



Dr. Denard's Rehabilitation Protocols
Arthroscopic Shoulder Surgery

These rehabilitation protocols are based on current studies detailing healing time and the risk of stiffness after arthroscopic shoulder surgery. You may note that these protocols are more conservative than you have seen in your experience or heard from friends. For rotator cuff tears in particular, the dogma for many years has been that immediate motion is required to prevent stiffness. This teaching is a product of open surgery which is more invasive and is not true for arthroscopic surgery! The most important thing is for the tissue to heal. The best available evidence shows that this takes 12 to 16 weeks for a rotator cuff tear. We can easily deal with stiffness, but a re-tear requires us to start all over again with a more involved surgery and rehab. Moreover, the protocols that I describe below have been shown by surgeons using the same techniques that I do, to result in a very low (~1%) chance of stiffness after rotator cuff repair.

Subacromial Decompression and/or Distal Clavicle Excision

In most cases, these procedures are performed in conjunction with another surgery and the rehab is dictated by the rotator cuff tear, SLAP repair, or Bankart repair. In the case of an isolated procedure, a sling is worn for comfort only. Immediate motion in all planes is allowed after surgery. Strengthening can begin 2 weeks after surgery.

*Full return to activity is 4 to 6 weeks after surgery.

Biceps Tenodesis

In general, a biceps tenodesis is performed in conjunction with a rotator cuff repair. Generally, the rehab protocol is dictated by the rotator cuff repair. The general rule is that GENTLE active flexion and extension of the elbow is allowed immediately after surgery. However, strengthening of the biceps (resisted elbow flexion) is delayed until 8 weeks after surgery.

Isolated biceps tenodesis protocol:

0 to 4 weeks after surgery:

Goal: early recovery (decreased swelling and early ROM)

- These patients use a sling for six weeks, which they may remove for showers and meals only.
- Ball squeezes with the hand are encouraged throughout the day.
- Three times per day patients do the following exercises during this period:
 - 1) Passive external rotation with a stick as tolerated
 - 2) Active elbow flexion and extension with the arm at the side
 - 3) Table slides
 - 4) Isometric scapular retraction exercises

4 to 8 weeks after surgery:

- The sling is discontinued at 4 weeks after surgery
- Continue exercises above with addition of:
 - 1) Passive elevation with a rope and pulley
 - 2) When full passive motion is reached, add active assist ROM in all planes
 - a. Laying raises
 - b. Wall washes

8 weeks after surgery:

Goal: Continue ROM, Add strengthening

- Continue ROM exercises above and add Active motion
- Add strengthening focusing on these core exercises:
 - “4-pack” strengthening exercises:
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

3 months after surgery:

- Return to gym activities
- Progress to sports-specific activities
- Full motion is anticipated by 4 mos postop

*Full activity is allowed at 4-6 months

Capsular Release:

0 to 4 weeks after surgery:

Goal: Immediate Range of Motion

- These patients use a sling for comfort ONLY
- Neck, Elbow, Wrist, and Hand exercises are encouraged throughout the day
- PROM and AROM are allowed immediately
- Formal therapy is done 3x/week for 3 weeks after surgery at minimum
- Three times per day patients do the following exercises during this period:
 - 1) Lying arm raises (active-assist)
 - 2) Table slides
 - 3) Sleeper stretches
 - 4) Doorframe stretches

4 to 8 weeks after surgery:

- Strengthening is allowed
- Continue ROM

12-16 weeks after surgery:

- 12 to 16 weeks after surgery is the anticipated timeline for full recovery of ROM

*Full activity is allowed as early as possible based on comfort

Rotator Cuff Tears

Partial thickness tears & Accelerated Protocol for Select Full-Thickness Tears

0 to 4 weeks after surgery:

Goal: early recovery (decreased swelling and early ROM)

These patients use a sling for 4 weeks, which they may remove for showers and meals only. Ball squeezes with the hand are encouraged throughout the day.

