Scoliosis: Treatment with a Spinal Orthosis (Spinal Brace)

**What is scoliosis?**
Scoliosis (say: skoh-lee-OH-sis) is a sideways curvature in the spine.

**What is a spinal orthosis?**
An orthosis (say: or-THOH-sis) is a medical device that is designed to support or treat people who have problems with their muscles, bones, or joints.

At this time in your life, your body is growing quickly. This rapid growth increases the risk that the curves in your spine will get larger too. A spinal orthosis is a back brace that is designed to hold your spine in place and decrease the chance that the curve in your spine will become worse as you grow.

By wearing a spinal orthosis, 80% (8 out of 10) of curves will stay the same size. Some curves may get smaller. That is a nice bonus, but it is not to be expected.

Your orthosis will be custom-made to fit you.

**How long will you need to wear a spinal orthosis?**
In order for the orthosis to work properly, it must be worn full-time, which is 22 to 23 hours per day.

You will need to wear a spinal orthosis until your skeleton stops growing so quickly. This will be when you have almost reached your full height. For girls, this occurs about 2 years after their period starts. Boys usually stop growing so quickly by age 16.

Your orthopaedic doctor will monitor you closely and will determine through X-rays and height measurements when you have finished growing.

**Types of spinal orthoses**
There are 3 main types of spinal orthoses that are commonly used to treat scoliosis.

- The first type is called a Thoraco-Lumbar-Sacral Orthosis (TLSO). This is the most commonly prescribed orthosis because it
treats both single and double curves. This is what you will likely be wearing.

- There are two other spinal orthoses your doctor may prescribe for you: the unbending spinal orthosis and the Milwaukee orthosis. These are less commonly used and are for a specific type of curve.

Modern spinal orthoses
Orthotists have been working to make better spinal orthoses for children who have scoliosis. Modern spinal orthoses now weigh less, are more comfortable, and are easier to wear.

Getting a spinal orthosis
Your family doctor or paediatrician has referred you to the Orthopaedic Clinic. You will need to make several visits to the clinic.

- At your first visit, you will be seen by a nurse, a physiotherapist, and an orthopaedic doctor to assess your spine. An X-ray may be taken at this time.
- If a spinal orthosis is needed, you will be seen by a certified orthotist. An orthotist is a person who has been trained in making, fitting, and assessing spinal and other orthoses. Your first visit with your orthotist may be on the same day as your clinic appointment, or it may be scheduled many weeks later. At this first visit, the orthotist will take many measurements and will take a cast of your body in order to make your custom spinal orthosis.
- A month later, you will see your orthotist again to fit the spinal orthosis.
- A month after the orthosis is fitted, you will see your orthotist again to have an X-ray taken while you wear your spinal orthosis. Any final adjustments will be made. The X-ray should show that the curve in your spine is straighter while wearing the orthosis.
- After that, you will be seen by your scoliosis care team every four to six months, or sooner if needed. Your scoliosis care team will include the doctor, the physiotherapist, and the certified orthotist.

What happens at the first visit
Your first appointment with your orthotist takes about an hour. Your orthotist will spend some time giving you information about spinal orthoses and answering your questions. You will then be given two long body stockings to wear for the assessment and casting part of the visit.

Your orthotist will examine you, ask you some questions, and then measure your body with a cloth measuring tape and calipers, which is a type of ruler. After that, you will be asked to lie on a casting bed while wet plaster of paris bandage is applied to the front of your body. The plaster takes about 10 minutes to set and harden. After that, you lie on your stomach while plaster is applied to your back. After the plaster hardens, the cast is removed by simply lifting it off your body.

This process is not painful. You will feel a little cold and some discomfort as the wet plaster is applied to your body. As the plaster hardens, the cast will become quite warm.

We recommend that you bring extra undergarments to change into after the casting.
What happens at the fitting appointment
After putting on a body stocking, you will try on your spinal orthosis. Your orthotist will mark the plastic to trim some away. This will happen a few times until the trim lines of your orthosis are right. At this point, the spinal orthosis is finished and is ready for the final fitting, about an hour later.

Your orthotist will speak with you and give you written instructions to make sure you know how to use the orthosis, and how to take care of your body and the spinal orthosis.

A fitting appointment may take up to three hours. A lot of time is spent waiting while your orthotist is completing work, so please bring something to keep yourself busy during these down times.

What happens at the follow-up appointments
The first follow-up appointment is scheduled for four weeks after the spinal orthosis has been fitted. This gives you enough time to slowly get used to wearing the spinal orthosis full-time. On this day, you will have an X-ray taken of your spine while you are wearing your spinal orthosis. This helps us ensure that the pads of the orthosis are doing the job to make your spine straighter while you are wearing the orthosis. After your X-ray, you will see your orthotist for final adjustments.

Other follow-up appointments with your orthotist will be scheduled on the same day as the follow-up appointments with your orthopaedic doctor. An appointment may be scheduled sooner if adjustments are needed.

How wearing a spinal orthosis feels
Your spinal orthosis will be tight and there will be pads pushing on your spine. As you are getting used to wearing your spinal orthosis, you will feel some discomfort from pressure of the pads. This will decrease over time. Many people who have worn both a spinal orthosis and braces on the teeth feel that the adjustment process is similar.

You will be wearing foam and plastic, so you will also feel warmer with your orthosis on. You are not expected to be able to wear your orthosis full-time at first. Over the course of a month, you will slowly increase your wear-time until you are comfortable wearing the spinal orthosis full-time.

You will need to wear an undershirt under the orthosis.

Playing sports
You can still play sports with a spinal orthosis. In fact, it is a good idea for you to be physically active every day. Although the orthosis restricts some movement in your body, there are some sports and activities that can be done with your orthosis on. Activities that require you to correct your balance quickly, or that need increased flexibility or increased air intake, must be done with the orthosis off. These activities include skating, snowboarding, skiing, horseback riding, gymnastics, dancing, and soccer.

Please ask your orthopaedic doctor or your orthotist about any activity or sports restrictions.
Colours of spinal orthoses
The spinal orthosis comes in either a peachy colour or black.

How long your spinal orthosis will last
On average, your orthosis needs to be changed every year as you grow.

Key points
- A spinal orthosis holds your spine in place and decreases the chance that the curve in your spine will get worse as you grow.
- You need to wear a spinal orthosis until your skeleton stops growing so quickly.
- There are three main types of spinal orthoses used to treat scoliosis.

- Patients who need a surgery called thoracoplasty will wear a brace for two to four months to help their ribs heal.

At SickKids:
As well as the basic colours of the orthosis, there are other optional designs, cartoon characters, and sports logos that are available for a small extra fee.

All proceeds from orthotic treatment at The Centre for Orthotics go to support patient care and research at SickKids. For more information, please see www.centrefororthotics.ca.