



STIFF NECKS AND SORE SHOULDERS

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Introduction

- **The goal of this lecture is to provide practical information regarding neck and shoulder pain including simple treatment strategies and when to seek medical attention**
- **In order to accomplish these goals, we will review the function of the spine and shoulder as well as the relevant anatomy, and common pathologies**
- **We will also discuss how to treat and prevent pain and injury through the use of therapeutic exercise**

Functions of the Spine and Shoulder

- **Functions of the Spine:**

- Establish our posture
- Provides an attachment site for many muscles
- Transmit force
- Protect the spinal cord

- **Functions of the Shoulder:**

- Provide extensive range of motion to the upper extremity
- Increase our ability to manipulate objects

The Spine

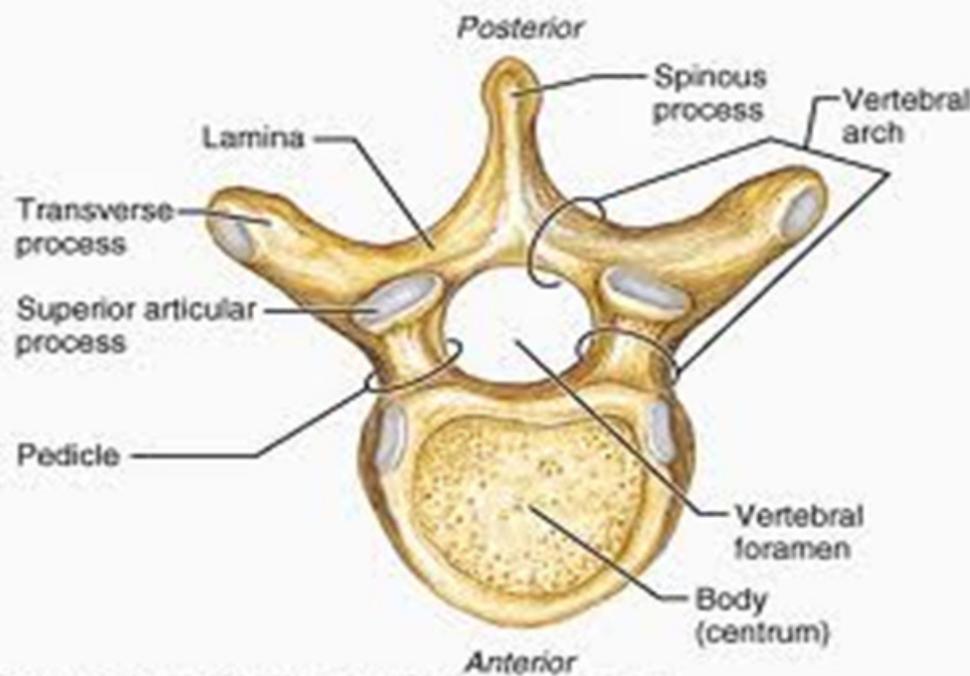
- **33 Vertebrae (Approximately)**
 - 7 Cervical
 - 12 Thoracic
 - 5 Lumbar
 - 5 Sacral (fused)
 - 4 Coccygeal (fused)



