

Scoliosis

BIRTH DEFECT RESEARCH FOR CHILDREN



What is Scoliosis?

Scoliosis is curvature of the spine that is often accompanied by a structural rotation of the spine. The term scoliosis traditionally refers to a side-to-side or lateral curvature of the spine often characterized as having an “S” or “C” shape.



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Scoliosis can occur in three different areas of the spine: the upper back, the lower back, and where the upper and lower part of the spine joins.

The curvature of the spine in scoliosis patients can range from as little as 10 degrees to more than 50 degrees.

How many children are affected by Scoliosis?

Approximately 2% of the population has some degree of scoliosis. The condition is four times more common in girls than boys. Only 4 children in 1000 will develop scoliosis severe enough to require treatment.

Most school systems test students in middle school or high school for scoliosis.

How does Scoliosis happen?

Scoliosis is the result of vertebrae not forming properly. It may be that vertebrae are missing, have only partially formed, or have not separated.

What Causes Scoliosis?

Functional scoliosis is a temporary condition usually due to muscle spasms, a difference in leg length, or an inflammatory condition.

The cause of the more common structural scoliosis is unknown in 80-85% of the cases.

Researchers believe that inheritance plays a part in many cases of scoliosis and that the risk of having scoliosis is probably greater for a child with a family history of the disorder.

In the 15-20% of the cases where the cause is known, scoliosis is often part of a syndrome or associated with other birth defects. When scoliosis is detected at birth, the child should be checked for other congenital abnormalities especially those that concern the kidneys.

Conditions Associated with scoliosis:

- Cerebral Palsy, a motor nerve disorder
- Connective tissue disorders
- Dysautonomia, a dysfunction of the autonomic nervous system
- Friedreich ataxia, a disorder involving the spinal column and brain nerve tracts
- Hemivertebra, a birth defect in which the side of a vertebra does not form properly before birth
- Certain types of infections
- Injuries
- Ligamentous laxity, a disorder involving the fibrous tissue that connects bones or cartilages
- Marfan's Syndrome, an inherited connective tissue disorder
- Metabolic diseases
- Mitral valve prolapse, a condition in which the heart valve does not close properly
- Muscular Dystrophy, a disease that weakens and deteriorates skeletal muscles
- Myelodysplasia (spina bifida), imperfect growth of part of the spinal column
- Poliomyelitis, a disease caused by a virus
- Rheumatic diseases
- Spinal dysraphism, an incomplete fusion or malformation of part of the back during the embryonic stage. Spinal dysraphism includes spina bifida.
- Tumors such as those found with neurofibromatosis, a birth defect associated with benign tumors of the spine

Helping a child with Scoliosis

The needs of a child with scoliosis vary dramatically depending on the severity of the disorder and the other associated conditions.

Medical team

A child with scoliosis should have a thorough evaluation to determine the severity of the condition and possible treatments. In an evaluation, the doctor will examine the child's back,



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chest, pelvis, legs, feet, and skin. He or she will also check the levelness of the shoulders, head, and opposite sides of the body. The doctor may also use a scoliosometer to measure the curvature of the spine.

If a problem is found, the doctor will probably refer the child to an orthopedic doctor who is specially trained to treat scoliosis. Additional testing may include X-rays and a CT scan. These tests enable the doctor to measure the degree of the curve. In potentially severe cases, magnetic resonance imaging (MRI) may be done to evaluate the spinal cord and spinal nerves. The results of these tests can help determine whether treatment is necessary. Treatment is based on the patient's age and future growth potential, degree and pattern of the curve, and type of scoliosis. If the scoliosis is part of a syndrome, genetic counseling may be advisable.

Observation

If no treatment is warranted, the child should be monitored by a physician twice a year to ensure that the condition does not get worse. Exercise may also be recommended.

Bracing

Bracing can be used for patients with a curvature of 25-40 degrees. Bracing is only used until the child's spine has fully matured. The brace often prevents the scoliosis from worsening. It does not, however, correct the curvature.

Different types of braces are available. If the curvature is not too severe or too high in the spine, an under-arm brace or body jacket can be used. These are more comfortable than the older braces that included a neck ring.

Surgery

In severe cases, surgery can be performed to partially correct the scoliosis and to stabilize the spine. The surgery usually involves implants or rods that help the bone fuse together. This will also prevent the condition from getting worse. With severe curvatures of 70 degrees or more, the heart and lungs can be affected. In these cases surgery can be life saving.

Psychological needs

A psychologist, mental health counselor, or social worker can help families work through their feelings and concerns and find additional resources for assistance. Since some cases of scoliosis are not diagnosed until adolescence, teenagers dealing with this disorder may need special attention to avoid problems with body image and self-esteem.

Fact Sheet by:

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