



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT: ALLIED HEALTH SCIENCES
COURSE NAME: ORTHOPEDICS

Topic: Spinal deformities



Spinal deformity



- **Spinal deformities** can occur for a wide range of reasons, including birth defects, aging and degeneration, to trauma.



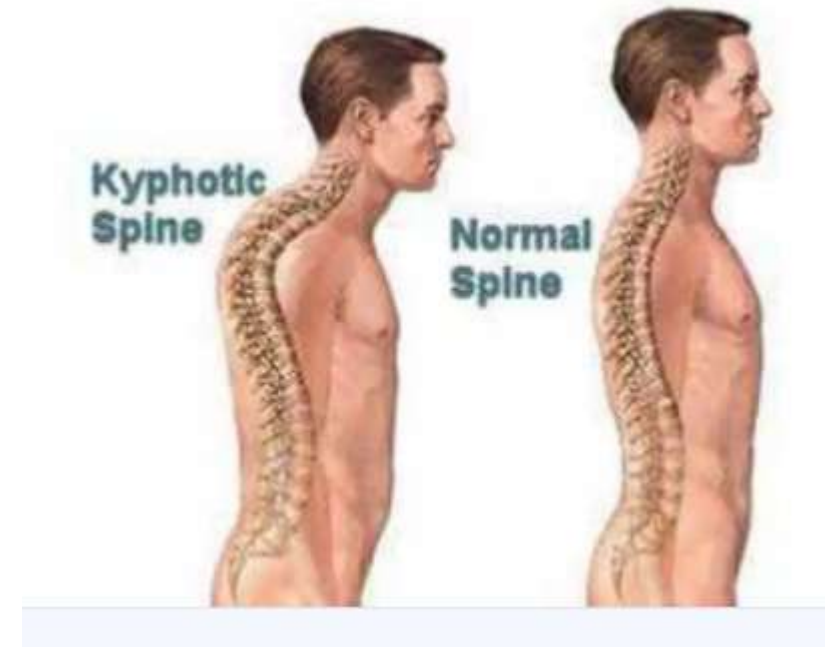


Introduction



Definition

Kyphosis is a curving of the spine that causes a bowing or rounding of the back, which leads to a hunchback or stoaching posture.





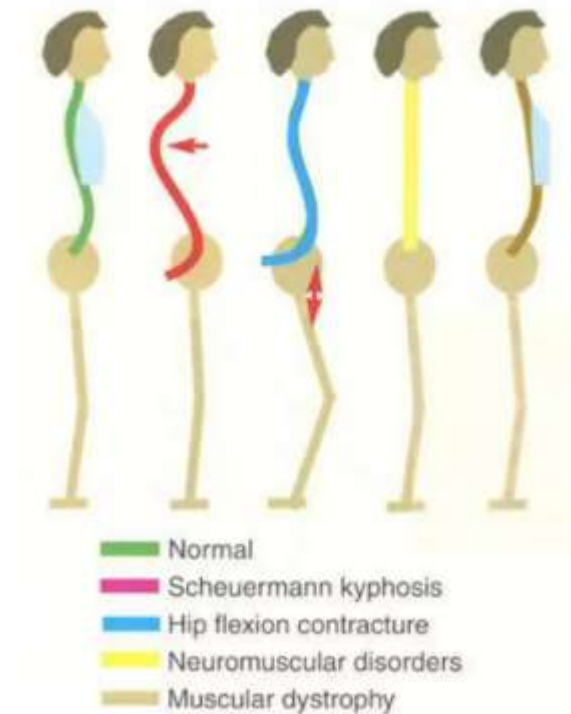
Etiology



There are three main types of kyphosis.

They are

1. Postural kyphosis
2. Scheuermann's kyphosis
3. Congenital kyphosis





postural kyphosis.



- It is the most common type of kyphosis.
- More common in girls than in boys which is typically noticed in adolescent age.
- It is caused by poor posture and weakening of the muscle, ligaments in the back (paraspinous muscles)
The vertebrae are typically placed in postural kyphosis.





Scheuermann's kyphosis

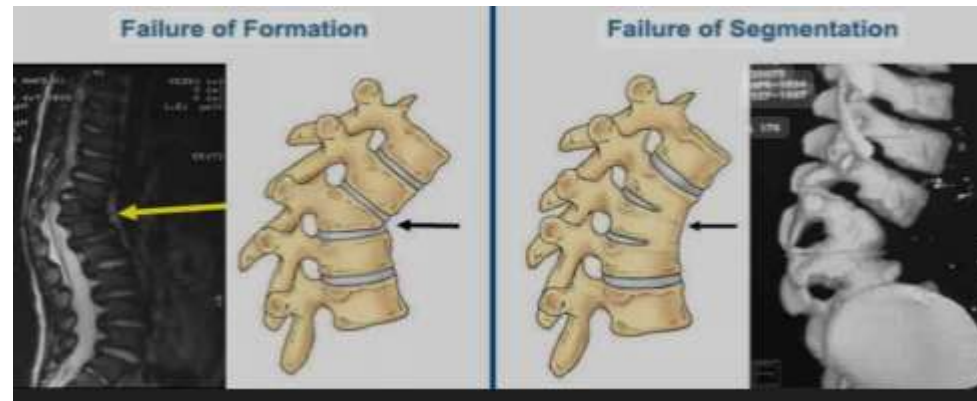


- It is also first noticed during adolescence period.
- It is a result of structural deformity
- It commonly develops with scoliosis
- Reasons are not well understood.



