

Your Scoliosis Diagnosis



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Welcome to Gillette Children's

Welcome to Gillette Children's, where we work to provide the best medical and nursing care for our patients. Gillette has been treating children with orthopedic conditions for over 120 years. The spine service was established in the 1940s and some of the earliest pediatric spine operations in the world were performed here. Today, we treat the vast majority of children in Minnesota with spinal conditions and perform more pediatric scoliosis surgery than any other hospital in the 5-state area.

About This Manual

This resource manual is intended to help spine patients and their families understand scoliosis. It contains information you'll need while at Gillette- and as a guide when you go home. The glossary (page 16) defines technical terms you'll be reading and hearing.

Although our spine patients range in age from infant to adult, most are kids or young adults who want to read about their scoliosis and treatment. To address those readers directly, we've used the term *you* in most parts of the manual. In the parts addressed to caregivers, however, we've used the term *your child or your teen*.

Research

Gillette is committed to providing the best, safest, and most up to date treatment options for scoliosis. As an organization, we participate in research to continue to learn and develop our techniques and share these with the scientific and patient community. A very important part of this process are the patients who agree to help us conduct this research. You may be asked to participate in a research study during your treatment process. Your participation in research is completely voluntary and would be discussed with you prior to being enrolled.

Important Phone Numbers

Keep in mind that this manual provides only general guidelines. Your nurse or provider will review pertinent information that is specific to your care. If you have specific questions, however, be sure to ask.

If you have an urgent question, call the **Nurse Help Line** at **651-229-3890**

If you have other questions about your care, contact us: **651-726-2845**

**For Questions Regarding:
Scheduling Appointments**
651-290-8707

Billing/Patient Accounting
651-325-2177

Insurance/Prior Authorization
651-325-2148

Gillette Social Work
651-229-3855

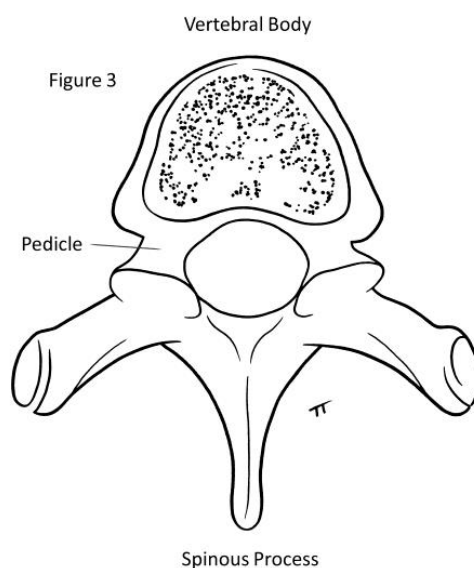
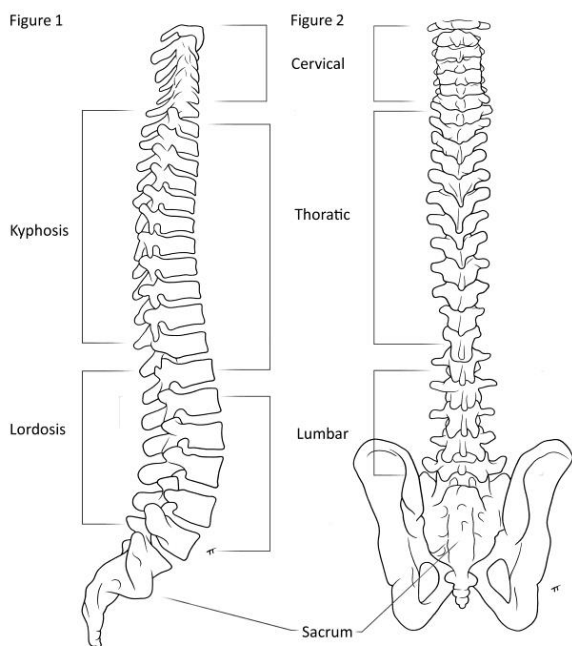
Scoliosis Specific Physical Therapy (Schroth)
651-229-3900