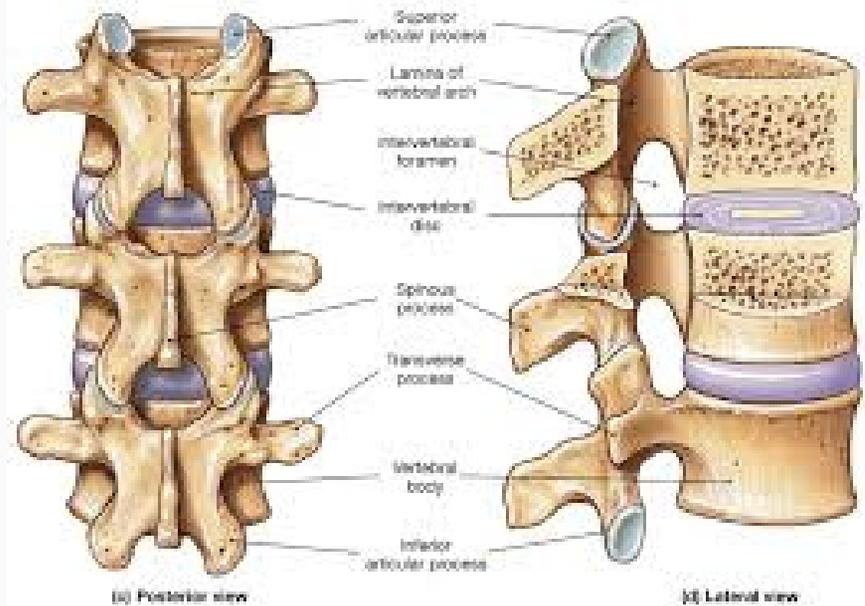
The Normal Spine



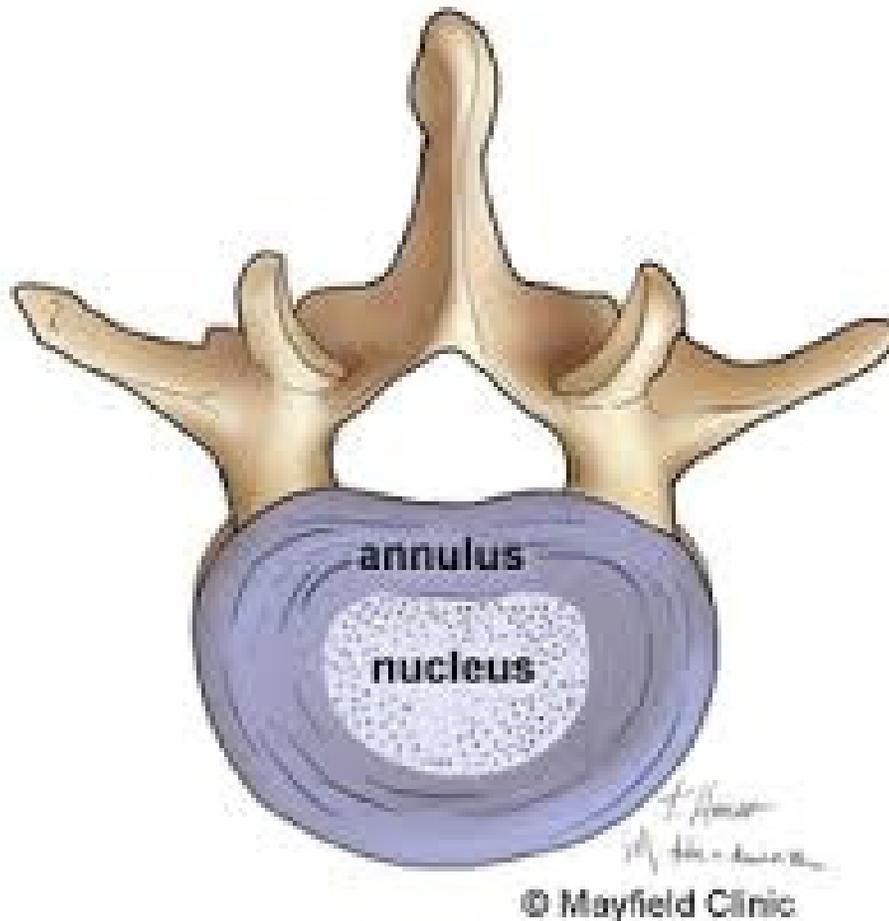
The Vertebrae



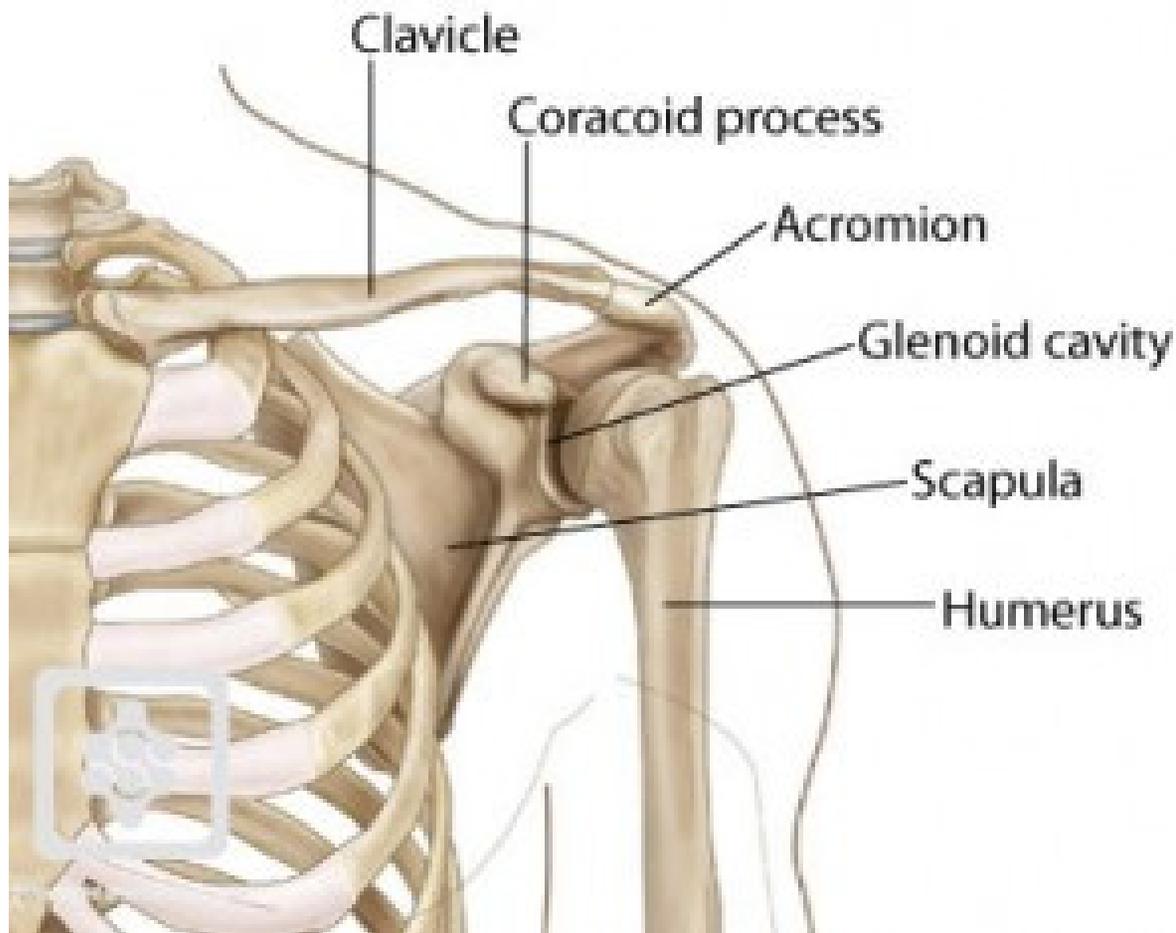
