

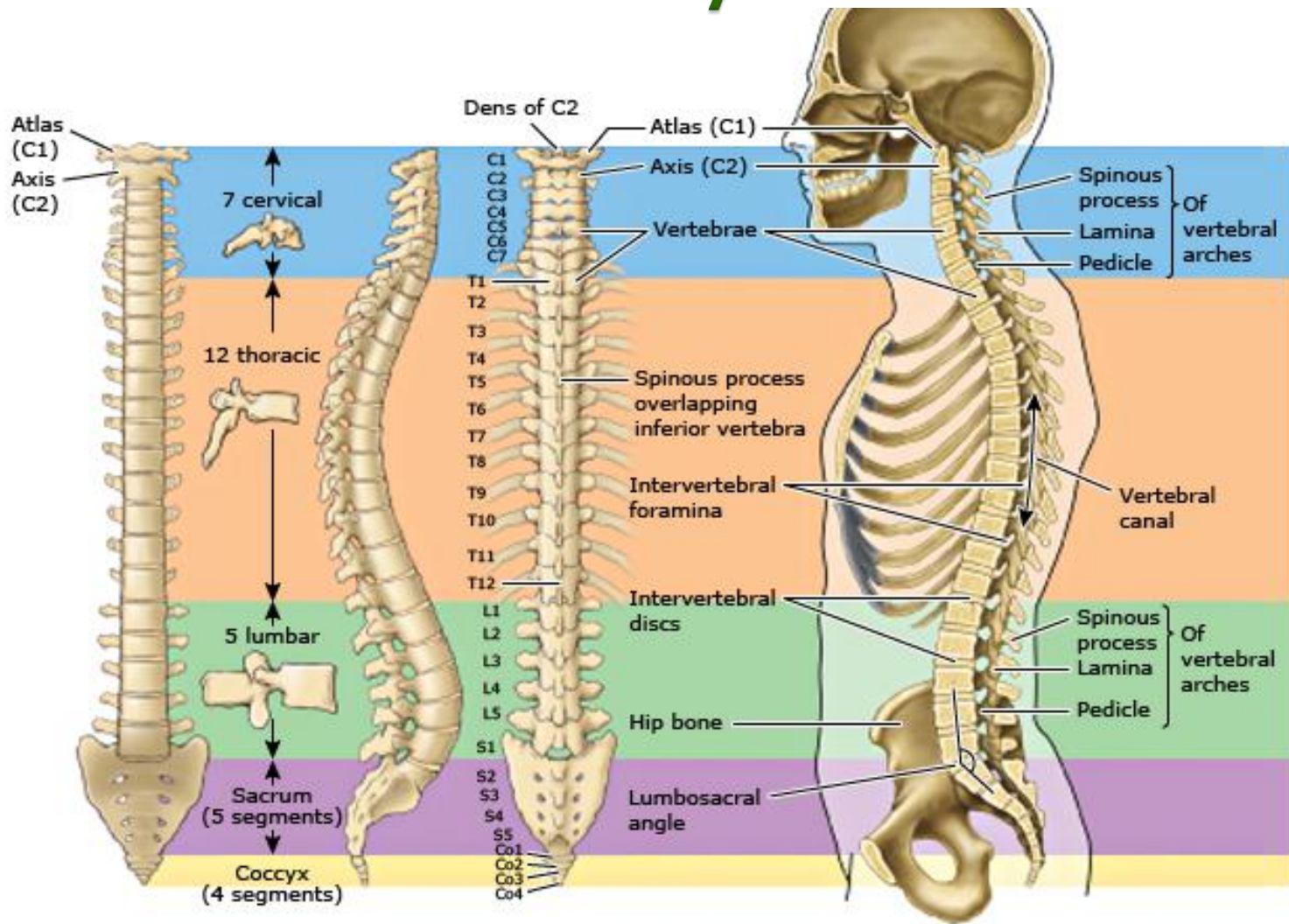
# The Back



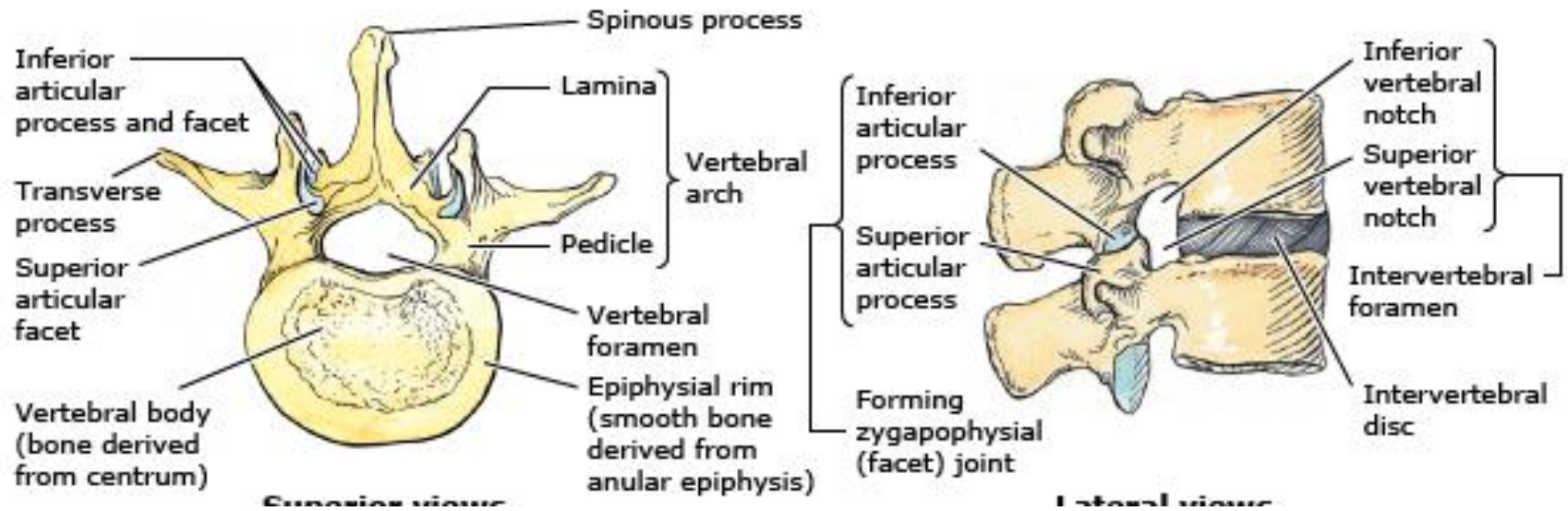
# Objectives

- ▶ Review anatomy
- ▶ Learn the physical exam of the back
- ▶ Discuss common causes of back pain

