

**POST-OP MANAGEMENT OF  
SLAP REPAIR  
&  
BICEPS TENODESIS/TENOTOMY**

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Orthopedic Update 2025

February 7-8, 2025

## OUTLINE OF THE NEXT 15 MINUTES

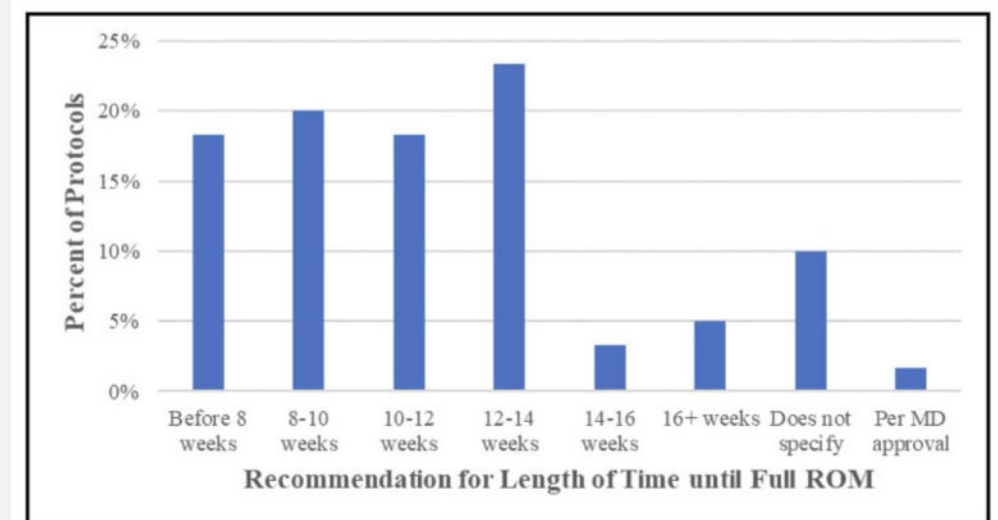
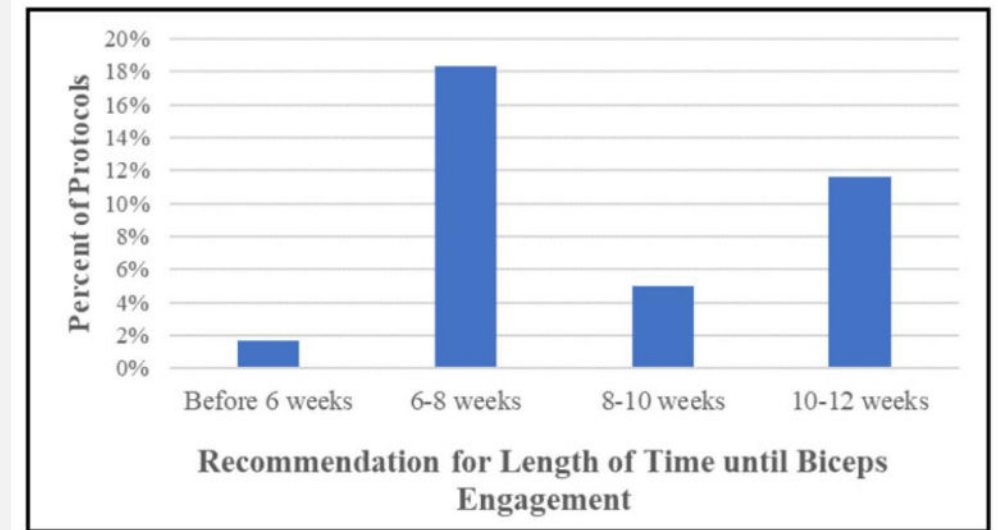
- My bad attitude
- Variabilities in Rehab Protocols
- Brief review of Relevant anatomy....very brief
- Compare the 5 phases of Rehab to soft tissue healing timeline
- Review 5 Factors to consider when Rehabbing SLAP repairs
- Present Manske's SLAP Repair protocol highlighting when to load the biceps and restore Full ROM

# POST-OP MANAGEMENT SLAP REPAIR & BICEPS TENODESIS/TENOTOMY



# VARIABILITY IN REHABILITATION PROTOCOLS AFTER SUPERIOR LABRUM ANTERIOR POSTERIOR SURGICAL REPAIR

- Kansas Journal of Medicine: 2021;14:243-248
- 60 protocols were included
- Most variability: Time until full ROM and biceps strengthening
- Least variable: Time in sling & scapular strengthening
- A lack of specificity within protocols in what return to throwing meant for functional ability made it difficult to compare protocols