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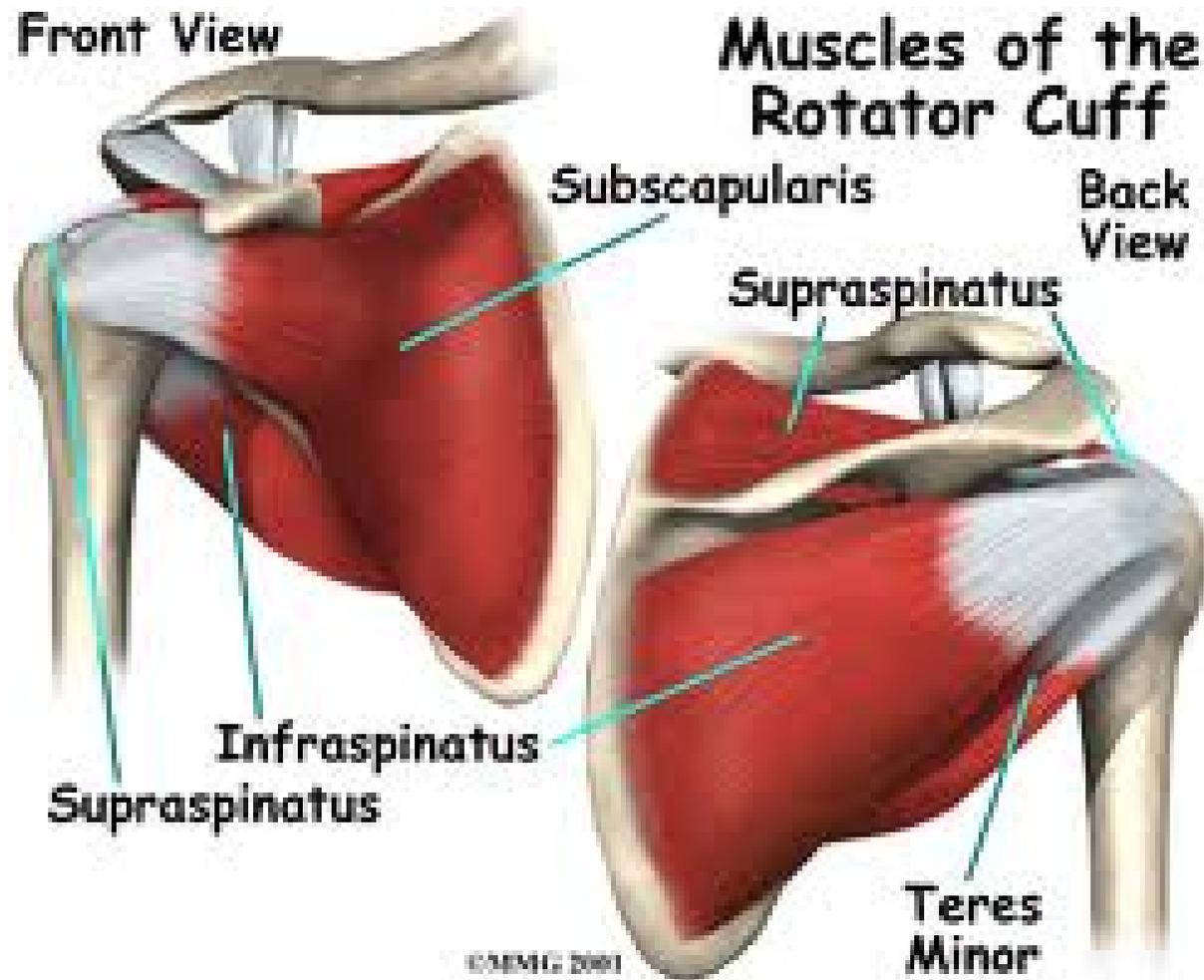
The Intervertebral Disc



