Physical Diagnosis of Spinal Pathology

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Basic Concepts

- Standard Physical Exam
- What you don’t want to miss:
  - Cervical radiculopathy
  - MYELOPATHY

Anatomy

- Boundaries of the neuroforamen:

Facet Joints
Anatomy

- Boundaries of the neuroforamen:

Disk

Muscle Strength

- 5 – Complete ROM – Full resistance
- 4 – Complete ROM – Some resistance
- 3 – Complete ROM – Against gravity
- 2 – Complete ROM – Gravity removed
- 1 – Slight contractility
- 0 – No contractility

Cervical Spine
Physical Exam – C3

- Symptoms
  - Occipital headache
  - Posterior neck pain
  - No motor involvement

Pain Distribution

Physical Exam – C4

- Symptoms
  - Neck pain
  - Traps pain
  - No motor

Pain Distribution
Sensory Distribution

Physical Exam – C5

Pain Distribution
Sensory Distribution
Physical Exam – C5

- Motor/Reflex
  - Biceps reflex
  - Deltoids and Biceps

Physical Exam – C6

- Motor/Reflex
  - Brachioradialis Reflex
  - Biceps and wrist extensors

- Pain Distribution
- Sensory Distribution
Physical Exam – C7

• Motor/Reflex
  - Triceps and Wrist flexors

Physical Exam – C8

Motor/Reflex
- Grip: No Reflex
Thoracic and Lumbar Spine

**Dermatomes**

- No need to memorize them all:
  - Learn 2-3 dermatomes with each region
    - Cervical C6-8
    - Thoracic T4/T10
    - Lumbar L4-S1
  - Everyone is wired differently

**Dermatomes**

- Shoulder - C5
- Thumb - C6
- Long Finger - C7
- Small Finger - C8
- Nipple line - T4
- Umbilicus - T10
Dermatomes

- Medial malleolus - L4
- Dorsal Foot - L5
- Lateral/Plantar Foot - S1

Idiopathic Scoliosis

- Physical examination
  - Observation
    - Shoulder asymmetry
    - Waist asymmetry
    - Trunk shift
    - Rotation (Angle of trunk rotation)
Physical Exam

- Special tests for spinal cord compression:
  - Lhermitte’s sign
  - Finger escape sign
  - Jaw reflex
  - Scapulohumeral reflex
  - Inverted radial reflex
  - Hoffmann’s sign
  - Hyperreflexia, clonus