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Congenital Scoliosis

Congenital scoliosis is caused by an abnormal formation of the spine prior to birth. Often this abnormality is not noticed immediately, but spine curvature develops with time. Some of these deformities are mild and require no treatment, while others run the risk of developing into severe spinal curvatures as the child grows.

If your child is thought to have congenital scoliosis, the evaluation should begin with a physical examination in search of associated congenital abnormalities. Taking x-rays of the entire spine will determine if significant spinal deformity is present and will allow your doctor to determine the type and severity of the vertebral malformations. A renal (kidney) ultrasound is usually recommended as part of the routine screening assessment if congenital scoliosis has been confirmed. An MRI of the spinal cord may be indicated if there is suspicion of a spinal cord abnormality, back pain or unexplained rapid progression of the curve.

The abnormality in congenital scoliosis can involve either a failure of a portion of the spine to separate during development (failure of segmentation -Figure A), a failure of the spine to develop normally (failure of formation-Figure B), or a combination of these defects. As a result of these anomalies, the spine begins to grow in a crooked manner and as the child grows in height, this curvature becomes more apparent.

Figure A



Figure B



Treatment options for congenital scoliosis include observation, bracing and surgery. The goals of treatment are to prevent the curve from progressing to a severe deformity and to provide spinal balance.

Observation is appropriate for small and balanced curves. Some patterns of congenital scoliosis are minor enough that no treatment is needed and the long term prognosis is good.

Bracing is rarely used in congenital scoliosis as the primary treatment. Bracing has not been shown to substantially change the pattern of abnormal growth that results from most vertebral malformations.

Surgery is often used to attempt to maintain spinal balance. This usually involves a fusion (getting several vertebrae of the spine to grow together into a solid bone segment) of the abnormal area of the spine. Often, removal of the abnormal vertebra is also necessary.