Three times per day patients do the following exercises during this period:

- 1) Passive external rotation with a stick
 - a. In cases of no subscapularis repair, external rotation is as tolerated.
 - b. If there is a partial subscapularis repair, external rotation is to neutral (30^0)
- 2) Active elbow flexion and extension with the arm at the side
- 3) Table slides
- 4) Isometric scapular retraction exercises

4 to 8 weeks after surgery:

Goal: Focus on ROM

Passive motion only

The sling is discontinued at 4 weeks after surgery.

Add forward flexion rope and pulley exercises

8 weeks after surgery:

Goal: Continue ROM, Add strengthening

Active-assist ROM, progressing to active motion as tolerated

Begin strengthening with focus on:

- 1) Wall washes
- 2) "4-pack" strengthening exercises
 - c. Resisted internal rotation
 - d. Resisted external rotation
 - e. Low row
 - f. Biceps curl

3 months after surgery:

-Return to gym, with avoidance of activities with rapid acceleration (throwing, golf, tennis) or high impact (overhead lifting)

-Goal for 80% of ROM by 3-4 mos

*Internal rotation is delayed until 12 weeks after surgery because this places increased strain on the rotator cuff

Six months after surgery:

Full activity

Small and Medium Tears (≤ 3 cm)

0 to 6 weeks after surgery:

Goal: early recovery (decreased swelling and early ROM)

These patients use a sling for six weeks, which they may remove for showers and meals only.

Ball squeezes with the hand are encouraged throughout the day.

Three times per day patients do the following exercises during this period:

- 1) Passive external rotation with a stick
 - a. In cases of no subscapularis repair, external rotation is as tolerated.
 - b. If there is a subscapularis repair, external rotation is to neutral (30^0)
- 2) Active elbow flexion and extension with the arm at the side
- 3) Table slides
- 4) Isometric scapular retraction exercises

6 to 12 weeks after surgery:

Goal: Focus on ROM

Passive motion only to start, progressive to active assist ROM at 9 weeks

The sling is discontinued at 6 weeks after surgery.

Add forward flexion rope and pulley exercises

12 weeks after surgery:

Goal: Continue ROM, Add strengthening

Continue active-assist ROM, progressing to active motion as tolerated

Begin strengthening with focus on:

- 3) Wall washes
- 4) "4-pack" strengthening exercises
 - g. Resisted internal rotation
 - h. Resisted external rotation
 - i. Low row
 - j. Biceps curl

*Internal rotation is delayed until 12 weeks after surgery because this places increased strain on the rotator cuff

4 months after surgery:

-Return to gym, with avoidance of activities with rapid acceleration (throwing, golf, tennis) or high impact (overhead lifting)

-Goal for 80% of ROM by 4 mos

Six months after surgery:

Full activity

Large and Massive Tears (> 3 cm)

0 to 6 weeks after surgery:

Goal: early recovery (decreased swelling and REST)

These patients use a sling for six weeks, which they may remove for showers and meals only.

Ball squeezes with the hand are encouraged throughout the day.

Three times per day patients do the following exercises during this period:

- 1) Active elbow flexion and extension with the arm at the side
- 2) Isometric scapular retraction exercises

6 to 12 weeks after surgery:

Goal: Focus on ROM

The sling is discontinued at 6 weeks after surgery.

Passive motion only

Emphasize these ROM exercises:

- 1) Table slides
- 2) Passive external rotation at the side with a stick
- 3) Overhead rope and pulley

12 weeks after surgery:

Goal: Continue ROM, Add strengthening

Begin active-assist ROM, progressing to active motion as tolerated

Begin strengthening with focus on:

- 5) Wall washes
- 6) "4-pack" strengthening exercises
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

*Internal rotation is delayed until 12 weeks after surgery because this places increased strain on the rotator cuff

4 months after surgery:

-Return to gym, with avoidance of activities with rapid acceleration (throwing, golf, tennis) or high impact (overhead lifting)

-Goal for 80% of ROM by 4 mos

Six months after surgery:

-Full activity

-Anticipate gains for up to 1 year after surgery

Revision repairs

0 to 6 weeks after surgery:

Goal: early recovery (decreased swelling and REST)

