

TREATMENT OF SHOULDER INJURY IN THE OVERHEAD ATHLETE

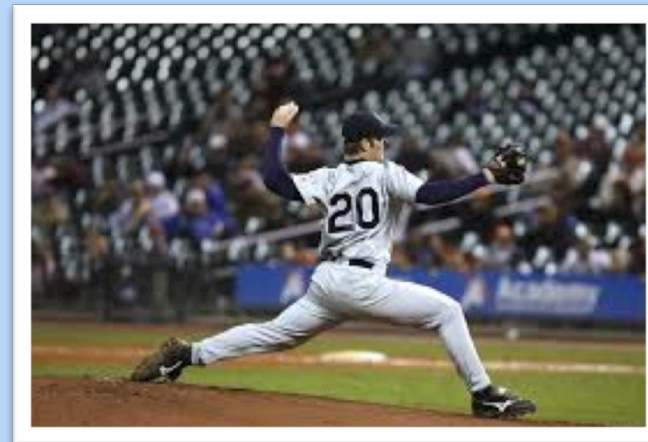
Jason
Bottoms, SPT

OBJECTIVES

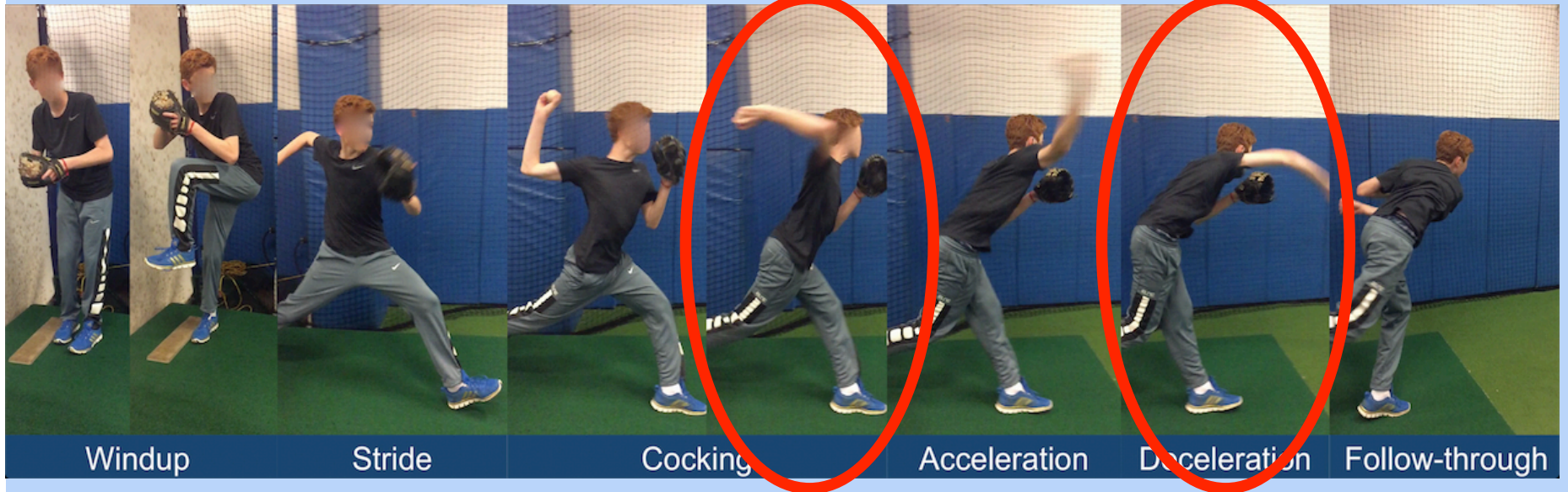
- Understand **prevalence** of specific shoulder pathologies
- Differentiate between normal shoulder complex **anatomy and adaptive anatomy** due to influence from overhead athletics
- Identify **key risk factors** for shoulder injury
- Report **general prevention** concepts for shoulder injury in overhead athletes
- Demonstrate understanding of **examination and treatment** ideas for both **rotator cuff tears** and **labral tears**
- Identify areas for **further research**

