

Arthroscopic Labrum Repair of the Shoulder (SLAP)

Anatomy

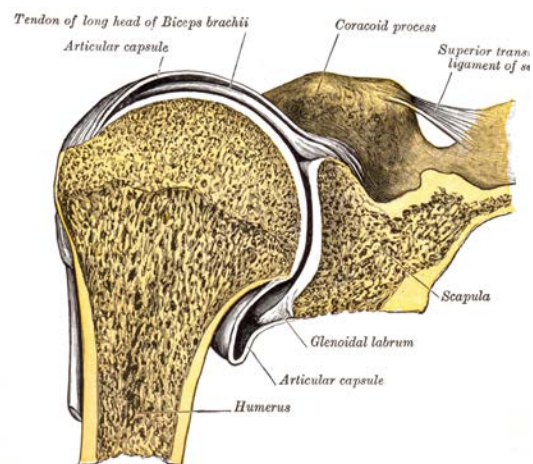
The shoulder joint involves three bones: the scapula (shoulder blade), the clavicle (collarbone) and the humerus (upper arm bone). The humeral head rests in a shallow socket on the scapula called the glenoid. Because the head of the humerus much larger than the glenoid, a soft fibrous tissue labrum called the labrum surrounds the glenoid to help deepen and stabilize the joint. The labrum deepens the glenoid by up to 50 percent so that the head of the humerus fits better. In addition, it serves as an attachment site for several ligaments.

Injuries

Injuries to the labrum can occur from acute trauma or repetitive shoulder motion. Examples of traumatic injury include:

- Falling on an outstretched arm
- Direct blow to the shoulder
- Sudden pull, such as when trying to lift a heavy object
- Forceful overhead motions

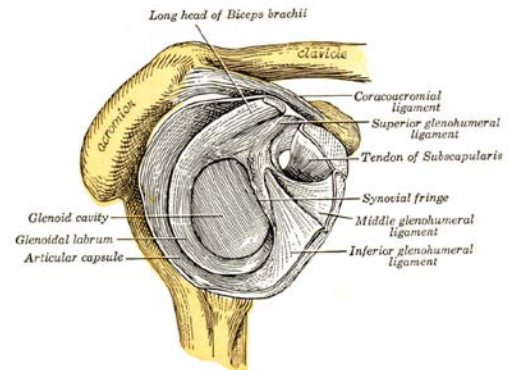
Tears can be located either above (superior) or below (inferior) the middle of the glenoid. A SLAP lesion (superior labrum, anterior [front] to posterior [back]) is a tear of the labrum above the middle of the glenoid that may also involve the biceps tendon. A tear of the labrum below the middle of the glenoid socket that also involves the inferior glenohumeral ligament is called a Bankart lesion. Tears of the glenoid labrum often occur with other shoulder injuries, such as a dislocated shoulder (full or partial dislocation).



Signs and symptoms

It is difficult to diagnose a tear in the glenoid labrum because the symptoms are very similar to other shoulder injuries. Symptoms include:

- Pain, usually with overhead activities
- Catching, locking, popping or grinding
- Occasional night pain or pain with daily activities
- A sense of instability in the shoulder
- Decreased range of motion
- Loss of strength



Treatment

Until the final diagnosis is made, Dr. Gill may prescribe anti-inflammatory medication and rest to relieve symptoms. Rehabilitation exercises to strengthen the rotator cuff muscles may also be recommended. If these conservative measures are insufficient, Dr. Gill may recommend arthroscopic surgery.

During the surgery, Dr. Gill will examine the labrum and the biceps tendon. If the injury is confined to the labrum itself, without involving the tendon, the biceps tendon attachment is still stable. Dr. Gill will remove the torn flap and correct any other associated problems. If the tear extends into the biceps tendon or if the tendon is detached, the result is an unstable biceps attachment. Dr. Gill will need to repair and reattach the tendon, using suture anchoring devices. If there is a tear below the middle of the glenoid, Dr. Gill will reattach the ligament to the glenoid (Bankart repair).

Rehabilitation

After surgery, you will need to keep your shoulder in a sling for three to four weeks. Dr. Gill will also prescribe gentle, passive range-of-motion exercises. When the sling is removed, you will need to do motion and flexibility exercises and eventually start strengthening. Athletes can usually begin doing sports-specific exercises after twelve weeks, although it will be about six months before the shoulder is fully healed.

Arthroscopic Superior Labrum Anterior to Posterior (SLAP) Repair of the Shoulder

PREOPERATIVE INSTRUCTIONS

Within one month before surgery - as indicated by your doctor.