# BICEPS TENODESIS/TENOTOMY PROTOCOLS

## MASS GENERAL BRIGHAM

### Phase I (1-4 weeks)

No AROM of elbow or shoulder

No shoulder ER beyond 40

No shoulder EXT beyond neutral

### Phase II (4-6 weeks)

Initial submaximal shoulder Isometrics

Gradually restore ROM by end of 6 weeks

### Phase III (6-8 weeks)

Initiate Resisted Biceps curls

Initiate Resisted supination

Rhythmic stabilization

### Phase IV (8-12 weeks)

Focus on low load, High reps(30-50) Open and Close Chain

### Phase V (12-16 weeks)

Initiate plyometric straining

## UVA HEALTH SPORTS MEDICINE

### • Phase I (0-2 weeks)

• Passive & gentle active assisted ROM: flexion & scaption to 90

• No ER past 40 for first 4 weeks, IR to 45

### • Phase 2 (3-6 weeks)

• **Weeks 5-6:** PROM flexion & scaption to 145, ER to 50, IR 60

• Initiate limited AROM/AAROM of shoulder to 90 flex/abd

• Begin AROM supination with no resistance/elbow flexed

• Full ROM by 8-10 weeks

• NO Biceps loading until week 10

• Initiate scapulothoracic isometrics

• Initiate submaximal shoulder isometrics

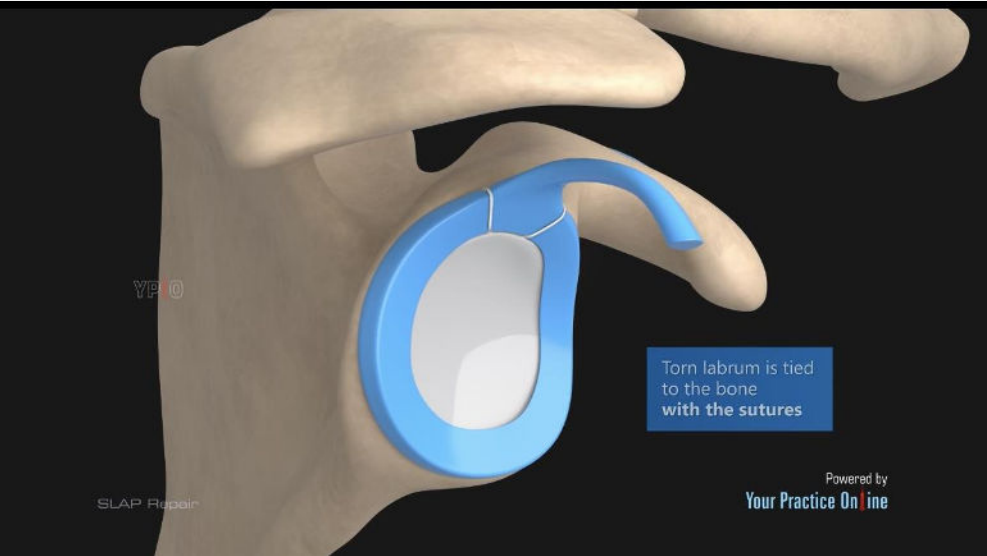
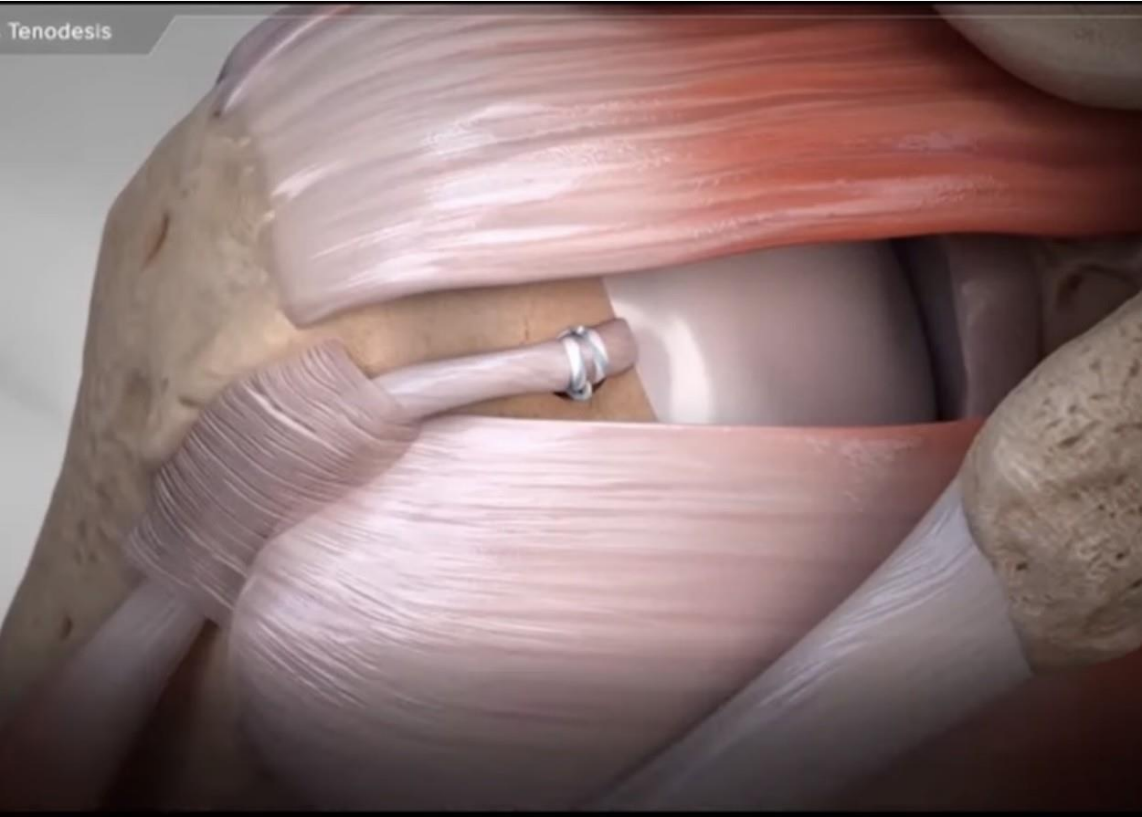
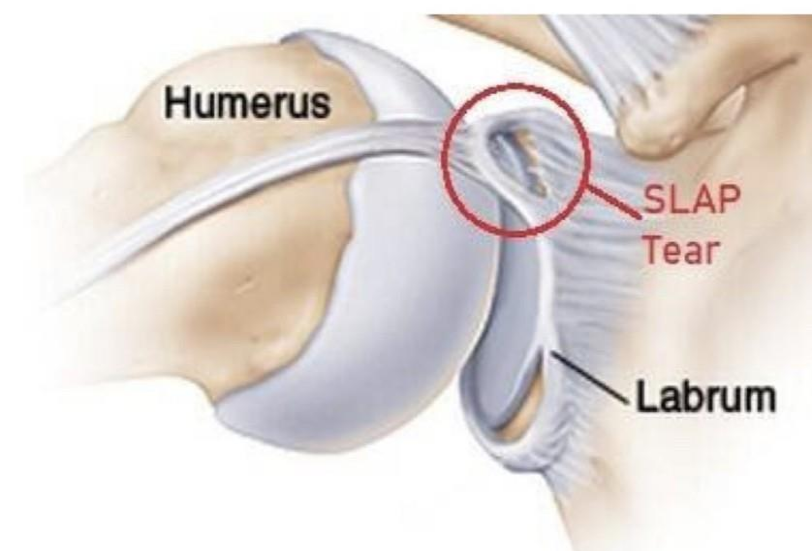
### • Phase 3 (7-12 weeks)