Orthotics, Prosthetics, Seating Department
651-229-3800

About the Spine

The human spine is made up of 33 bony segments called vertebrae. They fit together, forming a flexible column that supports the back and protects the spinal cord. The neck has 7 cervical vertebrae. The upper back and chest have 12 thoracic vertebrae; these are where the ribs are

attached. The lower back has 5 lumbar vertebrae. The last lumbar vertebra is attached to the sacrum, which is in turn attached to the pelvis. The lowest part of the spine is the coccyx, or tailbone. When viewed from behind, the spine appears straight and when viewed from the side it has natural curves. There is a natural thoracic kyphosis, forward curving, and a natural lumbar lordosis, backward curving.



What Is Scoliosis?

Some people have extra curves in their back that curve side to side and rotate. This 3-D rotation and side-to-side curvature is called scoliosis. On an x-ray, the spine of a person with scoliosis looks like an "S" or "C" instead of a straight line. Providers use a special measurement tool to measure the angle of the curve, called a Cobb angle. A slight curve may be normal. Scoliosis is diagnosed when the Cobb angle is 10 degrees or greater.

Idiopathic Scoliosis is categorized based on the age at which it begins:

- Infantile (IIS) less than 3 years old
- Juvenile (JIS) 4-9 years old
- Adolescent (AIS) 10 - 18 years old

Why Did I Get Scoliosis?

The exact reason why your spine curved remains unknown, that's what "idiopathic" means – that means we don't know why it occurs. We know there is some basis in genetics. A recent theory involves the front of the spine growing faster than the back of the spine, causing a rotating and twisting of the spine.

You did not do anything to cause your scoliosis. It is not from wearing a heavy backpack; it is not from a "wrong" sleep position; it is not from having poor posture. There was nothing you could have done to prevent getting scoliosis.

Scoliosis is more common than you might think, too. Approximately 3% of people have scoliosis.

Scoliosis Basics

Signs, Symptoms and Diagnosis

Most people with scoliosis do not report pain; those that do report pain typically report only mild pain. Severe or constant pain is not a typical symptom of scoliosis.

You or your parents may have noticed one or more of the following changes in your appearance:

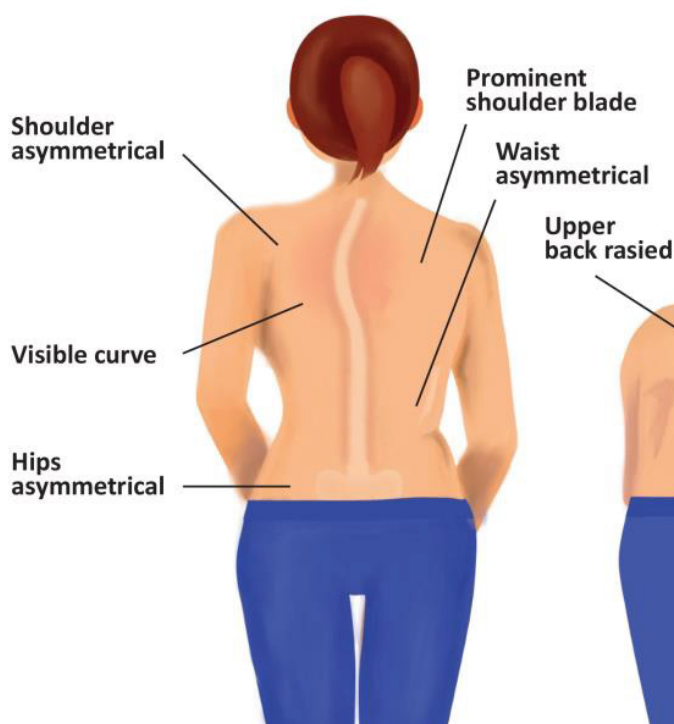
- Chest shifted to one side
- One shoulder blade is more noticeable than other
- Asymmetry (unevenness) of the waist

