What is Scoliosis?

Scoliosis is a sideways curvature of the spine that occurs most often during the growth spurt just before puberty. While scoliosis can be caused by conditions such as cerebral palsy and muscular dystrophy, the cause of most scoliosis is unknown.

Most cases of scoliosis are mild, but severe scoliosis can be disabling. An especially severe spinal curve can reduce the amount of space within the chest, making it difficult for the lungs to function properly.

Children who have mild scoliosis are monitored closely, usually with X-rays, to see if the curve is getting worse. In many cases, no treatment is necessary. Some children will need to wear a brace to stop the curve from worsening. Others may need surgery to straighten severe cases of scoliosis.

What Are the Symptoms?

Signs and symptoms of scoliosis may include:

- Uneven shoulders
- One shoulder blade that appears more prominent than the other
- Uneven waist
- One hip higher than the other

If a scoliosis curve gets worse, the spine will also rotate or twist, in addition to curving side to side. This causes the ribs on one side of the body to stick out farther than on the other side. Severe scoliosis can cause back pain and difficulty breathing.

When to seek medical advice

Go to your doctor if you notice signs or symptoms of scoliosis in your child. Mild curves can develop without the parent or child knowing it because they appear gradually and usually don’t cause pain.
What Are the Causes?
Doctors don’t know what causes the most common type of scoliosis — although it appears to involve hereditary factors because the disorder tends to run in families. Experimental testing is being done to determine if blood tests can determine the risk that scoliosis will get worse in a given individual. This type of testing is likely to be more common in the future.

Less common types of scoliosis may be caused by:
- Neuromuscular conditions, such as cerebral palsy or muscular dystrophy
- Birth defects affecting the development of the spine
- Wear-and-tear arthritis in the spine
- Having one leg longer than the other

What Are the Risk Factors?
Risk factors for developing the most common type of scoliosis include:

Age. Signs and symptoms typically begin during the growth spurt that occurs just prior to puberty.
Sex. Although both boys and girls develop mild scoliosis at about the same rate, girls have a much higher risk of the curve worsening and requiring treatment.
Family history. Scoliosis tends to run in families.

Treatment and Drugs
Most children with scoliosis have mild curves and probably won’t need treatment with a brace or surgery. Children who have mild scoliosis may need checkups every four to six months to see if there have been changes in the curvature of their spines.

While there are guidelines for mild, moderate and severe curves, the decision to begin treatment is always made on an individual basis. Factors to be considered include:

Sex. Girls have a much higher risk of progression than do boys.
Severity of curve. Larger curves are more likely to worsen with time.
Curve pattern. Double curves, also known as S-shaped curves, tend to worsen more often than do C-shaped curves.
Location of curve. Curves located in the center (thoracic) section of the spine worsen more often than do curves in the upper or lower sections of the spine.
Bone maturity. If a child’s bones have stopped growing, the risk of curve progression is low. That also means that braces have the most effect in children whose bones are still growing.
Wearing a brace won’t cure scoliosis, or reverse the curve, but it usually prevents further progression of the curve.

Braces
If your child's bones are still growing and he or she has moderate scoliosis, your doctor may recommend a brace. Wearing a brace won't cure scoliosis, or reverse the curve, but it usually prevents further progression of the curve.

Most braces are worn day and night. A brace's effectiveness increases with the number of hours a day it's worn. Children who wear braces can usually participate in most activities and have few restrictions. If necessary, kids can take off the brace to participate in sports or other physical activities.

Braces are discontinued after the bones stop growing. This typically occurs:

- About two years after girls begin to menstruate
- When boys need to shave daily

Braces are of two main types:

**Underarm or low-profile brace.** This type of brace is made of modern plastic materials and is contoured to conform to the body. Also called a thoracolumbosacral orthosis (TLSO), this close-fitting brace is almost invisible under the clothes, as it fits under the arms and around the rib cage, lower back and hips. Underarm braces are not helpful for curves in the upper spine.

**Milwaukee brace.** This full-torso brace has a neck ring with rests for the chin and for the back of the head. The brace has a flat bar in the front and two flat bars in the back. Because they are more cumbersome, Milwaukee braces usually are used only in situations where an underarm brace won't help.

**Surgery**
Severe scoliosis typically progresses with time, so your doctor might suggest scoliosis surgery — called spinal fusion — to reduce the severity of the spinal curve and to prevent it from getting worse.

Spinal fusion surgery connects two or more of the bones in your spine (vertebrae) together with new bone. Surgeons may use metal rods, hooks, screws or wires to hold that part of the spine straight and still while the bone heals. The process is similar to what occurs when a broken bone heals.

Complications may include bleeding, infection, pain, nerve damage or failure of the bone to heal. Rarely, another surgery is needed if the first one fails to correct the problem.

**Lifestyle and Home Remedies**
Although physical therapy exercises can’t stop scoliosis, general exercise or participating in sports may have the benefit of improving overall health and well-being.