• Resisted IR & ER @30 ABD progressing to 90

• Slowly and cautiously progress resisted biceps curl, & supination



# SLAP REPAIR & BICEPS TENODESIS A BRIEF LOOK AT THE ANATOMY



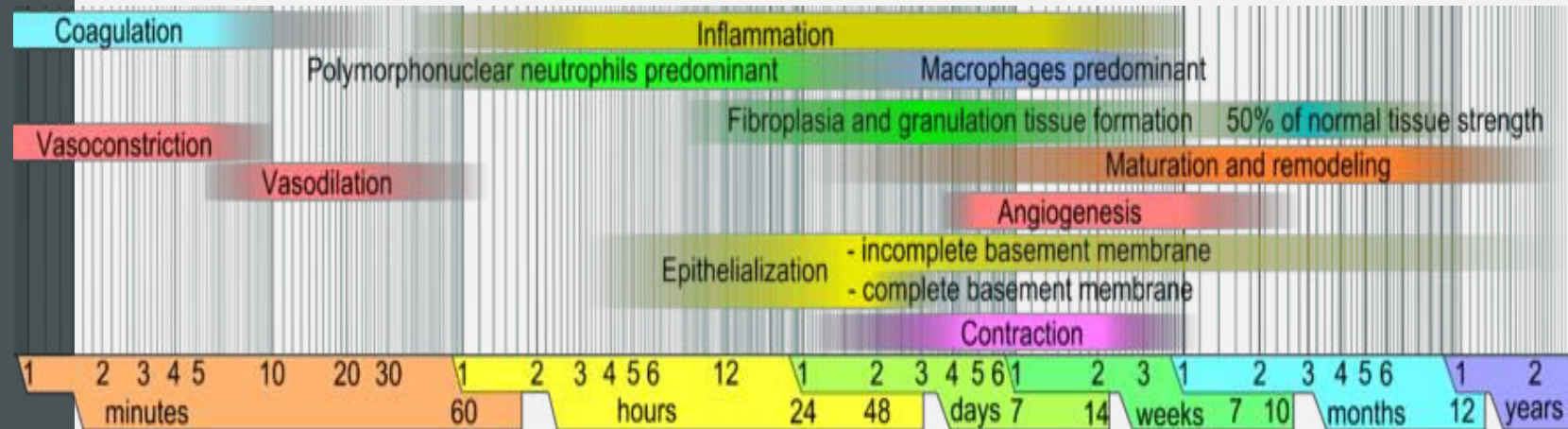
## SLAP REHABILITATION 5 PHASES

- Manske et al. Physical Therapy in Sport 11 (2010)
- PHASE 1: Protective Phase: Week 0 – Week 6
- PHASE 2: Moderate Protection phase: Week 7 – 12
- PHASE 3: Minimum Protection phase: Week 13 – 20
- PHASE 4: Advanced Strengthening phase: Week 21 -26
- PHASE 5: Return to Activity: Months 6 – 9
  
- These are suggestions and a study has yet to find a standardized agreement for post-operative rehabilitation of SLAP repairs

# COMPARING SLAP REHAB PHASES TO PHASES OF SOFT TISSUE HEALING/SCAR STRENGTH

- PHASE 1: Protective Phase: Week 0 – 6
- PHASE 2: Moderate Protection: Week 7 – 12
- PHASE 3: Minimum Protection: Week 13 – 20
- PHASE 4: Advanced Strengthening: Week 21 -26
- PHASE 5: Return to Activity: Months 6 – 9

## Soft Tissue Healing Timeline

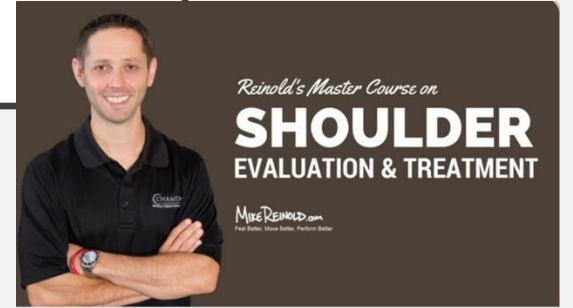






WHAT ARE WE WAITING FOR WITH  
POST-OP MANAGEMENT OF SLAP &  
BICEPS TENODESIS/TENOTOMY

# WHAT OTHER FACTORS TO CONSIDER WITH SLAP REPAIR FIVE



Mike Reinold's Online Shoulder  
Evaluation and Treatment Course

1. Type of SLAP Type II Classification (Snyder):
  - 1/3 Anterior Superior – traumatic event
  - 1/3 Posterior Superior: Peel back – throwers, leads to posterior/superior subluxation, impingement
  - 1/3 Anterior & Posterior

