

Spondylolisthesis symptoms and classification

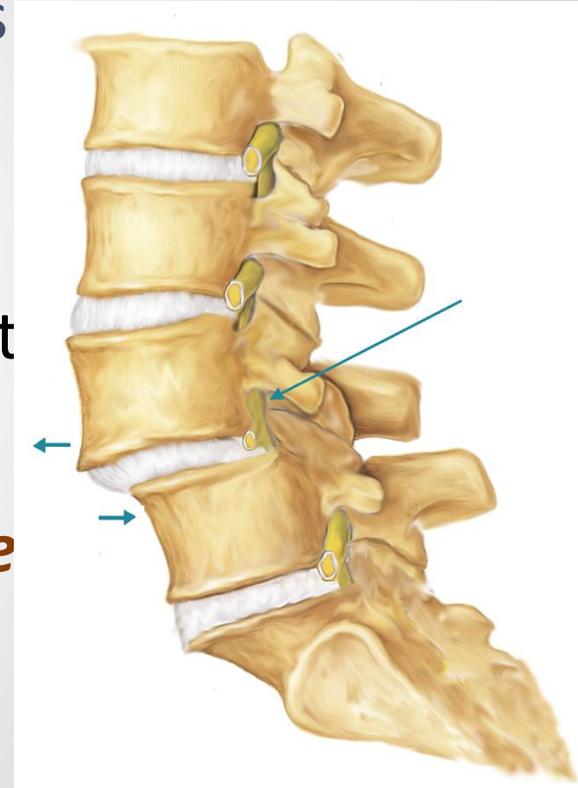
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Definition

- The word spondylolisthesis comes from the Greek words
 - spondylos, which means "spine" or "vertebra,"
 - Listhesis, which means "slipping, sliding or movement"

Anterior or posterior slippage of a vertebra regarding the inferior one



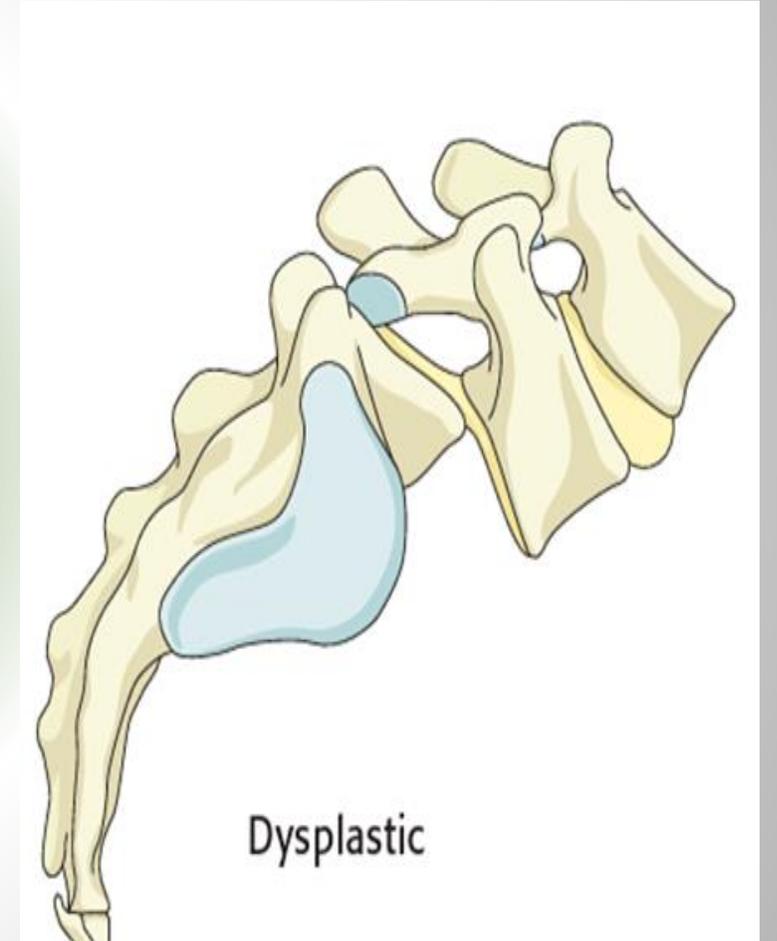
Classification

Wiltse-Newman Classification

- 1) *Dysplastic*
- 2) **Ithmic**
- 3) *Degenerative*
- 4) **Post-traumatic**
- 5) *Pathologic*
- 6) **Iatrogenic**

