

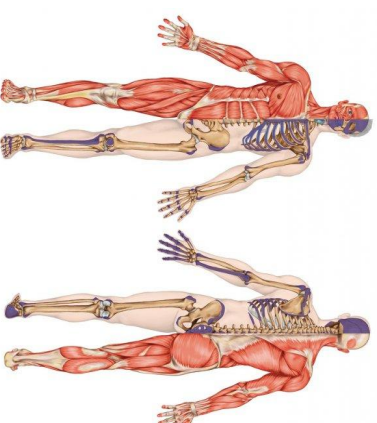
# Shoulder Anatomy and Mechanics

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"Shoulder function is a compromise between mobility and stability. Its large mobility is based on the structure of the glenohumeral joint and simultaneous motion of all segments of the shoulder girdle. This requires fine-tuned muscle coordination. Given the joint's mobility, stability is mainly based on active muscle control with only a minor role for the glenohumeral capsule, labrum and ligaments.



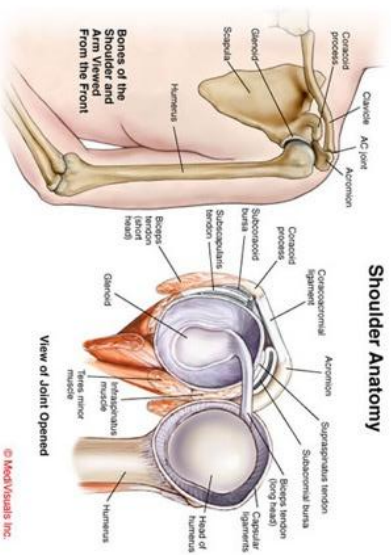
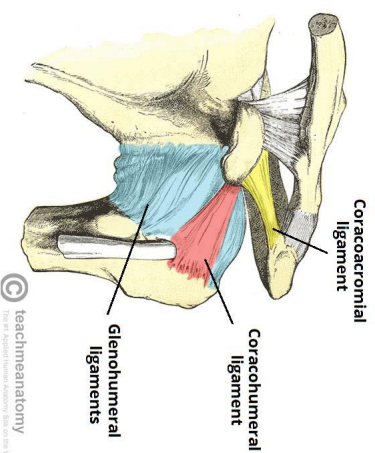
## Skeletal Anatomy



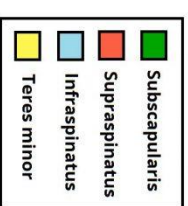
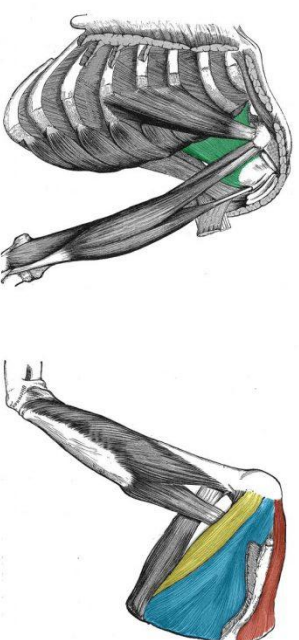
## Function of Shoulder Joint