- Clothes fit unevenly
- One shoulder is higher than the other
- One hip is higher than the other
- Asymmetry of front torso

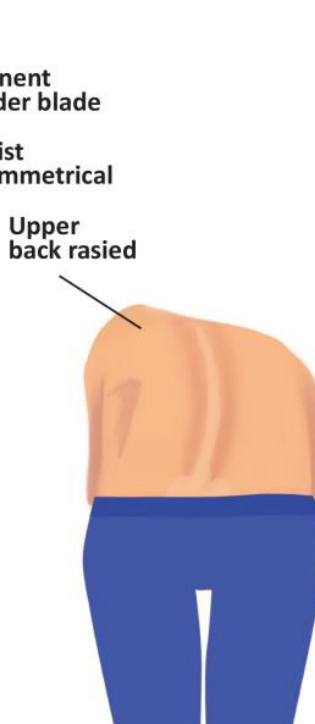
You may not have noticed any changes in your appearance, but your healthcare provider did when you had your check-up. Your provider may have asked you to do a forward bend exam, which can show spine abnormalities. This is called the Adam's Forward Bend Test.

The diagnosis of scoliosis is made based upon physical exam, and x-ray of the spine.

Standing Assessment



Forward Bending Assessment



Why Do We Treat Scoliosis?

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 a negative impact on quality of life.

Options for how to manage your scoliosis depend on your curve size and how much growing you have left.

At 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. The glossary on page 16 has great definitions of common medical words your provider might use when explaining your x-ray to you. Appendix A has examples of these markers of skeletal maturity.

For girls, knowing when you started, or that you haven't started yet, your first menstrual period also helps your provider determine how much growing you have left and how this could affect your curve. Girls typically grow for 1.5 - 2 years after they first begin their period.

Clinical Photos

We've talked a lot about x-rays and looking at the bones of your spine. But what you look like as an entire person is just as, if not more, important. In order to keep track of your posture, shoulder heights, waist appearance- and how your scoliosis and treatment is influencing these- your provider may ask to take photos of your back. We may take one photo of your back, one photo from the side, and one of your back with you bending forward to touch your toes. In order to have the most accurate photos, we need a picture of your bare back.

For females, wearing a sports bra will keep you covered but allow us to see your back. Please plan ahead, and wear or bring a sports bra to your spine appointment.



Management of Scoliosis

The way that Gillette cares for scoliosis largely depends upon the 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 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 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 on next page.

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 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. For more specific information on bracing, see "TREATMENT OPTIONS" section on page 8.

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 re-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 scoliosis.

Adolescent Idiopathic Scoliosis 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 your curves are responding to the treatment.*

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, 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. For more specific information on bracing, see "TREATMENT OPTIONS" section on next page. Your provider may also recommend adding scoliosis specific



physical therapy (also referred to as “Schroth Therapy”) to the bracing treatment. For more specific information on Schroth Therapy, see “TREATMENT OPTIONS” section on page 8.

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).

Treatment Options

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.

Bracing

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 above your hips. It wraps around your body and has areas inside it 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. **See Figures A and B below**

Full-Time TLSO



Figure A



Figure B

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 your hips, usually lower on one side to about mid-thigh. It wraps around your body and has "hyper-corrective" areas inside it to apply pressure to your curve(s). A Night Time TLSO can 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 Figure C below**

Cervico-Thoraco-Lumbo-Sacral Orthosis (CTLTO)- 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 top of your hips. A CTLTO 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's 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 more straight. Because you are growing all the time, the more you are in the brace, the more time this growing is being guided.

Night Time Hypercorrective TLSO



Figure C

Your Scoliosis Diagnosis

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.

1. 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.

2. 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.

3. 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.

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 con-

cerned 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 to help you:

- 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 are only worn while someone is 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.

continued

- 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.
- Be informed and involved in your health care. Check out online resources, blogs and support groups like the ones listed in the back of this book.