The Shoulder Complex



The Rotator Cuff



Common Neck and Shoulder Pathologies

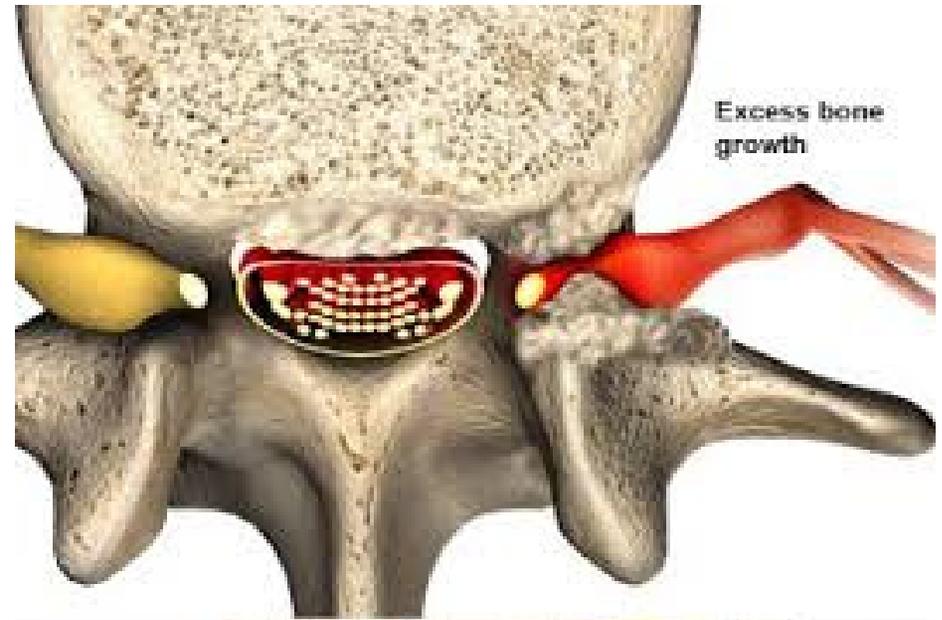
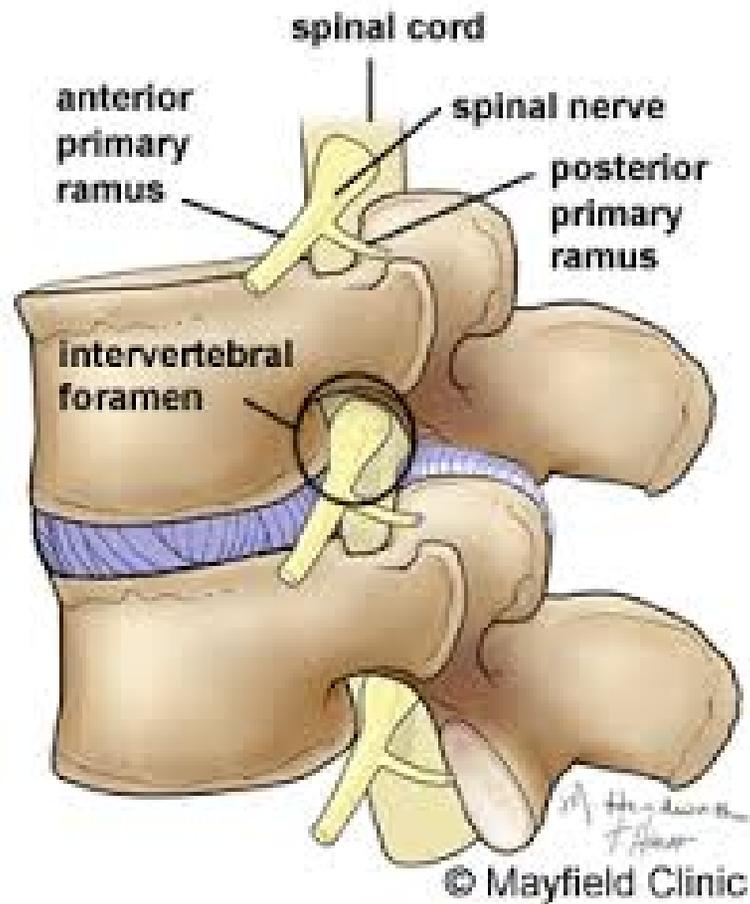
- **Neck Pathologies:**

- Spinal Stenosis
- Spondylosis
- Spondylolysis and Spondylolisthesis
- Intervertebral Disc Disorders