Dysplastic spondylolisthesis (Type I)

- Congenital defect (present from birth) in the formation the facet
- *Usually at the lower lumbar or the upper sacral portion (L5-S1)*
- Comprising 14–21% of cases in spondylolisthesis population



Isthmic spondylolisthesis (Type II)

- **3 subtypes**

A. Lytic-fatigue fracture of pars inter-articularis

Pars fractures are believed to be the result of repetitive motion

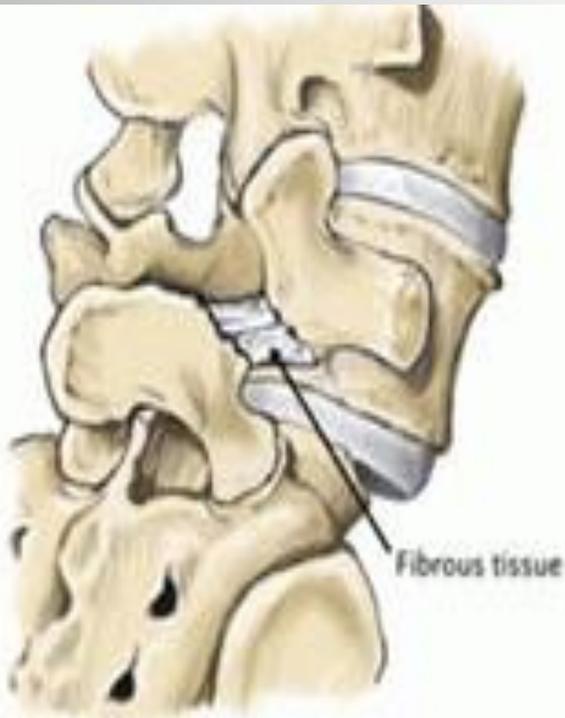
B. Elongated but intact pars acute fracture

Elongated pars without a defect which likely indicates anatomical variation or repeated fracture healing

C. Acute fracture

Non-healing fracture

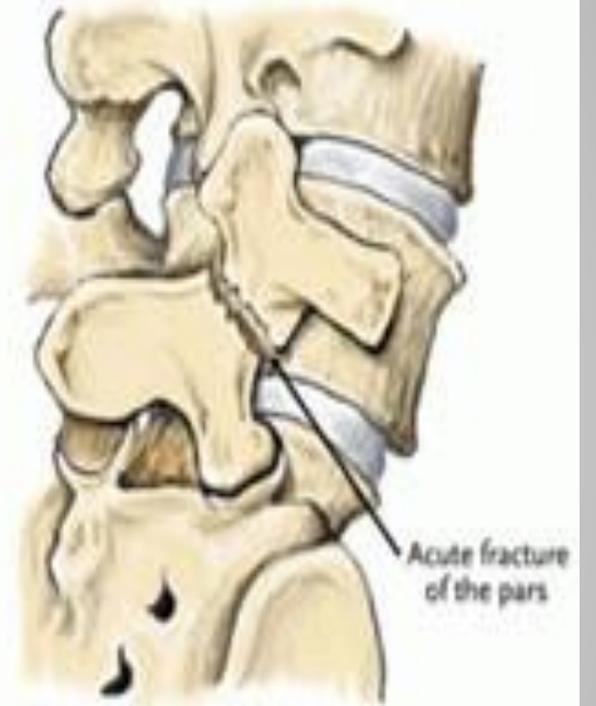
Isthmic spondylolisthesis



Type IIA



Type IIB



Type IIC

Isthmic spondylolisthesis

- *More frequent in middle-aged population*
- *Symptoms appear at the 3rd and 4th decade of life*
- *more frequent at L5-S1 level*