- Preoperative office visit for history and physical examination and instructions
- Complete blood count (CBC)
- Electrocardiogram (EKG) if over the age of 40

Within several days before surgery

- Wash the shoulder and axilla well
- Be careful of the skin to avoid sunburn, poison ivy, etc.

The day before surgery

- Check with Dr. Gill's office for your time to report to the surgical unit the next day.
- ***HAVE NOTHING TO EAT OR DRINK AFTER MIDNIGHT.*** If surgery will be done in the afternoon, you can have **clear liquids only** up to **six hours** before surgery but no milk or food.

The day of surgery

- Nothing to eat or drink
- Please bring the sling, ice machine and imaging studies that you may have received.

Rehabilitation after Arthroscopic Labrum Repair of the Shoulder (SLAP)

Phase 0: 0 to 2 weeks after surgery

POSTOPERATIVE INSTRUCTIONS

You will wake up in the operating room. A sling and an ice pack will be in place. You will go to the recovery room and generally will be discharged after 1-2 hours. You can get out of bed when you wish. Apply ice to the shoulder to reduce pain and swelling. You may remove the sling whenever you wish and gently move the elbow, wrist and fingers. Follow Dr. Gill's instructions regarding moving your shoulder after surgery.

GOALS:

1. Control pain and swelling
2. Protect the repair
3. Begin early shoulder motion

ACTIVITIES WHEN YOU GO HOME:

1. Apply ice to the shoulder as tolerated to reduce pain and swelling. You can change the dressing to a smaller one to allow the cold therapy to reach the shoulder.
2. Remove the sling on the first day after surgery.
Move your elbow, fingers and hand several times a day.
3. Begin the pendulum exercise several times a day:



Pendulum exercise

Bend over at the waist and let the arm hang down. Using your body to initiate movement, swing the arm gently in small circular motions. Repeat for 2 to 3 minutes at a time.

4. Remove the outer dressing on the second day after surgery and shower. Leave the little pieces of tape (steri-strips) in place. You can get the wound wet after 2 days in a shower, but do not soak in a tub. To wash under the operated arm, bend over at the waist and let the arm passively swing away from the body. It is safe to wash under the arm in this position.
5. Keep your elbow slightly in front of your body; **do not reach behind your body.** When putting on clothing, lean forward and pull the shirt up and over the operated arm first. Then put the other arm into the opposite sleeve. To remove the shirt, take the unoperated arm out of the sleeve first, and then slip the shirt off of the operated arm.

6. Call Dr. Gill's office for any concerns, including, but not limited to, severe pain, fevers, chills or redness.

OFFICE VISIT: Please arrange to return to Dr. Gill's office 10 days after surgery for examination and further instructions.

Rehabilitation after Arthroscopic Superior Labrum Repair of the Shoulder (SLAP)

Phase One: 0 to 4 weeks after surgery

Goals:

1. Protect the surgical repair
2. Ensure wound healing
3. Prevent shoulder stiffness
4. Regain range of motion
5. Control pain and swelling

Activities:

1. Sling

Use your sling most of the time for the first 2 weeks. Dr. Gill will give you additional instructions on the use of the sling at your post-operative office visit. Remove the sling 4 or 5 times a day to do pendulum exercises.

2. Use of the operated arm

You may use your hand on the operated arm in front of your body but **DO NOT** raise your arm overhead. Avoid extending the arm behind you and avoid putting your arm in a position as if your hands were behind your head. It is all right for you to flex your arm at the elbow but do not lift any objects in excess of 2 pounds or engage in activities that involve forceful use of the forearm such as using a screwdriver. Use of a computer or writing is all right as long as it is not painful.

3. Showering

You may shower or bath and wash the incision area. To wash under the operated arm, bend over at the waist and let the arm passively come away from the body. It is safe to wash under the arm in this position. This is the same position as the pendulum exercise.

Exercise Program

ICE

Days per Week: 7 **as necessary** **15- 20 minutes**

Times per Day: 4-5

STRETCHING / PASSIVE MOTION

Days per Week: 7 Times per day: 4-5

Program:

Pendulum exercises

Supine External Rotation

Supine assisted arm elevation, Ball squeeze exercise, Scapular retraction

Behind the back internal rotation

Isometric exercises: internal and external rotation at neutral

Rhythmic stabilization and proprioceptive training drills with physical therapist

Rehabilitation after Arthroscopic Superior Labrum Repair of the Shoulder (SLAP)

Phase two: the 5 to 7 weeks after surgery

Goals:

1. Protect the surgical repair
2. Improve range of motion of the shoulder
3. Begin gentle strengthening

Activities

1. Sling

Your sling is no longer necessary unless your Dr. Gill instructs you to continue using it (use it for comfort only).