PREVALENCE

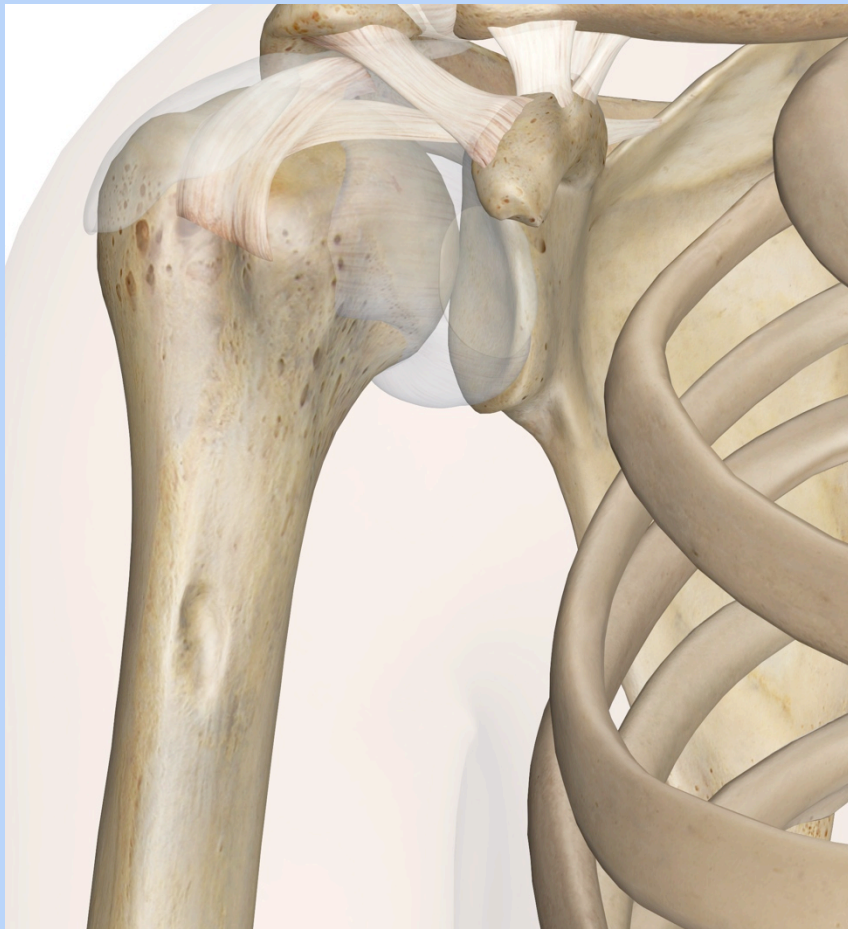
- What overhead athletes are we talking about?
 - Pitchers
 - Tennis players
 - Hand ball players
 - Volleyball players
 - Water polo players
- What common injuries are we talking about?¹⁻³
 - **Rotator cuff tears (RCT)**
 - **Labral tears**
 - Glenohumeral instability
 - Anterior capsule injuries
 - Internal impingement



