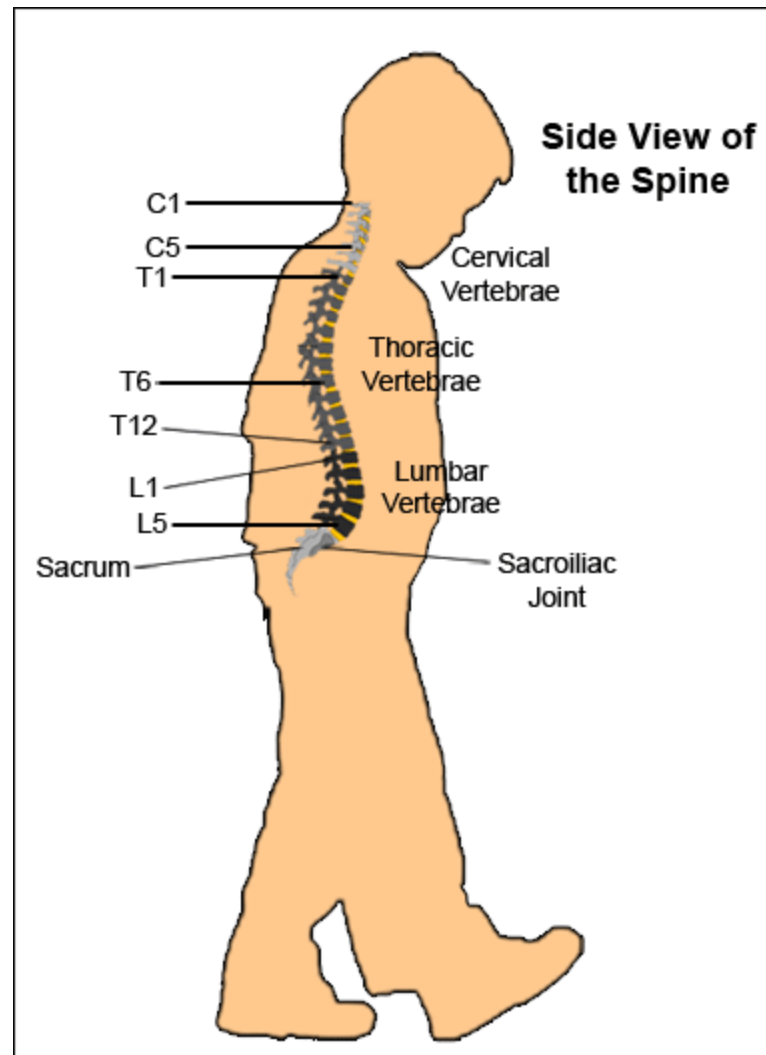




## Terms and Definitions



### **Definition**

Scoliosis is the lateral deviation of the spine and affects not only adults, but more commonly affects children and adolescents.

### **Prevalence**

Research into infantile scoliosis has been limited, and the frequency with which scoliosis develops in infancy or early childhood is unknown. Dr. Martha C. Hawes

4% of children aged 10 – 14 have detectable scoliosis. 60% to 80% of those affected are girls.

### Infantile Scoliosis

Infantile scoliosis is a lateral spine deviation occurring during the first 3 years of life and is twice as common in males. Approximately 74 – 94 % resolve on their own, but those that don't, progress into a severe and disabling condition.

### Juvenile Scoliosis

Juvenile scoliosis refers to scoliosis occurring in children aged 3 until the age of puberty approximately 10 years of age. Juvenile scoliosis can continue to progress severely, so continual monitoring is suggested.

### Adolescent Scoliosis

Adolescent scoliosis is scoliosis detected in those who have reached puberty but have yet to reach adulthood. This is the most common type of scoliosis. Like juvenile scoliosis, adolescents should be monitored until spinal maturity is reached to prevent possible progression and future health problems.

### Congenital Scoliosis

Is the result of an abnormality of the development of the vertebrae. This is structural scoliosis; this means that the spine has a problem within itself that is causing the abnormal curve. The abnormality was present at birth.

Developmental vertebral abnormalities that produce an imbalance in the growth of the spine resulting in scoliosis.

### Kyphosis

The spine is curved in an outward direction, rather than sideways.

### Spinal Fusion

Surgical operation to stabilize the spine by taking away movement in the vertebrae involved in the spinal curvature.

### Plagiocephaly

A plastic deformation of the skull that occurs when an immobile infant habitually lies toward one side and the action of gravity deforms the immature plastic skull. **In nearly 100% infantile scoliosis cases in Scotland, plagiocephaly matching the sidedness of the curve is present.** Thus, a depression on the left side of the skull occurs in correlation with a depression in the left side of the thorax.