2. Use of the operated arm

You can now move your arm for most daily activities, but you need to continue to be careful not to lift objects heavier than 1 or 2 pounds. You should avoid forceful pushing or pulling activities. You should avoid activities that load the biceps muscle, such as turning a screwdriver or carrying a heavy box. You should continue to avoid reaching behind you or other positions with the hand behind the head.

3. Bathing and showering

Continue to follow the instructions from phase one and the instructions above.

Exercise Program

STRETCHING / ACTIVE MOTION

Days per week: 7

Times per day: 1 to 3

Pendulum exercises

Supine External Rotation

Standing External Rotation

Supine passive arm elevation

Seated-Standing Arm Elevation

Behind the back internal rotation

STRENGTHENING EXERCISES

Days per week: 7 Times per day: 1

Theraband internal and external rotation

Standing forward flexion (scaption)

Prone row

Prone horizontal abduction 'T's

Prone extension

Sidelying external rotation

Rehabilitation after Arthroscopic Superior Labrum Repair of the Shoulder (SLAP)

Phase Three: starting 8 to 12 weeks after surgery

Goals:

1. Protect the surgical repair
2. Regain full range of motion
3. Continue strengthening progression

Activities:

Use of the operated arm

You may now safely use the arm for normal daily activities involved with dressing, bathing and self-care. You may raise the arm away from the body; however, you should not raise the arm when carrying objects greater than one pound. Any forceful pushing or pulling activities could still disrupt the healing of your surgical repair.

Exercise Program:

STRETCHING / RANGE OF MOTION

Days per week: 7 Times per day: 1-2

Pendulum exercises
Standing External Rotation / Doorway
Wall slide Stretch
Hands-behind-head stretch

Starting the 9th week after surgery

Standing Forward Flexion
Behind the back internal rotation
Supine Cross-Chest Stretch
Sidelying internal rotation (sleeper stretch)

STRENGTHENING / THERABAND

Days per week: 7

Times per day: 1
External Rotation
Internal Rotation
Standing Forward Punch
Shoulder Shrug
Dynamic hug
“W”s
Seated Row

Start the 11th week after surgery

Biceps curl



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Start the 9th week after surgery

STRENGTHENING / DYNAMIC

Days per week: 7 Times per day: 1

Side-lying External Rotation

Prone Horizontal Arm Raises 'T's

Prone row

Prone scaption 'Y's

Prone extension

Standing forward flexion "full-can" scaption

Add resistance 1 to 3 lb

Rhythmic stabilization and proprioceptive training drills with physical therapist

Rehabilitation after Arthroscopic Superior Labrum Repair of the Shoulder (SLAP)

Phase Four: 12 to 16 weeks after surgery

Goals:

1. Gradual initiation of functional activities
2. Maintain full range of motion
3. Continue progressive strengthening

Exercise Program

STRETCHING / RANGE OF MOTION

Times per day: 1

Days per week: 5-7

Pendulum exercises

Standing External Rotation / Doorway

Wall slide Stretch

Hands-behind-head stretch

Behind the back internal rotation

Supine Cross-Chest Stretch

Sidelying internal rotation (sleeper stretch)

External rotation at 90° Abduction stretch

STRENGTHENING / THERABAND

Times per day: 1 Days per week: 3

Continue exercises from phase 3

Optional exercises for overhead sports:

External rotation at 90°

Internal rotation at 90°

Standing 'T's

Diagonal up, diagonal down

STRENGTHENING / DYNAMIC

Times per day: 1 Days per week: 3

Continue exercises from phase 3

Prone external rotation at 90° abduction "U's

Biceps curls

Resisted forearm supination-pronation

Resisted wrist flexion-extension

PNF manual resistance with physical therapist

Push-ups

PLYOMETRIC PROGRAM

Times per day and days per week: per physical therapist

'Rebounder' throws with arm at side

Wall dribbles overhead

WEIGHT TRAINING

See weight training precautions section

Guidelines and Precautions for Returning to Weight Training After Arthroscopic Labrum Repair

You should not return to training using heavy weights or on weight machines until Dr. Gill determines that it is safe. In general, it is usually safe to return to heavier weight training at 3-4 months following labrum repair.

Before embarking on a weight-training program, you should have full range of shoulder motion and normal strength in the rotator cuff and scapular muscles. Dr. Gill or your physical therapist will test your motion and strength before you start weight training.

