

# Your Guide to Bracing



**Spine Program**

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## What is scoliosis?

Adolescent idiopathic scoliosis (AIS) is the most common type of scoliosis and involves an abnormal curvature of the spine that develops as the spine is growing. Typically this curve is in the shape of an “S” or a “C.” Not only can the spine curve, but it can also rotate or twist. Classic physical signs of AIS are a prominent hump in the ribs or uneven shoulders or hips.

AIS is often diagnosed using the Adam’s forward bend test. During the test, the patient bends forward, as if they are diving. Signs of AIS are a prominent line where the spine is, with one side higher than the other.

Once identified, common treatments for AIS include physical therapy, bracing, or surgical intervention.

## What are the causes and complications of AIS?

The specific cause of AIS is unknown. Risk factors such as age, gender, and family history can affect the likelihood of developing scoliosis. If left untreated, complications include worsening of the curvature, heart and lung compression (in severe cases), and increasing pain.

## What to expect

Once your child is diagnosed with AIS, your specialist will prescribe a brace appropriate for their needs. The goal of bracing is to stop, or slow down, the worsening of the curve. The type of brace will depend on the treatment plan you and your specialist discuss. An appointment will be made for your child to see an orthotist to be fit for the brace. At the first appointment, the orthotist will either take a mold or use a scanning device to build a brace. You will have multiple appointments to get the best fit for your child.

Once your child begins wearing the brace, pay close attention to any growth spurts they may have. An adjustment to the brace may be necessary as they grow. Contact your orthotist if you ever have concerns about the fit of your child’s brace. It’s important to encourage your child to wear the brace consistently and to be prepared for challenges. Most kids acclimate quickly to their brace, but some discomfort should be expected. The best results come from wearing the brace as prescribed.

# Types of braces

## Boston Brace

The Boston brace, made of plastic and foam, is one of the most common back braces used to treat AIS. It wraps around the torso and opens in the back. The top of the brace begins under the arms and the bottom is above the hips. It is designed to place the spine in a straighter position. The Boston brace is worn 16 to 23 hours a day and treats scoliosis by using pads to push on the curvature with a 3-point pressure system. The 3-point system, with opposing forces directing pressure on the curves, is one of the best non-surgical methods for correcting AIS.



## Boston 3D Brace

This brace is made from a custom mold using a scan of your child's spine. This is done with a handheld scanner in an orthotics and prosthetics office. This brace allows for a more customized fit based on your child's needs, offers a more aggressive 3-point pressure system correction, and includes extra correction to treat scoliosis where there is significant rotation in the spine. It is an improved design based on the original Boston brace.



## Providence Nighttime Brace

AIS can also be treated with night bracing. The Providence nighttime brace also applies a 3-point pressure system, but it is worn only at night. This type of brace is made either from custom measurements or a casting technique. This brace does not bend the patient and can offer more overall comfort.



## Milwaukee Brace

The Milwaukee brace is a full-torso brace that extends from above the shoulders to the pelvis. The brace incorporates metal uprights to treat scoliosis curves that are higher in the spine. Two uprights are placed on the back of the brace and one is placed on the front. The brace keeps the spine in alignment and is worn 23 hours a day.

## Charleston Nighttime Brace

The Charleston brace is a side-bending brace that is worn at night. The brace treats the curve by applying a 3-point pressure system to stretch the spine in an over-corrected position.



## Brace customization

Letting your child personalize their brace can help them embrace wearing it consistently. Below are some fun options for designs.



## Patient and family stories



I was diagnosed with AIS at 11 years old during my middle school physical. First, I was prescribed a night brace because my curve was approximately 20 degrees. A year later, the out-of-brace X-ray showed my top curve was 34 degrees and my lower one was 37. Because of this increase, I then wore a modified Boston brace 16 to 18 hours a day for two years. At that time I dreaded the doctor's visits and didn't want to miss school because I had so much work to make up, but getting fitted right was important.

The brace was a little embarrassing, too. I was worried that people in my grade would see me when I had to go to the nurse before gym to take off my brace. And, trips to the mall became frustrating when I tried on clothes. But, no matter what, I knew that I needed to wear the brace all the time if my curves were going to get better. And, I did get used to it after a little while. I also had physical therapy appointments at that time. Then, once my growing slowed, I only had to wear the brace at night again. Now, my curves are at 30 degrees.