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.



Your Scoliosis Diagnosis

Physical Therapy Scoliosis Specific Exercises (Schroth therapy)

Scoliosis Specific Exercises (Schroth therapy) is used to improve posture, alignment, body awareness, and alleviate back pain for those with scoliosis. Exercises are modified by a specially trained physical therapist for a patient's specific scoliosis curve.

Who is able to participate in Schroth Therapy:

Patients with scoliosis of mild to moderate curves who are 10 years or older.

Patients who have undergone PISF or VBT surgery for their scoliosis.

What to expect: A physical therapist will review your chart and x-rays. At the physical therapy evaluation, you should arrive 15 minutes early to complete questionnaires regarding your current experience with scoliosis. The physical therapist will assess your range of motion, functional mobility, posture, lung function and pain. An individualized plan based on the curve, physical findings and your goals will be developed.

Treatment Schedule:

Appointments are scheduled 1-2 times per week for 3-6 months determined by the evaluating therapist, participating patient, and their family at the end of each evaluation. Each plan is individualized to the unique needs of the patient.

Virtual Schroth appointments are available in certain situations. For returning patients who have been through the program, evaluation, treatment and discharge can be completed virtually if patient and family prefer this option. There is also an opportunity to do a combination of in-person treatment and virtual treatment.

For new patients who have not been through the Schroth-based program before, evaluation will need to be completed in person.

A plan can be put in place to utilize a combination of in-person and virtual appointments.

At this time, we are unable to offer virtual services across state lines. The patient must participate in their therapy session in the state of MN due to licensing requirements. A caregiver may need to be present for part or all of the treatment session to ensure proper positioning of the video during a virtual visit.

An individualized home program will be established and you will be expected to perform the exercises at home 30 minutes per day, 5 days a week. There is specialty

equipment required to maximize the success of your home exercise program, and your physical therapist will go over that equipment at the evaluation.

While participating in physical therapy it is important to do your exercises 5x per week for 30 minutes each day so you are able to learn the exercises well and your brain/body learns how to stay in its best position whether you are sitting, standing or moving.

Physical therapy scoliosis specific exercise post-surgery:

Scoliosis-specific exercise can be a great option following surgery to work on body awareness, balance, and strength. Therapy is not required following surgery but is an option for those who may need or want it. Good candidates for therapy following surgery are those patients who have trunk imbalance, unfused lumbar curve, difficulty with pain management, those who will be returning to high-level sport at the 6-8-month post-operative point.

Our post-op scoliosis specific exercise program is only located at our Phalen location at this time.

Research is limited about how effective Schroth therapy is in stopping curve progression or preventing progression into surgical range. Some research shows a decrease in Cobb angle and angle of rotation immediately following treatment. Those who participate in Schroth based therapy report a more positive body image and demonstrate improved trunk extension endurance following treatment.



Your Scoliosis Diagnosis

Frequently Asked Questions

Q: How will scoliosis affect my life?

A: Having scoliosis should not limit you in any way. A spine with scoliosis is as healthy as one that doesn't have scoliosis. You are able to do all of the things you would otherwise do without any restrictions or increased risk of making scoliosis worse or injuring your back. This includes playing sports, gymnastics, dancing, and having children in the future.

Q: Do I have to restrict my activities in any way?

A: No. There is no reason to restrict activities in someone with scoliosis. There is no increased risk of spine injury with scoliosis. And no activity is going to make scoliosis worse. We encourage you to stay active and get regular physical exercise in order to maintain an overall healthy lifestyle.

Q: Does the type of bed I sleep in matter?

A: No. Your mattress or sleeping position has no impact (positive or negative) on your scoliosis. You also don't have to purchase a special mattress, mattress pad or pillow if you have scoliosis or a brace.

Q: Is there a role for chiropractic care in the management of my scoliosis?

