

HOW TO:

**UNDERSTAND, CHOOSE CARE
FOR, AND MANAGE SCOLIOSIS**

The Scoliosis Coach Handbook
Written by: Dr. Andromeda Stevens, D.C.

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Finally, I thank my patients, their parents, and their families for the trust they have placed in me, for the opportunity to learn from them, and for the inspiration to write this book.

PROLOGUE/PREFACE

I would like to tell you my scoliosis story. When I was a young girl around 10-12 years old, I had upper back pain which was pretty persistent. Sometimes, the pain was acute. I remember keeping it from my parents and just coping with it. There would be many days that I would wake up in pain and have pain all day at school. It would feel better to lean forward onto my desk and rest or to extend backward over my chair and “crack” my back. I did not know I was making it worse. I will tell you more about that later. One day my mother and I were running around the house playing tag and just generally goofing off. I snuck up quickly behind her and surprised her by tapping her on the back. It startled her so badly, that she whiplashed her neck. She then began regular visits to a chiropractor, Dr. Renee Stamper, D.C., in Beverly Hills, California. My mother would take me with her most of the time. During one visit, Dr. Stamper took a look at me and discovered that I had scoliosis. She began adjusting me and I continued using chiropractic as a way of managing my pain over the years. As I grew older I also started doing lots of massage work for the pain.

Dr. Stamper set a positive example and inspired me to enroll in chiropractic college. Unfortunately, my professors never discussed scoliosis or anything about muscular work. My coursework was purely structural and clinical work. I took a hiatus from chiropractic college to go to massage school to learn more about healing work, muscles, touch and breathing. This was a very interesting break from my college experience. As the years went by, my pain would come and go but much of the time pain would be the very first thing I felt when I woke up and the very last thing I felt before going to sleep. Sometimes it drove me crazy. While I was in my last term of chiropractic college, we all had to work in the clinic and get X-rays to assess each other. My scoliosis was pretty mild and only in the upper part of my back but for whatever reason, it caused me substantial pain. Years later I was running a chiropractic clinic and a Pilates studio in Los Angeles and had a

client come to me with a question. She had severe scoliosis at 50+ years of age and was being told it was time to have surgery. She was horrified and asked if there was anything else that I knew of that she could try. I did some research and found a clinic on the outskirts of Los Angeles that did something called the “Schroth Method”. I sent her to investigate the technique and she took one of my Pilates instructors along with her for a weekend “boot camp” style of treatment. They came back with a very interesting handbook of exercises, which although it was not customized to the client, aroused my curiosity.

I started investigating Schroth and found a doctor in Massachusetts named Dr. Marc Moramarco, D.C., who was interested in coming to Los Angeles to see some of his patients. We agreed that he would use my office as a meeting place. He saw patients and I watched and followed along. I jumped in as a patient and performed the Schroth exercises for the better part of four hours over a 24 to 48-hour period. I was so sore I was flabbergasted. I was working muscles I hadn’t worked in years, shifting my curve and breathing in areas of my rib cage that were not normally accessed. I continued the exercises and protocols and to my astonishment, my pain dropped down to near zero. I started trying to figure out how I could get certified in this methodology. I was repeatedly rejected by various schools that didn’t believe that chiropractors should be practicing the Schroth method! Can you imagine? A practitioner who deals with nothing but spines all day is being told that she has no business using the Schroth method! I was bewildered, frustrated and mad. I persisted and found out that Dr. Moramarco was working with Dr. Hans Rudolph Weiss who is a grandson of the Schroth family and was coming to the United States to present the first program in the U.S.A. I jumped at the opportunity and booked my ticket to Massachusetts. The course was intense and extraordinary.

I started slowly implementing the program with a few clients and learned and practiced and studied and asked lots of questions of my mentors. My practice grew and I rented more space. I then

traveled back to Massachusetts for the level II Schroth program. Having been a chiropractor and Pilates instructor by this point for the better part of 23+ years, I saw so many Pilates instructors struggle with clients who had scoliosis and were not seeking treatment anywhere else other than the Pilates studio, or had received unhelpful treatment. Instructors would continually ask me what they could be doing to help their clients and I was perplexed at how to assist them in helping others although they were not clinicians. I started to take every Pilates-based scoliosis workshop and read every scoliosis, Pilates and yoga manual that I could find. I took many in-person and online workshops. They all seemed to contradict my Schroth training in one way or another or were simply inappropriate for a Pilates instructor. It was clear that untold numbers of instructors worldwide were following these protocols and possibly making things worse for their clients.