2. Mechanism of Injury:  
How was the labrum stressed that caused the symptoms

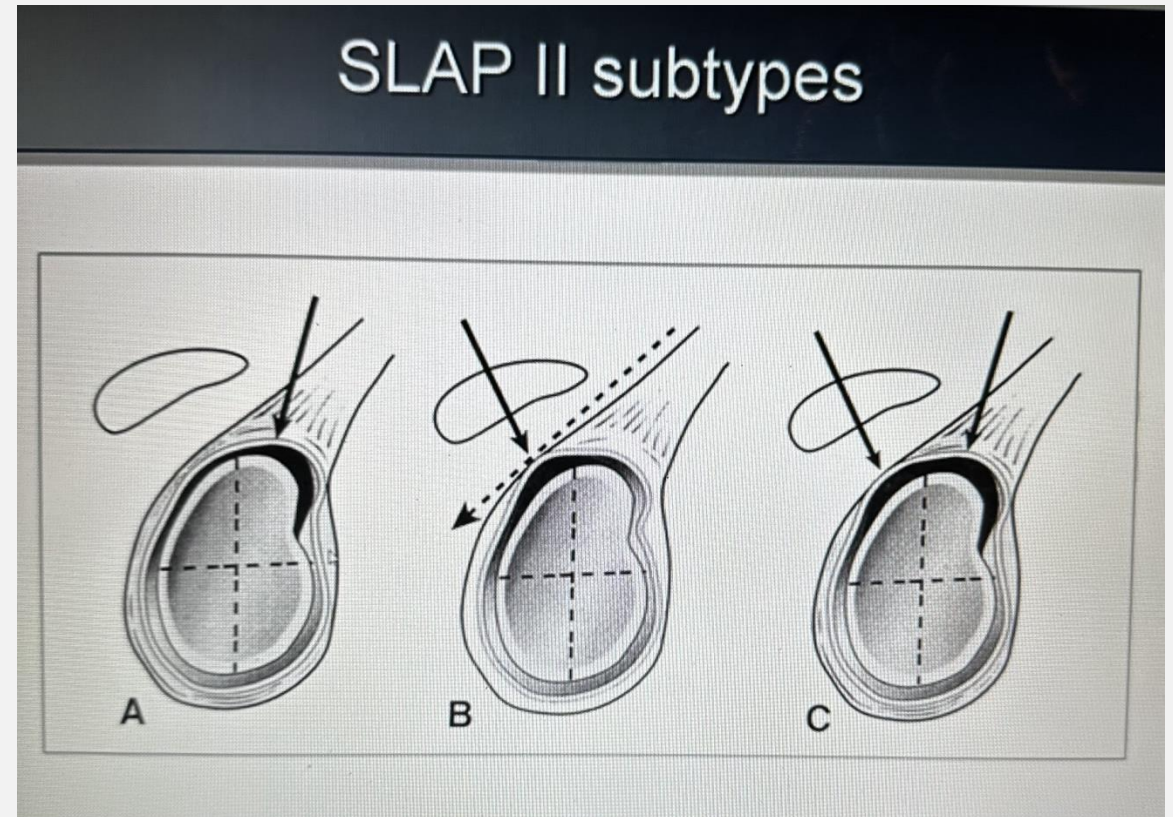
4. Number of Suture Anchors tells size of SLAP

3. Location of SLAP

5. Concomitant Procedures: Cuff, capsule, subacromial decompression

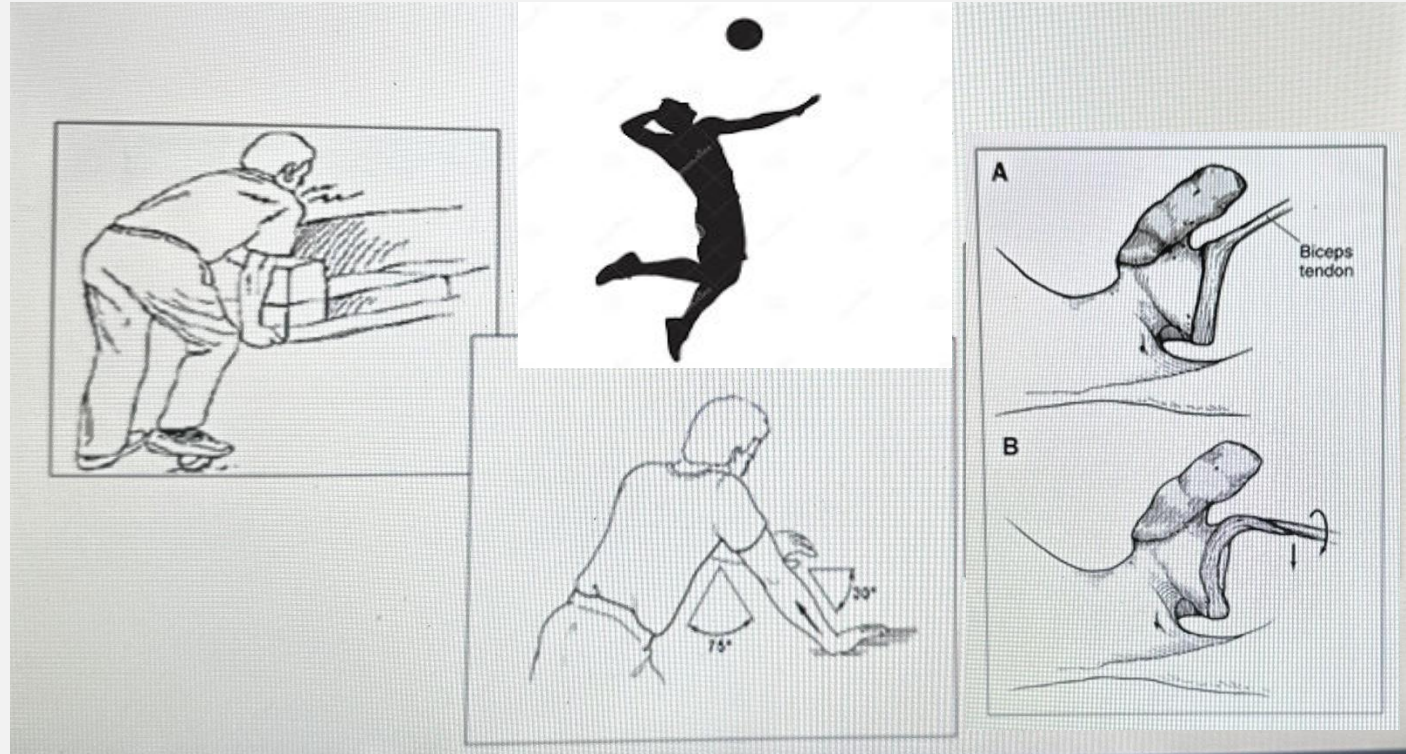
## I. TYPE OF SLAP TYPE II CLASSIFICATION (SNYDER):

- **A.** 1/3 Anterior Superior – traumatic event (37%)
- **B.** 1/3 Posterior Superior: Peel back – throwers, leads to posterior/superior subluxation, impingement (31%)
- **C.** 1/3 Anterior & Posterior (31%)