A: There is no scientific evidence that suggests chiropractic care can reduce a scoliosis curve or prevent it from progressing. We respect a family's decision to seek chiropractic care, but recommend it be done in conjunction with our management.

Q: Am I more likely to have back pain in the future since I have scoliosis?

A: Maybe. Back pain is a common complaint amongst adults regardless of their having scoliosis or not. One study looked at a 50-year follow-up of adults with untreated AIS. It showed higher reported chronic back pain in someone with scoliosis (61%) versus someone without scoliosis (35%). However, the majority of people in both groups rated the severity of pain as mild; and duration and its effect on work or daily living activities were similar. This implies that people with scoliosis more often report chronic back pain, but the pain is not worse or more debilitating compared to someone without scoliosis. It's important to remember that when someone is aware of a medical diagnosis related to their back that they may be more aware of their back and therefore more likely to report a problem should it arise.

Q: How tall will I be?

A: While we talk a lot about your growth, we are unable to accurately predict exactly how tall you will be. One way to estimate how tall you will be is to look back at your health records and find out how tall you were when you were 2 years old and then double that measurement.

Support and Resources

Scolios-Us

www.bracingforscoliosis.org/

Curvy Girls

www.CurvyGirlsScoliosis.com

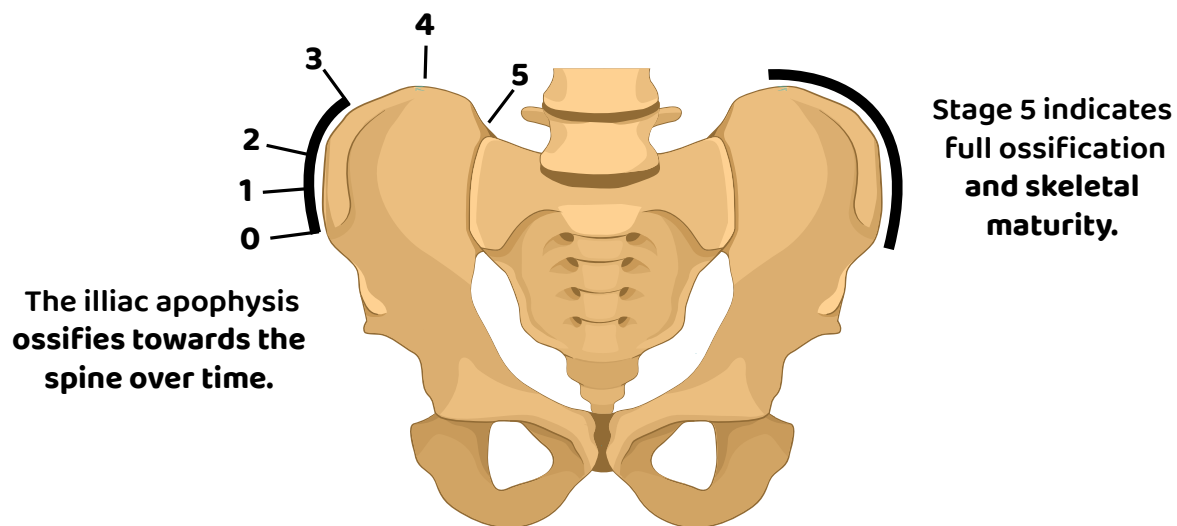
MN chapter: MN@curvygirlsscoliosis.com

Instagram: [cgscoliosis](https://www.instagram.com/cgscoliosis)

