CHEO

WHAT YOU NEED TO KNOW: ADOLESCENT IDIOPATHIC SCOLIOSIS

Adolescent idiopathic scoliosis (AIS) is a condition in which the spine develops a sideways curve. AIS is the most common type of scoliosis and typically occurs between 10 and 18 years of age. Although girls are more likely to develop AIS, boys can have it too. Most youth with this condition are otherwise healthy and have no other health problems.

What causes AIS?

Although research continues, the cause of AIS is still unknown. Even so, we know how to assess if a curve is at risk for worsening (risk of progression). We also know the best ways to treat AIS. About 1 in 3 youth with AIS have a family member with scoliosis.

Other types of scoliosis

1. **Neuromuscular scoliosis**
   Conditions like muscular dystrophy and cerebral palsy can lead to this type of scoliosis. These conditions can cause muscle imbalance and weakness. Weak or imbalanced muscles will not be able to support the spine well, causing it to curve.

2. **Congenital scoliosis**
   This develops in the womb, and the baby is born with bones of the spine that are not fully formed or fused together

How is AIS diagnosed?

To determine if your child or youth has AIS, health-care providers will:

1. **Perform a physical examination**

The scoliosis can be almost invisible, or very obvious. This depends on the size and pattern of the spinal curve. Children and youth with AIS often have:

- one shoulder higher than the other (shoulder asymmetry)
- a body shift to the left or the right
- one hip that is higher than the other (pelvic asymmetry)
- a rib bump on the back

2. **Assess X-rays**

Your child's orthopedic spine specialist will review X-rays to measure the spinal curve carefully. A child or youth is diagnosed with scoliosis if the curve is more than 10 degrees. In general, curves of 25 degrees or more need treatment.

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How is scoliosis treated?

Mild curves may not need treatment at all. In fact, of every 1000 children with AIS, only 3 to 5 develop spinal curves that need treatment. If your child or youth does need treatment, an orthopedic spine specialist will suggest the best treatment options for them. Treatment options are based on age, type and severity of the curve and the risk of the curve getting worse (curve progression).

What affects curve progression?

A child or youth's age, puberty stage and x-rays help us to assess the risk for a curve getting worse. There are a few things that make it more likely that a curve will get worse over time, including:

- growth spurts (curves get larger during rapid growth)
- bone immaturity on X-ray
- large curves (for example, a curve of over 50 degrees in a child who has finished growing)

How is AIS treated?

1. Observation

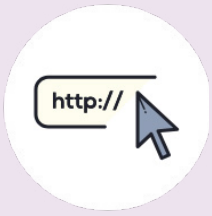
This involves checking the curve regularly as a child or youth grows (usually every 6-12 months). There is no active treatment. Doctors usually decide to observe children and youth with spinal curves of less than 20 -25 degrees.

2. Bracing

Children and youth can benefit from bracing if they are still growing and their curve is between 25 and 45 degrees. A brace will be designed specifically for your child or youth and the type of curve. As they grow, the brace may help prevent the curve from getting worse but it won't straighten an existing curve. There are two types of braces used at CHEO: a full-time brace and a night-time brace. Your spine specialist will decide which brace is best for your curve. A relevant study of patients with curves at high risk for worsening found that wearing a brace for at least 18 hours a day decreased the progression and decreased the need for surgery.

3. Surgery

Spinal fusion surgery is used to treat severe curves of more than 50-55 degrees. The goal of surgery is to correct and fuse the curved area of the spine. Usually, metal rods and screws are used to hold the spine as straight as possible. Bone chips are added to heal the vertebrae together as one solid piece of bone. The rods and screws are left in place and do not need to be removed.



Need more information?

Cheo.on.ca is the best place to find information on CHEO's programs and services and learn about a variety of health topics for children and youth. Visit our online resource section to access CHEO-recommended websites, books, apps, videos and more!

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