I set out to create a manual for Pilates teachers that would supply them with enough helpful information about what to do and more importantly, what not to do with a scoliosis client while reaming within the scope of the teacher's practice. This has been an extraordinarily rewarding project. Meanwhile, in my private practice, I was mostly working with individuals who were adults and had been suffering from scoliosis their whole lives without much success treatment-wise. I worked with parents of children who were newly diagnosed, completely overwhelmed and frankly, freaked out. They had so many questions and concerns and sometimes had been given conflicting information. I thought it was time to write down the basics, whether for persons with scoliosis or parents trying to help their child navigate this confusing new landscape.

My sincere hope is that my experience and knowledge will help you with your situation. Please feel free to reach out to me personally to discuss any questions you may have.

ABOUT THE AUTHOR

Dr. Andromeda Stevens, D.C. prompted by her scoliosis, became a chiropractor and has been practicing since 1996.

Andromeda was introduced to Pilates in the early '90s and was so inspired that she became a Pilates Method Alliance Gold Certified Teacher™ (13657 PMA# OR 10112 NPCT#). The profound results with her patients, as well as the inability to find quality Pilates Instructors for the Studio, led her to co-found Pilates Sports Center in 2000, with Kelli Altounian in Los Angeles. To train instructors in the method, The Pilates Sports Center Pilates



Teacher Training Program, the Burn at the Barre Teacher Training Program and the Pilates Master Teacher Program are now taught worldwide with the mission of providing the highest standard of excellence in Pilates education. The practice specializes in treating scoliosis using the Schroth Method. Dr. Stevens is Level II Schroth certified by Dr. Hans R. Weiss, M.D. (the grandson of K. Schroth) and she is one of very few certified in the U.S.A. in the original method.

Credentials:

- Graduate – Cleveland Chiropractic College of Los Angeles 1996
- Schroth Best Practice® Level I & II Certified by Dr. Hans-Rudolf Weiss, M.D. and Dr. Marc Moramarco, D.C. [USA: Schroth Best Practice Academy](#)
- Certification Course on BSPTS-Concept by Rigo Basic Level Course on Scoliosis and Spinal Disorders

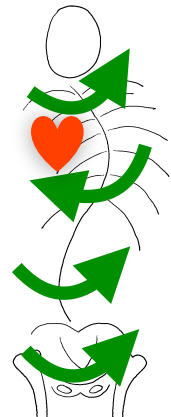
- Postgraduate certification: Cox® Technic - Flexion/Distracton Technique for treatment of discs
- Cupping Therapy Trained
- National Pilates Certification Program (NPCP) “Gold” Certified Teacher™ National Pilates Certification Program
- Integrated Flexibility Training – The Sports Club/LA
- BalletCore® Certified
- Massage Therapist – Touch Therapy Institute
- Graduate of Advances in Pilates – Long Beach Dance Conditioning
- Co-Founder of Pilates Sports Center International, Inc.
- Co-Creator of the PSC Pilates Teacher Training Program
- Co-Creator of the PSC International Master Training Program
- Co-Creator of Pilates Sports Centers Burn at the Barre™ Teacher Training Programs (Level I & II)
- Co-Produced and Created over 14 digital titles
- Co-Wrote or Co-Created over 19 workshops
- Co-Creator and Presenter: Pilates Expo Los Angeles
- Presenter: Mad Dogg WSSC / MindBody Fit-Pro Conference / Balanced Body Pilates On Tour / Inner Idea Conference / Body Mind Spirit Expo / Human Movement Conference / Pilates On Tour / PMA Conferences / Higgys Bears Higgys Con
- Master Teacher Trainer for Reebok Sports Club NY 2007
- Pilates Method Alliance Registry of Teachers
- Participant: PMA Fostering Future Professionals Program
- PMA Approved Schools List
- CEC Provider NCPT
- CPR / First Aid Certified
- Board of Directors – The Pilates Initiative
- Multiple Workshops were completed with Jay Grimes, Kathy Corey, Rael Isacowitz, Mary Bowen, Lolita San Miguel, Ron Fletcher, Cara Reeser, Alan Herdman, Mari Winsor and many more.
- Author of Scoliosis Coach Handbook
- www.ScoliosisCoach.com

1.

