Rehabilitation Guidelines for Posterior Glenoid Labral Repair

About the Guideline

Posterior glenoid labral repairs are performed following recurrent bouts of posterior shoulder instability and / or posterior labral tears. After surgery, rehabilitation plays a critical role in returning your shoulder back to full function. These rehabilitation guidelines are outlined in a criterion-based progression. General time frames are listed, but every surgery and person are different. When there is poor tissue quality or additional structures involved, rehabilitation following surgery may need to be adjusted. Your surgeon and physical therapist will help individualize your progressions.

About the Glenoid Labrum

The shoulder joint consists of the scapula (shoulder blade) and the humerus (long arm bone). The shoulder joint is very mobile, so it requires various structures to stabilize it. The labrum is a tissue that is located on the scapula (see image 1), and it adds stability to the shoulder by increasing the depth of the shoulder socket, thus increasing stability of the shoulder. Imagine a golf ball sitting on a tee, where the humeral head is the golf ball and the glenoid is the tee. An injury to the labrum can result in shoulder instability and / or dislocation.

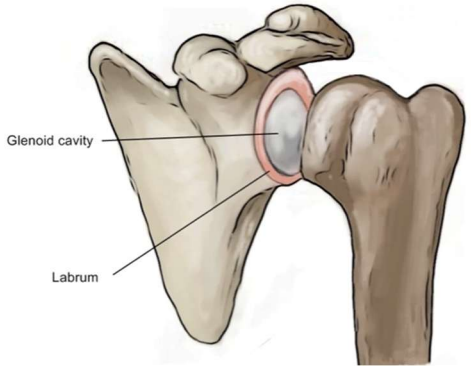

Image 1: Anatomy of the labrum

Mechanism of Injury

Posterior glenoid labral injuries can occur either traumatically or non-traumatically. A posterior glenoid labral injury commonly results in posterior (back of) shoulder pain and/or a sense of instability. Acute posterior glenoid labral injuries often occur by falling on a straight or outstretched arm (imagine a plank / push-up position). Non-traumatic posterior labral injuries result from repetitive loading into positions of shoulder is flexion, adduction and/or internal rotation. American football, rugby, baseball, and weightlifters have a higher risk of injury due to the repetitive motions of these sports.

Diagnosing a Posterior Glenoid Labral Tear

There are several methods used to diagnose a posterior glenoid labral tear. Your healthcare provider will start by assessing your shoulder through a physical exam. They will test strength, range of motion, and stability of the shoulder joint. They may also request diagnostic imaging for your shoulder.

There are several diagnostic imaging procedures used to assess the posterior glenoid labrum. Radiographs (x-rays) are initially used to assess the bony alignment of the shoulder. Additionally, they are used to determine if any associated fracture or bony involvement is present. Magnetic resonance imaging (MRI) may also be ordered to visualize the soft tissue structures, (muscles, tendons, and ligaments), and is highly accurate in diagnosing posterior glenoid labral injuries. Computed tomography (CT) may also be used to further assess bony abnormalities. Imaging is used to diagnose injury and to assist in surgical planning.

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Treatment Options for a Posterior Glenoid Labral Tear

Treatment options are individualized with consideration for your age, activity level, and impact on your daily function. Research shows that non-surgical treatment is often effective in helping you return to your previous level of activity. Non-surgical treatment typically includes activity modification and physical therapy.

Individuals who experience recurrent posterior shoulder pain, instability, or functional limitations after a bout of non-surgical treatment may be appropriate candidates for surgery. There are several options for surgical interventions. Your surgeon will help you select the appropriate surgical procedure for you and your specific injury. An arthroscopic posterior capsule-labral repair is primarily done if there is no bone loss. Repair of the posterior glenoid labrum involves suturing the labral tissue and tightening the joint capsule.

