Conditions

Scoliosis Treatment

If your child has scoliosis, Gillette Children’s Specialty Healthcare can help. Gillette is a nationally and internationally recognized leader in pediatric orthopedics and in the treatment of pediatric spine conditions, including scoliosis.

Whether your child has idiopathic, neuromuscular or congenital scoliosis, the primary goal of any treatment is to stop the curve from getting worse. Regardless of severity, scoliosis pain is rare. In many cases, surgery isn't necessary if scoliosis is detected early and your child receives proper care.

Most patients with mild scoliosis at skeletal maturity (when the spine is no longer growing) will lead a normal life with no limitations on activities, including sports.

However, for patients with more significant curves, there is a higher likelihood that the curve will continue to progress throughout adulthood. Although it will progress slowly (0.5-1 degree per year), throughout a lifetime this can add up to a significant curve which can be more difficult to correct and have an impact on quality of life.

Options for how to manage your child's scoliosis depend upon the size of their curve and how much growing they have left to do.

Management of Scoliosis

The way that Gillette cares for scoliosis largely depends upon what type of scoliosis you have.

Infantile Idiopathic Scoliosis (IIS): 3 years old and under

Infantile idiopathic scoliosis has the highest rate of spontaneous resolution. For smaller curves the first line treatment is observation. Your spine provider will want to monitor your child’s curve with an exam and x-rays every 4-6 months. They will make measurements on the x-ray to monitor for a possible change in curve size; including Cobb angle and rib vertebral angle difference (RVAD). Your provider may want to get an MRI to evaluate for other causes of scoliosis.

If the curve is moderate in size and/or increasing, your provider may recommend a non-surgical intervention, such as casting or bracing, to prevent or slow progression. For more specific information on casting and bracing, see “TREATMENT OPTIONS” section below.

Juvenile Idiopathic Scoliosis (JIS): 4-9 years old

For smaller curves, observation is the first-line treatment. Your spine provider will want to monitor your child’s curve with an exam and x-rays every 4-6 months. They will make Cobb angle measurements on the x-ray to monitor for a possible change in curve size.

With moderate curves we may recommend a brace to try and prevent the curve from worsening. The type of brace
that is recommended depends upon how big your curve is, where your curve(s) are within your spine, and how fast you are growing.

If you are prescribed a brace, your provider will want to see you every 4-6 months to check-in regarding symptoms, brace comfort and wear pattern; get an x-ray of your spine; see how fast you are growing, and do an exam. It must be emphasized that the purpose of the brace is to slow the progression of the curve, not to straighten the curve.

For larger curves, a brace may not be able to help and the best treatment may be surgery. If your child is a candidate for surgery, your provider will discuss the options with you.

Scoliosis curves that occur in younger children may be caused by an underlying abnormality in the spine or the spinal cord. The most common diagnoses are chiari malformation, spinal cord syrinx, or tethered spinal cord. These abnormalities occur in approximately 20% of JIS patients. Your provider may want to get an MRI to be sure there aren’t underlying causes that are contributing to or causing the scoliosis.

**Adolescent Idiopathic Scoliosis (AIS): 10 years old and up**

There are 4 main pathways of AIS management. Some patients stay on one pathway the entire time they are seeing a spine provider and some will move to different pathways. It depends on your unique curve and how you and your curves are responding to the treatment recommendations.

**Pathway 1:** You have scoliosis but we don’t need to do anything, not even check it.

With mild curves in patients who are skeletally mature and are not growing anymore, the curve has a very small chance of getting worse. These curves are mild enough that they are not causing symptoms. We are happy to see you if you develop any problems with your spine or if you have a concern, but we do not need to see you on a regular basis.

**Pathway 2:** You have scoliosis and we need to monitor it.

With mild curves in patients who have growth remaining or moderate curves in patients who are done growing, we will see you on a regular basis to monitor your curve. Your provider will want to see you every 4-12 months to check in with you regarding symptoms, get an x-ray of your spine, check your height, and do an exam.

**Pathway 3:** You have scoliosis and we need to intervene to try and prevent it from getting worse.

With moderate curves in patients who have growth remaining, we often recommend non-surgical treatment to try and prevent the curve from worsening. The most effective non-surgical treatment for AIS is wearing a brace. The type of brace that is recommended depends upon how big your curve is and where your curve(s) are within your spine. Your provider may also recommend adding scoliosis-specific physical therapy (also referred to as “Schroth Therapy”) to the bracing treatment.