WHAT IS SCOLIOSIS?

Scoliosis is a side (lateral) curvature and twisting of the spine. The spine may curve from side to side, forming an “S” or a “C” shape, rather than a straight line. The term Scoliosis comes from the Greek: skoliōsis meaning “crooked” or twists and turns.

As the spine curves sideways, the individual bones (vertebrae) also twist, like the steps of a spiral staircase, around the vertical axis of the spinal column. As these bones twist, the ribs that are attached to them also rotate and may create a “bump” or prominence on the back. This is usually the first “telltale sign” of scoliosis noticed by a parent or a physician. This rib prominence is usually what cosmetically bothers a person the most.

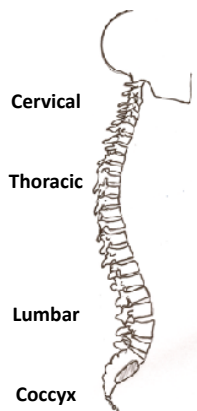


RIGHT UPPER SPINE CURVE
from the back view

Additionally, the front-to-back curves of the spine (sagittal curves) can be affected by scoliosis. Ideally, there should be three healthy natural curves of the spine from front to back:

- 1) The neck (cervical) slightly curves inward.
- 2) The upper back (thoracic) gently curves backward
- 3) The lower back (lumbar) curves inward again.

Imagine these natural curves of the spine as a “spring” to absorb shock. If they are disrupted, this could cause stress in the spine. In scoliosis, these curves can become exaggerated, flattened, or even reversed in their direction.



There is a theory that the stress of these disrupted curves is what causes the side-to-side (lateral) curves and rotations to become worse.

This front-to-back (sagittal) set of natural curves includes the neck and it is important to note that since we all spend too much time looking down at our electronic devices, we can lose this important alignment. This loss of the cervical curve can create many neck issues, discomfort and joint degeneration later in life. Sleeping on a good pillow with neck and head support is important as well. Also, we need to adopt a healthier posture while looking at our devices, reading, or doing computer work. I will discuss sagittal curves more along with “Text Neck” specifically in Chapters 7 and 12.



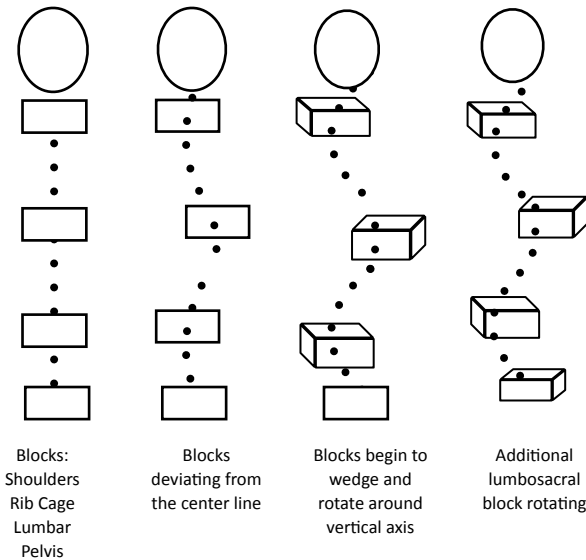
“Text Neck” Before and After Correction

What areas are affected by scoliosis?

Scoliosis is a three-dimensional condition that affects the:

- SHOULDER GIRDLE - it may rotate.
- SPINE - it may side bend (single or multiple areas).
- RIB CAGE - it may rotate and displace the ribs.
- PELVIS - it may rotate and or shift side to side.
- SAGITTAL CURVES - front-to-back curves of the spine may flatten or become magnified.

See the blocks in the illustration below showing lateral curves, rotations and counter rotations to try and balance the body.



Very severe, scoliosis can affect the heart and lungs, brain, central nervous system and the body's hormonal and digestive systems.