## 2. MECHANISM OF INJURY:

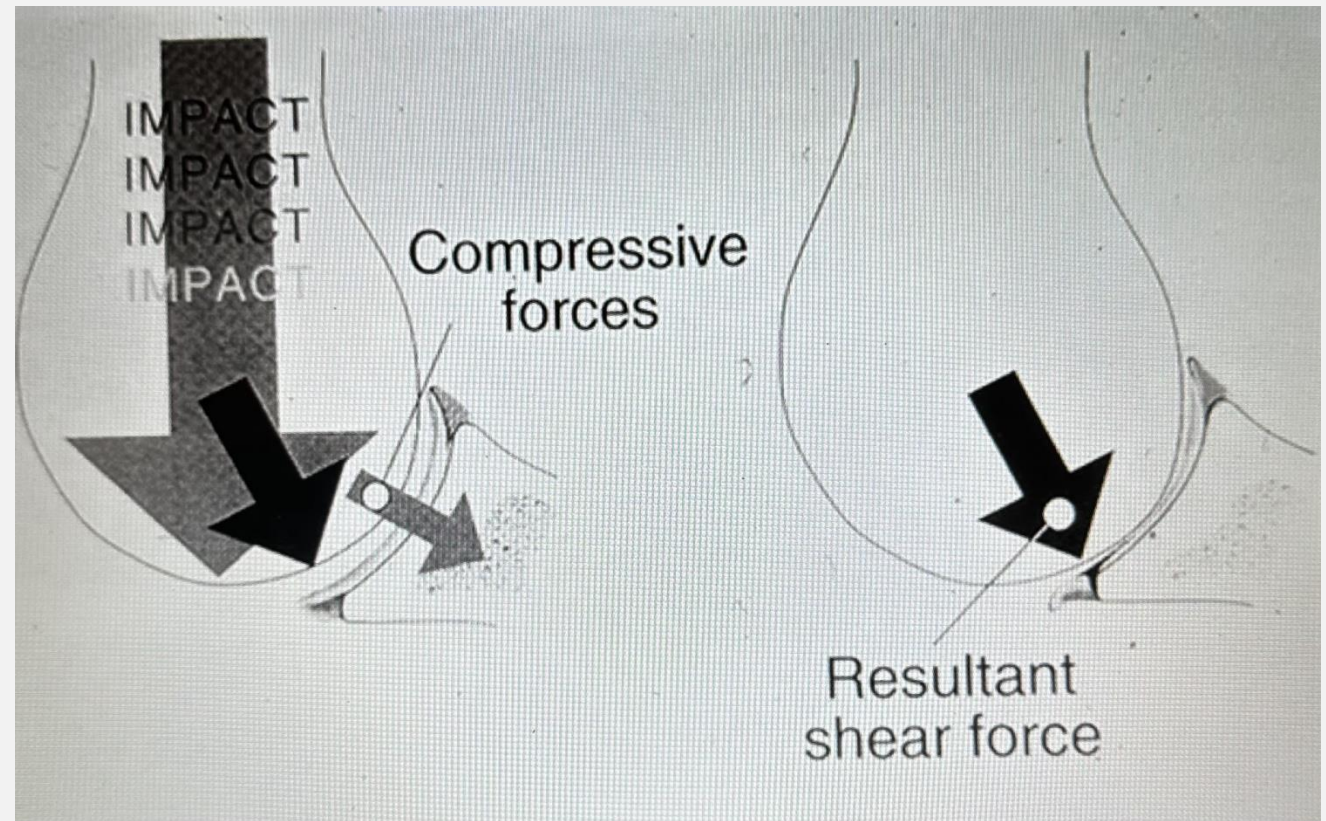
- How was the labrum stressed that caused the symptoms
- This is important to avoid when rehabbing patients





### 3. LOCATION OF SLAP

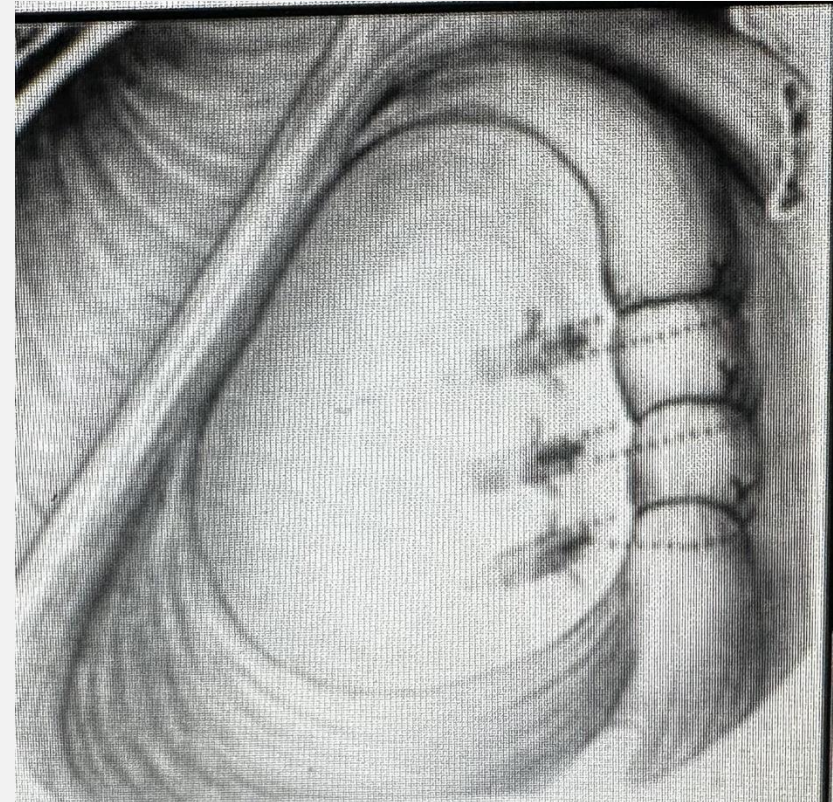
- Important in Rehab
- More important with post/superior SLAP repairs
- Would need to be careful with close chain exercises to avoid the compression and sheering in posterior direction.





