



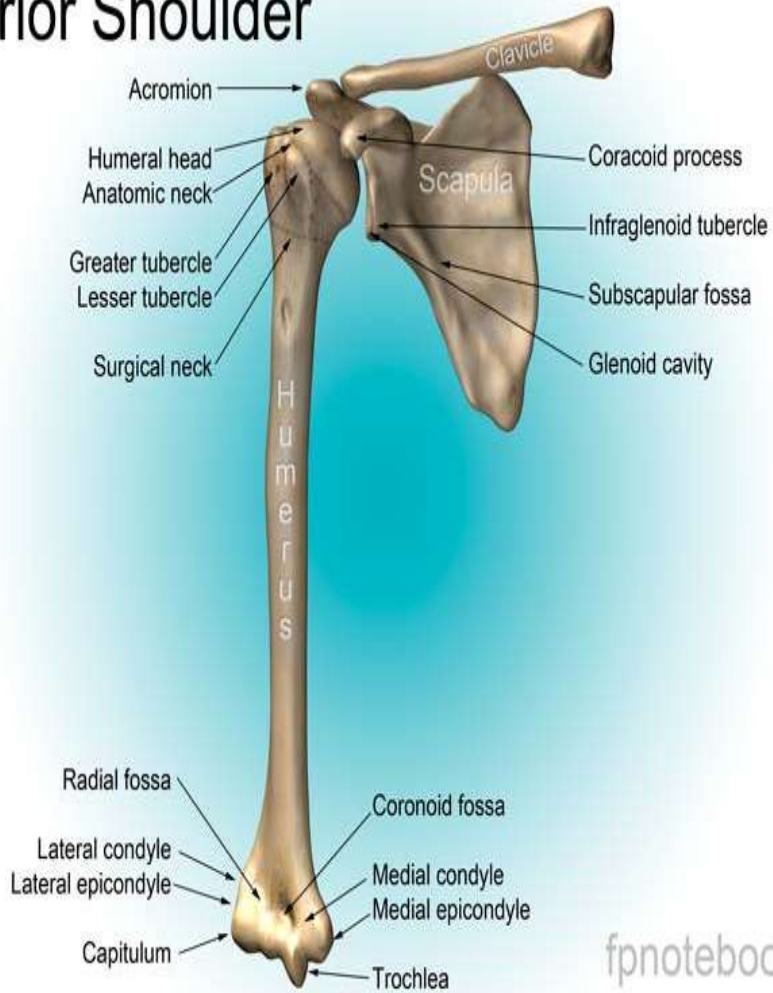
Understanding Shoulder Dysfunction

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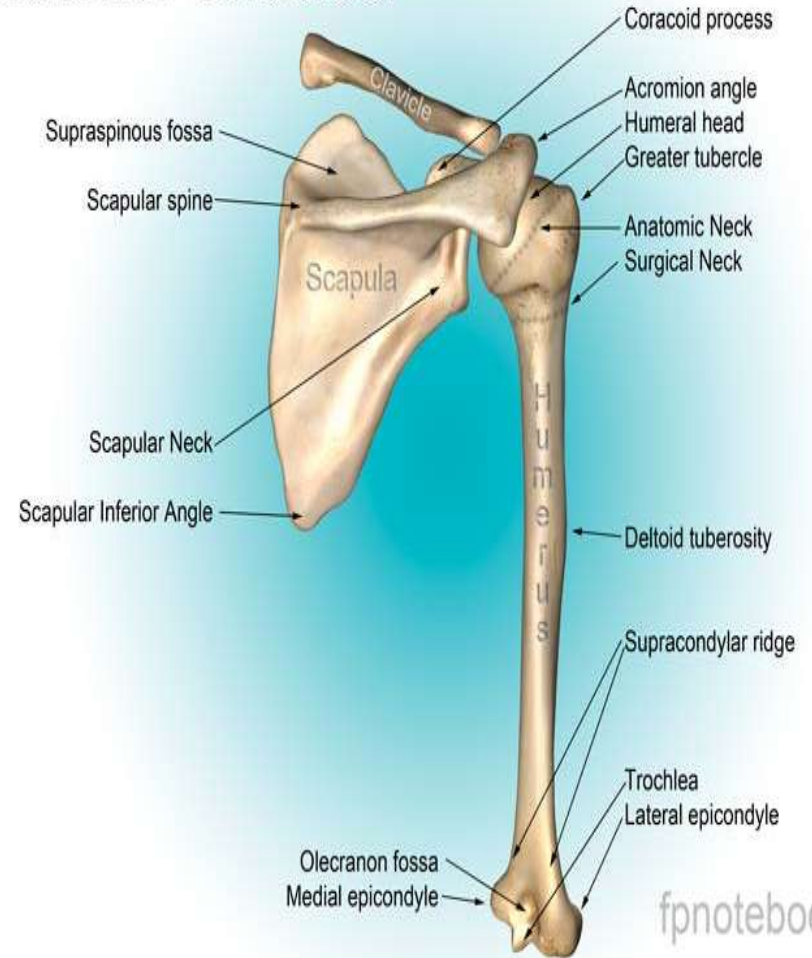
Agenda