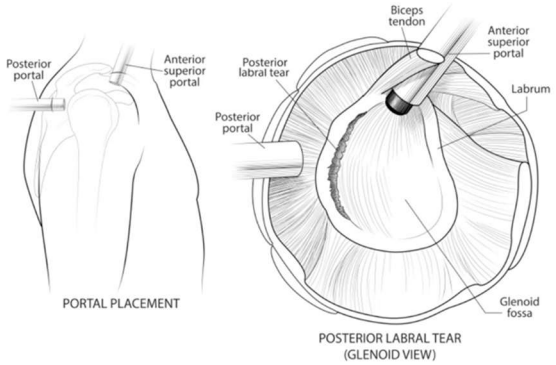

Image 2: Arthroscopic posterior labral repair

Rehabilitation Following Surgical Repair

Patients will generally participate in 5-7 months of formal rehabilitation, with increased time (6-9 months) for return to high level upper extremity activities including sport. Age, tear size, tissue quality, muscle, or bony involvement can all affect the timeline of your rehabilitation.

The rehabilitation process will address restoration of range of motion, strength, endurance, and gradual return to activity. Rehabilitation can be divided into 5 phases each with goals to meet in order to progress to the next.

Rehabilitation precautions following surgery will vary in each phase of rehab. These precautions are listed below in the guidelines. Post-operative rehabilitation has commonly been split into five phases:

Phase I is the immediate post-operative phase, and the primary goals of this phase are to protect the surgical repair, reduce pain and inflammation, prevent post-operative complications, and preserve range of motion at the elbow and wrist. A sling will be utilized immediately post-surgery, and should continue to be utilized throughout phase I.

Phase II has a focus of continued protection of the surgical repair and introduction of passive range of motion at the shoulder. Pain should continue to be minimized, and light muscular activation and strengthening will be initiated.

Phase III is the intermediate phase with goals aimed at restoring full active range of motion, return to independence with daily activities, and early phases of strengthening at the shoulder. During this phase you will wean from wearing the sling gradually with guidance from your physical therapist.

Phase IV is the strengthening phase. The goal of this phase is to maintain the full range of motion gained in previous phases and increase strength and endurance of the

shoulder. At the end of this phase, you should expect to be fully returned to activities of daily living.

Phase V is the return to activity phase. The goal of this phase is to further develop strength and power allowing you to return to higher demand activities including job and sport-specific demands. Introduction and return to sport activities will be gradual advancement in this phase is dependent on meeting objective criteria described below.

The rehabilitation process will be guided by both your physical therapist and surgeon. The rehabilitation plan will be tailored to you and your specific functional goals.

You may return to sport after receiving clearance from the orthopedic surgeon and rehab professional.

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Rehabilitation Guideline

Posterior glenoid labral repair is commonly performed following diagnosis of posterior labral tear. The protocol outlined in this document is designed as general rehabilitation for posterior glenoid labral lesions. When there are additional structures involved or poor tissue quality, rehabilitation following surgery will need to be adjusted. Please follow specific guidelines given on a case by case basis by surgeon for special considerations.

Rehabilitation Guidelines for Posterior Glenoid Labral Repair

Phase I: Immediate Post Surgical Phase (surgery to 3 weeks post-surgery)	
Appointments	Surgeon/Physician Assistant follow-up: 7-10 days Start physical therapy at: 7-10 days post-surgery • Frequency: 1-2 visits each week
Precautions	Sling: Always worn outside of physical therapy treatment • Okay to remove for performing home exercises (as instructed), personal hygiene & dressing Mobility: No shoulder internal rotation (IR) or horizontal adduction past neutral (normal resting position in sling) for ~6 weeks • No shoulder flexion beyond 90º for at least **6 weeks** • No shoulder IR with arm abduction for at least **8 weeks** Strengthening: • Avoid any pushing or closed-kinetic chain loading through shoulder for at least **12 weeks**
Rehabilitation Goals	▪ Protect surgical repair ▪ Minimize inflammation and pain ▪ Gentle muscle activation of scapular muscles ▪ Maintain normal range of motion (ROM) at the elbow joint
Range of Motion	Passive range of motion (PROM): • Abduction ≤ 90º • Flexion ≤ 90º (in scapular plane) • External rotation (ER) to 45º in 0º abduction • Active range of motion (AROM) for elbow, forearm, wrist, scapula, and neck range of motion
Therapeutic Interventions *(Examples, but not limited to…)*	General post-operative education – emphasis on protection of repair • Sling use • Sleeping positions Management of post-operative inflammation: ▪ Ice/cooling: up to 6x/day or as needed for pain (20 mins on every two hours as needed) Hand/wrist and elbow/forearm AAROM/AROM (supine and seated in sling) Activation drills • Initiate sub-maximal shoulder IR and ER in neutral shoulder position at **week 3**
Cardiovascular Endurance	Walking on flat ground (with sling) Upright, stationary cycling (with sling) **avoid activities that cause heavy sweating until full healing of surgical incisions*
Criteria for Progression to Next Rehabilitation Phase	✓ No sooner than 3 weeks following surgery ✓ Sling compliance and associated pain reduction