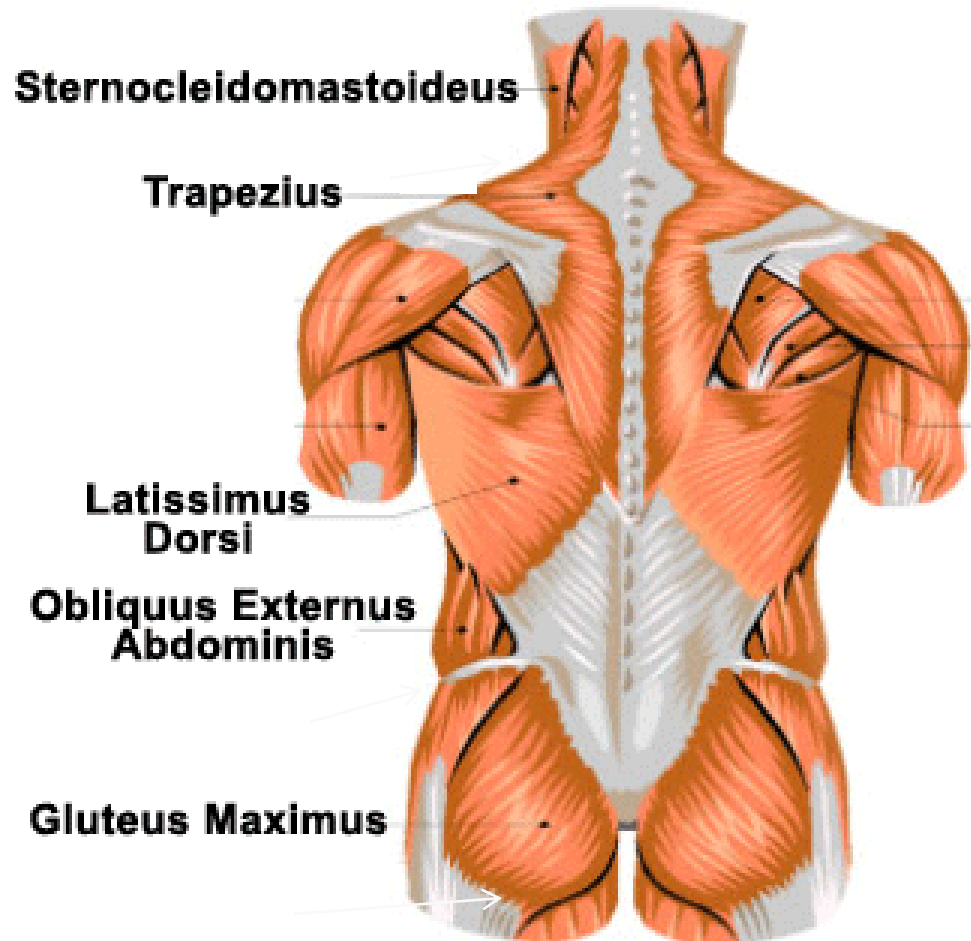
# The Back: Anatomy



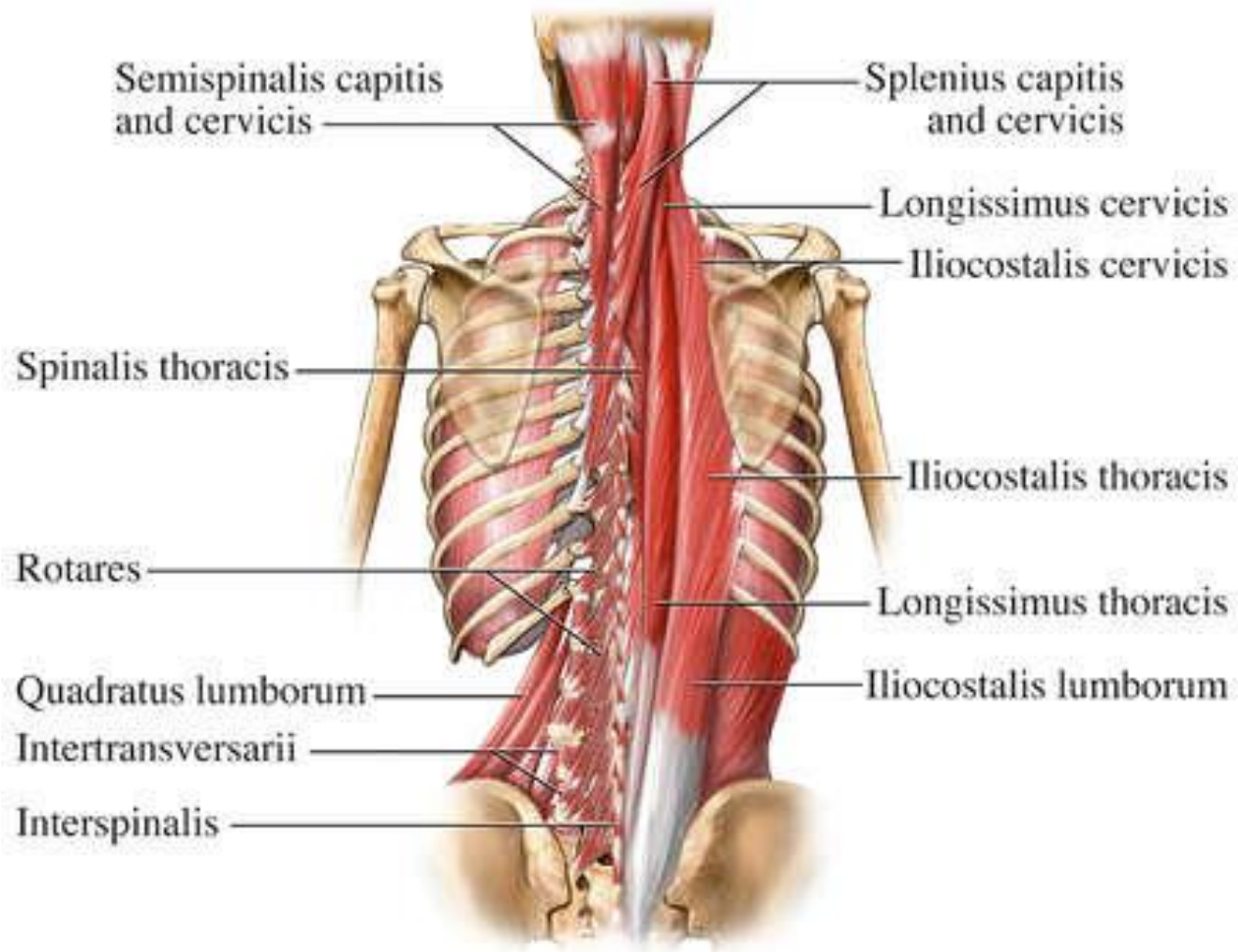
# The Back: Anatomy



# The Back: Anatomy



# The Back: Anatomy

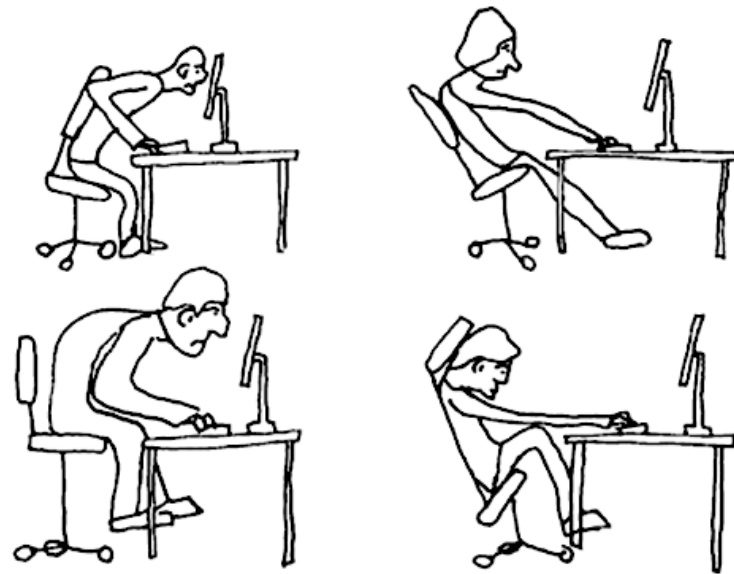


# Physical Examination

- ▶ Inspection