- Anatomy of the shoulder
- Shoulder mechanics
- Common reasons injuries occur
- Shoulder self assessments
- Shoulder releases and exercises

Anterior Shoulder



Posterior Shoulder



POSTERIOR
Right Shoulder

ANTERIOR
Right Shoulder

Supraspinatus

Infraspinatus

Teres minor

Scapula

Capsular
ligament
(cut)



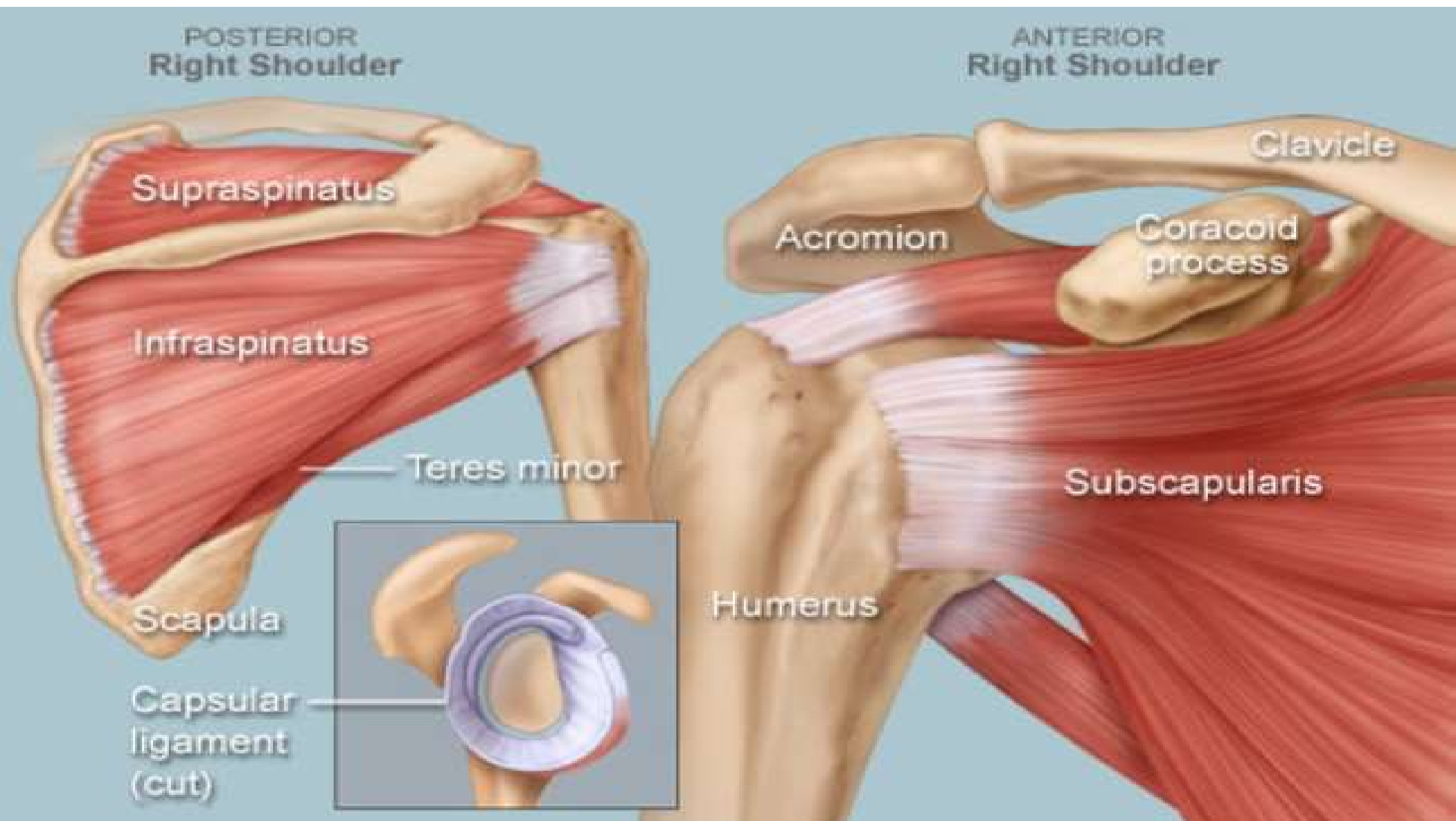
Clavicle

Acromion

Coracoid
process

Subscapularis

Humerus



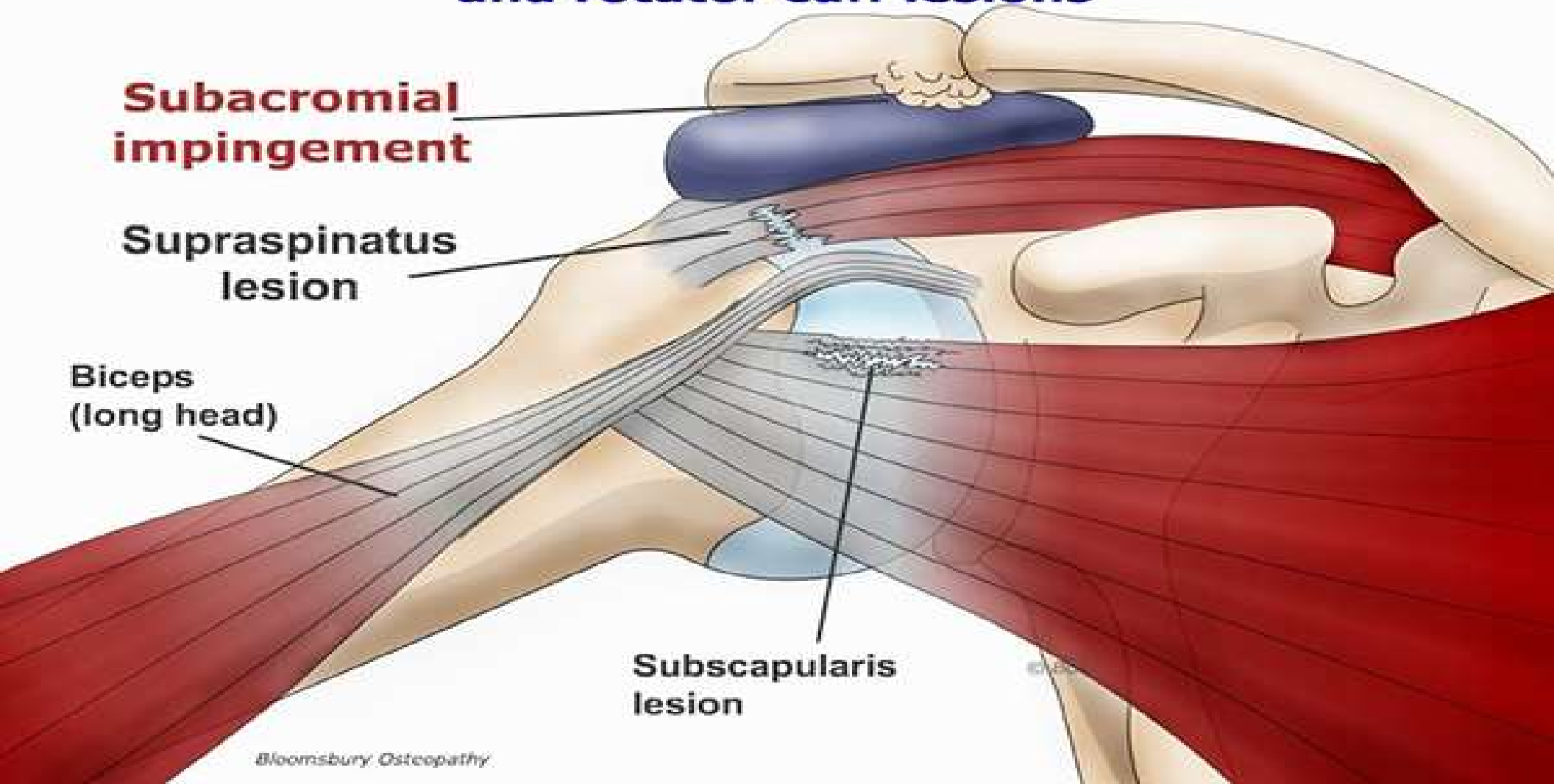
Subacromial impingement and rotator cuff lesions