Famous Figures With Scoliosis:

- Yo-yo ma - musician/cellist
- Hussein (Usain) Bolt - Olympic athlete
- Sarah Michelle Gellar - actress
- Lourdes “Lola” Ciccone Leon (Madonna’s daughter)
- Elizabeth Taylor - actress
- King Tut - Pharaoh of Egypt
- Alexander the Great - King of Macedon
- Liza Minnelli - actress
- Vanessa Williams - Miss America 1984/Singer/Actress
- Douglas Mac Arthur - General of the US Army
- King Richard the III of England

2.

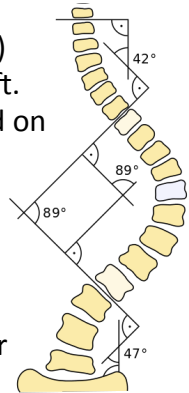
DIAGNOSING SCOLIOSIS

There are multiple ways to diagnose scoliosis.

- X-rays
- CT/CAT scan
- MRI
- Physical exam
- Scoliometer measurements
- Neurological Tests (reflexes etc.)
- Orthopedic Tests (physical tests)

When scoliosis is analyzed by a physician the previous tests should be used to determine the following:

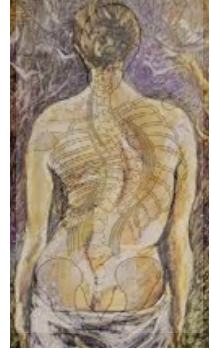
- Types: Structural or non-structural scoliosis (discussed later)
- The Shape of the Curve: single, double, or more than 2 curves
- Location: C = cervical spine, T = thoracic spine and L = lumbar spine
- Direction: The convex side (outside of the curve) and whether it bends outward to the right or left.
- Magnitude: The degrees of the curves are based on imaging (MRI or X-ray) measurements, called a Cobb Angle (see illustration)
- Effect on Sagittal Curves: Front-to-back curves of the spine
- Rotation: Each curve can cause rotation of the spine and ribs and possibly the shoulders and/or the pelvis. The degree of rotation of the spine and ribs can be measured by the use of a Scoliometer.
- Causes of scoliosis: (if known)
- Skeletal maturity



Medical terminology that you might need to know.

With scoliosis, the convex side (outward curve) is what the curve is named for. For example, it's called right scoliosis if the apex (most tilted vertebrae) bends outward to the right. Sometimes, medical terms are used instead of right or left (Dextro = Right, Levo = Left). Also, the area of the spine will be defined as thoracic (upper back), Lumbar (low back), or a combination of thoracic-lumbar.

Please reference Chapter 18 "Abbreviations/Definitions/Terminology".



Let's Discuss Each of the Imaging Techniques.

X-rays are the most common tool used to diagnose and evaluate scoliosis. The scoliosis curve is measured on the image to calculate the curve in degrees ("Cobb Angle").

A child at risk of a curve worsening may be monitored periodically (usually at 3-6 month intervals) using an X-ray. The "watch and wait" method is a poor idea as a curve can progress very quickly in the first hormone surge of a child or young adult. Adults can also progress up to 1 degree per year if left untreated. This will be discussed in greater detail, later. Once a curve is measured recommendations may be made by a physician and/or the therapist. They differ as you can see in this table.

Cobb Angle / Curve Degrees	Medical Model	Schroth Therapy Model
0-20°	Observe for progression (80% of all cases).	Rather than "observation", start basic Schroth, proper posture during daily living to reduce possible curve progression.
20-25°	Brace if progressing & substantial growth is remaining.	Bracing and more aggressive postural / Schroth therapy.
25-30°	Brace if progressive and growth remains.	Studies show Schroth therapy and hard bracing creates the best results.
40-50°	Surgery is recommended in the medical community.	Studies show Schroth therapy and hard bracing creates the best results.

Types of X-rays and Other Imaging:

- X-rays
- EOS® X-rays
- 3D Ultrasound
- CT/CAT Scan (computerized tomography)
- MRI (magnetic resonance imaging)

X-ray or radiography uses a very small dose of ionizing radiation to produce pictures of the internal structures. X-rays are the oldest and most frequently used form of medical imaging.