- ▶ Palpation
- ▶ Range of motion
  - Active
  - Passive
  - Resisted
- ▶ Provocative tests
- ▶ Functional tests

# The Back: Exam

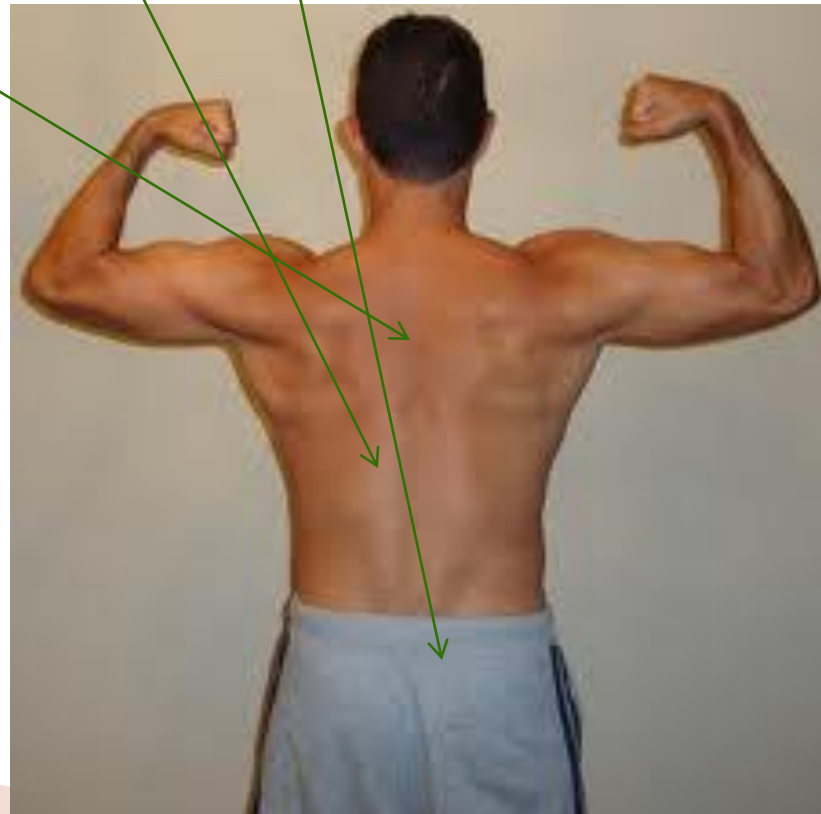
- ▶ Inspection:
  - Symmetry, skin changes, bruising, curvature, posture, shoulder height