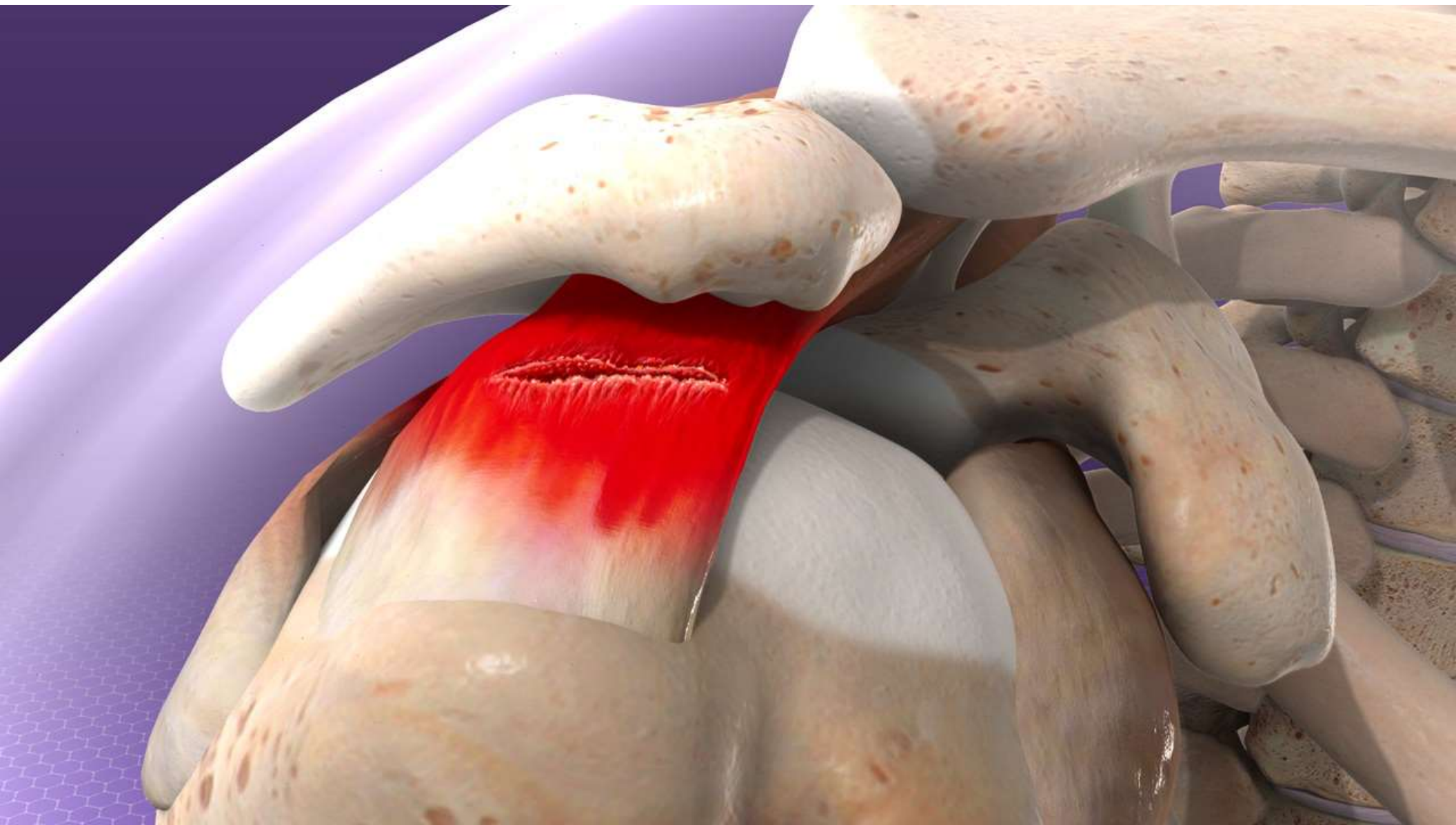
**Subacromial
impingement**

**Supraspinatus
lesion**

**Biceps
(long head)**

**Subscapularis
lesion**





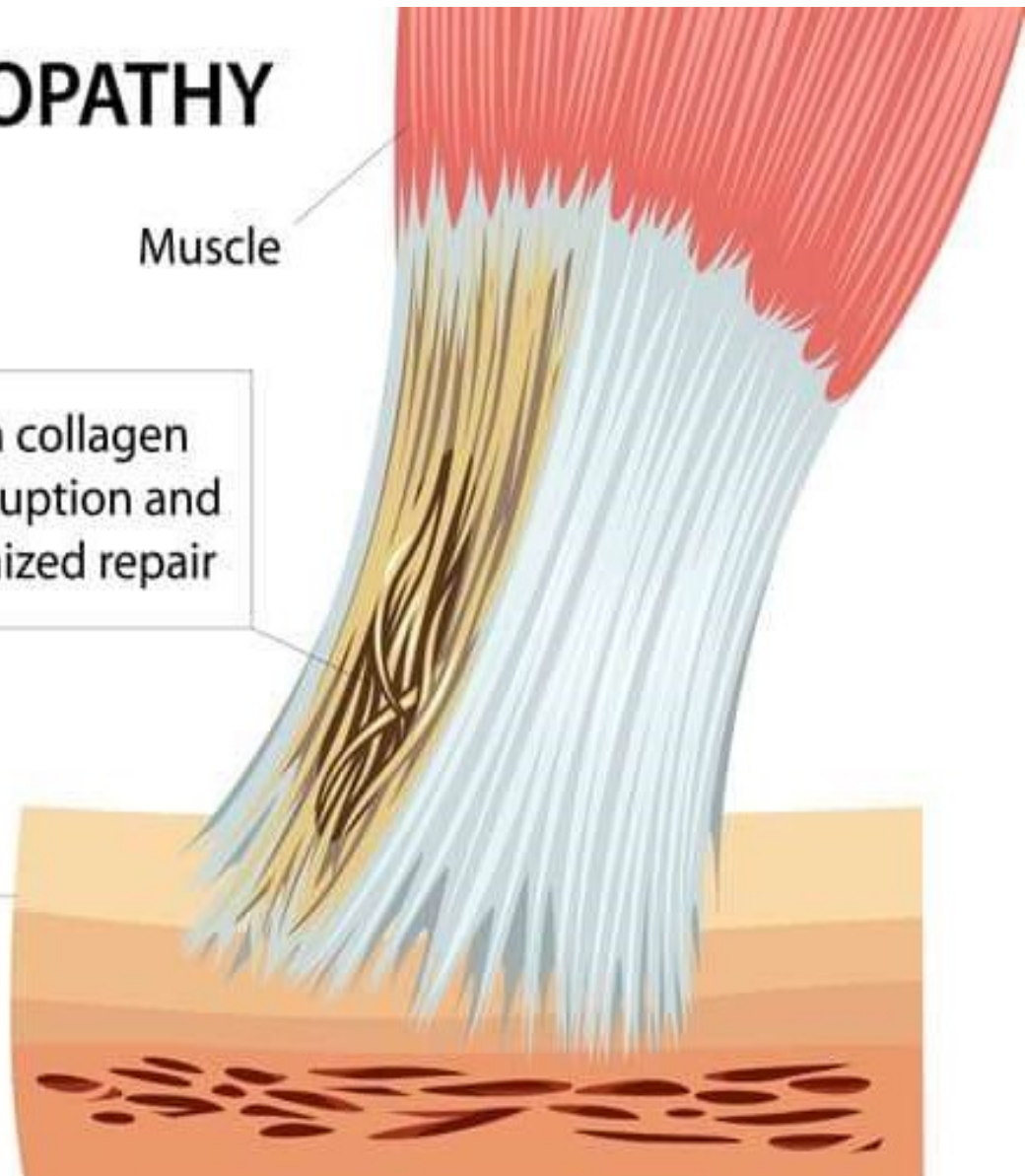
TENDINOPATHY



Muscle

Tendon collagen
fiber disruption and