Ways to reduce radiation:

- Ask the physician to measure with a scoliometer before referring to X-ray
- Reducing the number of X-rays to as few as possible
- Reducing the exposed area with a smaller view (narrow beam)
- Use lead or metal shields on breasts and reproductive organs
- Take an X-ray with the patient's back toward the X-ray beam
- Have the patient stand at least 6 feet from the machine
- Ask the radiology technician to use a filter (called a wedge)
- Ask the radiology department to use fast conventional or rare-earth films (because you don't need the highest resolution to calculate Cobb angles of scoliosis)
- Use and EOS X-ray and ask for micro-dose

EOS® imaging is an X-ray technology using about 1/7th of the radiation than in traditional X-rays or CT scans. It is an ideal imaging method but it can be expensive and not available at all imaging centers. EOS can simultaneously take full-body, frontal and side-view images in a weight-bearing standing or sitting position.

A study in 2016 concluded that micro-dose EOS provided useful images of the spine while significantly reducing radiation exposure. It suggests that patients with scoliosis undergo a standard initial x-ray for full diagnosis purposes and micro-dose

EOS for follow-up purposes if there is no suspicion of bone metastasis, fracture or other complaints, to reduce the accumulation of ionizing radiation in the long term.

3D Ultrasound scanning is at an early stage of development and still has some limitations.

CT / CAT Scan (computerized tomography) computers create 3-D cross-sectional images of the soft tissues, bones and blood vessels and get more detailed information than X-rays. During the minimally invasive and quick scan, the patient lies in a tunnel-like machine while the computer rotates and takes images from different angles. The doctor may use a special dye called contrast material to see structures more clearly. The patient drinks a liquid containing the contrast, or the contrast may need to be injected or given via an enema. CT/CAT Scan is less commonly used and is gradually being replaced by MRIs (magnetic resonance imaging).

MRI (magnetic resonance imaging)

MRIs involve no radiation as with CT/CAT scans or X-rays but they tend to be much more expensive and require the patient to hold still for long periods of time in the MRI machine which is a large machine that you lie down in. There are conditions to taking an MRI such as possible issues with metal implants, pacemakers, or magnetic devices with some types of expanding rods as we will see later in the Surgery Chapter. A new standing MRI is becoming more available and will give a more accurate picture of scoliosis since the person is not resting and relaxed but is standing in a weight-bearing position to see the natural state of the spine. An MRI is usually required by the doctor if a child is under ten years of age, has rapidly progressing scoliosis, or has other risk factors that should be ruled out with this type of more detailed imaging.

Getting images from the medical provider.

The images will most likely be digital images that can be uploaded to a portal accessed with a password or provided to you on a CD/disc. Disc technology is becoming old and problematic. It is usually

impossible for you to open the disc at home as it requires a special program. Some discs are only compatible with certain computers and are often corrupt or blank or won't open under the best conditions. If you can get your images on a portal it will be much easier to access, make a screenshot or share with other medical providers and keep them for your files. You own these images and are entitled to have access to them. Do not allow a facility to keep this information from you. Always ask that the disc be double-checked to be sure it contains the correct images and is functional before leaving the clinic.

How Often / How Should X-rays Be Taken?

(see also Chapter 9 "Bracing" for more X-ray information)

Studies suggest using X-rays on three occasions only:

- At the initial visit to confirm the diagnosis
- When there has been rapid growth or change in the curve appearance
- Before surgery to locate the exact levels for spinal fusion

Other occasions to get imaging may be to evaluate how well a brace is working during or after treatment or to monitor a scoliosis curve.

Radiation Exposure and Different Imaging Techniques

Mgy = megagray

mGy = milligray

SI = system of units of the gray (absorption of 1 joule of radiation energy per kilogram of matter)

(Richards et al. 2010).

The following table shows the differences in radiation doses with different types of imaging.

Imaging Techniques	Full spine film	
	Frontal (mGy)	Lateral (mGy)
EOS® microdose	0.019	0.044
EOS® low dose	0.132	0.214
Conventional X-ray	1.662	1.862
Full spine CT scan	15.6	-
Low dose full spine CT scan	5	-

How Should I Take an X-ray?

