

### ***Scoliosis***

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Hippocrates, the father of medicine, first described the condition known as scoliosis as a lateral spinal deformity. Hippocrates was very interested in the spine and instructed his students to look first to the spine for the origin of all disease. After Hippocrates first described it, Galen actually gave this curvature of the spine the name "skoliosis."

Scoliosis is characterized by both a lateral spinal curvature and rotation of the spinal vertebrae. It is often associated with rib humping (hunchback) and curvature of the spine that leaves a concave and convex side. A right thoracic curve is one of the most common scoliotic curvatures and is usually considered the "major" curve. These smaller curves are secondary or compensatory curves and are usually referred to as minor curves. Compensatory curves are the body's attempt to balance the spine. There are times when a person can have two major curves of almost equal prominence. When there is a double major curve, there are fewer spinal deformities and more balance than a single major curve. Shoulders are level, rib prominences are not too severe, and the major deformity is a shortened trunk.

When the spinal vertebrae begin to rotate with scoliosis, they push the ribs on the side of convexity posteriorly and the ribs on the concave side crowd together. The posterior bulge of ribs on the convex side form the characteristic rib hump in thoracic scoliosis. The disc spaces narrow on the concave side of the curvature and widen on the convex side. In time the vertebrae become wedged and thicken on the convex side.

There are two classifications or forms of scoliosis, structural and non-structural. With structural scoliosis, the curvature does not correct when the person bends. A non-structural scoliosis is more flexible and corrects itself with bending. Obviously, non-structural scoliosis is much more responsive to correction.

There are many causes of scoliosis, with the majority of causes being of unknown origin or "idiopathic." It is generally believed that this is a multi-factorial disorder involving mostly genetic and growth factors. There seems to be hereditary and sex-linked factors with females suffering

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from this disorder with a much higher frequency. Some obvious causes of scoliosis are the result of conditions such as cerebral palsy, dwarfism, rheumatoid arthritis, poliomyelitis and neurofibromatosis (Elephant Man's Disease).

Most screening and discovery of scoliosis is done in schools. The child is asked to bend from the waist with arms dangling freely. The examiner looks for any asymmetry in the low back, mid back or rib cage. If any abnormalities are detected, the child's family is notified and encouraged to see a doctor. The doctor will then perform a thorough exam to properly diagnose the condition.

As with many conditions, the earlier detection occurs the better. The structural changes of scoliosis manifest themselves by the juvenile or early adolescent years. Adolescent sufferers of scoliosis do not usually experience pain from scoliosis. Adults with scoliosis experience more pain than those without scoliosis, probably because curvatures increase with age. Scoliotic curves generally progress 1-2 degrees with each year of adult life and 5-8 degrees with each pregnancy.

Severe scoliosis curvatures especially in the thoracic spine have been associated with cardiac and pulmonary complications caused by com-

pression of the lungs and heart. As the curvature increases along with vertebral rotation, the chest cavity narrows, which decreases the room for lung expansion. As the scoliosis sufferer ages, their total lung capacity decreases and a certain amount of emphysema may occur. Some studies show that patients with severe scoliosis have a marked increase in mortality with a cause of death in 60% of the cases being a result of cardiopulmonary complications.

To get proper results, the scoliosis patient requires supervision and treatment over an extended period of time. The best treatment is early detection. If detected before they become too severe, most curves respond with conservative care. The best correction combines different modes of treatment. Chiropractic spinal manipulation, bracing, exercises, and electric stimulation are all acceptable treatments. In those cases in which conservative care is not effective, surgery may be the only option.

The skeletal deformities of scoliosis is often much more than a cosmetic deformity. When detected, scoliosis should not be taken lightly. Examination followed by appropriate treatment most often results in successful management of this condition.