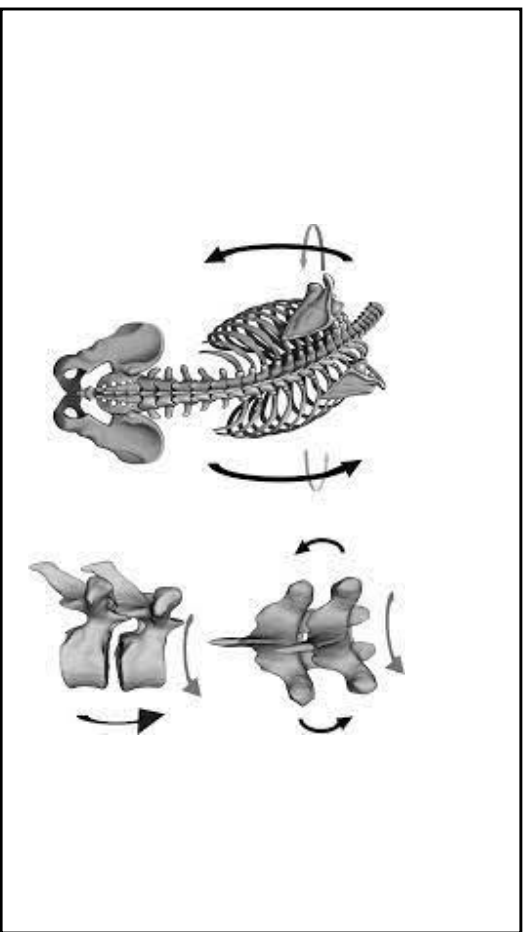
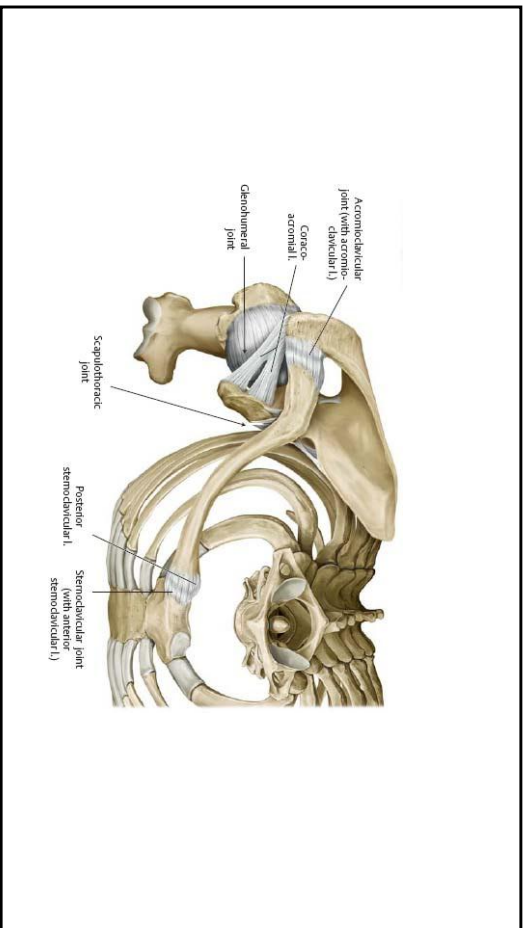
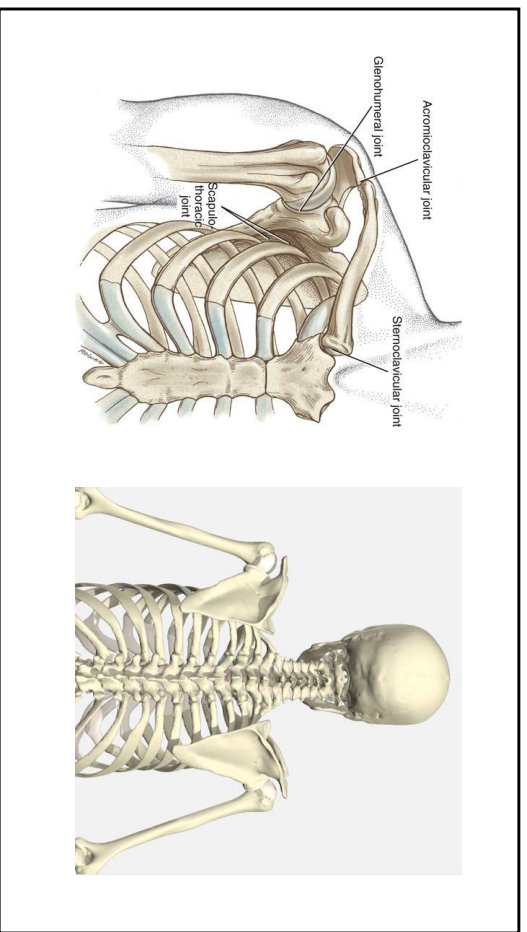
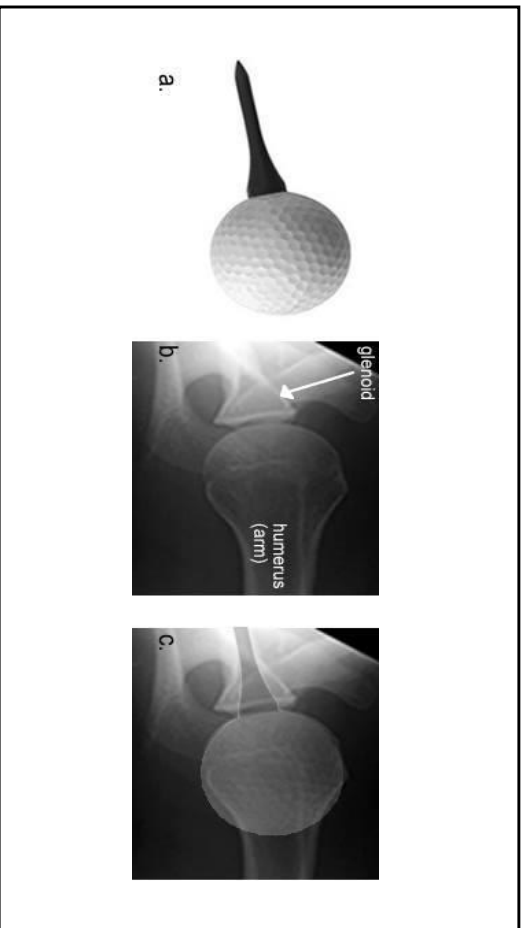
- Large range of motion available with poor stability
- Humeral head is 3-4 times larger than socket
- Glenoid has a suction mechanism to hold humeral head in place
- 3 main ligaments to stabilize shoulder
- Primary stabilizer of the shoulder is the rotator cuff musculature