disorganized repair

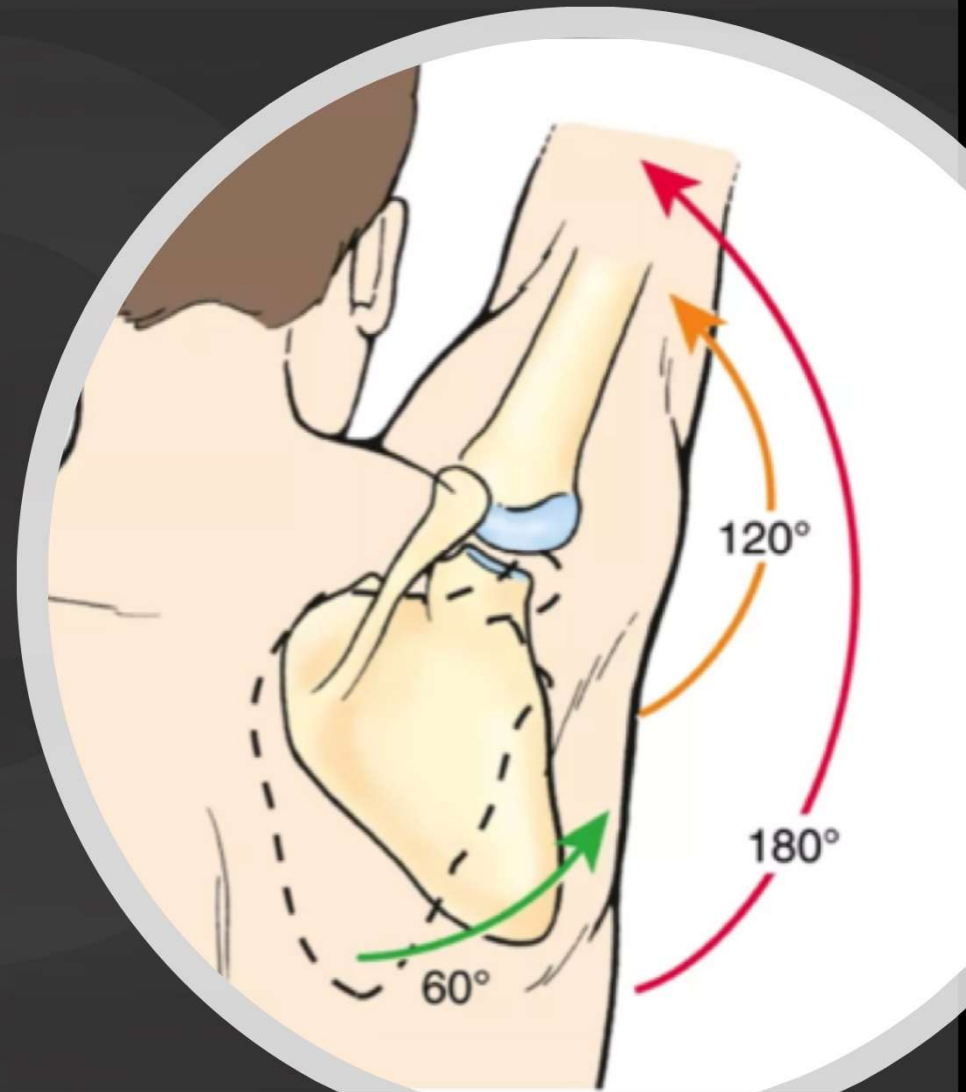
Bone



BIOMECHANICS

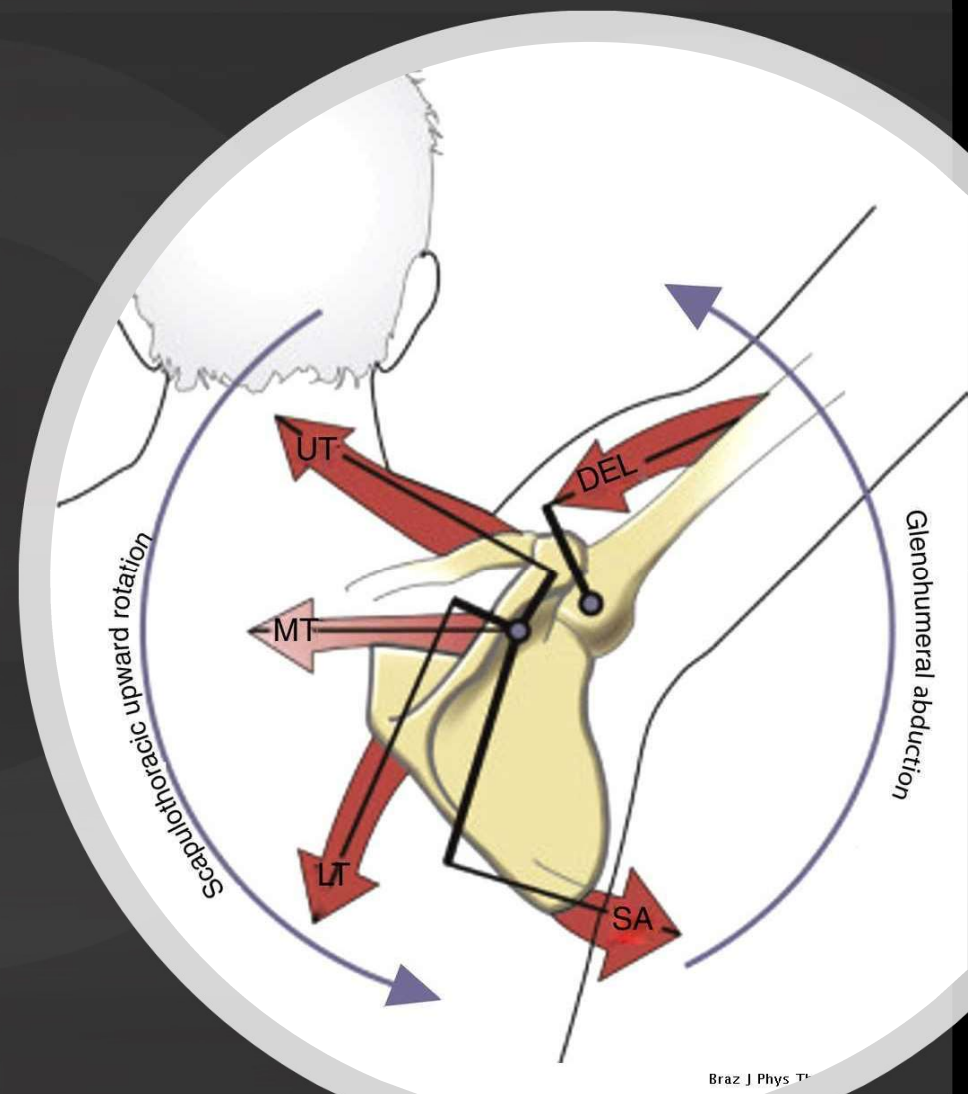
Scapulohumeral Rhythm:

- Defined as the ratio of the glenohumeral movement to the scapulothoracic movement during arm elevation
- The scapula and humerus move in a 1:2 ratio
 - 60 degrees occurs by rotation of the scapula
 - 120 degrees occurs by rotation of the humerus
- Scapula upwardly rotates, posteriorly tilts, and externally rotates during arm elevation