## 4. NUMBER OF SUTURE ANCHORS

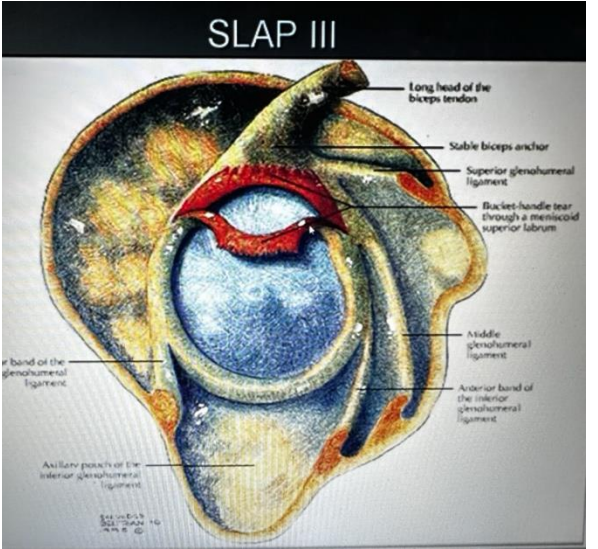
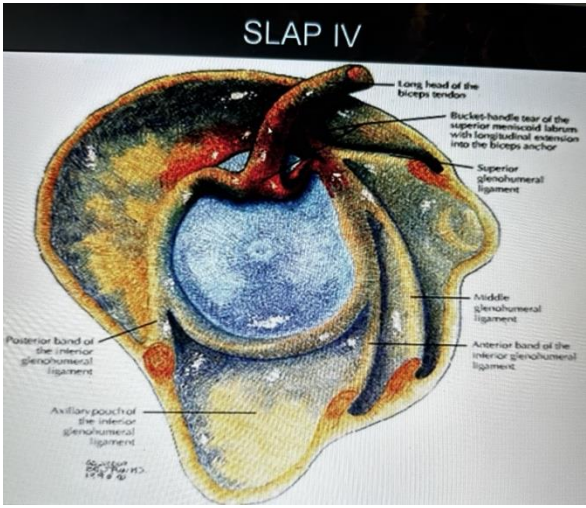
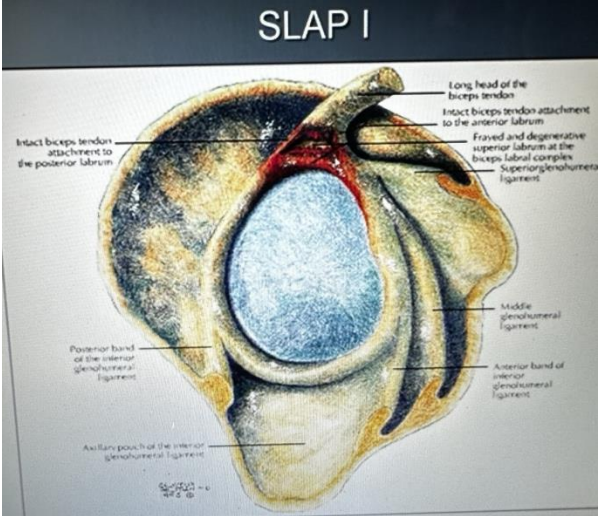
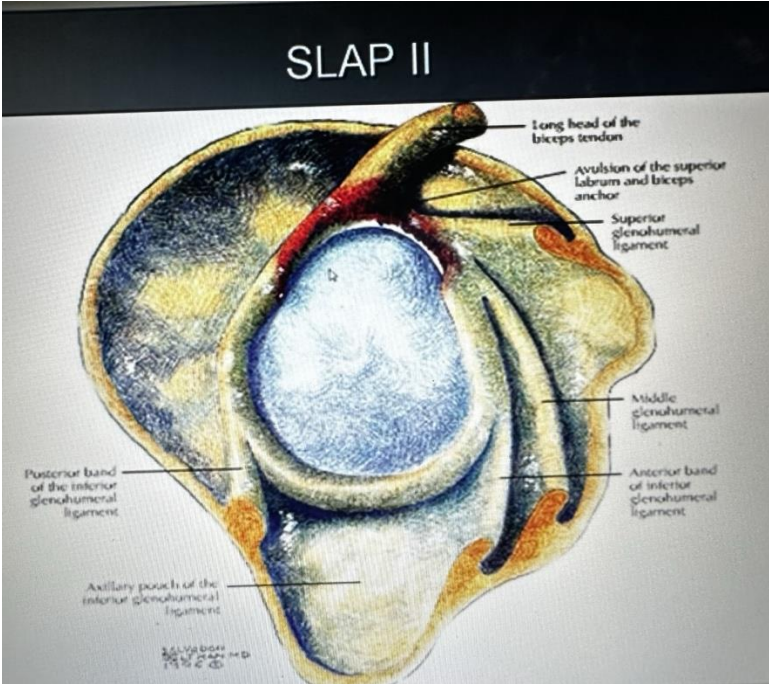
- Tells size of SLAP
- Indicates amount of instability
- Larger repairs: slower rehab



## 5. CONCOMITANT PROCEDURES

- Rotator cuff, capsule, subacromial decompression

# THE SLAP REHAB PROTOCOL



Manske R, Prohaska D.  
Physical Therapy in Sport 11(2010) 110-121

# SLAP REHABILITATION PROTECTIVE PHASE PHASE I (DAY 1 TO WEEK 6)

## • WEEKS 0 – 2

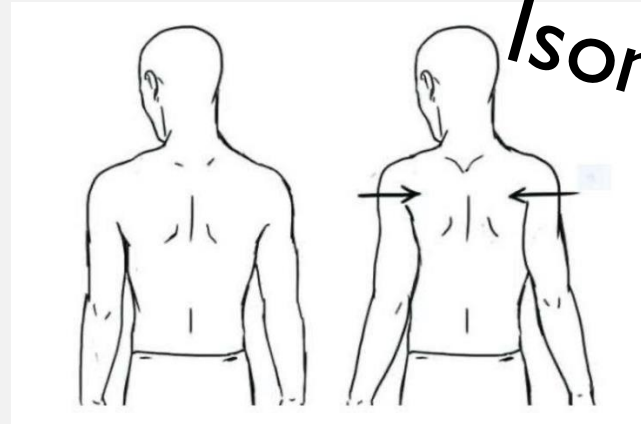
- Sling X 4 weeks
  - Sleep in sling X 4 weeks
  - Shoulder, elbow and hand ROM
  - **NO active isolated biceps activity (elbow flexion or forearm supination X 6 weeks)**
  - Hand – gripping exercises
  - Submaximal isometrics for shoulder musculature
  - Passive & gentle active assisted ROM exercises
    - Pendulum exercises
    - Flexion to 90
    - Scapular plane to 90
    - External rotation to 30 degrees x 4 weeks (approx. 10 degrees per week after 4th week)
    - Internal rotation to 45
    - Scapulothoracic AROM in all planes
- Cryotherapy and modalities as needed for pain control