X-rays of the entire spine (including the pelvis and neck) while standing and weight-bearing are the most informative way to see the entire spine. If a full spine image is possible it is preferred but separate images may be taken and then patched together if necessary but may interfere with measuring.

It is important to take X-rays at the same time of day if they are to be taken multiple times during the growing process. At the end of the day, the curvature will seem worse than it does at the beginning of the day due to muscle fatigue and gravity pulling on the skeleton. We are all shorter at the end of the day!

X-rays can be taken two ways:

A "back to front" (P-A view) means the back is facing the X-ray beam.

A "front to back" (A-P view) means the front is facing the X-ray beam.



The Pros and Cons are:

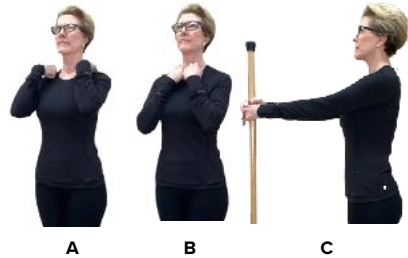
- Front to back view produces better image quality.
- Back to front view substantially reduces the patient’s radiation dose.

Taking an X-ray from the side (lateral or sagittal) is very important to see the posture of the “front to back” curves of the spine. To get the best possible side view, the position of the person does matter. De Sèze *et al* compared three different standing positions.

A. The clavicle position

B. The folding position

C. The straight-out arm position



Studies found that C., the straight-out arm position, *i.e.* standing with arms and hands supported horizontally in front of the body is the closest to the natural standing posture for an X-ray.

If back pain is present, a lateral radiograph of the spine including the lumbosacral region is important to check for vertebral abnormalities such as a fracture of the spine, spondylolisthesis (a slipping forward of one vertebral bone), infection, or bony destruction of any kind. Pain may also indicate that an MRI should be taken instead of, or as well as, an X-ray.

However, a lateral X-ray should only be taken during the first series. It does not need to be taken on every follow-up X-ray unless the patient has a significant curvature.

Bracing and X-rays:

(See more information in Chapter 9 “Bracing”)

It is important to do an X-ray while wearing the brace shortly after being fitted for a brace to see how much correction is being made. The side view of the correction is also very important since the

front-to-back curves are just as important as the rotations and the side-to-side curves. It is critical to make sure a brace is making good corrections in all three dimensions so that any adjustments can be made to the brace.

If a patient is wearing a brace, it is not best practice to take the brace off and do an X-ray immediately. It is essential to see if the spine is holding stable after removing the brace for some time before taking an X-ray. This will allow the spine to relax into a more realistic position and reveal the correction made by the brace. Discuss how to take imaging with your brace physician and not just with the orthopedist or pediatrician.

How do X-rays Show Skeletal/Bone Maturity?

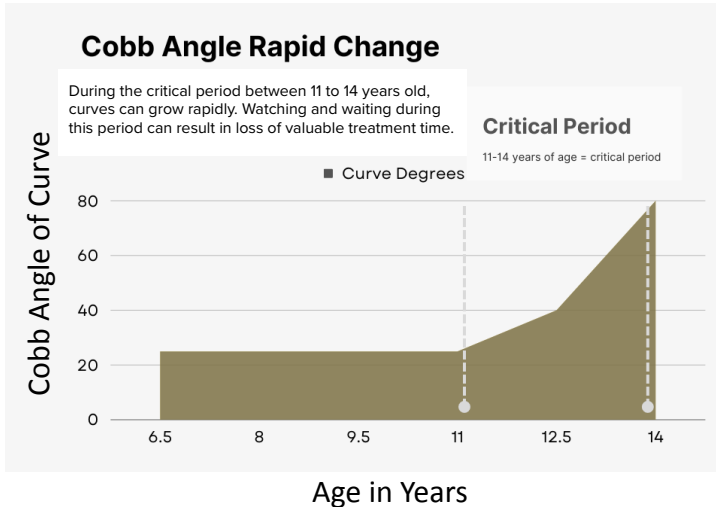
X-rays are used to measure scoliosis but also to see the status of bone development and to measure how much growth or bone maturity remains in a child. This is one important way to predict how much a scoliosis might progress. No method is perfect in predicting bone maturity, but they are all useful.