- **Shoulder Pathologies:**

- Impingement Syndrome
- Rotator Cuff Tear
- Labral Tear
- Osteoarthritis

Spinal Stenosis



Cervical Spondylosis

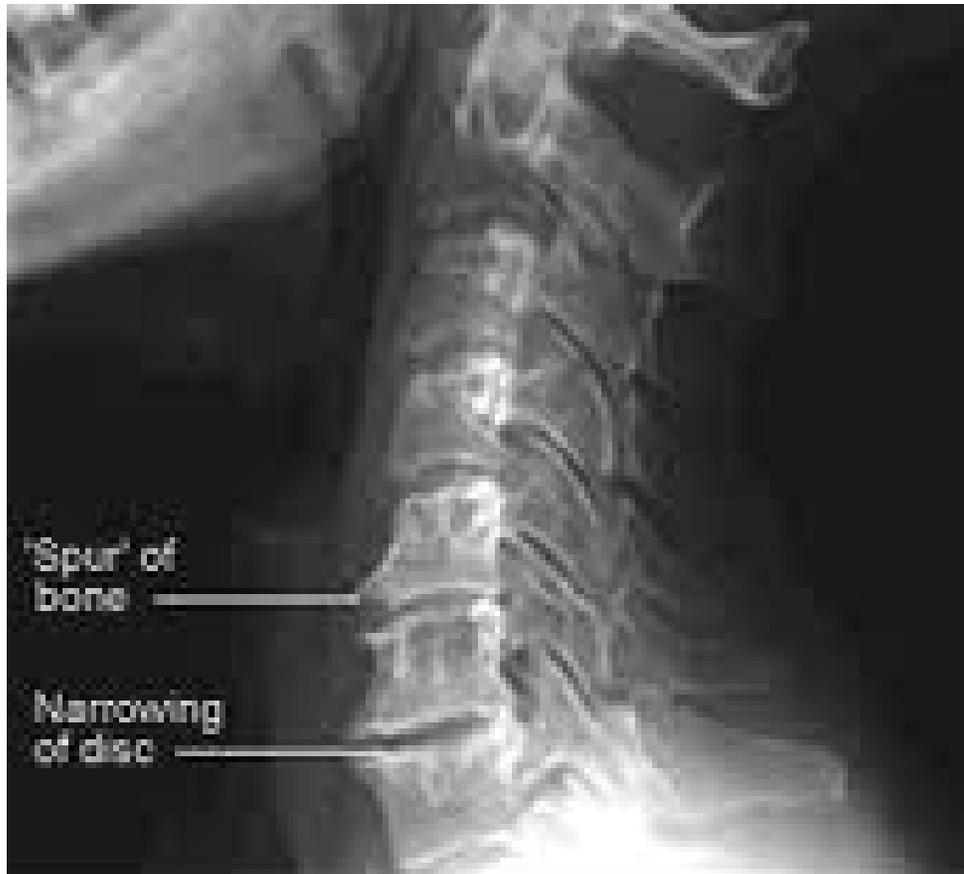


Figure 2. X-ray of the neck (side view) showing cervical spondylosis

Cervical Spondylolisthesis