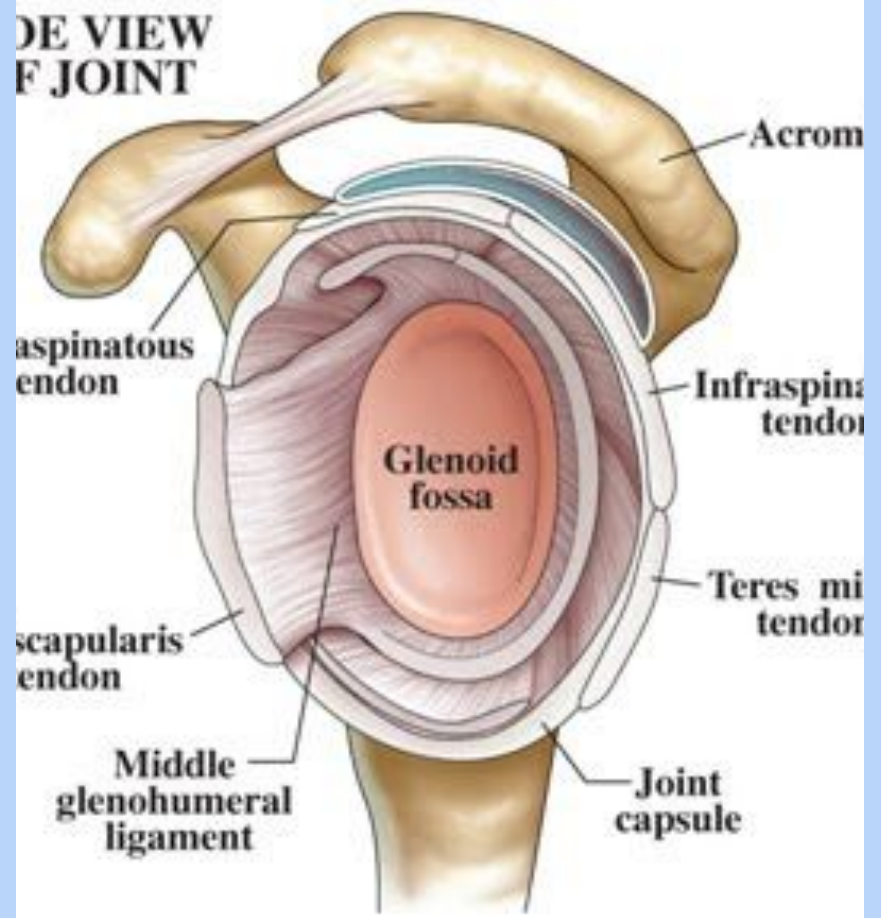
PHASES OF THROWING¹



ANATOMY

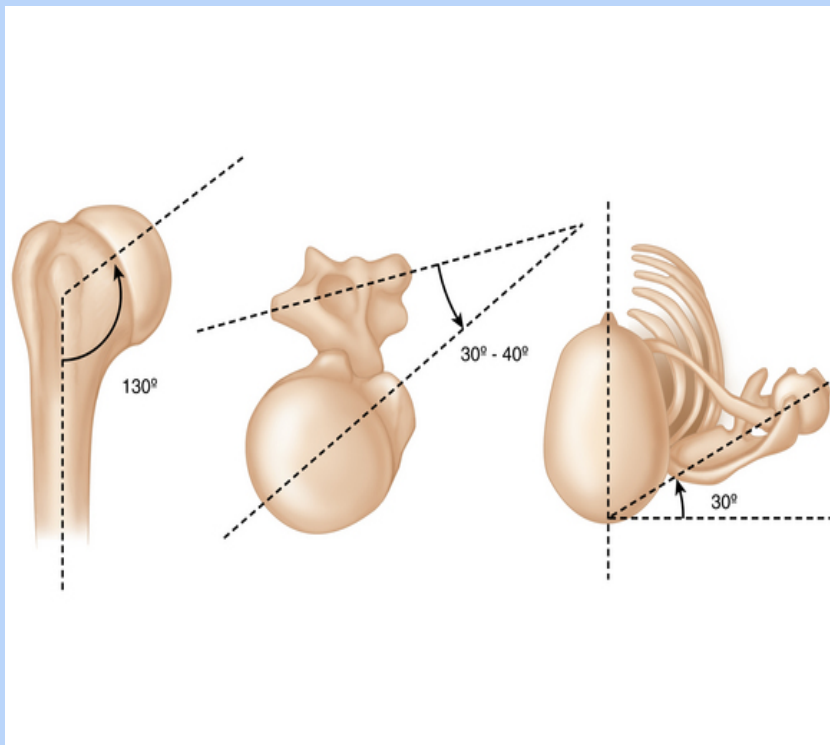


DE VIEW F JOINT



ADAPTIONS IN THE OVERHEAD ATHLETE

Osseous⁴⁻⁶



Soft Tissue^{4,6}

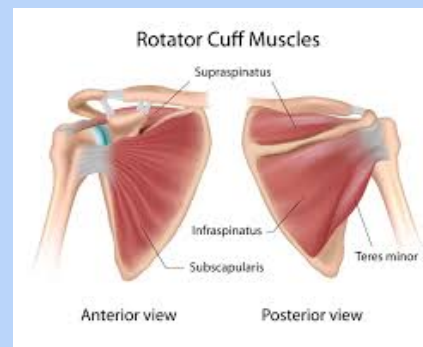
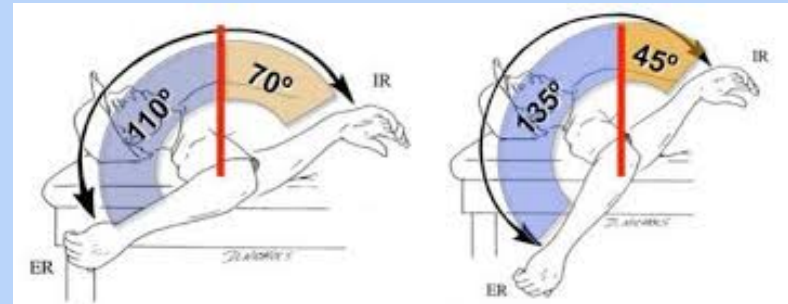


RISK FACTORS

Glenohumeral internal rotation deficit (GIRD)^{3,4}

Scapular dyskinesia^{3,5-7}

Rotator cuff weakness^{3,5,6}



PREVENTION

- **Recommendation #1**

- Posterior soft tissue stretching^{3,4}

- **Recommendation #2**

- Pec minor stretching, soft tissue mobilization for necessary scapular motions, scapular strengthening/stabilization^{3,5-7}

- **Recommendation #3:**

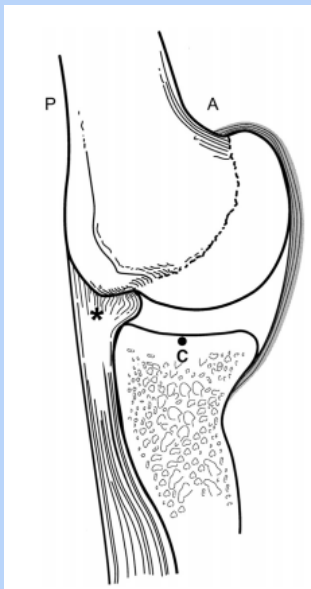
- General rotator cuff strengthening, particular focus on eccentric external rotator strengthening^{3,5,6}

ROTATOR CUFF TEARS

MAIN MECHANISMS OF INJURY⁸



Tensile overload



Internal impingement



Primary impingement

EXAMINATION^{4,5-9}

Patient complaint of **gradual onset of shoulder pain** typically in region of deltoid