Your provider will want to see you every 4-6 months to check in regarding symptoms, brace fit and wear pattern, get an x-ray of your spine, check your height and do an exam.

**Pathway 4:** You have scoliosis that is severe and we need to perform surgery to treat it.

As mentioned above, curves that are significant, progressive, or do not respond to bracing are likely to cause lifelong complications. It is because of this that we recommend surgical intervention to correct the curve to prevent it
from getting worse. The two most common surgical procedures we do for AIS are posterior instrumented spinal fusion (PISF) and vertebral body tethering (VBT).

**What to Expect During Your Visit?**

**Imaging**

A very important piece of managing your scoliosis curve is being able to accurately measure the curve and see how it’s changing. Getting an x-ray of your spine is the best way to do this.

Some of our clinics have a special x-ray machine called EOS. The EOS Imaging System is a unique system that captures the x-ray while you’re sitting or standing up; and uses an ultra-low dose of radiation. It provides a detailed image so we can make more informed diagnoses and create an individualized treatment plan. Reducing radiation is particularly beneficial for children who need to be imaged frequently, such as those with spinal conditions like scoliosis.

Your provider may want an MRI of the spine if there is concern for other causes of scoliosis. An MRI does not use any radiation, but takes up to one hour and requires the patient to lay very still. Because of this, some patients may need medicine to make them sleepy and remain still for the MRI. This is discussed on a case by case basis.

**Monitoring Your Growth**

We will measure your height at each visit. This lets us calculate how fast you’ve grown between visits, or your rate of growth. Knowing where you are on the rate of growth curve helps us to make the best decision for managing your specific curve.

There are multiple clues on your x-ray that help your provider determine how much growth you have left. We can use growth plates in your hand bones, upper arm bone, and pelvic bone to get more information on your skeletal maturity.

**Treatment Options**

**Vitamin D3 and Calcium Supplementation**

Research suggests that Calcium and Vitamin D3 supplementation may help to reduce the risk of curve progression in patients with Idiopathic Scoliosis. We recommend that you take:

- 600 mg of Calcium and 800 IU of Vitamin D3 daily

Many pharmacy chains carry this dose of Calcium or Vitamin D3 in one pill. This is a common over the counter supplement and does not require a prescription. Please notify your pediatrician that you are taking this supplement at your next well child examination. Patients with a history of kidney stones should consult their primary care provider before taking extra calcium.

**Casting**

Your provider may recommend a cast to help manage the spinal curve. Patients with Infantile Idiopathic Scoliosis
are usually in this treatment for up to 2 years.

The type of casting we use to manage scoliosis is Mehta casting. A Mehta cast is a body cast that is around the torso. There is a cut out area for the belly and a relief cut out on the side or back to achieve the corrective forces that are needed to guide straighter growth.

Brace

Your provider may recommend a spinal brace in order to help manage your curve. There are three types of braces that are most commonly used to treat idiopathic scoliosis:

**Full-Time Thoraco-Lumbo-Sacral Orthosis (TLSO):**

This type of brace is made of plastic and foam and extends from under your armpits down to just below your hips. It wraps around your body and has areas built inside it in order to apply pressure to your curve(s). It is prescribed for thoracic and lumbar curves that are the most at risk of progressing and is usually worn “full-time”, or a minimum of 18 hours per day. This type of brace is considered the “gold standard” for managing idiopathic scoliosis, which means that we have the most evidence that shows that TLSO treatment works at stopping or slowing curve progression and preventing surgery as long as it's worn as prescribed. (*reference to BRAIST) See Figures X-X

**Night Time/ Hypercorrective TLSO:**

This type of brace is only worn at night. It’s made of plastic and foam and extends from your armpits down to the bottom of your hips, usually lower on one side to about mid-thigh. It wraps around your body and has “hyper-corrective” areas built inside it in order to apply pressure to your curve(s). A Night Time TLSO is able to push on your curves more aggressively than a standard TLSO because it’s only worn in a lying down position when your spine is more flexible and gravity is not influencing your spine. If curves continue to progress even with the Night-Time TLSO your provider may consider adding a full-time TLSO to your treatment plan. See Figures X-X

**Cervico-Thoraco-Lumbo-Sacral Orthosis (CTLSO):**

This type of brace is rarely indicated and is used to treat curves that are high in the spine. It is made of plastic and extends from your neck to the bottom of your hips. A CTLSO is usually worn “full time”, or a minimum of 18 hours per day.