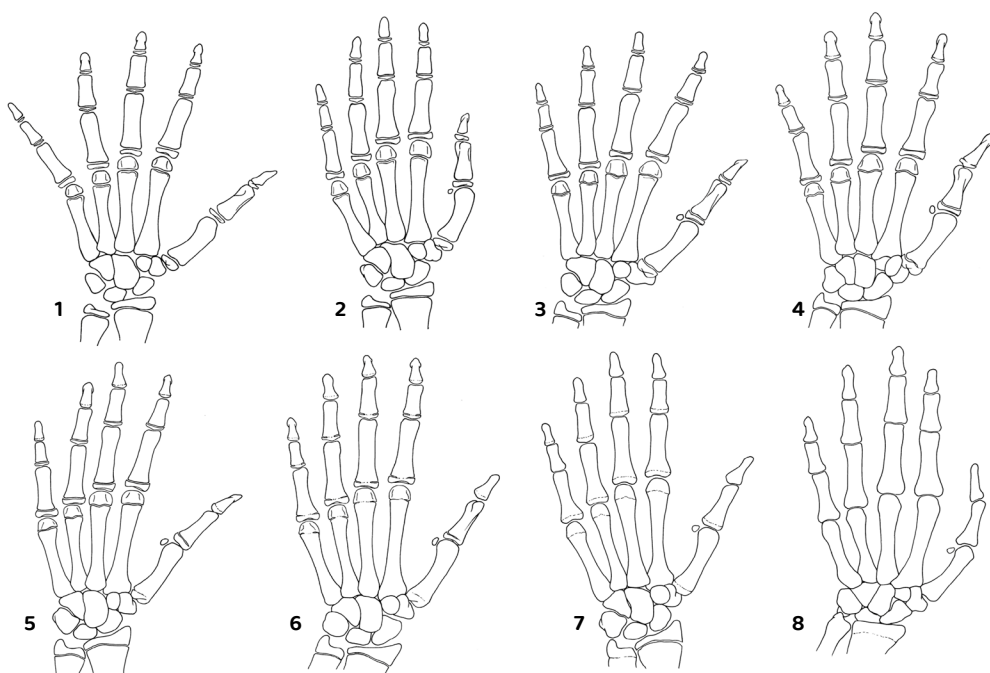
Scoliosis Research Society

www.srs.org/patients-and-families

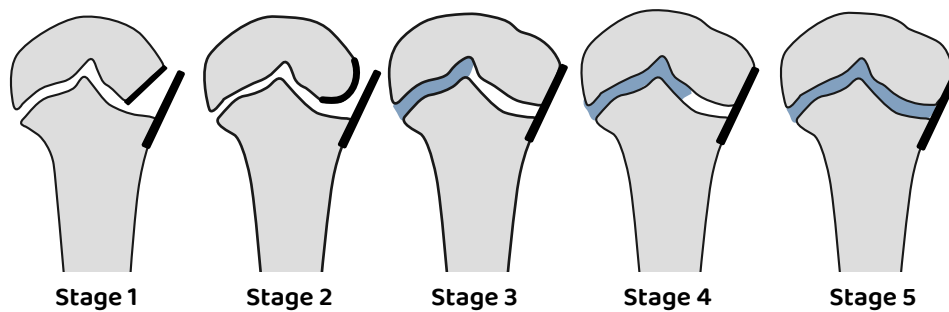
Appendix A-Skeletal Maturity Markers



Sanders Maturity Scale



Proximal Humerus Ossification



Your Scoliosis Diagnosis

Glossary

Adolescent Scoliosis: A sideways curvature that appears after age 10 and before skeletal maturity

Apex of Curve: Vertebra that is farthest from the center of the body (ie at the “height” of the curve)

Bending X-rays: X-rays to check the flexibility of the spine

Body Image: The mental and physical picture you have of yourself

Cervical Spine: The neck portion of the spinal column, which consists of seven cervical vertebrae between the skull and rib cage

Cervico-Thoraco-Lumbo-Sacral Orthosis (CTLSSO or Milwaukee Brace): A brace that supports the entire spine, has a neck collar in order to control curves that are high in the spine, or that extend into the neck or cervical spine.

