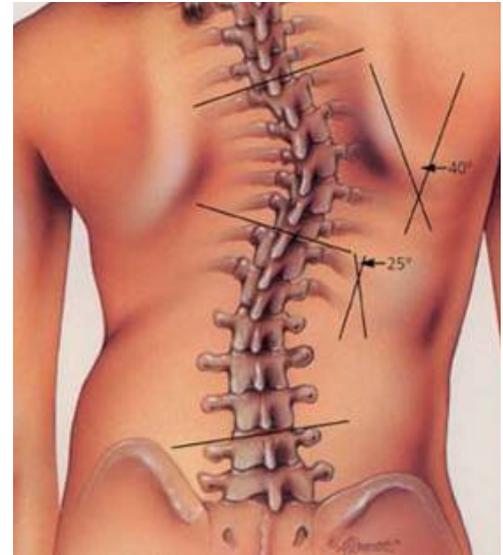


Idiopathic Scoliosis

INTRODUCTION

Idiopathic scoliosis means there has been asymmetric growth of the back and a sideways curvature has developed in the bones of the spine. Most scoliosis curvatures are small and do not cause any problems. The back may show some asymmetry but usually functions well. Scoliosis is a problem if the curvature gets big enough and the back starts to look twisted or if the ribs are pushed enough to restrict the lungs and heart. Scoliosis, if identified early, when the curvature is small, can often be treated to prevent the curves from getting big and causing problems.

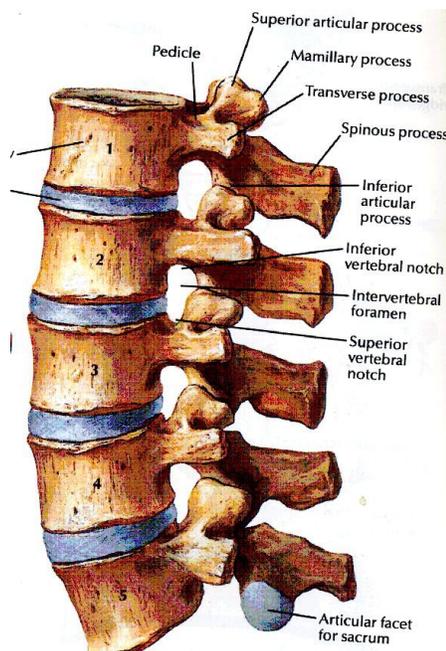


BACKGROUND

Scoliosis by definition is a sideways curvature of spine. There is not usually discomfort or a change in back flexibility. The main curve is usually to the right in the upper back or thoracic part of the spine. Because the ribs are connected to the spine in this region, usually the ribs are pushed up on the right side of the back. This is most easily seen when you bend forward. Scoliosis occurs in about 5 of every 1,000 children and affects girls more frequently than boys. Sometimes scoliosis will be found in multiple family members, but there is no clear inheritance pattern.

CAUSES

There are multiple known causes for scoliosis, which include abnormally shaped bones, brain or nerve problems, and rare tissue abnormalities such as brittle bone disease. However, the most common type of scoliosis occurs for unknown reasons. The underlying problem seems to relate to asymmetric growth in the vertebral bones of the spine. Some experts point to asymmetric pressures which develop from the ligaments, muscles, or ribs which push the bones to grow asymmetrically. Some experts point to the heart beating on the left side of the chest or the presumed differences from the right side to the left side in the blood flow to the vertebra. Other experts point to subtle neurologic causes in the brain, spinal cord, or nerves (such as being right handed) which could also influence growth. Experts continue to investigate these and other causes for asymmetric spinal growth, but as yet there is no good explanation why most scoliosis develops.



CLINICAL FINDINGS AND DIAGNOSIS

Scoliosis can be present with little or no outward signs or symptoms. There is usually no pain, no limitations on activity, and no change in flexibility. The first sign of scoliosis is a subtle side to side difference in the appearance of the back. Often this is identified by a school nurse or family doctor who is doing a routine physical examination. An Xray can be obtained to show the shape of the spine and measure the spinal curvature.

TREATMENT

The first step of evaluation is to determine the type of scoliosis. This includes a review of your medical history and family history. Examination will assess the shape of the back, mobility, and neurologic function. Xrays of the back show the appearance of the bones and are used to measure the degree of curvature. If other causes are not found, scoliosis is often idiopathic scoliosis.

The second step is to consider the magnitude of curvature, the remaining growth, and the risk for the curve getting bigger. Most curves start small and gradually get bigger with growth. Most of the time, when you stop growing, the scoliosis is stable. The size of the curvature is measured from the Xray. Due to various factors, the measurement has an error range of 5 degrees. The remaining growth is estimated based on your age, your height measurement, the Xray appearance of your pelvis, and pubertal stage. Your doctor will tell you the size of your curve, an estimate of your remaining time to grow, and an estimate of your risk for progression. Treatment is based on these factors. Options for scoliosis include observation, bracing, or surgery.

OBSERVATION: Mild Curvatures are treated with observation. Which means the doctor will recheck your back and the curve magnitude with Xrays every 4-6 months. Observation is for mild curvatures less than 25 degrees, curves that haven't shown progression, and in adolescents with little or no growth remaining.

BRACE TREATMENT: Moderate curvatures are treated with a special back brace called a TLSO, which stands for thoracolumbar spinal orthosis. Bracing is recommended if there is significant risk for progression. Adolescents at moderate risk for progression generally have a lot of growth remaining and a curvature more than 25 degrees, or have shown progression of more than 5 degrees.

SURGERY: Severe curvatures which are at risk of progression even after the completion of growth generally need to be stabilized with a surgery to straighten and stabilize the spine. Surgery is recommended for all adolescents with severe curves (greater than 50 degrees) and for adolescents with moderate curves (greater than 45 degrees) with growth remaining.



FREQUENTLY ASKED QUESTIONS

1. Why wasn't the diagnosis made earlier? Scoliosis is a silent condition which develops with growth. Scoliosis is silent in that there are little if any outward signs or symptoms. This is why school nurses and family doctors are trained to look for it.
2. What caused scoliosis? Experts have not yet been able to figure out why some people develop scoliosis.
3. Will scoliosis limit activities? Scoliosis should not limit you or your future. You should live a normal and active life with family, friends, sports, school, and a career. This is true no matter how your scoliosis is treated. The picture to the left shows a patient after surgery with good flexibility and strength.
4. How is scoliosis treated? Scoliosis is treated with observation, bracing, or surgery based on the size of your curve, the remaining growth in your spine, and your risk for progression. Your doctor will discuss your treatment with you.



MORE INFORMATION

Further information can be obtained on the internet. Your local public library can help you explore these sources if you are interested. Two good sites for expert and peer reviewed information are the American Academy of Orthopedic Surgeons at www.aaos.org and the Pediatric Orthopedic Society of North America at www.orthokids.org.