Because I am done growing, I no longer wear my brace, and am happy with the results. Although wearing the brace was a challenge, I can see that it helped me in the long run. I also realized that staying positive was what kept me on track.



- Hope, 15-year-old patient



My daughter, Madison, was diagnosed with AIS at age 10. She is a special-needs child, which was already a huge challenge, so I had no idea what to expect with this additional diagnosis. Our bracing journey began when we received the appointment to have her measurements taken. A couple of weeks later, we returned for her first fitting. It took a couple of fitting appointments to find the right adjustment for her to be as comfortable as possible. She was able to decorate her brace, and at first she found wearing the brace to be fun.

As time went on though, wearing it became much more difficult. I had to frequently go over the process with her thoroughly and explain why it was necessary for her to be consistent with wearing her brace. However, because it was so challenging for her, she did not wear the brace the prescribed amount of time of 23 hours each day. After a year and a half, Madison had outgrown her brace. We made an appointment with her orthotist to get refitted and found out her curve had increased. We were then faced with the decision to have spinal fusion surgery.

From that challenging experience, we learned how extremely important it is for your child to wear the brace for the prescribed amount of time in order to help avert more spine curvature. Parents need to provide encouragement and work to make sure the brace is comfortable and worn consistently.



- Susan, mom of special-needs patient Madison

## Common questions

### **Will my child be able to exercise in their brace?**

Yes. Children should exercise to help strengthen their core. Most surgeons will recommend exercising with the brace off. Low-impact sports, like swimming, are a great activity option for out-of-brace wear. If needed, your specialist will give safe and effective exercises that can be done while your child is wearing the brace.

### **My child is concerned that wearing the brace will be embarrassing. What can we do?**

Fortunately, most braces are quite discrete. Clothes may need to be a size larger to accommodate the brace, but the brace is usually not noticeable, especially if it is decorated.

### **How long does my child have to wear the brace?**

The length of time your child will need to wear their brace will depend on daily wear, age, and remaining growth.

### **Can my child take off the brace if it's uncomfortable?**

Braces are removable, but the more your child wears it, the better their results will be. Understanding that your child will occasionally be uncomfortable while wearing the brace is an important part of the process. Support and encouragement to wear the brace as prescribed is needed. Most kids do get acclimated quickly to the brace.

### **Will my child need physical therapy?**

Physical therapy is often a prescribed part of this process. Your specialist will decide what will work best for your child.





## Helpful Tips



Clothing sizes should be increased to accommodate for the brace and ensure comfort.



To avoid skin irritation, do not use lotions, oils, or perfumes underneath the brace.



Body pillows can be helpful for children who sleep on their stomach.



If your child experiences numbness or tingling in their legs while sitting, let your orthotist know right away. The brace may need to be adjusted.



It is very important for the brace to be worn tightly. This prevents excess rubbing and irritation.

## Brace and skin care

Have your child bathe daily and inspect the skin. Note any areas that may be pink and monitor for any irritation, redness, or wounds.

Have your child wear a seamless tank or t-shirt under the brace. Seams can cause itchy, irritating indentations in the skin.

Clean the brace's foam liner with rubbing alcohol and a soft cloth.

## Schroth Method for AIS

The Schroth Method is a nonsurgical treatment for scoliosis using specialized physical therapy techniques to minimize or reverse the progression of spinal curve and to decrease pain. Your doctor will determine if this treatment is right for your child. Schroth physical therapy is offered through CHKD's sports medicine physical therapy program and requires a prescription from your doctor.

Schroth is a one-on-one therapy method using tactile stimulus, muscle activation, and breathing techniques to support improved posture and reinforce proper alignment of the spine. Individual treatment plans are developed by a Schroth-certified physical therapist to meet the curve pattern, fitness status, and level of function of each patient. Some exercises include rotational breathing techniques, pelvic corrections, and spine-stabilizing isometric contractions. These exercises bring awareness to proper postural positions, strengthen muscles in the direction of correction and elongation of the spine, and increase breathing into collapsed areas to support proper alignment.





## Our Locations

### Norfolk

Children's Hospital of The King's Daughters  
601 Children's Lane  
and  
CHKD Health Center at Kempsville  
171 Kempsville Road

### Chesapeake

CHKD Health Center at Oakbrooke  
500 Discovery Drive

### Newport News

CHKD Health and Surgery Center at Oyster Point  
11783 Rock Landing

### Virginia Beach

CHKD Health Center and Urgent Care at Landstown  
1924 Landstown Centre Way

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# Spine Program

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