Degenerative spondylolisthesis (Type 3)

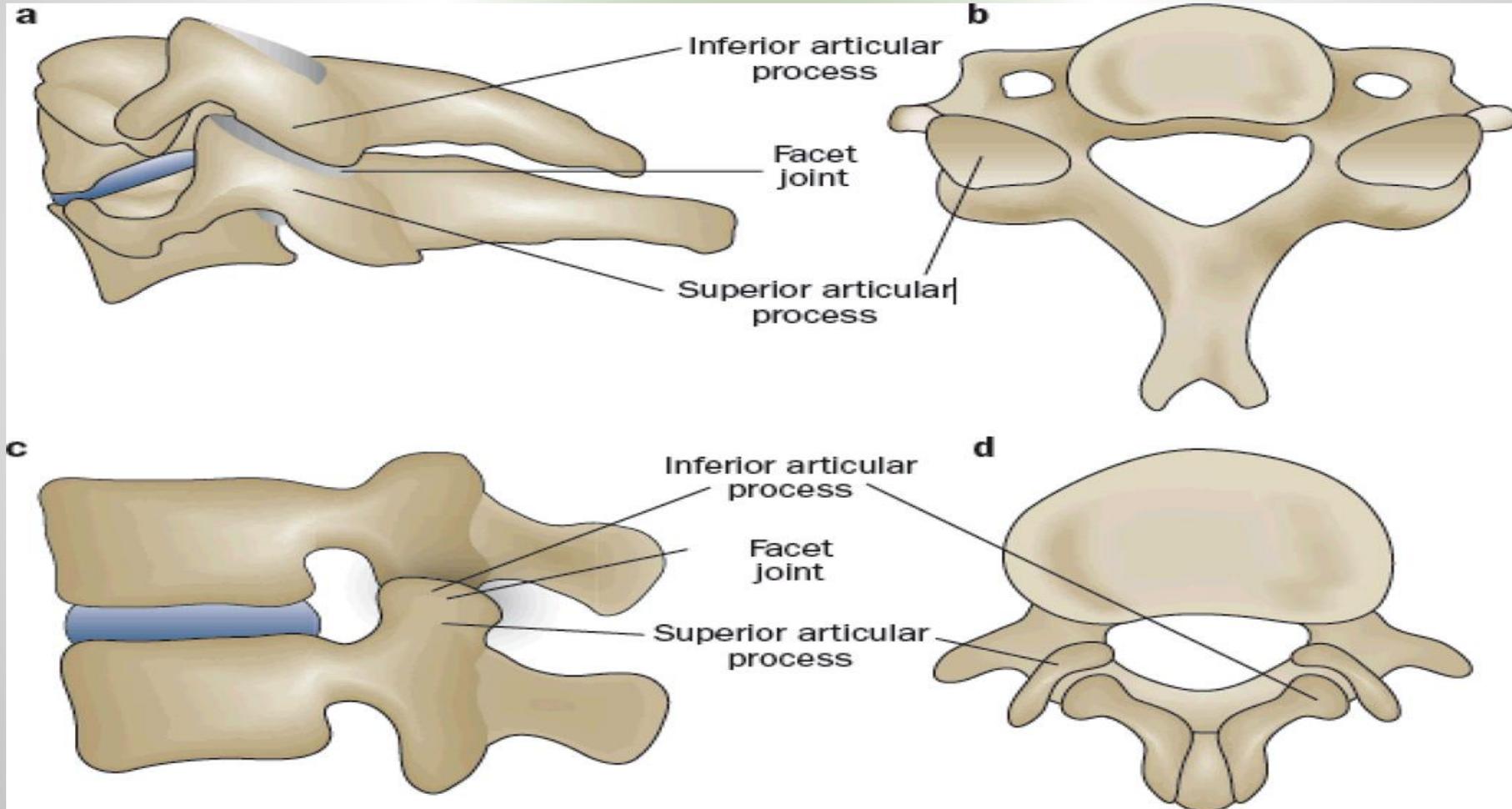
- *Acquired disease*
- *Affecting persons more than 50 years of age*
- **Multifactorial etiology**
 - Anatomical:
 - ✓ more sagittaly oriented facet
 - ✓ increased lordosis
 - Gender: female preponderance (estrogen receptors, ligamentous laxity)
 - Body mass index
 - Repetitive physical stress
 - ❖ Most common at L4-5 segment