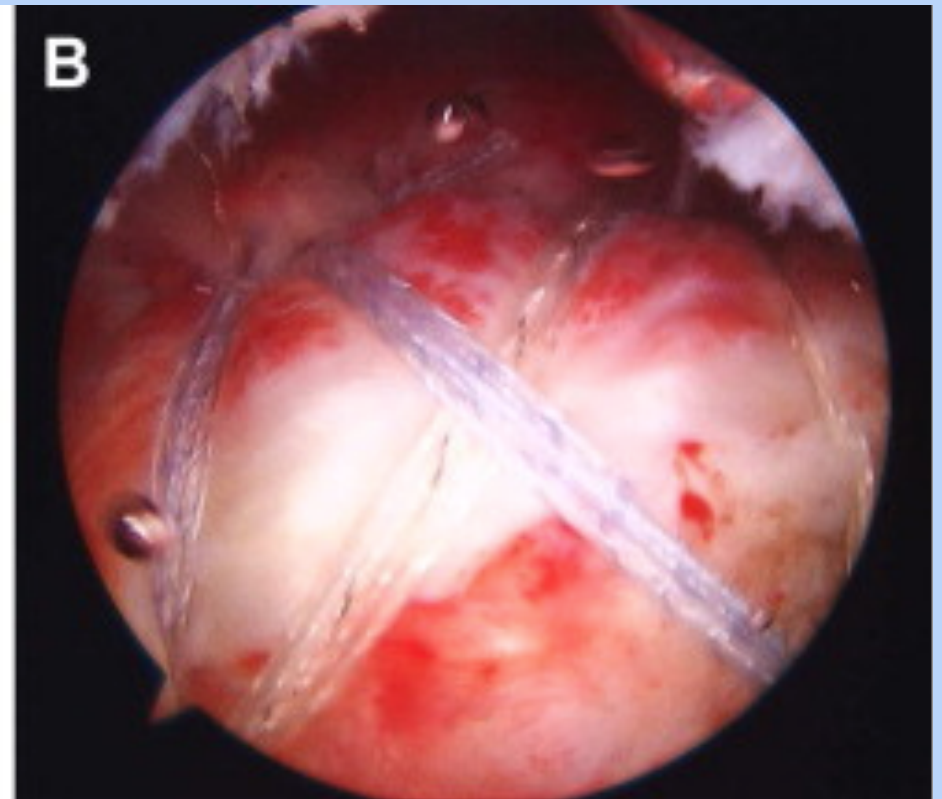
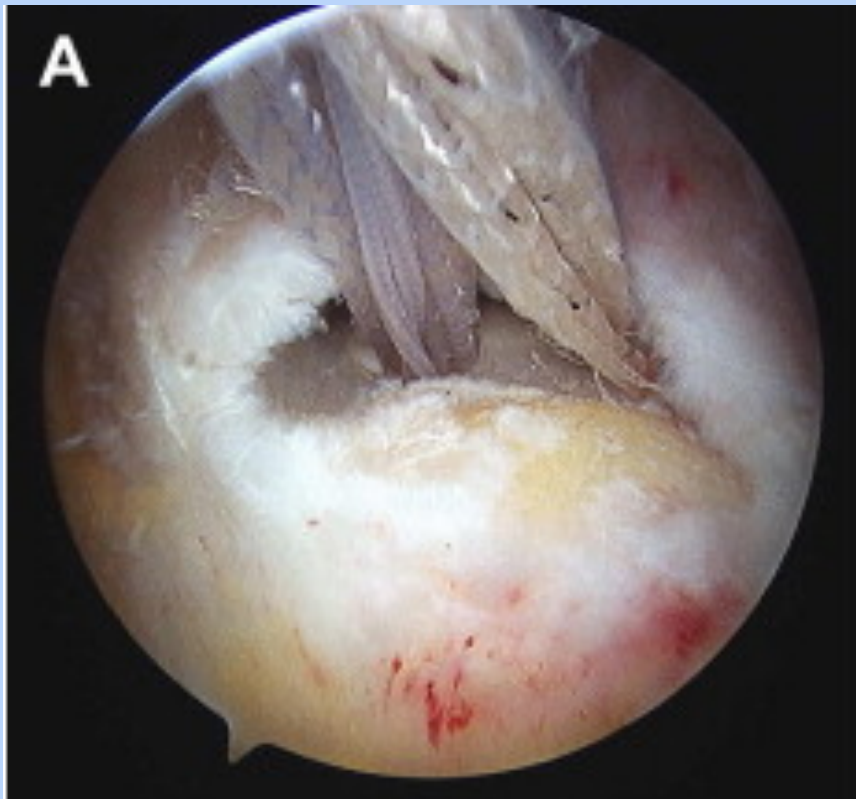
ROM should be assessed for presence of **GIRD**

Rotator cuff and scapular musculature should be assessed for **strength and/or reproduction of pain**

Diagnostic cluster (Bak et al, 2010):

- Active abduction less than 90 degrees
- Empty can test
- External rotation lag sign