SCAPULOHUMERAL RHYTHM

- The timing and coordination of your shoulder muscles controls your scapulohumeral rhythm
- Scapular stability occurs when muscles surrounding a joint provide equal levels of strength and tension
- When your scapulohumeral rhythm becomes abnormal you are more likely to develop a shoulder injury
- Poor scapular stability usually results in tipping and downward rotation of your scapula



****When one muscle is tighter, stronger or puts more tension on a joint than the “opposing” muscle--- leads to altered movement

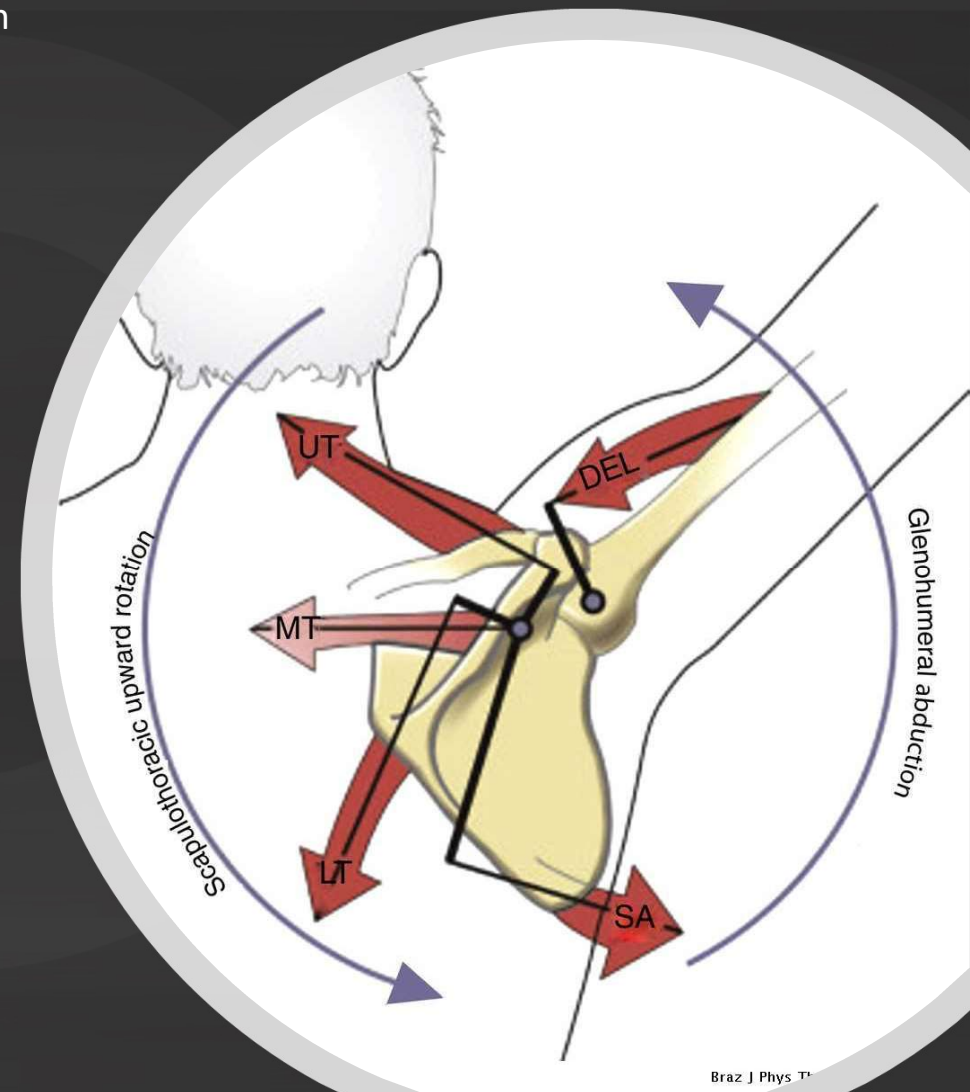
COMMON IMBALANCES

Overactive Muscles:

- Pecotoralis Major/Minor
- Upper Trap/Levator Scapulae
- Internal Rotators

Underactive Muscles:

- Serratus Anterior
- Mid/lower trap
- External rotators



COMMON CAUSES

Poor Posture

- Anterior>Posterior Chain
- Tight pecs, upper traps, and internal rotators
- Weak Retractors

Unbalanced Training Regimes

- Lack of emphasis on mobility and flexibility
- Excessive emphasis on strengthening anterior chain muscles

Sport Specific Training:

- Repetitive movements in one plane
- Ex. Pitchers commonly have excessive external rotation ROM. Leads to increased anterior and inferior translation of the humerus, leading to anterior instability



RESTING ALIGNMENT

- Right vs Left sided asymmetries
- Rounded shoulder/forward head posture
- Scapular winging (chicken wing)
- Scapular elevation (shrug)
- Scapular protraction