## Passive stability via ligaments



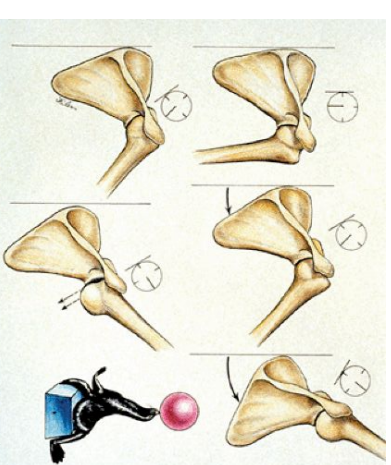
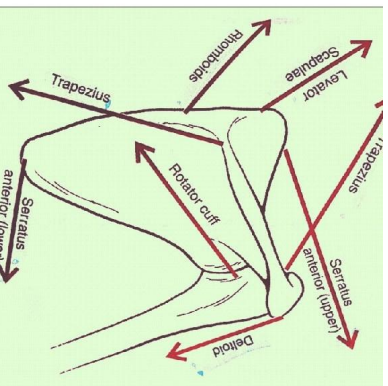
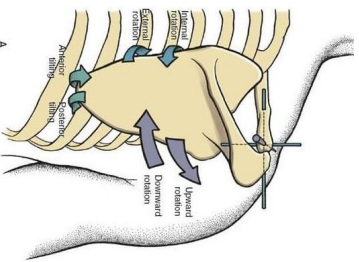
## Rotator Cuff Musculature





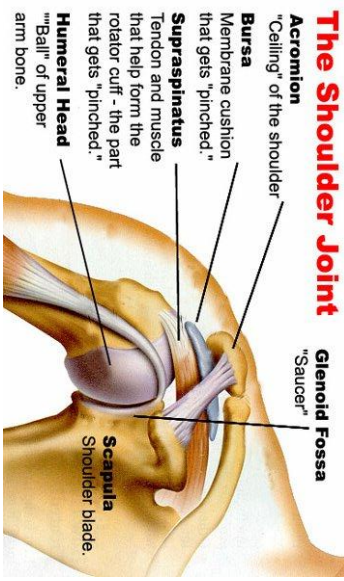
## Common Issues/Injuries

- Stiffness/mobility issues
- Postural deficits
- Arthritis
- Rib issues/injuries
- Congenital Instability
  - Hyper-mobile
- Dislocation/subluxations
- SLAP/Bankart Tear