Congenital kyphosis

- It is the least common type of abnormal kyphosis.
- It is caused by abnormal development of the vertebrae prior to birth
- Occurs due to fusion of many vertebrae together





Etiology & risk factors



- It can occur at any age Very rare at birth
- Postural kyphosis occurs as a result of poor posture and weakening of muscle and ligaments
- Congenital kyphosis occurs as a results of improper development of vertebrae or fusion of vertebrae.

Other causes include-

- Certain endocrine disorders
- Connective tissue disorders
- Infection
- Muscular dystrophy
- Poliomyelitis
- Spina bifida
- tumors





Clinical features



Difficulty in breathing (only in severe cases)

Fatigue

Mild back pain

Round back appearance

Tenderness and
stiffness





complications



- Decreased lung capacity
- Disabling pain
- Neurological symptoms including leg
- Weakening or paralysis
- Round back deformity.



Assessment 1



- 1. What is Scheuermann's kyphosis
- 2. Mention the clinical features
- 3. Etiological factor



Diagnosis



History collection

Physical examination

X-Ray spine

PFT

MRI



Assessment 2



- Role play about symptoms-1

Treatment

- Treatment depends upon the cause of disorder
- Congenital kyphosis requires corrective surgery at early age.
- Scheuermann's disorder is treated with braces and physical therapy
- Kyphosis caused by tumors needs surgical correction.





Quiz about
Managements

Assessment-3





Lordosis



- A normal spine when viewed from behind appears straight.
- Lordosis is a medical term used to describe an inward curvature of a portion of the lumbar and cervical vertebral column.





Etiology



- Cause of lordosis has been linked to achondroplasia and spondylolisthesis
- Lordosis is also associated with poor posture, a congenital problem with the vertebrae, neuromuscular problems, back surgery or a hip problem.
- In children rickets may also leads to lordosis.



Clinical features



- Prominence of buttocks
- Back pain
- Pain down the legs





Diagnosis



- X-rays: done to measure and evaluate curve.
- Bone scans: to evaluate degenerative or arthritic changes. Also helps to find out bone tumors
- MRI: to rule out associated problems
- CT scan
- Blood investigations. Early detection of Lordosis is important for proper and successful treatment



Management



- Based on-
- Child's age, overall health, medical history, cause and extent of the condition.
- Goal of treatment is to stop the progression of the curve, prevent deformity
- Simple exercises are sufficient, If Lordosis is associated with poor posture

Prognosis

- Prognosis depends on child's age, amount of curvature ■ Requires frequent examination by the physician to monitor curve as the child grows and develop. ■ Early detection helps in proper management



Scoliosis

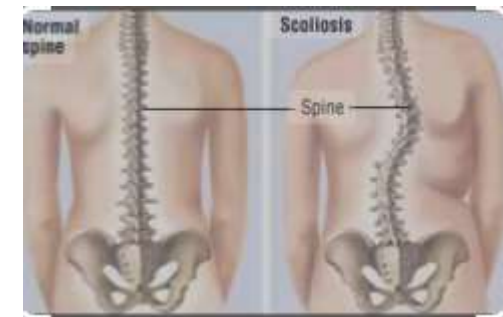


- Scoliosis is the lateral curvature of the spine. As the spine curve, the vertebrae rotate, pulling the ribs along.
- Generally a sideways curvature greater than 10 degrees is considered scoliosis.

Etiology

- In most cases, the cause is unknown, which is called idiopathic scoliosis
- Can also be caused by hereditary factors, birth defects, or injuries

SCOLIOLSLIS





Types



Depending on the etiology, scoliosis is of 3 major types:

1. Congenital
2. Neuromuscular
3. Idiopathic

Congenital scoliosis - Embryologic malformation of spine during 3rd to 5th embryonic life . Localized or generalized deformity

Neuromuscular (paralytic) Scoliosis - Secondary or neuropathic (polio myelitis, cerebral palsy, myelomeningocele) which results in imbalance.

Infantile Idiopathic Scoliosis - Occurs in first years of life . Associated with intrauterine position. Boys are more affected . Usually left thoracic curve is seen.



Clinical features



- Uneven shoulders
- Head not centered over the pelvis
- Uneven hips
- Uneven rib cage
- Uneven waist
- Skin changes over the spine
- Leaning to one side
- Causes
 - In most cases, the cause is unknown, which is called idiopathic scoliosis
 - Can also be caused by hereditary factors, birth defects, or injuries



Treatment



- Treatment depends on the severity and location of the curve
- Mild cases may only require regular check-ups
- More severe cases may require bracing or surgery
- Conservative treatments include physical exercises, bracing, and insoles