

Exercise Therapy

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Abnormal Spinal Curvatures: Scoliosis, Kyphosis and Lordosis Explained

SCOLIOSIS: scoliosis is the lateral curvature of the spine in the upright position in the coronal plane.

The lateral curvature is usually accompanied by some rotational deformity. Only man boasts of an erect posture.

Nature has designed four physiological curves in the so-called erect spine, cervical and lumbar lordosis, dorsal curve in the thoracic spine and the sacral region. Thus, when the spine develops a lateral curve, it is abnormal. It throws the well-adjusted spinal mechanism out of gear and poses the following problems:

A cosmetically unacceptable deformity.

Deranges the load and force transmission mechanism through the spine.

Jeopardizes the functions of vital organs like lungs, heart by overcrowding the ribs.

Managing it is cumbersome and unrewarding experience most of the times.

Structural scoliosis: In structural scoliosis, the curves are fixed and nonflexible and fail to correct with side bending.

Nonstructural scoliosis: In nonstructural scoliosis, the curves are flexible and readily correctible with side bending.

KYPHOSIS

Definition

It is defined as increase in normal posterior convexity of the thoracic spine and is referred to as 'hyperkyphosis'.

Types: Knuckle: Prominence of single spinous process indicating collapse of single vertebra, e.g. TB spine/Kummel's disease, etc.

Angular: Two to three vertebral body are collapsed, e.g. late stage of TB, secondary carcinoma, etc.

Round: Several vertebrae are involved and hence gives a round appearance, e.g. in children—Scheurmann's disease, in old age—senile kyphosis.

LORDOSIS

Lordosis is the normal inward curvature of the spine, mainly seen in the cervical (neck) and lumbar (lower back) regions.

Types of Lordosis

Postural Lordosis – Caused by poor posture, obesity, or weak abdominal muscles.

Congenital Lordosis – Present at birth due to abnormal spinal development.

Traumatic Lordosis – Develops after injury or trauma to the spine.

Neuromuscular Lordosis – Associated with neuromuscular disorders such as cerebral palsy or muscular dystrophy.

Secondary (Compensatory) Lordosis – Occurs as compensation for other spinal conditions, such as kyphosis or hip disorders.

Ref: Ebnezar, J. (2010). Textbook of orthopedics (4th ed.). Jaypee Brothers Medical Publishers.

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