SURGERY?^{7,8}



TREATMENT PHILOSOPHY

PAIN → MOTION → STRENGTH → CONTROL

TREATMENT^{3,7-9}

PAIN → MOTION → STRENGTH → CONTROL

Stretching ideas: sleeper stretch, cross body stretch

Strengthening ideas: eccentric ER, ball catching drill

Plyometric-type ideas: two-handed chest pass, wall dribbles

Initiate return to throwing program

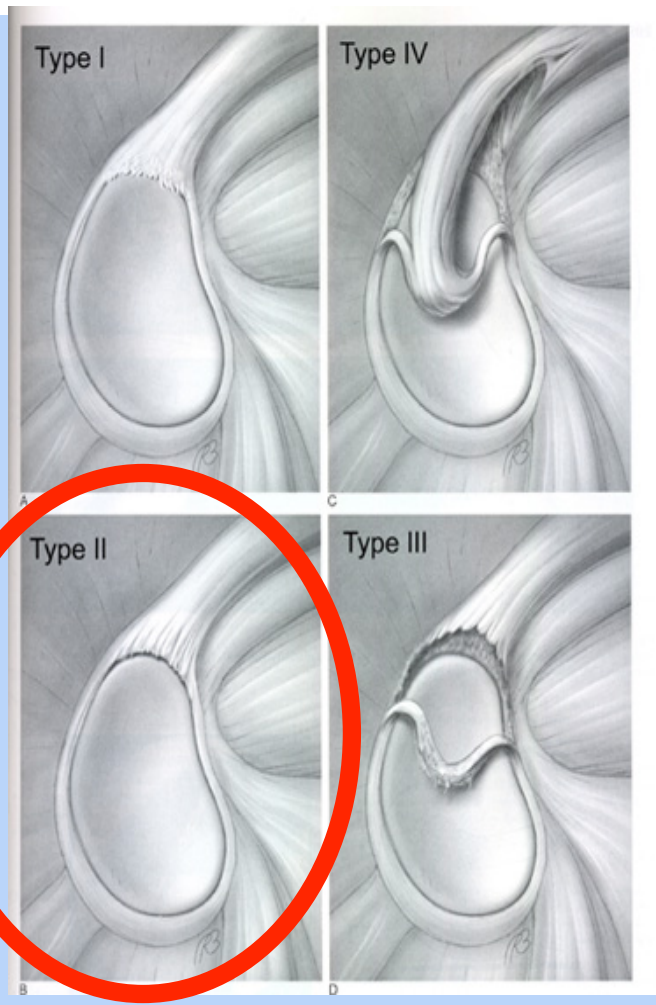
Table 6.

Stages of Return to Throwing

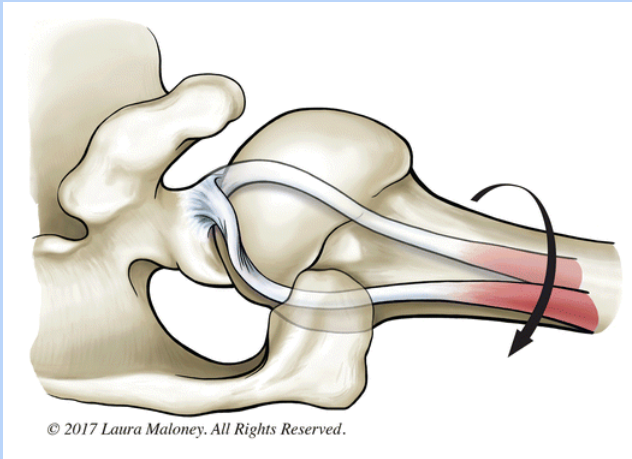
	Initial objectives	Goals
Stage 1 – Pre-Mound Throwing	Day 1: 25 throws max at 20-45'	Long-toss program; progress distance 45, 60, 90, and 120'. 150' goal for pitchers
Stage 2 (Pitchers) – Mound Throwing	Start at 45' on mound; fastballs 50% max velocity; Continue to increase number of pitches and distance	Modulating pitch velocity 75%-100%, breaking balls only once fastballs and changeups can be thrown
Stage 2 (Position Players) – Distance Throwing Phase	Focus on mechanics with progression to accuracy	Interval distance progression: 120, 150, 180'
Rest/Off- Day	Engage in activities similar in difficulty and intensity to exercises in phase 2	Keep shoulder loose, minimize soreness; 10-minute toss session