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Phase II: Protection & Early Mobility Phase (3 weeks - 8 weeks post-surgery)	
Appointments	Surgeon/Physician Assistant follow-up: 6 weeks post-op Physical therapy: 1-2 visits each week
Precautions	Sling: initiate gradual weaning from sling no sooner than **6 weeks** Mobility: No shoulder internal rotation (IR) or horizontal adduction past neutral (normal resting position in sling) for ~6 weeks • No shoulder flexion beyond 90º for at least **6 weeks** • No shoulder IR with arm abduction for at least **8 weeks** Strengthening: Avoid any pushing or closed-kinetic chain loading through shoulder for at least **12 weeks**
Rehabilitation Goals	▪ Full AROM in all planes, except shoulder IR and horizontal adduction ▪ ***Gradually*** progress shoulder IR and horizontal adduction ROM ▪ Strengthen shoulder muscles in the scapular plane (less than 45º abduction) ▪ Begin proprioceptive exercises in open chain positions only
Range of Motion	PROM / AROM: progress to full shoulder and scapular AROM • No shoulder flexion beyond 90º for at least **6 weeks** • No shoulder IR with arm abduction for at least **8 weeks** **Continue to avoid cross-body adduction positions
Therapeutic Exercises ***(Examples, but not limited to…)***	Post-op sling weaning *(see criteria below)* ▪ Begin with 1 hour in home environment daily starting **week 6 post-op** ▪ Progress 1-2 hours each day until pain-free with 4-6 hours out of sling at end of week 6 Early phase strengthening: • Rotator cuff (RTC) muscle activation – Introduce in a neutral shoulder position at a submaximal level (~75% + MVIC with increased isometric hold duration) – Side-lying / seated RTC AROM progressions – Side-lying shoulder scaption to 90 º ▪ Scapular activation and mobility – Prone scapular retraction – Unloaded, supine serratus punches & seated shoulder shrugs ▪ Hand/wrist and forearm/elbow complex progressions – Progress as indicated – no heavy loaded carries / biceps load for at least **8 weeks** Late phase strengthening: • Rotator cuff (RTC) muscle activation – Band-resisted RTC strengthening – Side-lying shoulder horizontal abduction to neutral – Seated/standing shoulder scaption AROM to 90 º ▪ Scapular activation and mobility – Light load (<10 lbs) single arm suitcase carries – Supine / standing loaded serratus punches ▪ Hand/wrist and forearm/elbow complex progressions – Introduction of grip variety with all RTC activation and strength progressions – Consider rate of force development focus with isolated grip strength tasks

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	Cardio: • Stationary cycling – no UE support • Walking on uneven ground
Criteria for Progression to Next Rehabilitation Phase	✓ Full, procedure-specific PROM, AAROM and AROM in all planes (see parameters above) ✓ Tolerance to full weaning from sling without reactive pain ✓ Tolerance to early and late-phase strengthening without reactive pain > 2/10 ✓ No compensatory upper quarter movement patterns with shoulder AROM

Post-op Glenoid Labral Repair: Sling Weaning Progression

Day 1	Out of sling for **1 hour** / In sling for 1 hour – repeat Continue to sleep in the sling
Day 2	Out of sling for **3 hour** / In sling for 1 hour – repeat Continue to sleep in the sling
Day 3	Out of sling for **5 hour** / In sling for 1 hour – repeat Continue to sleep in the sling
Day 4	Out of sling for **full day**, but use as needed Continue to sleep in the sling
Day 5	Full day out of sling (including sleeping out of sling)

***If you notice shoulder **soreness** that lasts longer than 24 hours, repeat the previous day before progressing hours out of the sling.*

***If you have a job that requires more manual specific labor / use of your arms, it is recommended that during this weaning process you still wear your sling at work.*