SELF ASSESSMENT

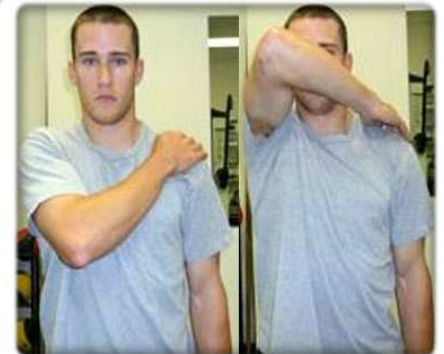
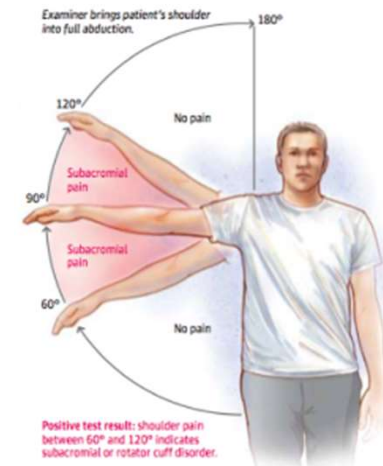
Postural Assessment

- Use a mirror
- Wall spinal alignment
- Floor angel

Shoulder Mobility

- Painful ROM?
- Impingement Test

****Are you double jointed? May need to emphasis strengthening/stability vs mobility



What to do...? Mobilize and Stabilize!

Goal is to optimize your mobility through releases and stretches

- Counteract the muscle imbalances that are created by poor posture, stress, or daily living

Improved mobility → improved postural alignment → improved muscle length tension relationships → improved mechanics = Balance

- Stretch/release anterior chain
- Mobilize thoracic spine/cervical spine

Strengthen posterior chain and deep neck flexors

- Push/pull ratio: 1/2

Active Soft Tissue Releases

What is the point?

- Releases focus on relieving tissue tension via the removal of *adhesions* which can develop in tissues as a result of overload due to repetitive use or adaptive shortening
- Pin adhesive point while pulling surrounding muscle tissue to release the restriction that is bound up at a certain point

Active soft tissue release vs. stretching?

- Stretching brings you to the point of restriction. Releasing breaks up restrictions/adhesions
- Improves muscles capability to passively lengthen into end range during a stretch

How long should I release?

- It depends!

What if it hurts?

- Search for point of tenderness
- Should be uncomfortable but not recreating your pain

Releases

Pectoralis Release

- Stand facing a wall
- Place a lacrosse ball on your pec, about 2 inches below the collarbone and towards your armpit
- Move the ball until you find a tender area
- Maintain pressure on the ball while moving your shoulder in and out/up and down
- You can add arm movements to increase pressure



Latissimus Dorsi Release

- Lie on your side
- Place a foam roller directly under your shoulder blade
- Move your arm forward and backward in a punching motion



Stretches

Thoracic Mobilization

- Sit on the floor with your knees bent
- Place the foam roller perpendicular to the middle of your back and lower your body onto foam roller.
- Clasp your hands together behind your head with your elbows tucked in to support your neck.
- Extend your upper body backward over the foam roller for 10 repetitions, keeping your backside flat on the ground
- Move the foam roller up/down your spine 2 inches to a new location and repeat



Upper Trap Stretch

- Tilt your head towards one shoulder
- Use your hand on the same side you bent your head towards to add more pressure into the stretch
- Take the opposite hand and reach for the bottom of your chair to try to depress the shoulder you are stretching
- Hold for approximately 30 seconds



Strengthening Exercises

Resisted Shoulder External Rotation

- Stand with your feet shoulder width apart, your shoulder pinched backwards, and your elbow bent to 90°
- Place a rolled-up towel in between your elbow and side. Grasp theraband or cable with thumb pointing up. Slowly move your arm out to the side, with forearm parallel to the ground
- Make sure you're not bending your wrist and keep upper arm against your body



Prone Scap Pinches

- Lie face down with a rolled-up towel underneath your forehead
- Rotate palms facing downwards towards the floor
- Keep your head in a neutral position
- Attempt to pinch your shoulder blades completely together without letting your shoulders shrug
- Slightly lift your arms off of the floor
- Hold for 3-5 seconds and then let your shoulders completely relax



Common Lifting Mistakes

The goal is to create more space!!!

- Stretch/mobilize before you lift
- Emphasize strengthening your posterior chain: Push/pull ratio: 1/2
- Strengthen your external rotators!!!!
- Avoid using too many machines at the gym
- Perform exercise in the scapular plane and keep your shoulder in a neutral or externally rotated position to optimize subacromial space

More Resources

- Most exercises are available on our YouTube page: React Physical Therapy
- If you have any questions about this webinar, please feel free to reach out to me: Kmartin@bereact.com
- React's webinar series will continue every week
- Telehealth appointments are also available with all of our locations