Bone maturity is measured utilizing one of several methods:

- Sanders, Greulich-Pyle, Tanner-Whitehouse and the Thumb Ossification Composite Index (TOCI) methods are based on an X-ray of the left hand and the state of ossification (“sealing” of the growth plates) of the bones.
- Risser Sign is based on an X-ray of pelvic bones which I will discuss later.

Progression of scoliosis happens mostly when bone maturity is not finished and “growth spurts” are still occurring, so intervention during this period is critical. The status of a young woman’s first period (the medical term is “menarche”) is also a predictor of maturity but as you can see in the research provided, these are imperfect predictors of growth, maturity, or risk of curve progression. It is important to realize that the progression of scoliosis can still happen even after bone maturity or the beginning of a girl’s period.

During a “growth spurt,” a curve can experience rapid worsening and it is very important to realize that “watching and waiting” even for a few weeks may be risky. This chart tracks curve progression and the missing X-ray or exam opportunities with “watch and wait”.



If scoliosis changes rapidly with growth spurts, why don't most doctors check more frequently?

The reasons may include:

- Some doctors believe it will stabilize or resolve on its own.
- Some doctors want to avoid radiation exposure caused by repeated X-rays.
- Some doctors believe that nothing works to stop curve progression unless it has reached the “surgical range” of 40-50° in which case, a scoliosis fusion surgery is recommended.

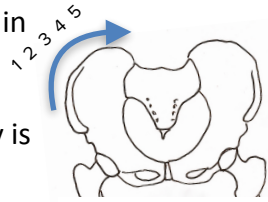
So what can you do instead of “watch and wait”?

- Get an MRI instead of an X-ray if you or your doctor are worried about radiation
- Start scoliosis-specific postural exercise (SSPE) with a trained therapist.
- Get a highly corrective brace as soon as possible.

- Monitor growth monthly with a scoliometer for growth “spurts”. This will give you a good indication of when a child is most at risk for getting worse.

What is the Risser Sign and why is it important?

When any imaging is taken of the spine it is important to include the pelvis to see the signs of bone maturity at the top of the pelvic bones. The large bones of the pelvis are called the iliac bones and the very top of the iliac bone is called the iliac crest. During the maturation process, there is a small line that is visible on imaging that shows the stages of bone maturity. This is called the Risser sign. In a child, it will appear as though there is a small hairline crack at the top of the iliac crest. This “crack” starts to fill in with solid bone during puberty from the outside rim towards the inside closest to the spine. As the line starts to fill in it is graded 0-5. Zero is the youngest and the growth spurt hasn’t happened yet or has barely started, Risser 3 is when puberty is almost complete and Risser 4 or 5 is full skeletal maturity.



The other measuring technique is the Sanders based on an x-ray of the left hand and the state of ossification (“sealing” of the growth plates) of the bones.

Am I Done With Scoliosis Treatment at Bone Maturity?

Once bone maturity is reached at Sanders or Risser 4-5, it is more difficult to make a positive impact on the curvature in general. This is not to say in any way that people at a Risser/Sanders 4-5 should give up. Much more change can be made to the spine especially if the spine is flexible and the person is willing and motivated. Most doctors tell patients and their parents to abandon any bracing or therapy at, or near, skeletal maturity. It is important to note that there have been many cases where the curve got worse again once bracing and therapy were abandoned too soon or brace weaning was done too quickly. Studies show that bracing past the Risser 4 stage continues to have a positive

impact on the curvature. You can even start bracing at a Risser 4 and have a good result. It is never too late to try.

Visual Assessment:

Scoliosis can go unnoticed in the early stages or you may begin to notice the following signs:

While standing - observe from the back:

- Observe the head - is there a tilt off to one side?
- Observe the shoulders - is one more forward?
- Observe the shoulder blades - is one more prominent on the ribcage or higher?
- Observe the ribcage - is there a prominence in the back or front?
- What happens when the person bends over at the waist? Is there a “bump” on one side?
- Observe the waist - is there a fold on one side?
- Observe the hips - one hip may seem higher or more prominent to the side than the other.

From the side:

- Observe the upper spine - is it flat or hyperkyphotic (too rounded)?
- Observe the lumbar spine - is it flat or hyperlordotic (too arched)?