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Phase III: Mobility & Early Strengthening Phase (8 weeks -12 weeks post-surgery)	
Appointments	Surgeon/Physician Assistant follow-up: 12 weeks Physical therapy visits: 1x / 1-2 week(s)
Precautions	Mobility: No shoulder IR with arm abduction for at least **8 weeks** Strengthening: • Avoid any pushing or closed-kinetic chain loading through shoulder for at least **12 weeks** • Post-exercise soreness should resolve in less than 24-48 hours
Range of Motion	Full AROM in all planes • *Careful / gradual* ROM to end range IR and horizontal abduction
Therapeutic Exercises	Strengthening • Rotator cuff (RTC) muscle activation – Progress isometric shoulder ER in planes of increasing shoulder abduction (90º or below) – Progress band-resisted RTC strengthening in planes of increasing shoulder abduction – Long-lever stability holds: supine serratus hold / side-lying T hold ▪ Scapular activation and mobility – Initiate low load, low volume closed-kinetic-chain progressions no sooner than **12 weeks post-op** ▪ Incline plank ▪ Quadraped plank ▪ Hand/wrist and forearm/elbow complex progressions – Progress rate of force development focus with isolated grip strength tasks in all planes of shoulder mobility Cardio: appropriate to begin jogging progressions at **12 weeks post-op** as tolerated
Criteria for Progression to Next Rehabilitation Phase	✓ At least **12 weeks post-surgery** ✓ Full shoulder AROM in all planes without compensatory movement patterns ✓ Appropriate shoulder IR and ER strength at neutral – see **Appendix E**

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Phase IV: Strengthening & Return to Activity Phase (12 weeks - 18 weeks post-surgery)	
Appointments	Physical therapy visits: 1x / every 2-4 weeks
Precautions	• Post-exercise soreness should resolve in less than 24-48 hours • Avoid posterior shoulder pain or instability with activity
Therapeutic Exercises	<u>Strengthening:</u> • Rotator cuff (RTC) muscle activation – Progressive weight, band and cable-resisted RTC loading at increasing angles of shoulder abduction – Forward scaption and lateral raises with progressive load – W position and overhead carry progressions ▪ Scapular activation and mobility – Progress closed-kinetic-chain volume and load at **16 weeks post-op** ▪ Full plank and side plank progressions ▪ Fwd/rev bear crawl tasks <u>Cardio:</u> Appropriate to begin linear speed progressions at **16 weeks post-op** as tolerated Appropriate to participate in team-based conditioning as appropriate
Criteria for Progression to Next Rehabilitation Phase	✓ At least **18 weeks post-surgery** ✓ Full shoulder AROM in all planes without compensatory movement patterns ✓ Appropriate shoulder IR and ER strength at 90º abd – see **Appendix E** ✓ No shoulder instability at higher velocities

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Phase V: Return to Activity Phase (18+ weeks post-surgery)	
Appointments	Physical therapy visits: 1x / every 2-4 weeks
Precautions	• Post-exercise soreness should resolve in less than 24-48 hours • Avoid posterior shoulder pain or instability with activity
Therapeutic Exercises	Strengthening: • Rotator cuff (RTC) muscle activation – Progressive weight, band and cable-resisted RTC loading in job / activity / sport-specific positions – Forward scaption and lateral raises with progressive load and speed / reactivity demands – Overhead press and carry progressions ▪ Scapular activation and mobility – Progress closed-kinetic-chain volume and load ▪ Front and side plank variations ▪ Horizontal press progressions (stability and load focus) at **5-6 months post-op** Plyometrics: (if appropriate strength and motor control criteria met – **Appendix E**) • Double arm med ball drills o Med ball slams, med ball scoop toss, med ball chest pass o Med ball rotational throws • Single arm plyo ball drills o Plyo ball overhead wall dribbles o Reverse D2 pattern throws Cardio: sport-specific cardio progressions
Rehabilitation Goals / Criteria for Return to Activity / Sport	✓ Clearance from surgeon ✓ See **Appendix E** o Also consider posterior shoulder endurance test o For collision sports: ASH, UQ-Y balance test, and a one-arm hop test o For overhead athlete (OKC): Seated single arm shot put test and PSET at sport-specific angles

***Important to continue participation in ongoing preventative strength, power and motor control exercises at return to sport**

All physical therapy appointment frequencies are recommendations only. Your physical therapy provider will work with you to select an appointment frequency that best fits your individual needs.

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