BAD POSTURE (EXAMPLES OF)

# The Back: exam

- ▶ Palpation
  - Midline, paraspinal, SI joint



# The Back: exam

- ▶ ROM:



# The Back: exam

- ▶ ROM: flexion, extension, right and left side leaning, right and left rotation



# The Back: exam

- ▶ Provocative tests
  - Quadrant testing: narrows neural foramen to exacerbate compression



# The Back: exam

- ▶ Straight leg raise
  - Disc pain or herniation



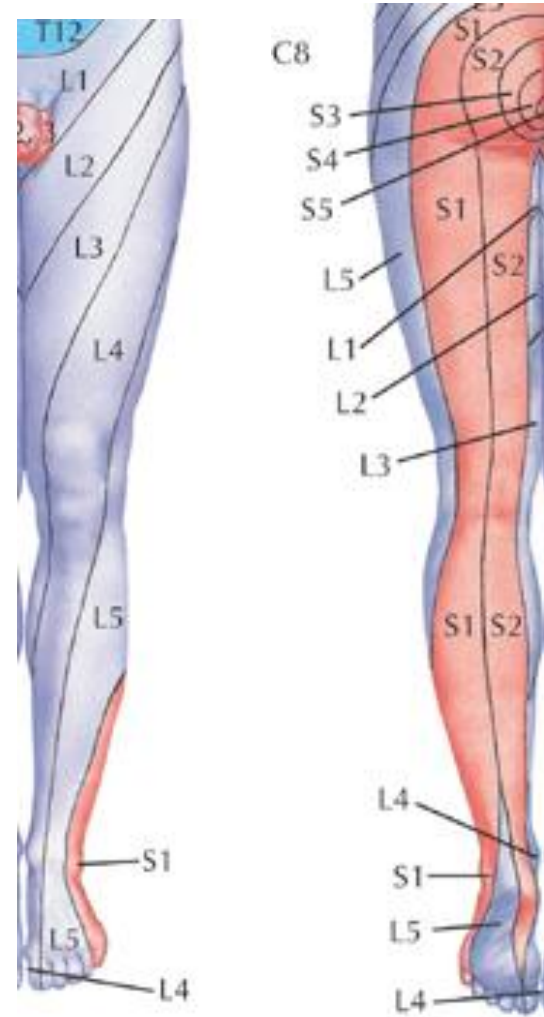
# The Back: exam

- ▶ Provocative tests
  - Stork test: spondylolysis or facet syndrome



# The Back: exam

- ▶ Neuro evaluation
  - Straight leg raise
  - Strength
    - L2–hip flexion, L3–knee extension, L4–ankle dorsiflexion, L5–big toe extension, S1–ankle eversion, S2–knee flexion
  - Reflexes
    - L4–patellar, S1–Achilles
  - Sensation



# Back Pain

## ▶ Rule out badness

- Infection: osteomyelitis, diskitis, paraspinal abscess
  - Fever, systemic symptoms, increased WBC, ESR, CRP
  - Systemic findings not as significant with diskitis
- Rheumatologic
  - Sacroiliitis associated with ankylosing spondylitis, psoriatic arthritis, reactive arthritis, IBD
  - Stiffness and morning symptoms
  - Positive FABER



# Back Pain

## ▶ Tumors

- Primary – Ewings sarcoma
- Metastasis
- Benign tumors – Osteoid osteoma
  - Night pain
  - Relieved by NSAIDs



# Back Pain

- ▶ Spondylolysis
  - Fracture of pars interarticularis
  - Repetitive hyperextension
  - Pain with extension, positive stork test
  - Bilateral at risk for spondylolithesis