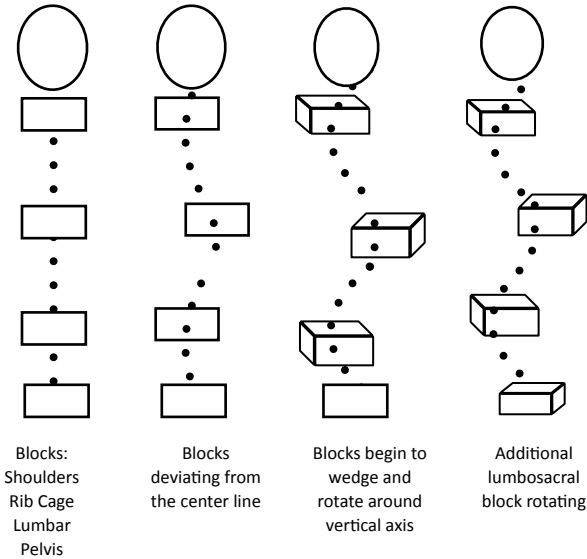
While lying down face up:

Observe if one of the following is one more pronounced forward

- Shoulders
- Ribs
- Hips

As seen briefly in Chapter 1 “What is Scoliosis”, another way to understand what is happening in the body is: Imagine “blocks” that distort during scoliosis. Observe the blocks below. Imagine the larger part of the block as coming towards you, meaning; that area is leaning outward laterally into the wide block AND rotating

backward. The small part of the wedge is leaning inward laterally AND rotating forward.



If any of these signs are noted, it is wise to get evaluated as soon as possible. If the individual is still growing, scoliosis can progress very quickly in childhood and even in the late teen years.

The Adam’s Test: (See Chapter 20, page 231 “Scoliosis Screening Handout”) Scoliosis shows its telltale “bump” in a forward-bend position. A Scoliometer device can measure the locations and degrees of spinal rotations that cause the “bump”. Usually, this test is performed in school but is being given less frequently in the US. Ask a pediatrician or school nurse to perform the test or purchase a scoliometer for home use. It is simple to learn how to use and online videos are available. Visit my ScoliosisCoach YouTube Channel: <https://youtu.be/-l4JH-3aaJc> To purchase a scoliometer, visit my website www.ScoliosisCoach.com

How to Perform the Adams Test and Use a Scoliometer:

Wearing a sports bra, or otherwise exposed back and no shoes, stand with feet together.

1. Sit behind the person who is standing with their back to you.
2. The person bends over at the waist with straight legs and straight and relaxed arms with palms together, until the upper spine is parallel to the floor.
3. Upper back: Place the scoliometer across the back with the “cut out” part of the device straddling the bony center of the spine. Hold the device with two hands at the top corners and move it down the back. The bubble will move if there is a bump. Chart the largest number you find, if the bump is right or left, where and the date you measured it (you can use stickers on the side of the spine if you wish to mark the rotations). I provide a Scoliosis Screening Chart at the end of this handbook.
4. Lower back: As you approach the low back the person may need to bend further over until the lumbar spine is parallel to the floor. Continue moving to the lowest part of the back.



RIGHT UPPER SPINE
CURVE (from the back)

Mark the largest number, if the bump is Right or Left, where and the date you measured it.

Do not press down hard on the scoliometer device. That can distort the reading. Retest again 1-2 times for accuracy. Keep a journal or use the Scoliosis Screening Chart mentioned earlier.



What do the numbers mean? As seen in the photo above, the bubble goes to one side, meaning the opposite side was the higher side or the rotated area. So this image indicates a 16° rotation of the right, the higher side.

In a patient, when 5° of rotation or more is seen, or a significant increase in degrees over some time, a physician should evaluate it, especially if you are testing a person who is still growing.

For more details on how a doctor should screen for scoliosis and diagnose it, see Chapter 14 “Choosing a Doctor”.

Note: Remember, true scoliosis is not only side-to-side curvature but also has a rotational element. A scoliotic curve without rotation should be investigated for other causes, including bony tumors, neuromuscular conditions, intraspinal pathology and nerve root irritation.