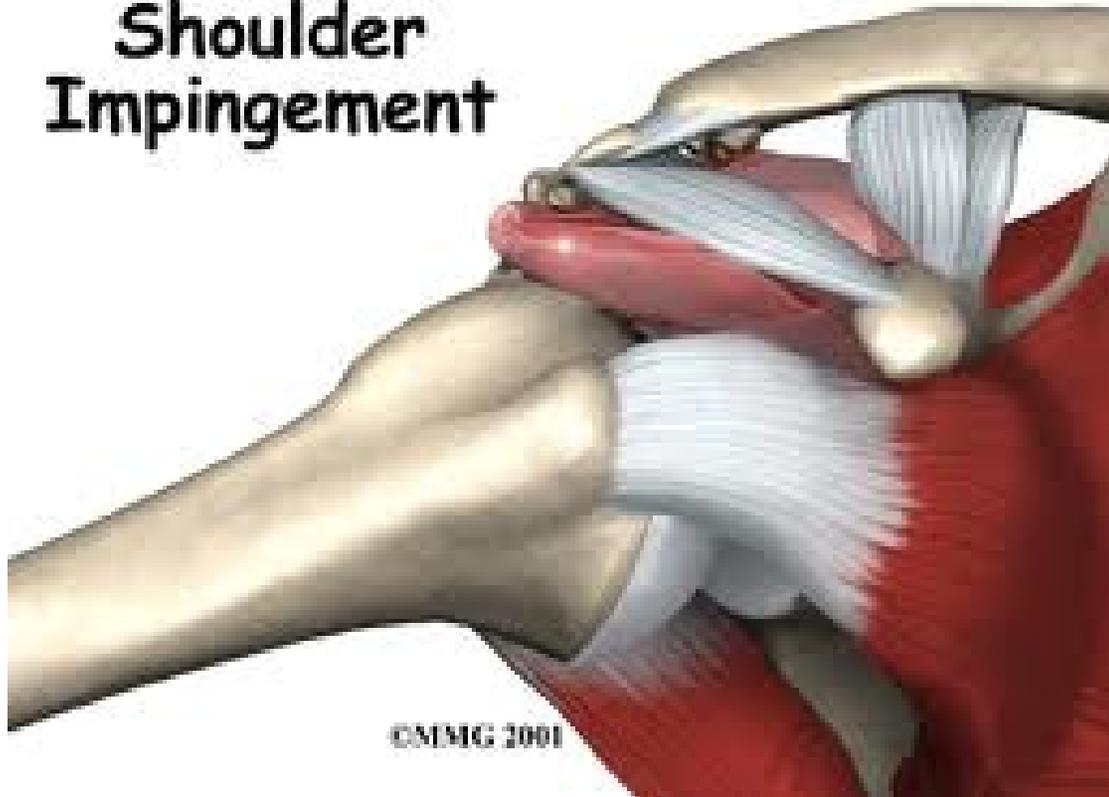
Cervical Herniated Disc



Subacromial Impingement

- *Impingement accounts for 90% of all RC tears!*

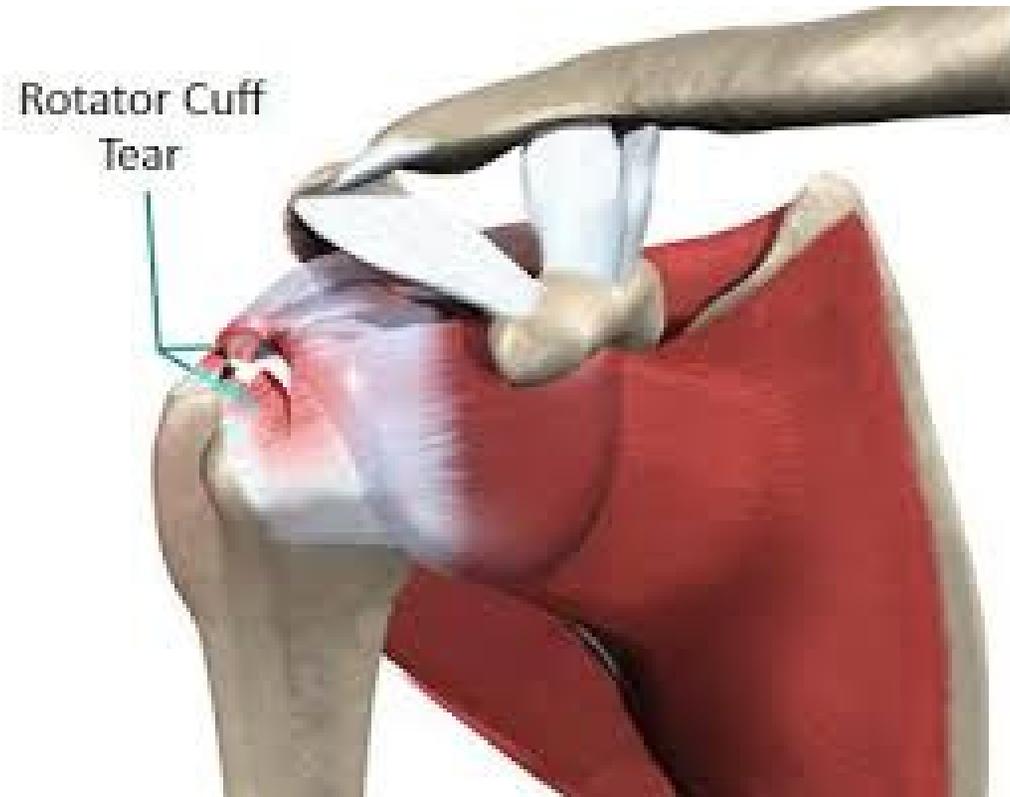
Shoulder Impingement



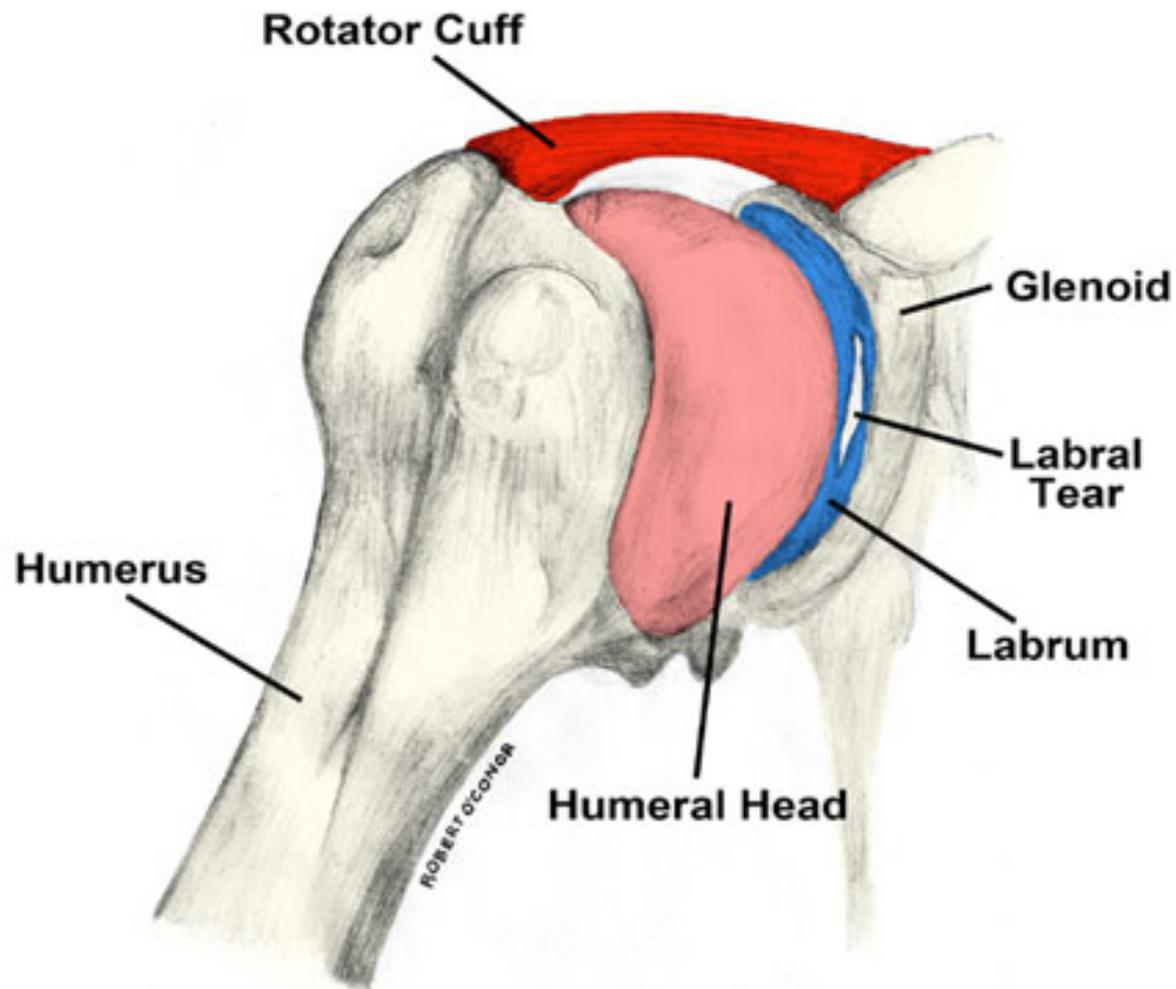
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Incidence of RC Tears