## Muscular Issues

- Shoulder Impingement
- Rotator Cuff tears
- Scapular Dyskinesia/weakness



Breathing timeout



Shoulder Instability/Hypermobility



Postural Considerations

- Forward Head Posture
- Forward shoulder posture
- Thoracic Kyphosis



## Postural Considerations



**Tight**  
Upper Traps &  
Levator Scapulae

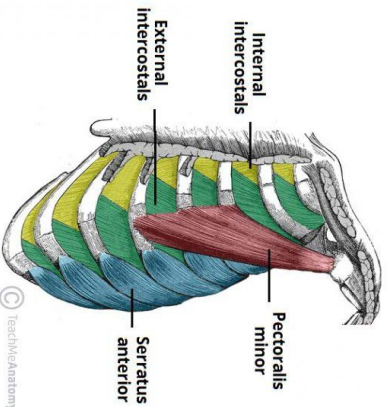
**Weak**  
Deep Neck  
Flexors

**Weak**  
Lower Traps &  
Serratus Anterior

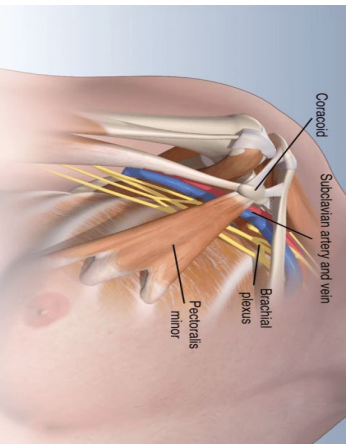
**Tight**  
Pectoralis



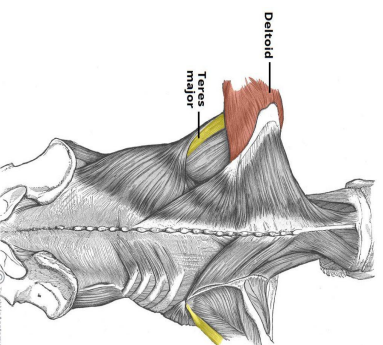
## Chest Wall Tightness



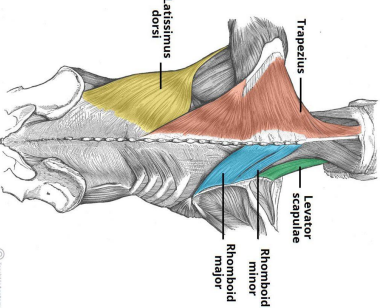
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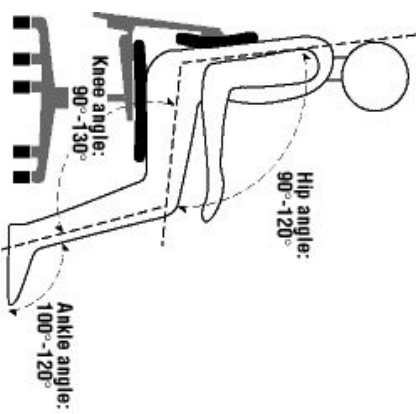
## Anatomy Flashback



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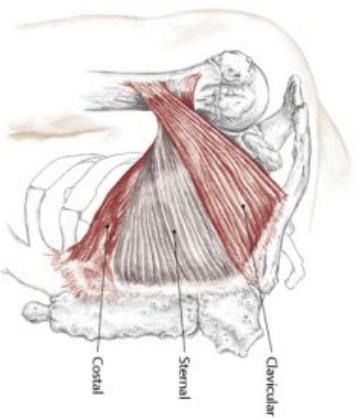


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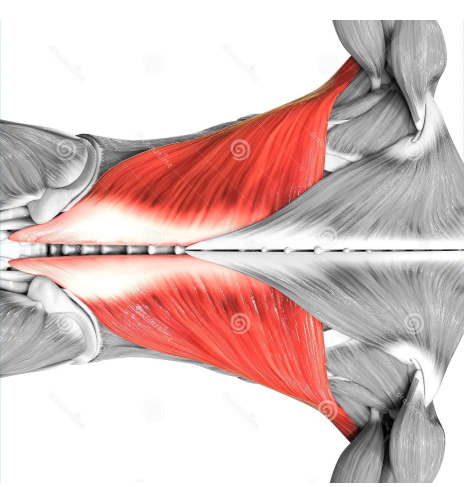
## Pec Major

- Adducts the glenohumeral joint (GH) (shoulder)
- Flexes the GH joint
- Internally (medially) rotates the GH joint



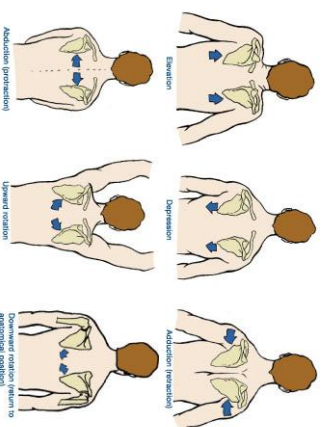
## Lattissimus Dorsi

- Shoulder extension
- Adduction
- Medial/Internal Rotation



## Scapular Postural Considerations

- Retraction and depression of shoulder
- Correct/address shoulder shrug



- Consider all of these elements when developing a guided yoga routine for patients
- Forcing shoulder motion is not going to be good for you or your clients
- Breathing is something that is important to cue into your practice to facilitate motion and mobility through your shoulder
- Shoulder stability and function should be accounted for
  - Don't be afraid to correct your people and use your hands if you and the other people feel comfortable
- Think about moving outside of poor postures and shoulder mechanics to develop a habit for people

## References

Veeger HE, van der Helm FC. Shoulder function: the perfect compromise between mobility and stability. *J Biomech*. 2007;40(10):2119-29. doi: 10.1016/j.jbiomech.2006.10.016. Epub 2007 Jan 12. PMID: 17222853.