# Back Pain

## ▶ Spondylolysis

### ◦ Imaging

- X-ray: AP, lateral, oblique
- Look for scotty dogs

### ◦ May need bone scan

### ◦ Treatment

- Rest +/- brace
- PT
- Return to activity as symptoms

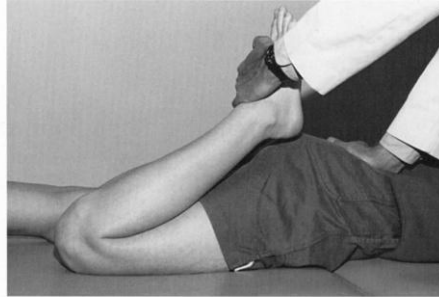


# Back Pain

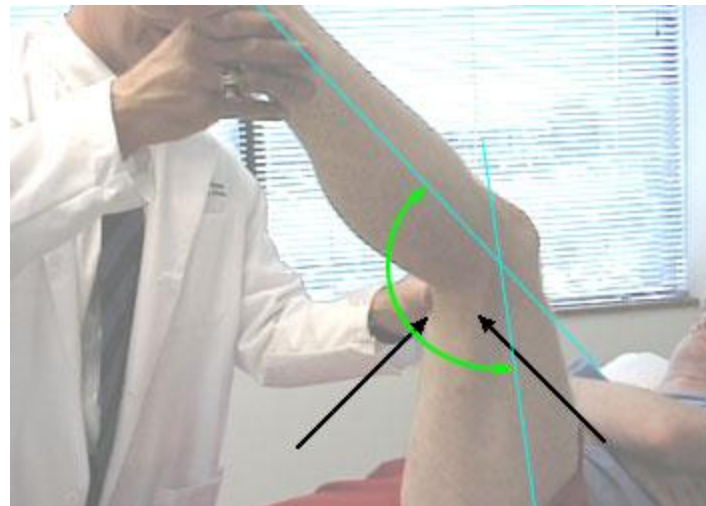
- ▶ Muscular
  - Can be chronic or from acute strain
  - Assess flexibility and hip and core strength

# Flexibility and strength testing

- ▶ Quads

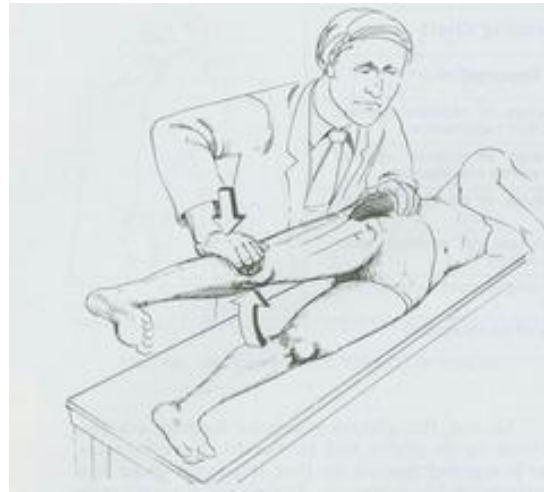


- ▶ Hamstring; popliteal angle



# Flexibility and strength testing

- ▶ Hip flexors: Thomas test
- ▶ Glut strength



- ▶ Hip strength

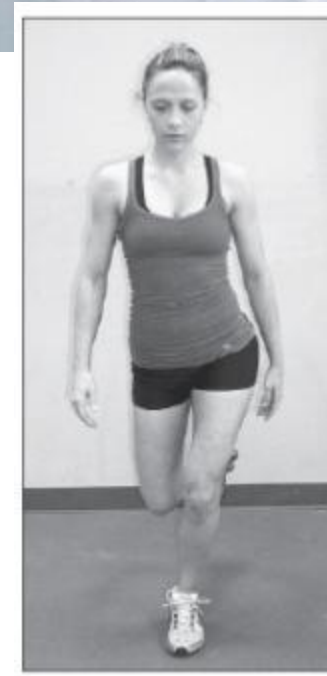
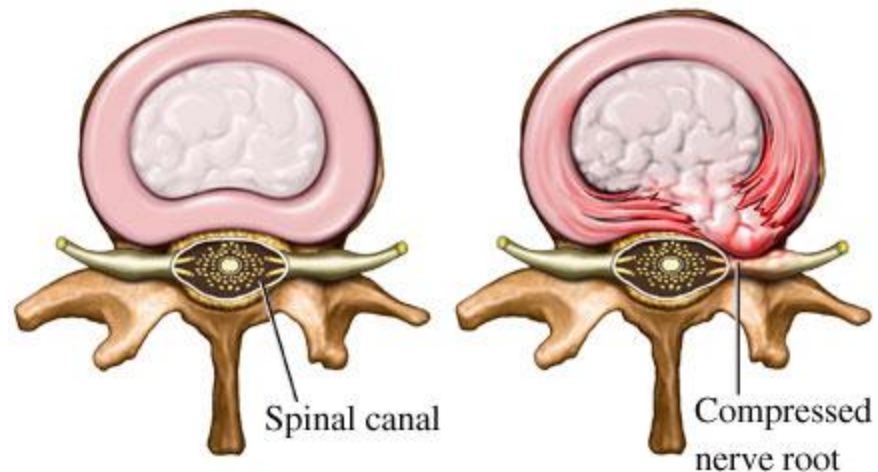