LABRAL TEARS

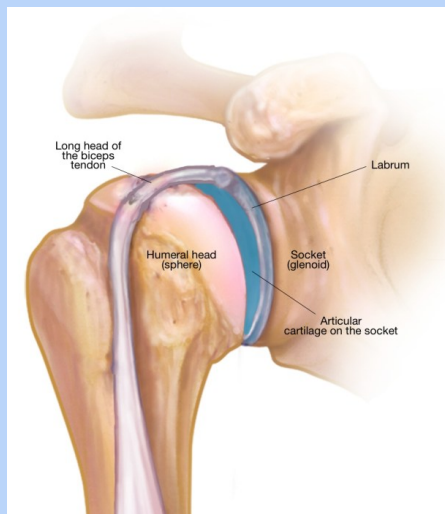
TYPES OF SLAP LESIONS



MECHANISMS OF INJURY^{1,10,11}



**Internal impingement/
Peel-Back Mechanism**



Eccentric tensile forces*

EXAMINATION^{5,10,11}

Patient complaint of **gradual onset or acute pain with general overhead motion**

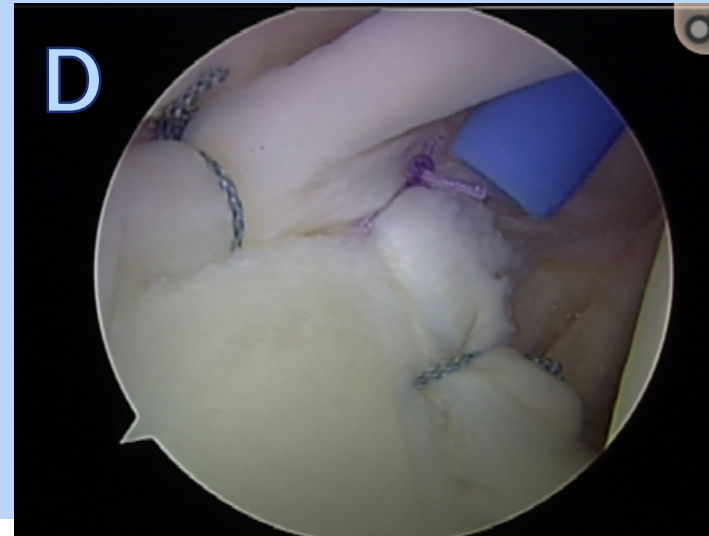
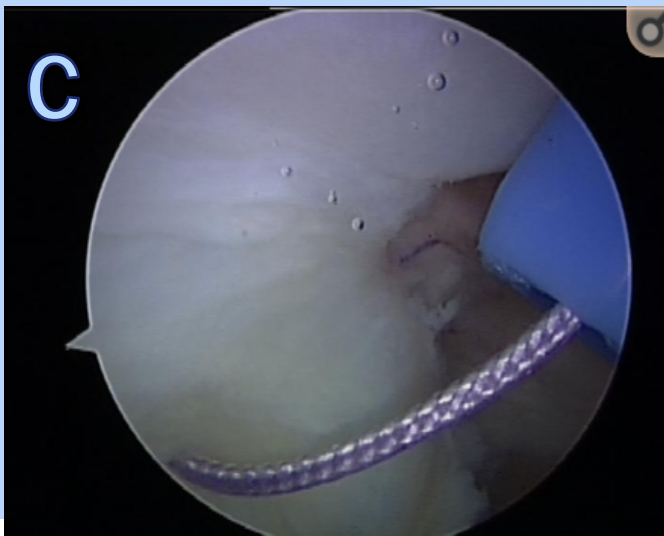
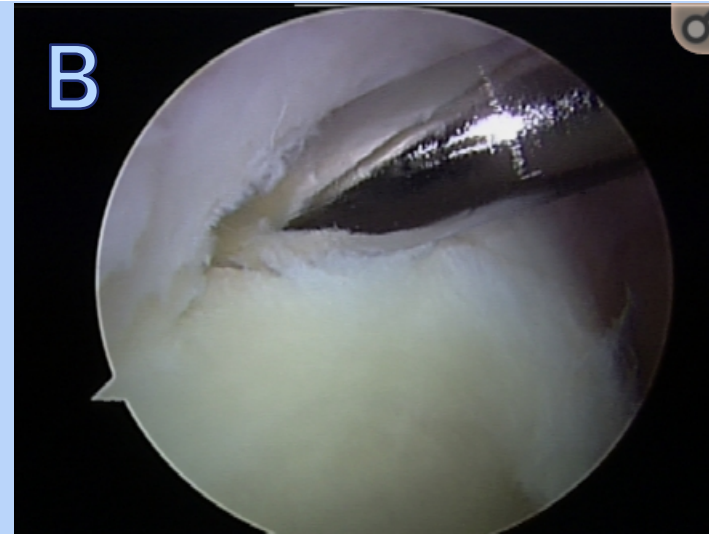
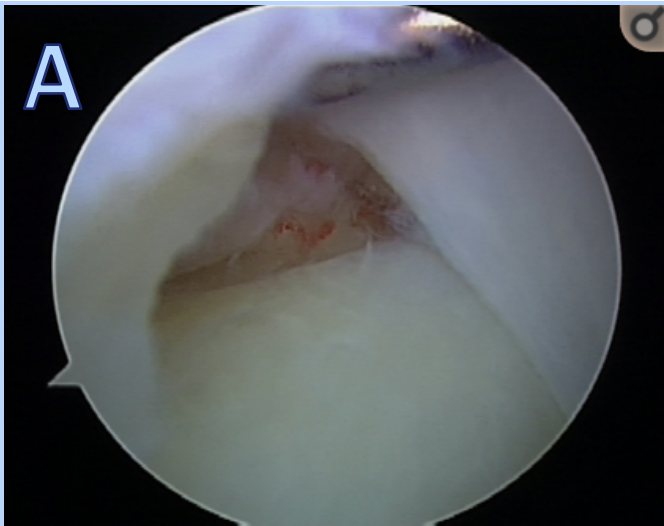
