

Bracing for Scoliosis



Boston Brace, Inc

Braces don't correct scoliosis.

Braces are used for scoliosis to try to keep the curvature from getting worse. Braces don't correct scoliosis because the spine is deep in the body and difficult to control by external pressure. Braces for teeth are applied directly to teeth and tightened gradually to affect growth. But, scoliosis braces have to work through skin, muscles, ribs, and joints just to keep scoliosis from worsening.



You wouldn't expect braces for teeth to work if you only pushed on the cheek.

Do Braces Stop Scoliosis from Worsening?

There is also controversy whether braces for scoliosis do much to help control the curvatures. It seems that some curves are determined to worsen in spite of bracing. Some curves would not increase even if braces aren't worn. But, there do seem to be some that are influenced by bracing. We know that boys are not helped by braces because scoliosis in boys is different from scoliosis in girls. We also have some genetic testing that shows some girls do not respond to bracing. We are getting better at choosing the girls who may benefit from bracing, but there are still some failures that go on to surgery.

Who needs a brace?

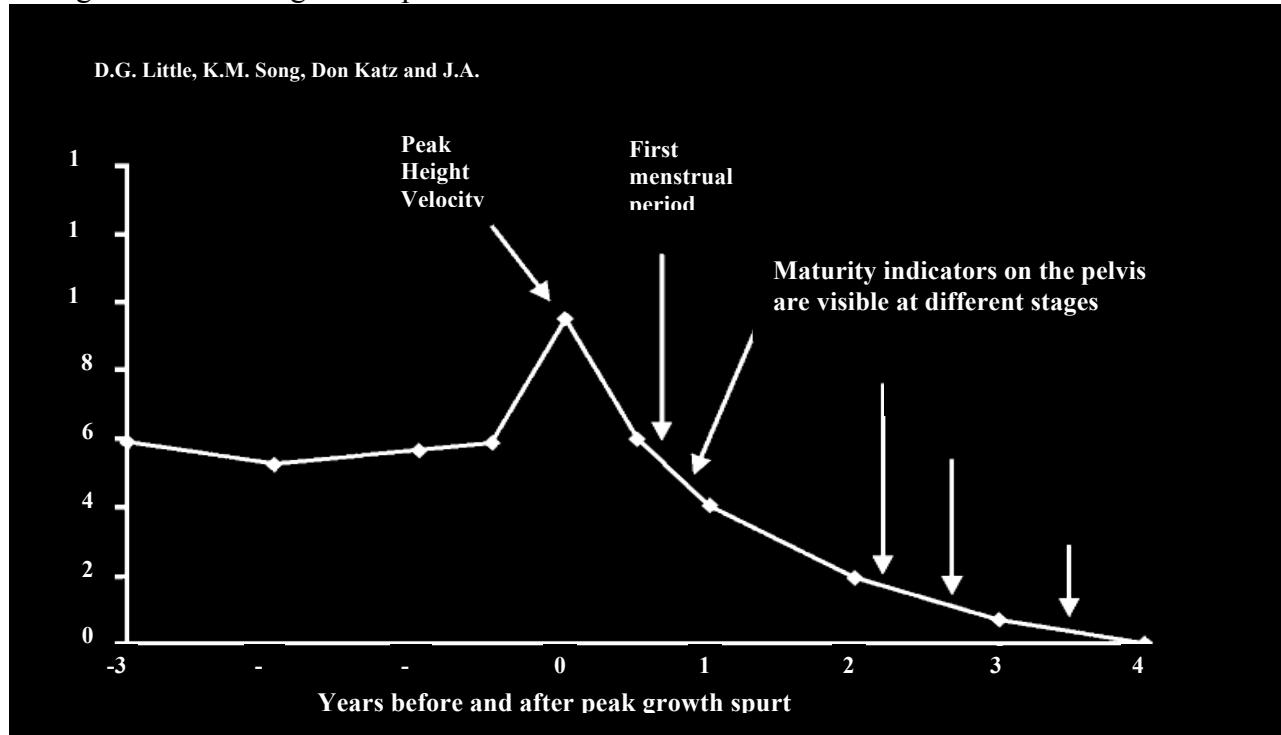
We recommend braces for girls who have moderate curvatures (20° - 40°) if there is significant growth remaining. In very young children braces may be used for curves that are more than 15° . In some special circumstances we will also try bracing for larger curves, but surgery is generally recommended for curves larger than 50° .

How many years is bracing needed?