- These patients use a sling for six weeks, which they may remove for showers and meals only
- Ball squeezes with the hand are encouraged throughout the day.
- Three times per day patients do the following exercises during this period:
 - 1) Active elbow flexion and extension with the arm at the side
 - 2) Isometric scapular retraction exercises

6 to 12 weeks after surgery:

Goal: ROM only

- The sling is discontinued at 6 weeks after surgery.
- Passive motion only
- Emphasize these ROM exercises:
 - 1) Table slides
 - 2) Passive external rotation at the side with a stick
 - 3) Overhead rope and pulley

12 weeks after surgery:

Goal: Continue ROM

- Begin active-assist ROM, progressing to active motion as tolerated
- No strengthening

*Internal rotation is delayed until 12 weeks after surgery because this places increased strain on the rotator cuff

4 months after surgery:

Goal: Strengthening

- Begin strengthening with focus on:
 - 1) Wall washes
 - 2) "4-pack" strengthening exercises
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

Six months after surgery:

- Return to gym, with avoidance of activities with rapid acceleration (throwing, golf, tennis) or high impact (overhead lifting)
- Goal for 80% of ROM by 4 mos
- Anticipate gains for up to 1 year after surgery

Superior Capsule Reconstruction

0 to 6 weeks after surgery:

Goal: early recovery (decreased swelling and REST)

- These patients use a sling for six weeks, which they may remove for showers and meals only. --
- Ball squeezes with the hand are encouraged throughout the day.
- Three times per day patients do the following exercises during this period:
 - 1) Active elbow flexion and extension with the arm at the side
 - 2) Isometric scapular retraction exercises

6 to 12 weeks after surgery:

Goal: PASSIVE ROM only

- The sling is discontinued at 6 weeks after surgery.
- Passive motion only
- Emphasize these ROM exercises:
 - 1) Table slides
 - 2) Passive external rotation at the side with a stick
 - 3) Overhead rope and pulley

12 weeks after surgery:

Goal: Continue ROM

- Begin active-assist ROM, progressing to active motion as tolerated
- No strengthening
- *Internal rotation is delayed until 12 weeks after surgery because this places increased strain on the rotator cuff

4 months after surgery:

Goal: Strengthening

- Begin strengthening with focus on:
 - 1) Wall washes
 - 2) "4-pack" strengthening exercises
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

Six months after surgery:

- Return to gym, with avoidance of activities with rapid acceleration (throwing, golf, tennis) or high impact (overhead lifting)
- Goal for 80% of ROM by 4 mos
- Anticipate up to 1 year for full recovery

SLAP Repair

0 to 4 weeks after surgery:

Goal: early recovery (decreased swelling and REST)

-These patients use a sling for four weeks, which they may remove for showers and meals only. -

-Ball squeezes with the hand are encouraged throughout the day.

-Three times per day patients do the following exercises during this period:

- 1) Passive external rotation with a stick
- 2) Active elbow flexion and extension with the arm at the side
- 3) Table slides
- 4) Isometric scapular retraction exercises
- 5) If posterior release is performed, they begin sleeper stretches immediately postop

4 weeks after surgery:

Goal: ROM only

-Passive motion only

-The sling is discontinued at four weeks after surgery.

-Three times per the day patients do the following exercises:

- 1) Passive elevation with a rope and pulley
- 2) Continued external rotation with a stick
- 3) Passive internal rotation (if not already begun because of a posterior release)

6 weeks after surgery:

Goal: ROM and strengthening

-Progress to active-assist

-The following exercises are added:

- 1) Doorframe stretches
- 2) Wall washes
- 3) Strengthening exercises
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row

8 weeks after surgery:

-The following exercises are added:

- 1) Biceps curl is added to the strengthening exercises

*Stretching continues throughout rehab until full motion is regained

**Overhead activities that accelerate the arm (golf, tennis, baseball, volleyball, etc.) are delayed until 8 months after surgery

Bankart and Remplissage Repair

0 to 6 weeks after surgery:

Goal: early recovery (decreased swelling and REST)

-These patients use a sling for six weeks, which they may remove for showers and meals only. --

-The exception to this is a dominant arm in an overhead athlete in which case the sling is worn for only 4 weeks.