**NO Active Biceps &  
Restricted ROM**



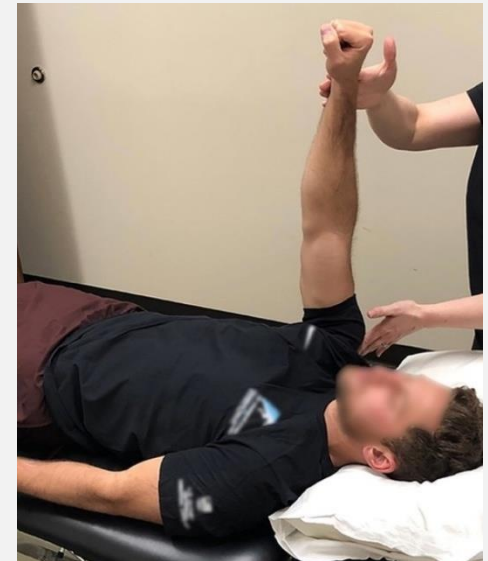
PHYSICAL THERAPY IN SPORT 11(2010) 110-121  
**SLAP REHABILITATION**  
**PROTECTIVE PHASE**  
**PHASE I (DAY 1 TO WEEK 6)**

- **WEEKS 3 – 4**
- Discontinue sling use @ 4 weeks (per physician approval)
- Continue shoulder, elbow and hand ROM
  - Flexion to 90
  - Scapular plane to 90
  - External rotation to 30
  - Internal rotation to 60
- No active external rotation, extension, or elevation
- Initiate scapulothoracic isometrics
- Initiate proprioceptive training (rhythmic stabilization drills)



*Shoulder  
Isometrics*

*Supine  
ABC's  
Manual  
RS*





**SLAP REHABILITATION  
PROTECTIVE PHASE  
PHASE I (DAY 1 TO WEEK 6)**

- **WEEKS 5 – 6**
- Return to light work activities
- Continue to gradually improve ROM
  - Flexion to 145
  - Elevation in scapular plane to 145
  - External rotation to 50
  - Internal rotation 60
- Full ROM should be achieved at weeks 8-10
- Initiate limited AROM/AAROM of shoulder to 90 flexion or abduction
- Continue submaximal shoulder isometrics
- Can begin AAROM supination (no resistance/elbow flexed)
- **NO biceps loading until week 10**

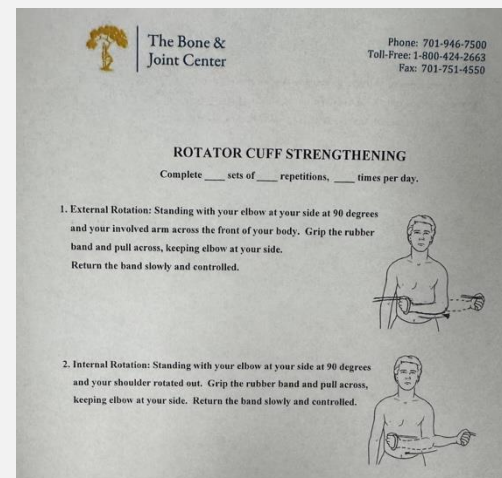
**Gradual  
progression of  
ROM**

PHYSICAL THERAPY IN SPORT II (2010) 110-121  
SLAP REHABILITATION  
MODERATE PROTECTIVE PHASE  
PHASE II ( WEEKS 7 – 12)

- **WEEKS 7 – 9**

- Continue to progress AROM/PROM (Full by week 8-10)
- Begin isotonic rotator cuff IR/ER strengthening with bands/weights
- Progressions:
  - Submaximal to maximal
  - Slow speeds to fast speeds
  - Known patterns to random patterns
  - Eyes open to eyes closed
  - Open kinetic chain to closed kinetic chain
  - Progress 1 pound/week

Can do things  
around the  
house, but NO  
biceps  
isolation



PHYSICAL THERAPY IN SPORT II (2010) 110-121  
**SLAP REHABILITATION**  
**MODERATE PROTECTIVE PHASE**  
**PHASE II ( WEEKS 7 – 12)**

**WEEKS 7 – 9**

Exercises

- Scapular plane elevation
- Side lying external rotation
- Standing rotator cuff series
- Prone horizontal abduction/extension

• Manual resistance to shoulder


• **Biceps Isolation BUT**

• **NO biceps loading until week 10**


The Bone & Joint Center  
 Phone: 701-946-7500  
 Toll-Free: 1-800-424-2663  
 Fax: 701-751-4550

**SCAPULAR STABILIZATION EXERCISES**  
 Complete 1 set of 10 repetitions of each exercise 3 times per day.  
 Progress to 3 sets of 10 repetitions of each exercise 1 time per day.


1. Anchor hand on the door.
2. hold rubber band in both hands.
3. Pinch shoulder blades together.
4. Pull arms backwards with elbows straight – hold for count of 3.



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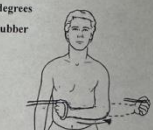
1. Anchor rubber band on door.
2. Hold rubber band in both hands, arms straight in front of you.
3. Pinch shoulder blades together.
4. Pull backwards, bending at the elbows, shoulder height – hold for count of 3.




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**ROTATOR CUFF STRENGTHENING**  
 Complete \_\_\_ sets of \_\_\_ repetitions, \_\_\_ times per day.

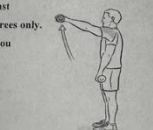
1. External Rotation: Standing with your elbow at your side at 90 degrees and your involved arm across the front of your body. Grip the rubber band and pull across, keeping elbow at your side. Return the band slowly and controlled.