Figure 2.1 Trendelenburg sign.

# Sciatica

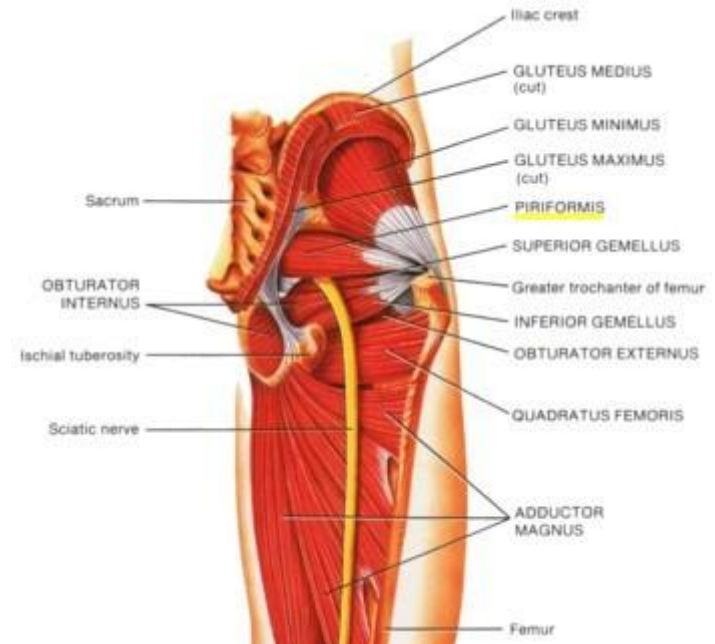
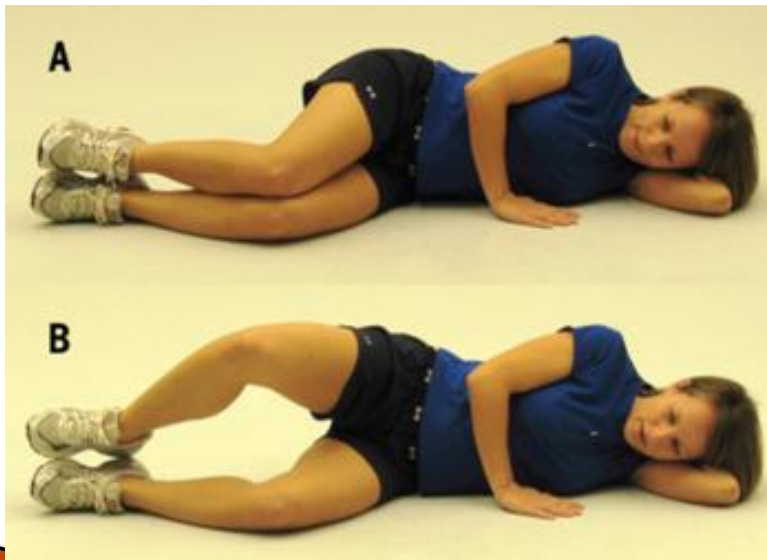
- ▶ Symptom not a diagnosis
- ▶ Diskogenic pain
  - Usually degenerative
  - Findings associated with nerve root that is compressed



# Sciatica

## ▶ Piriformis syndrome

- Compression of the sciatic nerve by the piriformis can mimic disk pain
- Positive clam test



# Summary

- ▶ Remember anatomy
  - ▶ Physical exam
  - ▶ Rule out non-MSK problems
  - ▶ Look for functional deficits for rehab
- 