-Ball squeezes with the hand are encouraged throughout the day.

-Three times per day patients do the following exercises during this period:

- 1) Active elbow flexion and extension with the arm at the side
- 2) Isometric scapular retraction exercises

6 weeks after surgery:

Goal: ROM and strengthening

-The sling is discontinued at six weeks after surgery. The exception to this is a dominant arm in an overhead athlete in which case the sling is worn for only 4 weeks.

-Three times per the day patients do the following exercises:

- 1) Passive elevation with a rope and pulley
- 2) External rotation with a stick
 - a. For most patients, external rotation is to half that of the opposite arm until 12 weeks
 - b. For overhead athletes, external rotation to 75% of the opposite arm is allowed
- 3) "4-pack" strengthening exercises
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

3 months after surgery:

-Return to gym, with avoidance of activities with rapid acceleration (throwing, golf, tennis) or high impact (overhead lifting)

-Goal for 80% of ROM by 3-4 mos

-Add sport-specific exercises

Six months after surgery:

-Full activity including contact sports

Posterior Instability Repair

0 to 4 weeks after surgery:

- These patients use a sling for four weeks, which they may removed for showers and meals only.
- Ball squeezes with the hand are encouraged throughout the day.
- Three times per day patients do the following exercises during this period:
 - 1) Active elbow flexion and extension with the arm at the side
 - 2) Passive external rotation with a stick as tolerated
 - 3) Isometric scapular retraction exercises

4 weeks after surgery:

- The sling is discontinued at four weeks after surgery.
- Three times per the day patients do the following exercises:
 - 1) Passive elevation with a rope and pulley
 - 2) Continue external rotation with a stick
 - 3) “4-pack” strengthening exercises
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

2 months after surgery:

- Return to gym with light weights
- Avoid overhead lifting and bench press

3-4 months after surgery:

- Goal for normal ROM
- Add sport-specific exercises
- Ok for push-ups, begin with knee push-ups first

Six months after surgery:

- Full activity including contact sports

Notes and Assorted Combinations

Subscapularis Tears

Usually the tear is associated with a tear of the supraspinatus and/or infraspinatus and the protocol is dictated by the size of that tear. For isolated subscapularis tear, the protocol follows that of small and medium tears with the exception of no table slides for the first six weeks. In general, for all subscapularis tears, external rotation is only allowed to neutral during the first 6 weeks after surgery. For tears that only involve the upper 30% of the subscapularis, however, passive external rotation with a stick to 30 degrees is allowed during the first six weeks after surgery.

*Full activity is 6 to 12 months depending on the size of the tear

SLAP Repair and Rotator cuff repair

The protocol follows that of the rotator cuff repair and is based on the size of the rotator cuff tear.

SLAP and Bankart or Circumferential instability

The protocol follows that of the Bankart repair

Rotator Cuff and Bankart

0 to 6 weeks after surgery:

These patients use a sling for six weeks, which they may removed for showers and meals only. Ball squeezes with the hand are encouraged throughout the day.

Three times per day patients do the following exercises during this period:

- 1) Passive external rotation with a stick to neutral
- 2) Active elbow flexion and extension with the arm at the side
- 3) Isometric scapular retraction exercises

6 to 12 weeks after surgery:

Passive motion only.

The sling is discontinued at six weeks after surgery.

Three times per the day patients do the following exercises:

- 3) Passive elevation with a rope and pulley
- 4) Passive external rotation with a stick, goal is to reach half that of opposite arm at 12 weeks after surgery

12 to 16 weeks after surgery:

Active motion in all planes is allowed.

They begin strengthening with elastic bands.

Three times per the day patients do the following exercises:

- 1) Wall washes
- 2) Passive external rotation with a stick as tolerated
- 3) “4-pack” strengthening exercises (beginning at 12 weeks in most cases, but delayed until 16 weeks for a massive rotator cuff tear)
 - a. Resisted internal rotation
 - b. Resisted external rotation
 - c. Low row
 - d. Biceps curl

*Full activity is 1 year