- *Pars could be intact or fractured*

- *Facet hyper-trophy is common*



Facet orientation



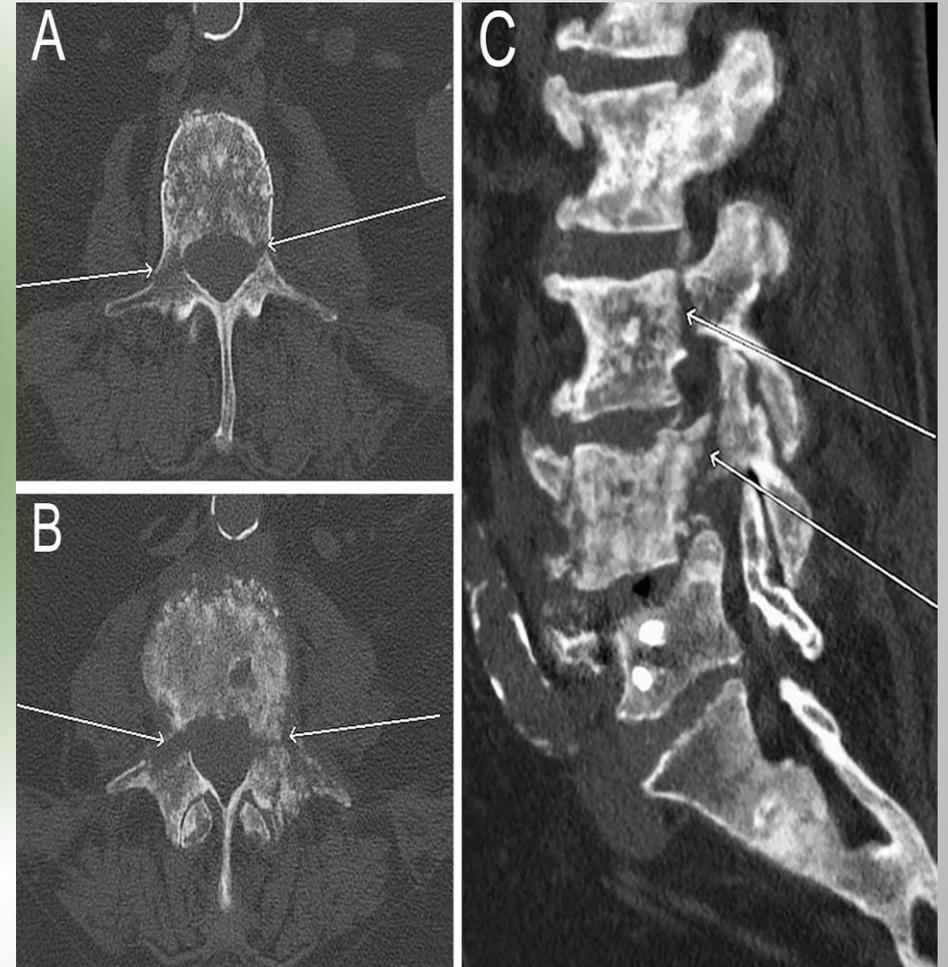
Post-traumatic spondylolisthesis (Type IV)

- **Acute fracture of posterior elements of the vertebral column including pars**
- **Usually due to high force mechanism of trauma**
- **Unstable in nature**
- **More common at cervical region**
- **Acute Neurological deficit could happen**