Once bracing is started, it is continued until growth has stopped or slowed down almost to a stop. That is usually one year after the onset of menstrual periods for girls. Also, there are markers on the pelvis x-ray that help determine growth remaining. The best way is to measure height every four to six months. When growth is less than $\frac{1}{2}$ inch in six months, bracing has done as much as it is going to do. After skeletal maturity, scoliosis can still worsen if the curve is more than 35° but continued bracing will not help when growth has stopped or slowed almost to a stop.

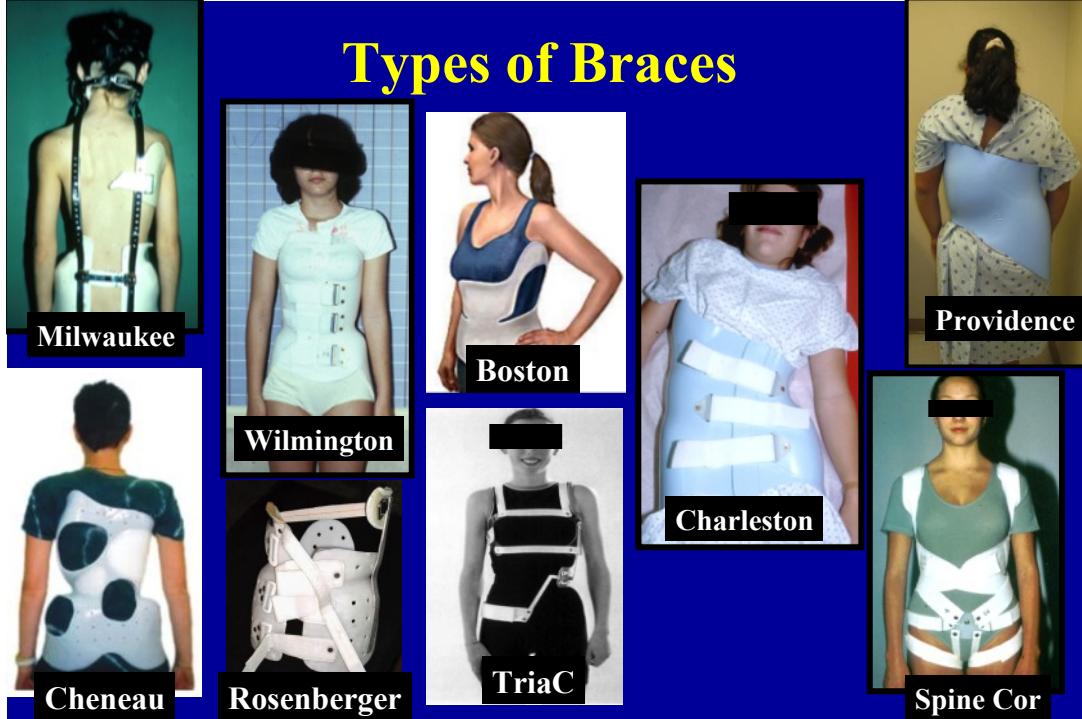
How do you know there is growth remaining?

X-rays of the pelvis, hand, or elbow can determine skeletal maturity. Girls who have not reached puberty have a lot of growth remaining. The rate of growth may be more important than the amount of total growth remaining because young children have a lot of growth remaining, but scoliosis usually develops and worsens when growth is most rapid during the adolescent growth spurt.



What type of Brace is Best?

Some of the more common types of braces are shown here. New ones are coming out regularly. Perhaps there are so many different braces because none of them really works as well as we would like them to. Each has advantages and disadvantages. The most common types are discussed below.



The Boston Brace is widely used. It is worn 23 hours a day and supports the body in a neutral position. The TriaC brace is similar, but slightly flexible. It is also worn 23 hours a day.

The Spine Cor System is a relatively new concept. This device is worn 23 hours a day and allows flexibility. Spine Cor has not been proven to be as effective as most other types of braces. One early study shows it is effective, but one shows that it may not be effective. More studies are needed. It can be difficult to put on and take off, but most patients like it because they can be flexible in it and it is well concealed by clothing.

The Providence and Charleston Braces are worn only at night. The Charleston Brace bends the curvature in the opposite direction while sleeping at night. The unbending principle is unique to this brace while others use direct force to improve scoliosis in a brace. The Charleston Brace has been studied by many authors and is effective for some types of scoliosis. The Providence brace is also worn at night and works by pressing harder on the curves for greater correction during a shorter period of time. The Providence Brace gives better correction in the brace than the Boston Brace, but not as good as the Charleston Brace. While these braces look uncomfortable, they are not more uncomfortable than any brace. Discomfort at night means that the brace needs to be modified.

Which is the best brace?