When starting your weight-training program, you can start with 3 sets of 15-20 repetitions. Training with high repetition sets ensures that the weights that you are using are not too heavy.

NEVER perform any weight training exercise to the point of muscle failure. "Muscle failure" occurs when, in performing a weight training exercise, the muscle is no longer able to provide the energy necessary to contract and move the joint(s) involved in the particular exercise. Joint, muscle and tendon injuries are more likely to occur when muscle failure occurs.

***The following weight training exercises should be avoided after Bankart repair for shoulder instability and superior labrum repairs:

1. Pull downs behind-the-neck (wide-grip)
2. Behind-the-neck shoulder press
3. Wide-grip bench press
4. Standing lateral deltoid raises
5. Triceps press overhead

The following exercises require special cautions:

1. Pull downs should only be done in front of the head, to the chest, with a medium (not wide) grip.
2. Shoulder press overhead should be done carefully, avoiding heavy weights. If doing shoulder presses, always start with the hand in front of the shoulder and end overhead where you can still see your hand. For persons using barbells, this is the "military press".
3. If bench pressing, your grip should be no wider than the width of your shoulders. Avoid any exercises using grips wider or narrower than shoulder width.
4. Lateral deltoid raises should be avoided because of the impinging and wearing effect on the rotator cuff. Forward raises in the "thumb-up" position are usually safer and can be done with reasonable weights. Lateral raises from the prone or bent over position can be done as a substitute for standing lateral deltoid raises.
5. When doing incline bench press with barbells, there is a danger of shoulder dislocation if the lifter loses control of the bar when returning the barbell to the rack of the incline bench. Always have a spotter for removing and replacing the barbell in this exercise.
6. If you are doing any type of "chest-fly", keep in mind the following precautions:
Do not do any chest-fly exercise with straight elbows. Always allow the elbows to bend and never lower your hands (holding dumbbells) below the level of your chest.
7. If you are using a "Pec-Deck" machine, never let the weight stretch the arms so that your elbows

pass behind your chin. You can set the arms on this machine a few clicks forward to adjust the maximum motion allowed.

8. If you are performing “dips” using a set of parallel bars, never lower yourself below the point where the elbows reach a 90-degree angle.
9. For triceps exercises, triceps pushdowns on a pulley system are safe as well as bent-over triceps extensions.
10. When doing the upright-rowing exercise, keep your grip at least 12 inches apart. When pulling the bar upward toward the chin, do not raise the bar higher than the point at which the elbow reaches shoulder level.

Exercises Usually Problem-Free

1. Biceps Curls
2. Cable and bent-over rowing
3. Shoulder shrugs

If your goal is returning to high-level weight training or weight lifting, it will take 3 to 6 months of cautious, gradual progression to return to top form. In general, avoid increasing the amount of weight lifted by more than 10-15% (at a time) of your present working weight every 10-14 days.

Remember: Weight training is beneficial to improve muscular strength and protect the joints from injury. If done improperly by using too much weight and/or improper technique, weight training can cause serious injury.

Rehabilitation after Arthroscopic Superior Labrum Repair of the Shoulder (SLAP)

Phase Five: 16 to 20 weeks after surgery

Goals:

1. Progression of functional activities
2. Maintain full range of motion
3. Continue progressive strengthening

Exercise Program

STRETCHING / RANGE OF MOTION

Days per week: 5-7 Times per day: 1

Continue all exercises from phase 4

STRENGTHENING / THERABAND

Days per week: 3 Times per day: 1

Continue from phase 4

STRENGTHENING / DYNAMIC

Days per week: 3 Times per day: 1

Continue from phase 4

PLYOMETRIC PROGRAM

Days per week and times per day per physical therapist

'Rebounder' throws with arm at side

Wall dribbles overhead

Rebounder throwing/weighted ball

Deceleration drills with weighted ball

Wall dribbles at 90°

Wall dribble circles

WEIGHT TRAINING

See weight training precautions section

INTERVAL SPORT PROGRAMS

See individual programs for golf, tennis, swimming and throwing.