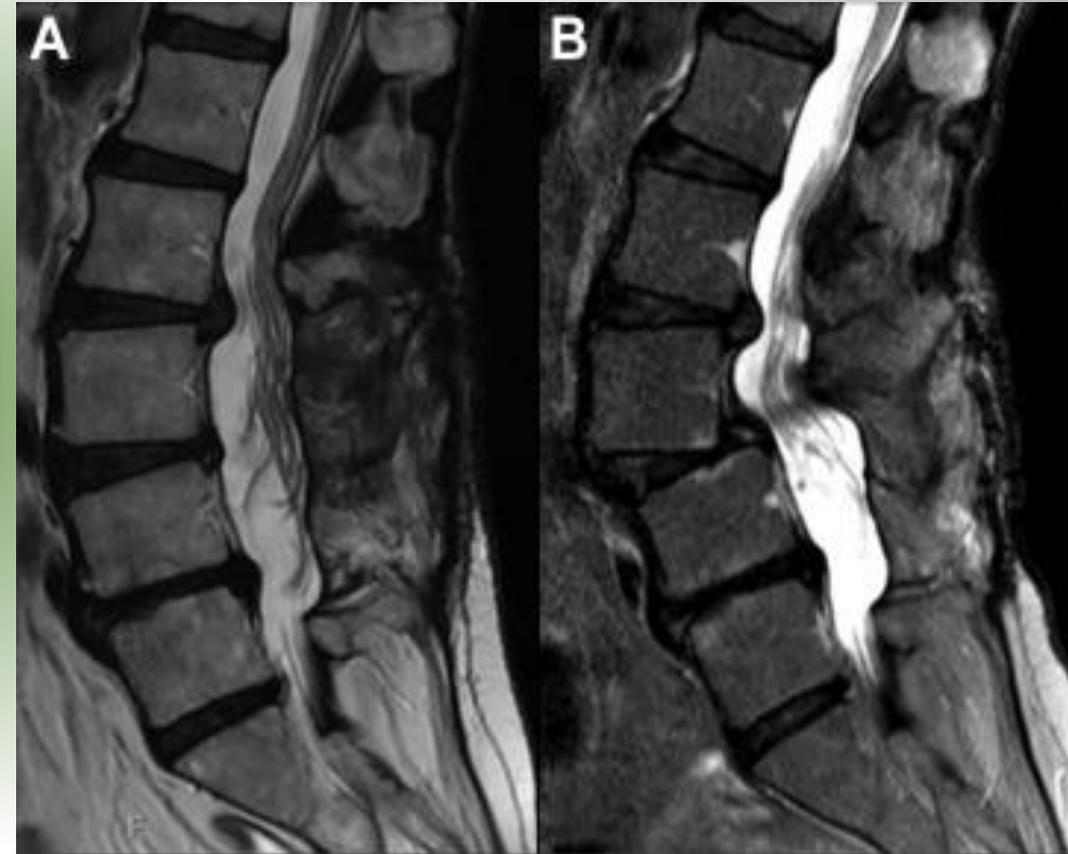
Pathologic spondylolisthesis

- Destruction of posterior bony elements
- Malignancy
 - Metastasis
 - Primary bone neoplasm
- Infection
- Etc.



Iatrogenic spondylolisthesis

- *Slip caused directly from a prior spine surgery*
- *Decompression of the spine without stabilization*
- *Due to extensive pars (facet joint) removal*
- *Could happen early or late*
- *Symptoms begins with ambulation*



symptoms

- *Most patients are asymptomatic (especially in the degenerative group)*
- In dysplastic type back pain and walking or sitting difficulties could happen in the early childhood
- Isthmic subtype affects younger patients than the degenerative one
- *In traumatic type symptoms are acute and neurological deficit could be presents at the beginning*
- In pathologic type pain is the usual symptom (mechanical in nature) and could appear when considerable destruction of the vertebrae has occurred

- Symptoms:

- **Pain:**

Back pain

Radicular pain

Claudicatory pain

- **Autonomic:**

✓ Bowel incontinence

✓ Bladder incontinence

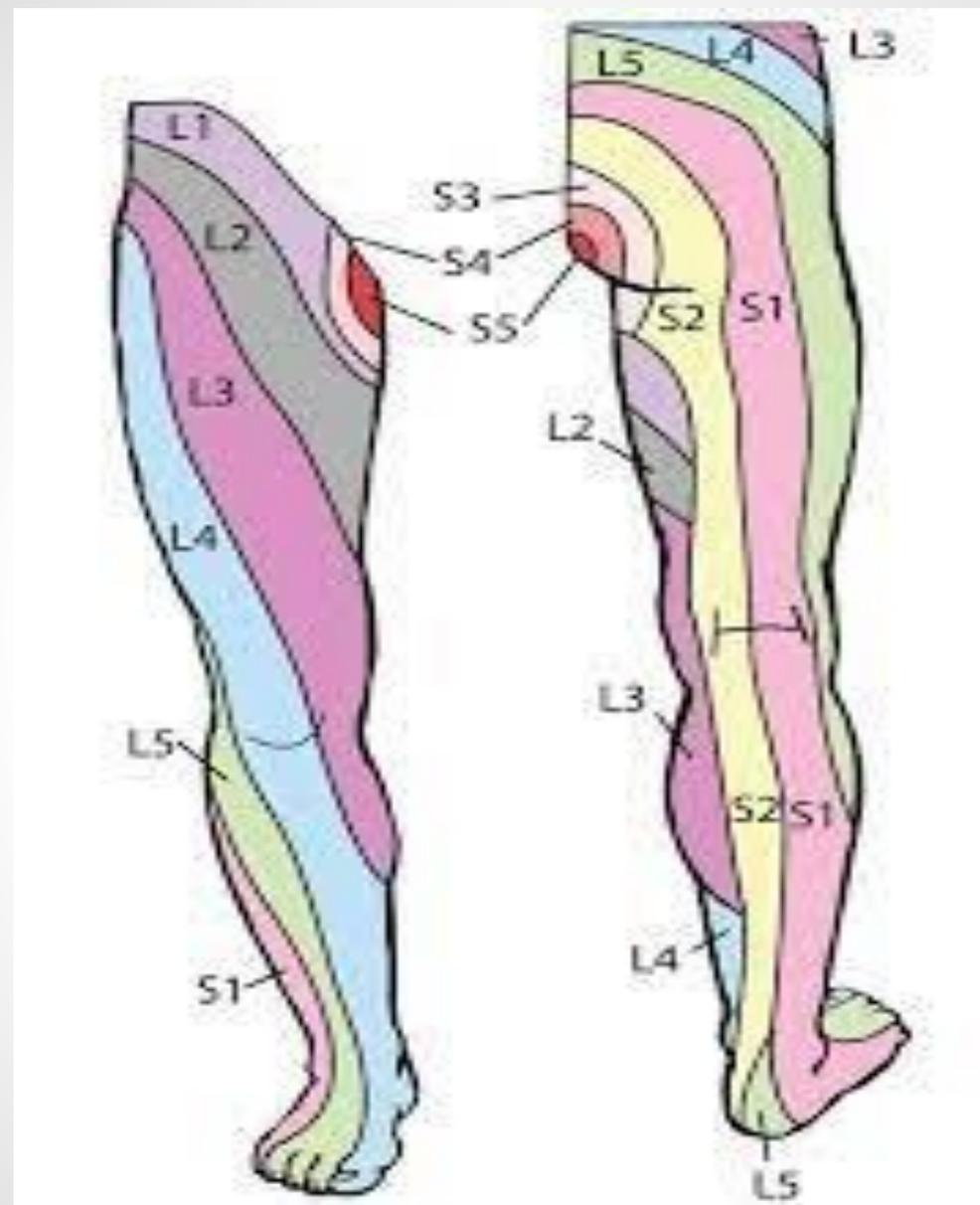
✓ Bladder retention

- *Neurologic:*

- Weakness
 - Numbness
 - Tingling
 - Muscle atrophy
 - Affected DTR
- Affected babinsky or Hoffman exams (esp. cervical)
 - Etc.

Pain

- ***Back pain with or without extremities involvement***
 - Mechanical in nature
 - *Worse at extension position*
- *Radiculopathy most affects L4 and L 5 nerve roots*



• Thank *you* for *kind* attendance

