a patient I saw recently who had a horribly pinched nerve and was in so much pain he could barely walk. He clearly required surgery, which I scheduled, but I also considered the man holistically. I prescribed an exercise program, a diet plan, and a handful of other conservative interventions to help ease his pain until surgery. The man called me, elated, two days before surgery and told me his pain was completely gone. I replied, “Then I’m canceling your surgery!” I carefully followed him over time and he’s still doing great. Now that case is a bit of an outlier, but not as unusual as you might think. When patients are seen relatively early, spine health specialists can often create a tailored management program that relieves their pain and helps them avoid spine surgery altogether.

■ **AN EARLY VISIT OFFERS THE CHANCE OF MOTION-PRESERVING SURGERY**

There are instances when spine surgery is needed. Spinal fusion surgery involves fusing together two or more of the vertebral bones in the spine, and is a surgery of last resort. Spinal fusion provides stability and relieves pain, but makes the spine less mobile. Spinal motion is important for anyone who enjoys an active lifestyle, which is almost everyone. In contrast, artificial disc replacement surgery also relieves pain and provides stability while preserving or even restoring spinal motion. If a patient qualifies—usually if the spinal disease is not too advanced—I often recommend artificial disc replacement surgery. That is not only my professional opinion, but also based on personal experience. I’ve had over 10 spine surgeries myself, both spinal fusions and artificial disc replacements. If I was given the option of both surgeries, I would choose artificial disc replacement every time. Waiting too long to see a spine surgeon may eliminate the option of a motion-preserving surgery.

■ **RECOMMENDATION**

Focus on spine wellness. Understand there is a gamut of nonsurgical treatments that can protect and improve spinal health. The best way to care for your spine is to see a spine surgeon for neck or back pain early in the process, not as a last resort.

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