This depends on the personality of the child and the type of curvature. Double curves are more difficult to brace with any type of brace and these have the worst success rates. For double curves larger than 35° a Boston, TriaC, or Providence Brace is generally recommended. The Providence Brace may not be quite as effective, but it is worn only at night.

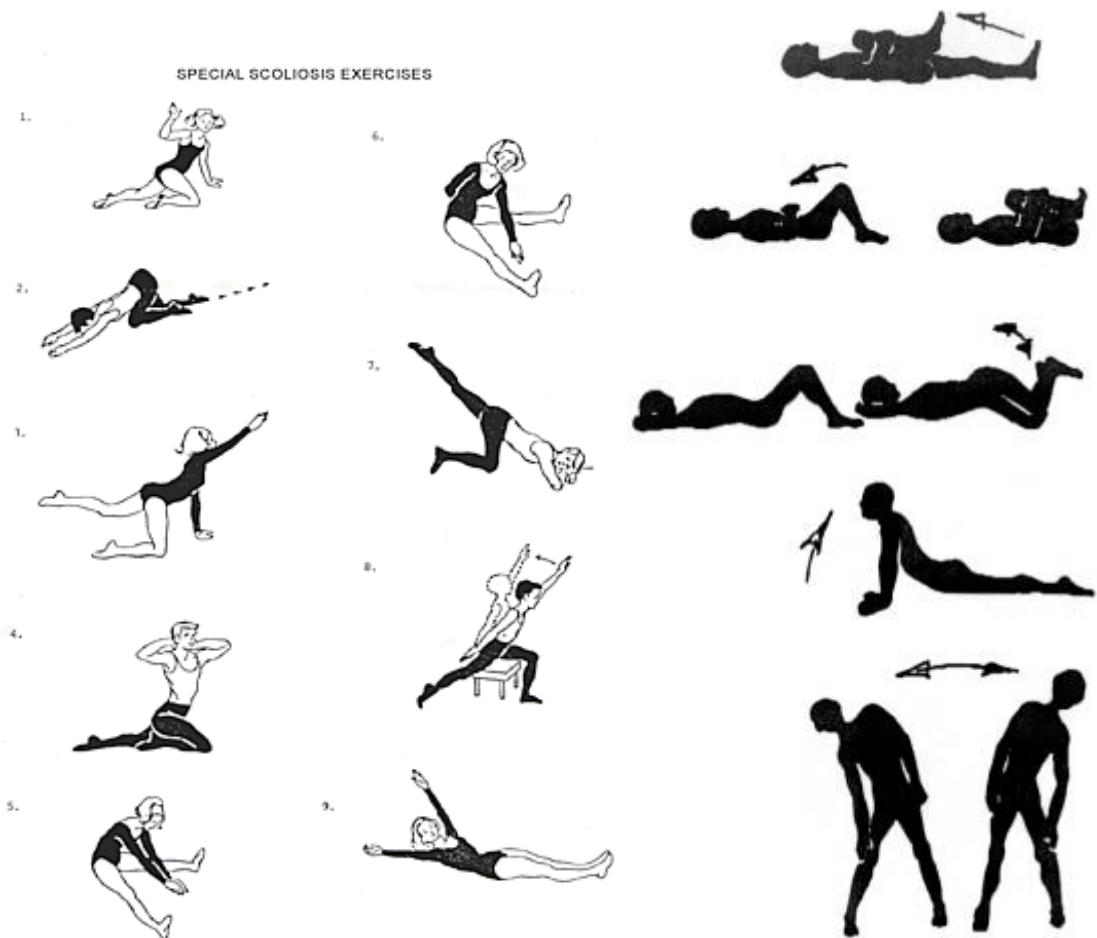
For single curves and curves less than 35° the Charleston Brace is as successful as other types of braces. It is worn only at night time preferably for a minimum of 8 hours each night.

Is it better to wear a brace all the time instead of part-time?

This is controversial among scoliosis experts. It is our experience that part-time brace wear is as effective as full-time brace wear for most scoliosis curvatures. We have data to support this. Even researchers who have recommended full-time (23 hours a day) brace wear have not been able to demonstrate that wearing a brace more than 14 hours a day is beneficial. However, adolescents who do not follow advice regarding proper time of wear for their particular brace are less successful than adolescents who do not wear their brace as recommended. Some patients do benefit from full-time wear, but most can wear braces part-time with equal success.

What about exercises for scoliosis?

