GUIDELINES FOR ROTATOR CUFF REPAIR REHABILITATION

The Shoulder Center of Kentucky uses a functional approach to therapeutic exercise. This approach is based on a kinetic chain model and motor control theories of function. It has evolved from the philosophies of W. Ben Kibler, M.D., Gary Gray, PT, and the conditioning methods of Vern Gambetta, M.A. It uses as much of the kinetic chain as possible to facilitate and load the targeted tissue. This is a truly functional approach to rehabilitation, placing the body in functional positions and requiring segmental stabilization, force production and force absorption.

Each case can be very different depending on the goals of the patient, the age of the patient, the size of the repair, type of repair, etc. We follow these basic guidelines. Unless otherwise directed by a physician.

**Week 1-4**
- **Sling (duration varies – call 258-8543 for information)**
  - No active upper extremity open chain rotation or abduction. Flexion, as tolerated, up to 90°
  - Sleep in sling for 3 weeks
  - Exercises emphasize standing scapular motion, retraction, depression and scapular PNF with arm in a sling
  - Use complementary trunk movement to facilitate scapular motion (flex and rotate away from involved side for protraction, extend and square or rotate toward involved side for retraction)
  - Closed Kinetic Chain rotator cuff and scapular exercises such as weight-shifting, wobble boards, and gentle stabilization
  - Towel slides on a table as tolerated
  - Passive and Active-Assisted ROM
- **After 3 weeks:**
  - PROM, AAROM, progress to AROM
  - Continue CKC rotator cuff stabilization and scapular exercises, increasing arm elevation as tolerated
  - Add tolerable arm motion to standing scapular motion exercises
  - Facilitate active arm elevation through axial loading of the glenohumeral joint (patient pushes on a table or wall as he/she elevates in the desired plane)
- **At 4 weeks, initiation of gentle mobilizations and capsular stretching, if indicated**
  - These can become more aggressive at 6-8 weeks

**Week 4-8**
- **Exercises should progress toward functional activities as ROM and strength improve**
- **Open chain rotator cuff strengthening when there is good scapular control and begin at < 90° elevation**
  - We prefer rotator cuff loading that is consistent with function, including scapular and trunk motion, rather than isolated exercise
  - These include punches at various (tolerable) heights and planes, and adding arm elevation, rotation and extension of the lever arm to the complementary scapular exercises
  - Avoid impingement and rotator cuff referred pain throughout
EXAMPLE EXERCISES FOR FUNCTIONAL SHOULDER REHABILITATION

SCAPULAR CONTROL
When: Beginning of therapeutic exercise through the end of rehabilitation, may begin without glenohumeral motion or arm elevation, introduction of glenohumeral motion and arm elevation once indicated and scapular control increases
Goals: Facilitate scapular motion and scapular re-education, strengthen scapular musculature in functional movement patterns
Sample Exercises: Trunk diagonals, sternal lifts, shoulder dumps (incorporates glenohumeral elevation and external rotation), tubing fencing, dumbbell or tubing punch/pull, modified dumbbell "cleans"

CLOSED KINETIC CHAIN
When: Begin at the onset of therapeutic exercise and continue throughout the program
Goals: Stimulate pain-free co-contractions of the rotator cuff, scapular musculature independently and in coordination; promote glenohumeral compression and dynamic stabilization
Sample Exercises: Weight-shifting on a fixed hand, ball stabilization in appropriate plane and degree of elevation, various levels of push-ups, scapular clock

AXIALLY LOADED EXERCISES
When: Glenohumeral translation or scapulohumeral coordination is determined to be the limiting factor in increasing AROM
Goals: Increase active arm elevation with appropriate rotator cuff and scapular stabilizer co-contractions, facilitation of weakest components of AROM to achieve appropriate, pain-free ROM, transition to active, open kinetic chain arm elevation
Sample Exercises: Table slides, ball rolling, wall slides, Pro-Fitter™ (Fitter International, Calgary, Alberta, Canada)

INTEGRATED EXERCISES
When: After scapular control and AROM is at or approaching normal
Goals: Integrated strengthening of scapular, rotator cuff and trunk musculature
Sample Exercises: Overhead dumbbell presses in all planes, slow and controlled simulated sport activities (full throwing, swing, or striking motion of a sport), “hanging” cleans, power cleans, explosive plyometric activities, variations of other exercises incorporating greater proprioception and core demand

Exercises for Functional Shoulder Rehabilitation

1. **Trunk Diagonals.** With the uninvolved-side foot forward, emphasize trunk flexion and medial rotation in the start position. As weight shifts rearward, emphasize trunk extension and lateral rotation, hip extension, and pull the scapula medial and inferior.
2. **Sternal Lifts.** Emphasize erect posture, lifting the sternum up and out while pulling the scapula in and down. Allow rhythmic, reciprocal movement.
3. **Shoulder Dumps.** Gross movement similar to Trunk Diagonals adding an object such as a medicine ball. The ball is “dumped” over the shoulder, simulating the dumping of a bucket of water. This adds glenohumeral elevation and rotation to the movement.
4. **Fencing.** Using tubing a fencing stance and lateral lunges emphasize frontal plane scapular retraction and control of lateral scapular motion. Angle of pull, amount of rotation, and amount of complementary weight shifting may vary.
5. **Punches.** Done at various levels and planes, with varying complementary movement, punches load the rotator cuff in functional movement patterns.
6. **Scapular Clock.** By controlling the patient’s posture and positioning relative to the fixed hand, the clinician can ensure proper scapular response.
7. **Fitter Extension.** While maintaining thoracic extension and using the Pro Fitter (Fitter International, Inc., Alberta, Canada) with heavy resistance, apply a downward force while attempting glenohumeral extension. This safe, closed kinetic chain exercise elicits force couple contraction of the scapular stabilizers.
8. **Simulated Pitching Motion.** “Slow motion” and “forward/reverse” performance of functional activity conditions muscles for that activity.
9. **Hanging Cleans.** Incorporate hips and trunk with scapular movement. Primary plane can be modified when using dumbbells. Degree of glenohumeral elevation can be modified.
10. **Proprioceptive Challenge.** Changing the stance or introducing unstable surfaces can increase the proprioceptive challenge of the exercise.