It is important to remember that the purpose of the brace is to slow or stop the progression of the curve. Unfortunately, in most cases, wearing a brace cannot improve or straighten a curve. In some cases, however, it can improve some of the body asymmetries to improve cosmetic appearance.

A brace is only prescribed for children and teens who are still growing. Once the majority of growing is done, your provider will slowly reduce the amount of time that the brace is worn until you are done wearing it completely. You will not have to wear a spine brace for the rest of your life.

How successful the brace is at managing your curve is directly related to how often you wear it. The brace works by guiding the spine to grow straight. Because you are growing all the time, the more you are in the brace, the more time this growth is being guided.

Getting Your Brace
If your provider recommends a brace to manage and treat your scoliosis, you'll visit one of our spine orthotists in Gillette's Orthotics, Prosthetics and Seating Department, or OPS. Most braces for scoliosis are custom-fabricated, meaning that they are made special just for your body and your particular curve pattern. You will be scheduled for an evaluation appointment and then a fitting appointment to get your brace. Once you have your brace, you will have regular follow up appointments with your orthotist to be sure that it's fitting correctly and comfortably as you grow.

**Evaluation for a Brace:**

This appointment is either a 1 or 2-hour appointment. During the evaluation, your spine orthotist will evaluate your back, take measurements and either take a plaster cast or a digital scan of your torso. At this appointment, you'll be able to choose a pattern and/or a decal for your brace to make it unique and special for you.

**Fitting Your Brace:**

This appointment lasts for 2-6 hours, depending upon the type of brace you are getting and also how complex it is. You'll try on your brace several times during the appointment and the orthotist will trim plastic and add pads as needed. You'll practice putting the brace on and wear it for a while to be sure it's comfortable before you take it home. Your orthotist will give you information about taking care of your brace, taking care of your skin and how you should get used to wearing your new brace.

**Follow Up:**

After you get your brace, you may need to return to see your orthotist 2-3 weeks later to make sure it's pushing appropriately on your curves. In addition, every time you see your spine provider, you should be scheduled to see your orthotist as well to do a check of your brace. If at any time, you have concerns or questions about your brace or how it's fitting, you can always call your orthotist and come in for adjustments if needed.

**For Patients: Body Image and Acceptance**

Your spinal brace must be worn according to your provider's instructions to achieve the best results. If a spine brace isn't worn, it will not help your scoliosis.

Wearing a spinal brace can be challenging for many reasons. We understand that wearing a spine brace is not an easy thing to do. It is important that you feel good about yourself and, at the same time, accept wearing the brace. Your scoliosis is one small piece of who you are. We want you to know that your spine care team is more concerned with your overall health than your spine alone. If treatment with a brace results in negative feelings, we encourage you to share that with your spine care team. It is important that we work as a team to provide the best overall outcome for you.

**Here are some suggestions that may help:**

- Talk about your brace with your friends and family. Friends can be a really great source of support, so include them early on in your treatment. Feel free to bring a friend along to your fitting appointment.

- Remember that you won't have to wear your spine brace forever. Braces only work on patients who are still growing.
• Find types of clothing to wear over your brace that will make you feel good about your body.

• Focus on your positive qualities and talents, not the spine brace.

• Tell your school nurse that you wear a brace. If you ever need assistance with your brace at school, the nurse will be there to help you.

**Integrated Care**

Scoliosis can range quite a bit from mild to severe. Whether your child has minor curvatures and is otherwise healthy, or has complex underlying conditions, highly trained experts at Gillette can help manage your child’s spine condition.

Your child deserves a lifetime of excellent health care—from birth through adulthood. The family-centered environment at Gillette is designed to help your child achieve the highest possible levels of health, independence and happiness.

You’ll get help navigating the services you need to treat your child. The specialties and services most often involved in scoliosis care include:

• **Orthopedics.**

• **Orthotics.**

• **Neurosurgery.**

• **Rehabilitation therapies.**

• **Pulmonology and respiratory care.**

• **Seating and mobility equipment** (for children, teens and adults who have neuromuscular scoliosis associated with conditions that limit their ability to walk).

**Explore Scoliosis Resources**

**Publications for Health Care Professionals**

• **Scoliosis Screening: A Program Manual (PDF).**

• **In Brief: Managing Adolescent Idiopathic Scoliosis (PDF).**

• **A Pediatric Perspective: Adolescent Idiopathic Scoliosis: Screening, Treatment and Referral (PDF).**

Make An Appointment

651-290-8707

Refer a Patient

651-325-2200