According to Dr. Michael J. McMaster, M. D. F.R.C.S., the same asymmetric forces that cause the postural molding of the head also cause a similar molding of the child's immature torso, resulting in scoliosis.

**RVAD - Rib Vertebral Angle Degree** – as described by Dr. Min H. Mehta is the angle formed on each side between the apical thoracic vertebra and its corresponding rib. The rib-vertebra angle difference is the difference between the rib-vertebral angle on the convexity of the curve subtracted from that on the concavity and may be either a positive or negative value. In a normal spine the rib-vertebra angle difference at any vertebra is zero.

Resolving curves are nearly always thoracic and when first seen the rib-vertebral angle difference is less than 20 degrees in 80% of patients. The usual pattern is for the rib-

vertebral angle difference to decrease as the curve resolves. (Bradford Book, 1986)

**Abbot Cast** - is an under the arm cast, covering the torso, that's used to hold the spine in place.

**Risser Cast** - is an over the shoulders cast that covers the torso from the top of the chest, to the bottom of the hips. It's used to keep the back immobilized so it can not twist, turn or bend.

**TLSO – Thoraco-Lumbar-Sacral Orthosis**- this removable, plastic, brace opens in the front and is held closed by adjustable Velcro straps.

**Rib Hump** - also called Rib Prominence, as the spine curves abnormally the involved vertebrae are forced to rotate. Rotation at the thoracic level impacts the rib cage resulting in rib prominence on the opposite side of the curve.

**CT/CAT Scan** - Computed Tomography or Computed Axial Tomography - xray images obtained that cannot be seen on a standard xray. Multiple images are taken and compiled by a computer to create complete, cross sectional pictures (slices) of soft tissue, bone, and blood vessels. Used as an early diagnosis tool for many diseases.

**MRI - Magnetic Resonance Imaging** - diagnostic device which uses a strong magnetic field to create images of the body's internal parts. (C & S Patient Education Foundation).

**Titanium Rib or VEPTR - Vertical Expandable Prosthetic Titanium Rib** - An expandable titanium metal rod placed in a vertical position alongside the spine attached to ribs and pelvis, or the spine. The VEPTR expands and supports a deformed chest wall cavity giving the lungs room to operate and grow. Used to treat many chest wall deforming and/or spine defect diagnoses which result in Thoracic Insufficiency Syndrome.

**Thoracic Insufficiency Syndrome** - The lack of ability of the chest to grow to support normal breathing or lung growth.

**Vertebral anomalies** - Congenital deformity of the spine where there is an absence or deficiency in a number of growth plates on one side of the spine resulting in a localized imbalance in the longitudinal growth of the spine and a increase in curvature as the child grows. (M. J. Mc Master, James IV Lecture, 9/12/2001). Divided into two groups, Defect of Formation and Defect of Segmentation.

**Hemivertebra** – commonly referred to as “butterfly vertebrae” and the most common cause of congenital scoliosis. The complete failure of a vertebra to form on one side. Growth occurs on the upper and lower surfaces of the hemivertebra and the absence of two growth plates on the unformed side acts as a wedge on one side of the spine resulting in increasing scoliosis. Hemivertebra may be single, multiple, and occur at all levels of the spine (M.J. McMaster, James IV Lecture, 9/12/2001).

**Unilateral Unsegmented Bar** - second most common cause of congenital scoliosis. A unilateral failure of vertebral segmentation affecting two or more vertebrae, usually over three vertebrae. The unsegmented bar does not contain growth plates and does not grow longitudinally. (M.J. McMaster, James IV Lecture, 9/12/2001).

**Syringomyelia** - Neurological condition where a fluid filled cyst forms in the spinal cord. (C & S Patient Education Foundation).

**Syrinx** - Fluid filled cyst in the spinal cord. (C & S Patient Education Foundation).

**Rib Fusion** – A medical condition of the ribs being stuck together.

**Chest Wall** – In respiratory physiology, the total system of structures outside the lungs that move as a part of breathing; it includes the rib cage, diaphragm, abdominal wall, and abdominal contents.

**Diaphragm** – the thin muscle below the lungs and heart that separates the chest from the abdomen.

**Thorax** – The part of the trunk between the neck and abdomen, containing that part of the body cavity, the walls of which are supported by the dorsal vertebrae, ribs, and the sternum, and which the heart and lungs are situated; the chest.

**Trachea** – The windpipe, a fibrocartilaginous tube lined with mucous membrane passing from the larynx to the bronchi.

**Tracheotomy** – The operation of making an opening into the windpipe.

**Ventilator** – A machine that mechanically assists patients in the exchange of oxygen and carbon dioxide.

**Hypoplastic thorax** – a condition that leaves children with a very small rib cage with little room for the lungs to grow and expand.