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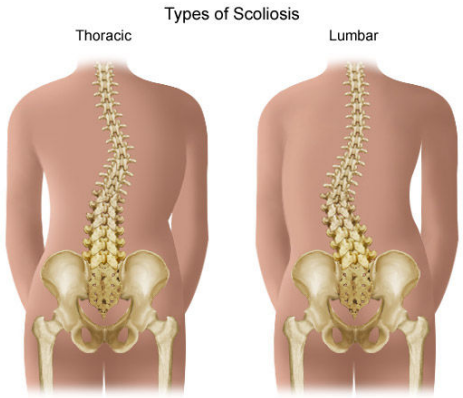
Scoliosis

When viewed from the front, the spine appears to be straight, but when looked at from the side, the normal spine has two gentle S-curves.
The normal rounding of the shoulder and the sway of the lower back exist for even load distribution through the spinal segments.



A spine with scoliosis has abnormal curves with a rotational deformity. In scoliosis, the spine curves to the side when viewed from the front and back, and each vertebra also twists on the next one in a corkscrew fashion. On an x-ray, the spine of an individual with a typical scoliosis may look more like an "S" or a "C" than a straight line. Scoliosis may have its onset in infancy but is most frequently seen in adolescence. It is more common in females by a 2:1 ratio.

The cause of the most common form of scoliosis is *idiopathic scoliosis* in which the etiology remains unknown (Idiopathic refers to a disease or condition of unknown origin).

Two other cases of scoliosis are categorized as:

Nonstructural (functional): This type of scoliosis is a **temporary condition**. The curvature occurs as the result of another problem. Examples include one leg being shorter or as a result of muscle spasm.

Structural: In this type of scoliosis, the spine is not normal. The curvature is caused by another disease process such as a congenital abnormality, muscular dystrophy, metabolic diseases and connective tissue disorders.

Signs and Symptoms

- Pain is common in adulthood, especially if left untreated. As the curve worsens, certain spinal joints become overloaded and surrounding muscles become tight. Pain can occur because of the muscles trying to conform to the way to the spine is curving.
- Scoliosis causes shoulder, trunk and waistline asymmetry.
- In mild forms, the condition may be barely noticed
- In severe forms there may be significant, back pain and postural fatigue.

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Management

The management of scoliosis is determined by its presentation and symptoms. Plain x-rays of the spine may be ordered. These x-rays can easily detect the extent of a scoliosis. It is important to note that early detection and identification of scoliosis will determine the success rate of management in the long-term.

- **Physiotherapy** can help any musculoskeletal disorders that occur in association with a scoliosis. In the majority of functional scoliosis cases, management consists of:

    1. Postural strengthening and mobility exercises for optimal spinal stability and flexibility.
    2. Correction of muscle imbalance and faulty movement patterns
    3. Strapping or corrective taping

In severe cases, scoliosis may be treated by:

- **Bracing** - Bracing is sometimes necessary, and may prevent the need for surgery. Studies have shown that bracing is effective in stopping the progression of the curve in about 80 per cent of patients, until the age of 16. A variable degree of relapse of the curve does occur after the cessation of bracing, usually at the age of 15 - 16. However, children who have been braced generally still have curves within the acceptable range, which should not carry any particular disadvantage into adulthood.

- **Surgery-** In thoracic scoliosis insertion of metal rods will act as braces to straighten the spine and prevent further deterioration of the scoliosis. These rods are usually left in the spine throughout life. Return to school is about 1 month. Life after surgery returns to near normal by about 9 months, except that body contact sports are not permitted. Scoliosis in the lumbar spine is treated with fusion, and the underarm brace is required for up to 6 months after surgery.

References:

Walker, J.M. Musculoskeletal Development. *Physical Therapy*. 2002 71: 879–899.

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