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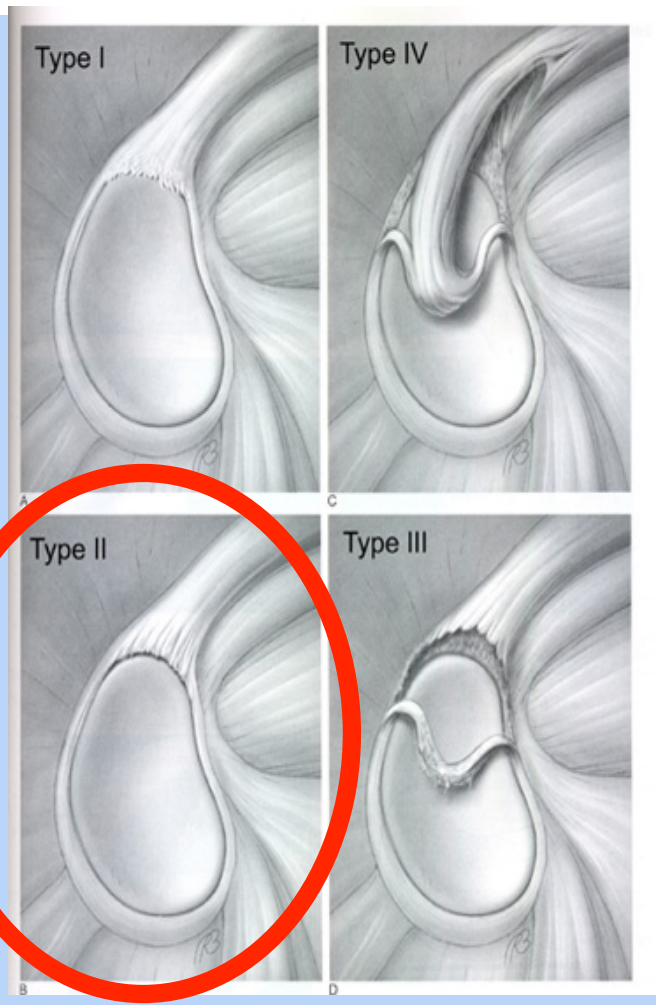
Diagnostic cluster (Oh et al, 2008):

- **Compression rotation**
- **Active compression (O'Brien)**
- **Bicep load II**

SURGERY?¹⁰⁻¹³



TYPES OF SLAP LESIONS



TREATMENT^{2,3,10-11}

PAIN → MOTION → STRENGTH → CONTROL

If Type II SLAP lesion, avoid early strong biceps contraction

May need to limit ER due to peel-back mechanism

THANK YOU

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