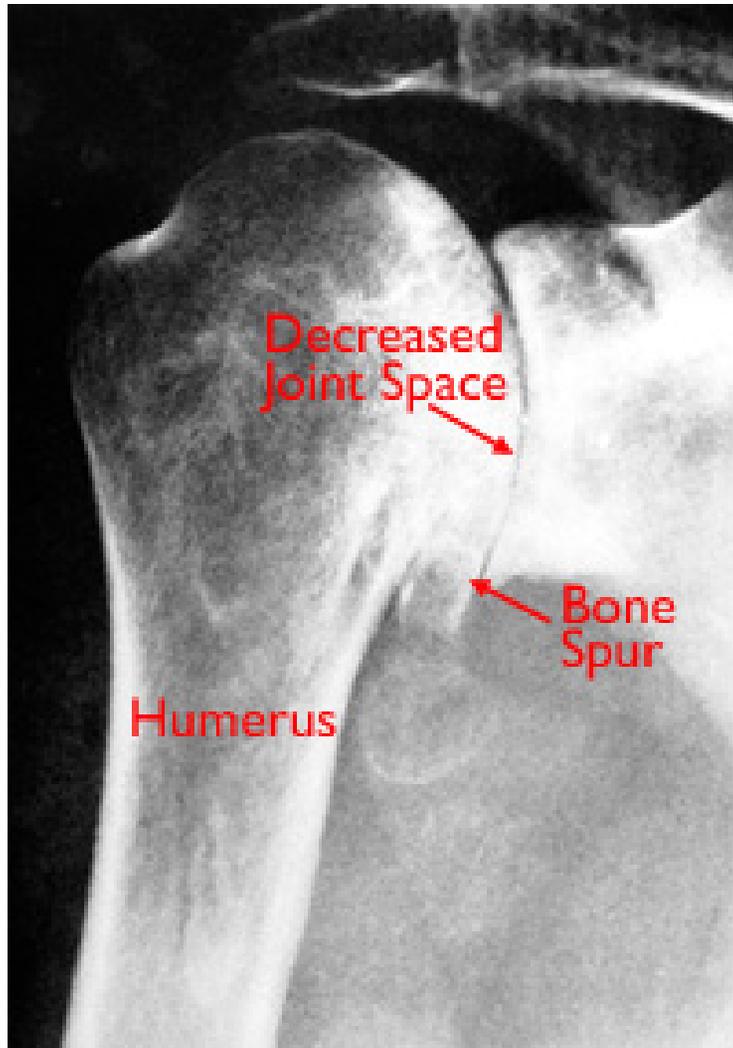
- **20% of individuals over 50**
- **50% of dominant shoulders by age 70**
- **80% by age 80**



Glenoid Labrum Tear



Shoulder Osteoarthritis



When to Seek Help?

- **Sensory changes such as numbness or tingling in the hand or fingers**
- **Weakness in your shoulder, elbow, wrist or hand**
- **Gross loss of range of motion**
- **Systemic symptoms such as headaches, dizziness, or nausea that are associated with changes in head and neck position**

Where Do We Go From Here?

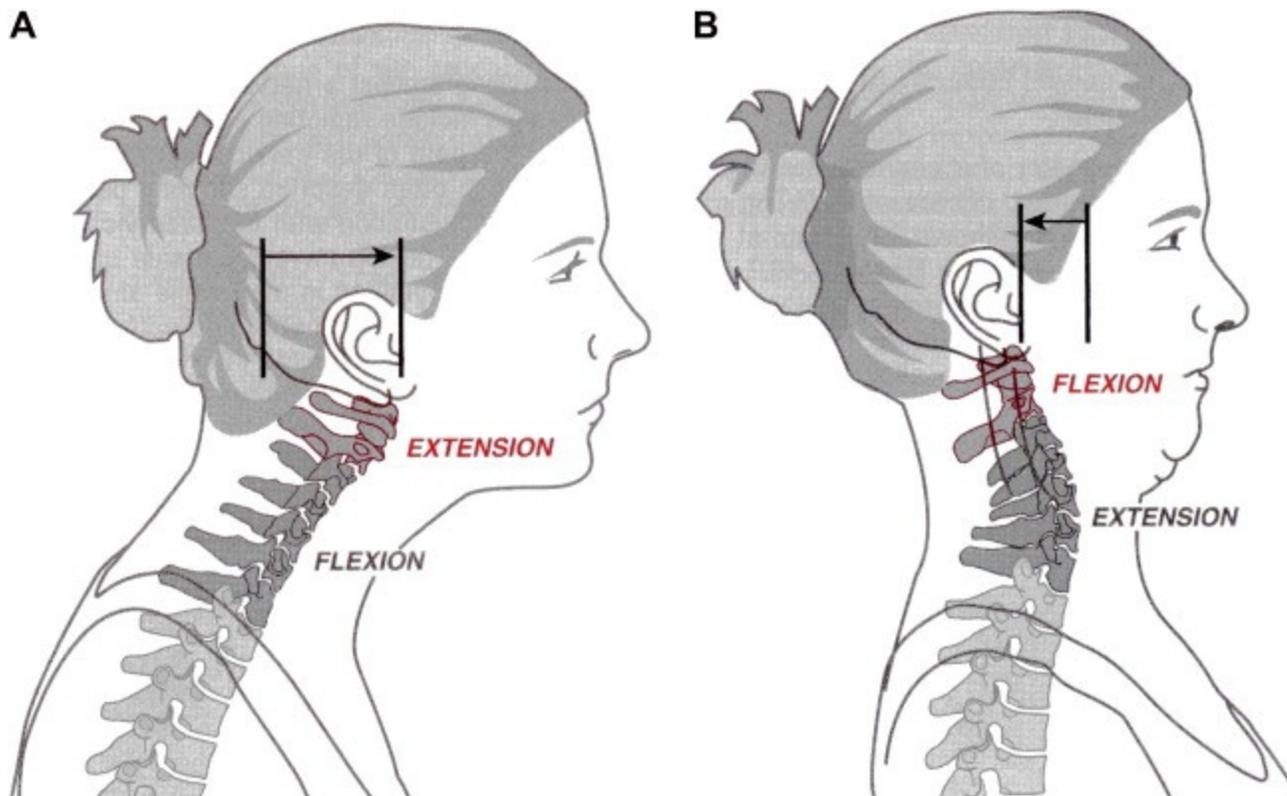


Stretch What's Tight, Strengthen What's Weak

- **Try performing these simple exercises periodically throughout the day:**
 - Chin Tuck
 - Crossover Shoulder Stretch
 - Doorway Pec Stretch
 - Wall Slide
 - Cat/Camel Spine Stretch
 - Side-Lying Trunk Rotation
 - Side-Lying Shoulder External Rotation