It has been repeatedly demonstrated that exercises and manipulations do not influence the course of scoliosis at all. Electrical stimulation has been used in the past to build strong back muscles on the convex side of the curvature, but strong muscles on one side have not been any more successful than doing nothing. Bracing and surgery are the only proven methods of treatment of scoliosis. When adolescents wear braces part of the day, they do not need a special exercise program. But, children who are in braces full-time need an exercise program to prevent weakness from immobilization. Here are some exercises that are good for flexibility and discomfort from scoliosis. 40 minutes of exercise three times a week will usually make you feel better. Do these stretches for one minute each and repeat each one twice. It is better to stretch and hold rather than bouncing back and forth. We can prescribe physical therapy if you prefer a supervised educational program to get started. Also, some individuals prefer Pilates. There is some evidence that Pilates may be especially helpful for scoliosis discomfort. Yoga is also preferred by some patients. But, there is no evidence that exercises will change the outcome of scoliosis even when combined with bracing or other treatments.



Will Chiropractic help stop scoliosis?

Chiropractic manipulations may help relieve pain or tired feelings in the back, but manipulations do not influence scoliosis. Scoliosis is a disorder of growth like teeth that grow crooked. Manipulations will not influence the growth of the vertebrae. If it did, there would be concern about damage to the growth centers. Chiropractic is not harmful or dangerous for patients with scoliosis, but it is not beneficial for stopping curvatures. Many of the “success stories” from Chiropractic involve scoliosis that is secondary to painful conditions, or involve mild scoliosis that would not get worse regardless of treatment. Also, scoliosis in adolescents who are near skeletal maturity do not benefit from manipulations, exercises, or braces.

Are there any health food products that will help?

This is an unexplored area of research for scoliosis, so perhaps some will be found in the future. For now, there are no medical recommendations. Vitamins and minerals should be a part of the health program for adolescent girls who are building bone. I recommend a multi-vitamin once a day that has Vitamin D, and Calcium. Unexplored but possible additives include BioSil (must be purchased online and is an absorbable form of silica that

has been shown to help prevent osteoporosis. Most vitamin supplements with silicon dioxide are not absorbed)

There is evidence that adolescent girls with increasing scoliosis have low Melatonin levels. Melatonin is produced from Serotonin and Serotonin is produced in the body from tryptophan. Foods rich in tryptophan include: egg whites, soy beans, parmesan cheese, cheddar cheese, sunflower seeds, turkey, chicken, beef, pork. Carbohydrate in fruits, especially bananas help convert tryptophan to Serotonin. Other carbohydrates such as potatoes and pasta can also help convert tryptophan to serotonin. Also vitamins B1, B3, B6, and Folic Acid are helpful in Serotonin production. Exposure to normal daylight through the retina of the eyes (no sunglasses) converts tryptophan to Serotonin. Reading a book outside, sunbathing with sunscreen for skin protection, having a picnic, or sports activity are good examples of outdoor activities. Melatonin is only produced from Serotonin at night when the eyes sense darkness. So, sleep in a darkened room is recommended along with proper diet, and sunshine for one hour a day as a good health habit. Staring at a computer screen or working late with lights on suppresses Melatonin production, so turn the lights out and get a good night's sleep.

How do I get my brace?

You will be given a prescription and directions to the brace shop. You will also need a copy of your scoliosis x-ray. At the brace shop you will be measured for a brace that will be made specifically for you. It will take three or four weeks for your brace to be made. When you know the date your brace will be ready, then call our office for an appointment as far in advance as possible. That will allow you to pick up the brace and come to our office the same day that you receive your brace. We will need to check the brace to see if it fits properly. An x-ray will be made in the brace. If it is not adequate, you may need another brace but you will only pay for one brace even if the brace shop needs to make another one. Be prepared mentally for modifications. If braces always fit exactly the first time, there would be no need to check them and take x-rays in the brace.



How often do I need to be checked?**How often do I need a new brace?**

Scoliosis does not worsen quickly. A check-up every six months is generally frequent enough. You will be seen more than that when new braces are needed. A brace will usually last one year or for two inches of height gain. Sometimes they fit for longer or shorter periods of time depending on growth and maturation. Insurance companies may object to paying for two braces in the same calendar year, but we can write letters to support payment for a second brace if that is needed for your care.

What are the problems I might expect with brace wear?

Please ask my assistant for the information sheet for your particular type of brace. That will answer most of your questions. Also, the brace maker can make suggestions for your type of brace.

Are there other experts we should contact?

Dr. Price is a recognized expert on the subject of bracing and non-operative management of scoliosis. He has published several scientific articles in peer-reviewed journals on the subject of bracing for scoliosis. He has also served as Chairman of the Non-Operative Committee of the Scoliosis Research Society. Dr. Price is involved in developing saliva and blood tests for scoliosis detection and prediction of success. Dr. Price is well-known in this field, but there are many controversies that are unsolved, so we would encourage you to seek any care that will help you be more comfortable with your decisions.