Compensatory Curve: In spinal deformity, a secondary curve located above or below the structural curve develops as a way for the body to maintain normal body alignment

Cobb Angle: A measurement of side-to-side spinal curvature; the “angle” of your curve your provider will measure on x-ray, example: 25° (degrees)

Decompensation: How much the head is shifted to the left or right in relation to the center of the pelvis

Disc: Tissue between the vertebrae that acts as a shock absorber or cushion during movement

Double Curve: Two lateral curves (scoliosis) in the same spine: a double major curve involves two curves, which are usually the same size; a double thoracic curve consists of an upper thoracic curve and a larger, more deforming lower curve

Growth Plate: Area of growing tissue in bones that allows bones to lengthen and grow; looks like a gap or space in a bone while someone is still growing and closes when bones are mature and no longer growing.

Hemivertebra: An anomaly of the spine that is congenital, or present at birth, caused by incomplete development of one side of a vertebra

Hyperkyphosis: forward bending of spine that is greater (or more curved) than normal limits

Hyperlordosis: backward bending of the spine that is greater than normal limits

Hypokyphosis: forward bending of the spine that is smaller (or flatter) than normal limits

Hypolordosis: backward bending of the spine that is smaller (or flatter) than normal limits

Idiopathic Scoliosis: A spinal curvature without a known cause

Infantile Scoliosis: A curvature of the spine that develops before age 3

Juvenile Idiopathic Scoliosis: Scoliosis that develops between ages 4-9

Kyphoscoliosis: A sideways curve of the spine accompanied by kyphosis

Kyphosis: A normal forward curve in the thoracic spine

Lordosis: A normal backward curve in the lumbar spine

Lumbar curve: A spinal curvature with an apex between the second and fourth lumbar vertebrae (L2-L4)

Lumbosacral: Pertaining to the lumbar and sacral (L5-S1) regions of the back

Lumbosacral Curve: A spinal curvature at the lumbosacral area (L5-S1)

Orthosis: A brace that prevents movement of the spine or limbs

Orthotist: A medical specialist skilled in orthotic, or brace, engineering and treatment

Primary Curve: The largest scoliosis curve of the spine

Proximal Humerus Ossification: A growth plate in the upper arm bone that is used to evaluate a patient's degree of skeletal maturity (can be seen on x-ray). Scale from 1-5. One is skeletally immature (lot of growing left); Five is skeletally mature (done growing). [see Appendix A]

Nighttime TLSO: A brace that is worn at night in order to stop or slow progression of scoliosis curves.

Rib Vertebral Angle Difference (RVAD): Angle of the rib where it meets the vertebra at the apex of the curve, a way to measure rotation of the chest wall. The difference of the angle on right compared to the left.

Risser Sign: A growth plate which forms across the top of each side of the pelvis and shows a patient's degree of skeletal maturity (can be seen on x-ray) Scale from 0-5. Zero is skeletally immature (lot of growing left); Five is skeletally mature (done growing). [see Appendix A]

Sacrum: A curved, triangular bone at base of spine, consisting of five fused vertebrae, which joins the lowest lumbar vertebrae and the pelvic bone.

Sanders Stage: Staging system to measure skeletal maturity by evaluating the growth plates in the bones of the hand. Scale from 0-8. Zero is skeletally immature (lot of growing left); eight is skeletally mature (done growing). [see Appendix A]

Scoliometer: A tool used to measure trunk rotation in scoliosis

Skeletal Maturity: The age at which bones have finished growing

Spine: Vertebral column, sometimes called the backbone

Thoracic curvature: A spinal curve in which the apex is between the second and 11th thoracic vertebrae

Thoracolumbar curvature: A spinal curve in which the apex occurs at the 12th thoracic and 1st lumbar vertebrae

Thoraco-Lumbo-Sacral Orthosis (TLSO): A brace used to stop or slow progression of scoliosis curves in the thoracic and lumbar spine

Tri-radiate cartilage: Staging system to measure skeletal maturity by evaluating the growth plates in the hip joint. "Open" indicates a lot of growth remaining, "closed" indicates closer to being done growing.

Vertebral column: The flexible supporting column of vertebrae, separated by discs and bound by ligaments

Your Scoliosis Diagnosis

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