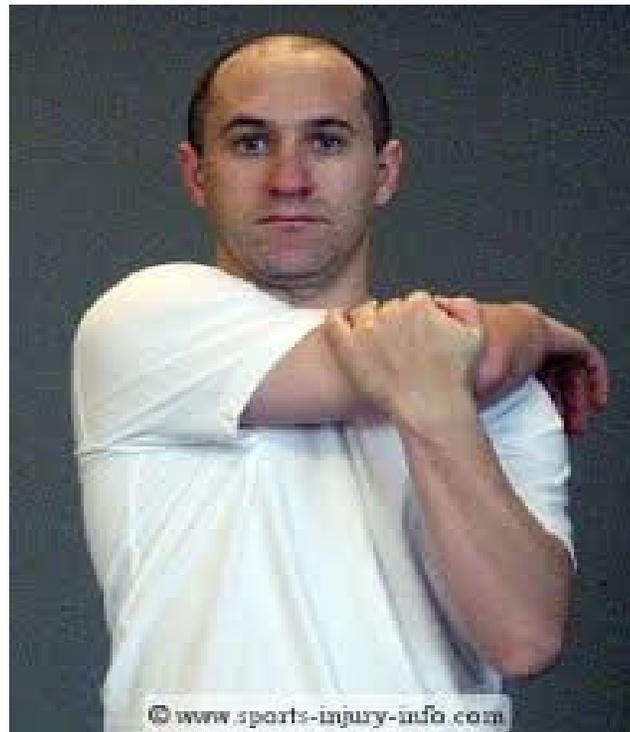
Chin Tuck

- Stretches posterior neck musculature while also strengthening the deep neck flexors
- Perform 10 repetitions with a 5 second hold



Crossover Shoulder Stretch

- Stretches the posterior shoulder musculature
- Perform 2-3 rounds of 30 seconds



Doorway Pec Stretch

- Stretches the anterior shoulder musculature
- Perform 2-3 rounds of 30 seconds



Wall Slide

- Stretches and strengthens the upper back musculature while also strengthening the abdominals
- Perform 10 repetitions periodically throughout the day



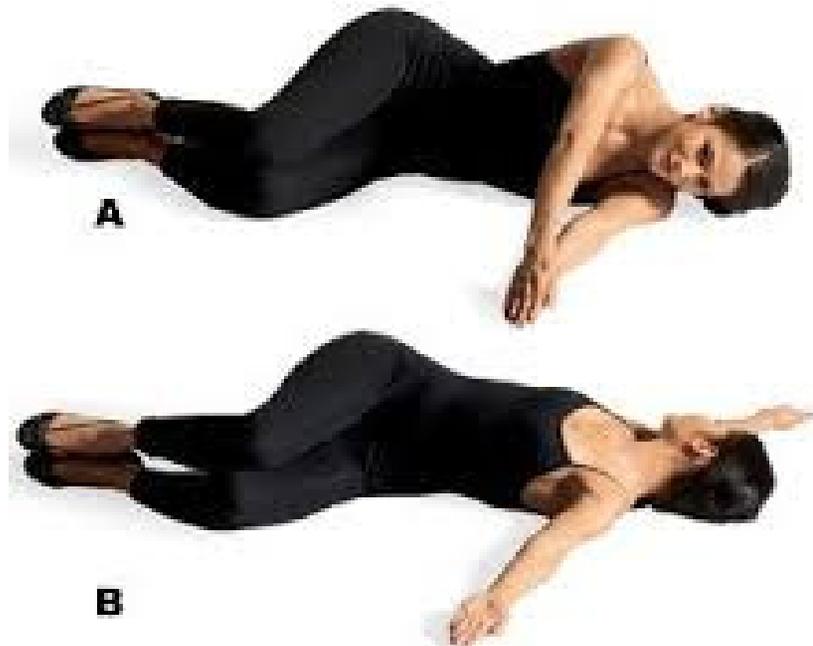
Cat/Camel

- Stretches the cervical, thoracic, and lumbar spine
- Perform 1-2 rounds 10 repetitions in a slow and controlled manner



Side-Lying Trunk Rotation

- Stretches the anterior shoulder musculature and thoracic spine
- Perform 1-2 rounds of 10-15 repetitions per side in a slow and controlled manner



Side-Lying Shoulder External Rotation

- Strengthens the posterior rotator cuff musculature
- Perform 2-3 rounds of 10-15 repetitions in a slow and controlled manner



REMEMBER!

- If any of the previously recommended exercises or stretches causes you acute pain, ***DO NOT DO THEM!***



Conclusions

- **Neck and shoulder pathology is something that is extremely common across a variety of populations**
- **Understanding some of the underlying pathologies, when to seek treatment, and how to address your pain and dysfunction through exercise can help you manage your symptoms and ultimately assist you in achieving a full recovery**