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## Non-Operative Posterior Shoulder Instability Protocol

The physical therapy rehabilitation for posterior shoulder instability will vary in length depending on factors such as:

- Degree of shoulder instability/laxity
- Acute vs. chronic condition
- Length of time immobilized
- Strength/range-of-motion status
- Performance/activity demands

The Rehabilitation Program is outlined in three phases. It is possible to overlap phases (Phase I-II, Phase II-III) depending on the progress of each individual. In all exercises during Phase I and Phase II, caution must be applied in placing undue stress on the posterior joint capsule as dynamic joint stability is restored. An isokinetic strength and endurance test is scheduled during the latter part of Phase II. The focus in Phase III is on progressive isotonic and isokinetic exercises in preparation for returning to the prior activity level (work, recreational activity, sports, etc)

### PHASE I

1. Apply modalities as needed (heat, ice, electrotherapy, etc).
2. Perform ROM exercises (passive, active-assistive) for flexion, abduction, horizontal abduction, external rotation, and internal rotation (as needed).
3. Shoulder stretch- anterior cuff/capsule stretch (as needed).
4. Add joint mobilization (e.g. emphasis on anterior glides) as needed.
5. Active external rotation may be performed from 0 degree rotation to full external rotation. Arm is positioned at side with elbow flexed at 90 degree. Use surgical or rubber tubing for resistance. If pain persists, isometric exercises may be added. As strength improved, progress to using free weights, lying prone with arm abducted to 90 degrees or sidelying with arm at side.
  - Prone: Perform the combined movements of horizontal abduction followed by external rotation to protect the posterior joint capsule.
  - Sidelying: Limit the degrees of internal rotation to protect the posterior joint capsule
6. Add active internal rotation performed from full external rotation to 0 degree rotation using surgical or rubber tubing. Limiting the degrees of internal rotation is necessary to avoid excessive stress to the posterior joint capsule. If there is pain with active



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movements, strength can be maintained by performing an isometric contraction. The shoulder position may be adjusted to allow a pain free muscle contraction to occur.

7. Add supraspinatus exercise, if adequate range-of-motion is available (0-90 degrees). Shoulder is positioned in the scapular plane approximately 20-30 forward of the coronal plane.
8. Active shoulder flexion exercise through available range-of-motion.
9. Active shoulder abduction exercise to 90 degrees.
10. Shoulder shrug exercise-avoid traction in the glenohumeral joint between repetitions by not allowing the arms to drop completely. This will avoid an excessive inferior glide of the humeral head.
11. Active horizontal abduction exercise (posterior deltoid) in prone lying position. Avoid excessive stress to the posterior capsule by limited movement from 45 degrees of horizontal adduction to full horizontal abduction.
12. Add forearm-strengthening exercises(elbow,wrist).

## PHASE II

1. Continue anterior cuff/capsule stretch, mobilization, and range-of-motion exercises (as necessary).
2. Continue shoulder strengthening (emphasis on rotator cuff and posterior deltoid) with surgical tubing and/or free weights. Emphasis may be placed on the eccentric phase of contraction in strengthening the rotator cuff.
3. Add arm ergometer for endurance exercise.
4. Add push-ups. Movement should be pain free with emphasis on protecting the posterior joint capsule. Shoulders are positioned in 80-90 degree of abduction. Caution is applied during the ascent phase of the push-up to avoid excessive stress to the posterior capsule. Do not raise the body beyond the scapular plane. Begin with wall push-ups. As strength improves, progress to floor push-ups (modified- hands and knees, or military-hands and feet) as tolerated by patient.
5. Isokinetic test. Perform isokinetic strength and endurance test for the following suggested movement patterns; shoulder internal/external rotation (arm at side), horizontal abduction, and abduction/adduction. To perform this test, prerequisite strength requirements of the rotator cuff are 5-10 pounds for external rotation and 15-20 pounds for internal rotation. The shoulder should be pain free and have no significant amount of swelling.
6. Active shoulder internal rotation, using free weights, may be added performed supine with the arm positioned at the side.



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7. Horizontal abduction may be performed through an increased range (starting position at 90 degrees of horizontal adduction as tolerated)
8. Add total body conditioning with emphasis on strength and endurance. Include flexibility exercises as needed.

### PHASE III

1. Continue anterior capsule stretching (as needed)
2. Continue to emphasize the eccentric phase in strengthening the rotator cuff.
3. Continue arm ergometer training.
4. Add military press. Press the weight directly over or behind the head.
5. Add isokinetic strengthening and endurance exercises (high speeds- 200+ degrees/second) for shoulder internal and external rotation with the arm at the side.
6. Isokinetic strengthening for horizontal abduction/adduction may be added. Shoulder flexion/extension and abduction/adduction may be added as needed.
7. Isokinetic Test. The second isokinetic test for shoulder internal/external rotation, horizontal abduction/adduction and abduction/adduction is administered. For shoulder internal/external rotation, the shoulder may be tested in the functional position (80-90 degrees of abduction). Test results for internal/external rotation and horizontal abduction should demonstrate at least 80% strength and endurance (as compared to the uninvolved side) before proceeding with exercises specific to the activity setting.
8. Continue total body conditioning program with emphasis on the shoulder (rotator cuff, posterior deltoid).

#### Improve Neuromuscular Control of Shoulder Complex

- Initiation of PNF
- Rhythmic stabilization drills

#### Continue Use of Modalities (As Needed)

- Ice, electrotherapy modalities

#### Criteria for Progression to Phase 3

- Full nonpainful ROM
- No palpable tenderness
- Continued progression of resistive exercises



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## **PHASE IV: Advanced Strengthening Phase**

### Goals:

- Improve strength, power, and endurance
- Improve neuromuscular control
- Prepare patient/athlete for activity

### Capsular Stretches:

- Address joint imbalances as necessary

### Continue Use of Modalities (As Needed)

### Continue Isotonic Strengthening (Progressive Resistance Exercises)

### Continue Eccentric Strengthening

### Emphasize PNF

### Initial Isokinetics:

- Flexion-extension
- Abduction-adduction
- Internal-external rotation
- Horizontal abduction/adduction

### Initiate Plyometric Training:

- Surgical tubing
- Wall push-ups
- Medicine Ball
- Boxes

### Initiate Military Press:

- Precaution-avoid excessive stress on anterior capsule

### Criteria for Progression to Phase 5:

- Full ROM
- No pain or palpable tenderness
- Satisfactory isokinetic test



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- Satisfactory clinical examination

## **PHASE V: Return to Activity Phase**

### Goals:

- Maintain optimal level of strength, power and endurance
- Progressively increase activity level to prepare patient for full functional return to activity/sport

### Continue All Exercises as in Phase 4

### Continue Capsular Stretches

### Initiate Interval Program

### Continue Modalities (As Needed)

### Follow-up

- Isokinetic test
- Progress interval program
- Maintenance of exercise program

This protocol provides you with general guidelines for the nonsurgical or in-season rehabilitation of the patient with multidirectional glenohumeral instability.

The frequency of visits may be determined mutually by the patient, therapist, and athletic trainer depending upon patient comfort level, progress, and understanding of the home program.

Specific changes in the program will be made by the physician as appropriate for the individual patient. Patients with persistent instability may be candidates for further evaluation and/or surgical intervention.