Rehabilitation Guidelines after Arthroscopic Superior Labrum (SLAP) Repair

Post-op phase	Sling	Range of Motion	Therapeutic Exercise		Precautions
<p>Phase 1 0-4 weeks after surgery</p> <p><u>Goals:</u></p> <p>*Allow healing of repaired labrum.</p> <p>*Initiate early protected and restricted range of motion.</p> <p>*Minimize muscular atrophy.</p> <p>*Decrease pain/inflammation.</p>	<p>Per MD instructions.</p> <p>Pendulum exercises several times a day</p>	<p>Weeks 0-2</p> <p>*Flexion as tolerated</p> <p>*ER/IR with arm in scapular plane at 40° abduction: *ER to 15° *IR to 45°</p> <p>Weeks 3-4</p> <p>*Flexion as tolerated</p> <p>*Abduction to 80°</p> <p>*ER/IR with arm in scapular plane at 40° abduction: *ER: 30° *IR : 60°</p>	<p>Pendulum exercise</p> <p>Active-assisted supine FF as tolerated.</p> <p>ERN as tolerated.</p> <p>IR behind back.</p> <p>Scapular retraction</p> <p>**NO active ER or Extension or Abduction</p>	<p>Isometric exercise at 0° of abduction</p> <p>Ball squeezes</p> <p>Rhythmic stabilization (RS)</p>	<p>Avoid ER in abduction.</p> <p>Caution to avoid excessive shoulder extension.</p>
<p>Phase 2 5th to 7th weeks after surgery</p> <p><u>Goals:</u></p> <p>*Gradual increase in ROM</p> <p>*Improve strength</p> <p>*Decrease pain/inflammation</p>	D/C	<p>*Flexion as tolerated</p> <p>*ER at 45° abduction: 50°</p> <p>*IR at 45° abduction: 60°</p> <p>*At 6 weeks begin light and gradual ER at 90° abduction – progress to 45° ER</p>	<p>ERN</p> <p>IR behind back</p> <p>Supine FF as tolerated.</p>	<p>Continue phase 1 exercises: *Active-assisted progressing to active forward flexion with scapulohumeral rhythm Sidelying ER Sidelying scaption Prone row Prone extension Prone T Standing scaption Theraband ER/IR Proprioception drills</p>	<p>Gentle mid-range ER in POS, gradually progress to coronal plane.</p> <p>Cautiously improve ERN.</p>
<p>Phase 3 8-12 weeks after surgery</p>	D/C	<p>Week 7-9: *Gradually progress</p>	<p>ER @ scapular plane</p> <p>Wall slide</p>	<p><u>Theraband exercises:</u> *ER, IR, forward, punch, shrug,</p>	<p>Continue same as above</p>



<p><u>Goals:</u></p> <ul style="list-style-type: none">*Gradually restore full range of motion*Increase strength*Improve neuromuscular control*Enhance proprioception and kinesthesia		<p>ROM:</p> <ul style="list-style-type: none">*Flexion to 180 °*ER at 90° abduction: 90°*IR at 90° abduction: progress to full	<ul style="list-style-type: none">IR behind backHorizontal adductionSidelying IR @ 90°Hands behind head starts 9th week postopOverhead pully	<p>dynamic hug, 'W's.</p> <ul style="list-style-type: none">*Biceps curl starts week 9*Seated row starts week 11 <p><u>Dynamic exercises:</u></p> <ul style="list-style-type: none">*Continue phase 2 exercises*PRE 1-3 lb. as tolerated*Prone Y*Continue RS*Continue proprioception drills*Scapulohumeral rhythm exercises	
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Post-op Phase	Therapeutic Exercises		Return to Sports	Precautions
<p>Phase 4 12- 16 weeks after surgery</p> <p><u>Goals:</u></p> <ul style="list-style-type: none"> * Full ROM *Improve: strength, power and endurance *Improve neuromuscular control *Improve dynamic stability *Improve scapular muscular strength 	<p>Gradually stretch to full ROM</p> <p>Continue previous stretches</p>	<ul style="list-style-type: none"> *Continue phase 3 exercises *Optional exercises: -Theraband: add 'T's, diagonal up and down -Add Prone'U's *Weight training can begin. *Plyometric exercises: Rebounder throws arm at side Wall dribbles overhead 	<p>Not yet</p>	<p>See weight training precautions.</p> <p>Continue to avoid excessive or forceful extension and ER</p>
<p>Phase 5 16-20 weeks after surgery</p> <p><u>Goals:</u></p> <p>Progressively increase activities to prepare patient for unrestricted functional return</p>	<p>Full ROM</p>	<ul style="list-style-type: none"> *Continue above *Plyometric exercise: *Add rebounder throws with weighted ball, *Decelerations *wall dribbles at 90°, *wall dribble circles 	<p>Interval sports programs can begin per MD</p>	<p>Weight training precautions.</p> <p>Shoulder brace sometimes for collision sports.</p>



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