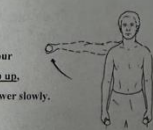
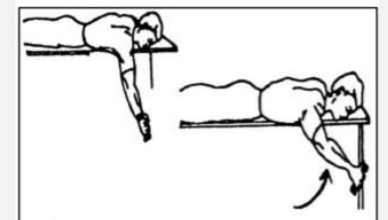
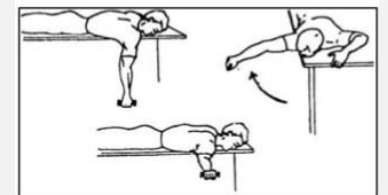
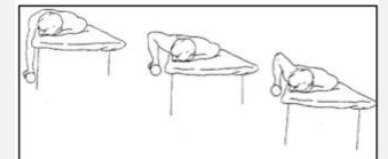
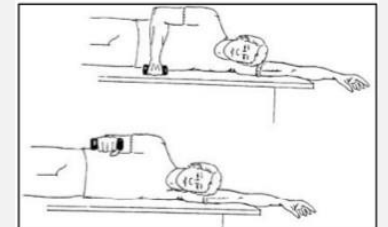
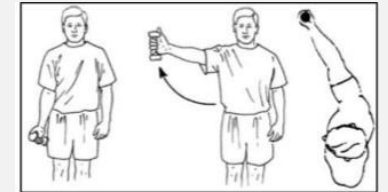
2. Internal Rotation: Standing with your elbow at your side at 90 degrees and your shoulder rotated out. Grip the rubber band and pull across, keeping elbow at your side. Return the band slowly and controlled.



3. Standing Flexion: Stand with your elbow straight and palm against your side. Raise your arm in front with your thumb up, to 90 degrees only. Lower slowly and controlled. (Once you can do this comfortably you can continue overhead as far as possible).



4. Shoulder Abduction to 90 Degrees: Stand with your arm at your side and elbow straight. Raise your arm out to the side, thumb up, until your arm reaches 90 degrees. Hold for 2 seconds, then lower slowly.

## SLAP REHABILITATION MODERATE PROTECTIVE PHASE PHASE II ( WEEKS 7 – 12)

### • WEEKS 10 – 12

- Initiate stretching exercises if ROM not full by 10 weeks
  - Flexion to 180
  - Scapular plane elevation to 180
  - External rotation to 90
  - Internal rotation at 90 abduction to 80



- Begin submaximal isometrics & AROM to biceps
- Begin more aggressive exercises for rotator cuff and scapulothoracic musculature
- Continue isotonic progressive resistive exercises and manually resisted exercises
- Progress external rotation motion to 90/90 position
- Begin submaximal exercises above 90 of elevation
- Initiate “throwers ten” exercises

# SLAP REHABILITATION

## MINIMUM PROTECTIVE PHASE

### PHASE III ( WEEKS 13 – 20)

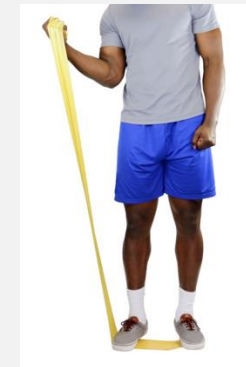
#### • WEEKS 13 – 16

- Continue stretching exercises if needed
- Maintain full ROM
  - External rotation @ 90 abduction up to 120 (throwers) Initiate throwers motion
- Continue phase II exercise progression and principles
- **Isotonic elbow flexion and forearm supination**
- Can increase intensity and decrease repetitions
- Initiate light plyometric activities (2 handed, progressing to one)



#### • WEEKS 16 – 20

- Initiate modified throwing progressions from level surface
- Continue to progress resistive exercises
- Continue to progress plyometric exercises
- Continue stretching exercises as needed





## SLAP REHABILITATION

### ADVANCED STRENGTHENING PHASE

PHASE IV ( WEEKS 21 – 26)    PHASE V (6-9 MONTHS)

- **WEEKS 21-26**

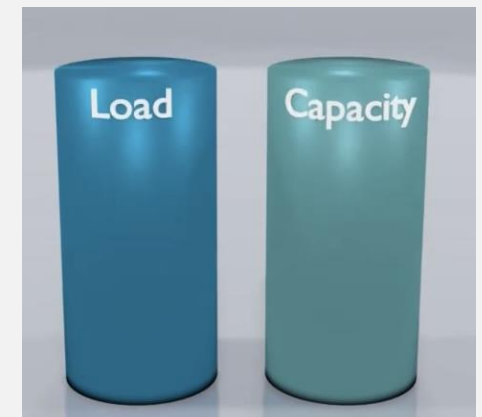
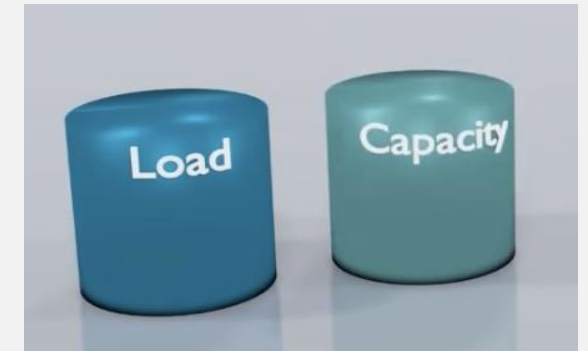
- Initiate single arm plyometric training
- Progress interval sports programs
  - Begin throwing from mound (weeks 24 – 28)

- **6 MONTHS**

- Allow full velocity throwing from mound
- Continue capsular stretches ( especially posterior indefinitely)
- Unrestricted athletic participation

## “WHEN TO LOAD THE BICEPS” IN REVIEW FOR SLAP

- Functional activity around the house @6 weeks
- Isolated Biceps initiated @8 weeks with NO load
- Low loads to biceps @10 weeks
- Slowly apply loads to Biceps
- Light & progressive
- DON'T PUSH
- Resisted/weighted Biceps exercise @12 weeks



## CONCLUSION ON SLAP BICEPS TENODESIS/TENOTOMY

- There is no standardized agreement for post-operative rehabilitation of SLAP repairs biceps tenodesis/tenotomy
- Gradual restoration of ROM
- Progressive strengthening matching load with tissue capacity
- Keep in mind the tissue healing timeline when determining "WHEN TO LOAD THE BICEPS"



**THANK YOU!!!**