



# Orthopaedic Protocols

## Total Shoulder Replacement Arthroplasty

### 1-3 Days Post-op:

- Pendulum exercises are initiated every 2, 3 hours for 5 min sessions. The patient is encouraged to perform scapular elevation, depression, retraction & protraction frequently throughout the day.
- Because the subscapularis is divided & repaired, the patient is cautioned against active internal rotation beyond 35-40 degrees. Passive Range of Motion (PROM) in all other planes is permitted. Active forward flexion & abduction are also permitted if the arm is held in internal rotation throughout the arc. Again, because of the subscapularis repair, the patient should be cautioned against resistive internal rotation as a strong contraction might stress the repair. Active & passive motion is permitted for the elbow, forearm, wrist & hand.
- The shoulder immobilizer is worn between exercise sessions & at night.
- Pain management may consist of high rate, conventional Transcutaneous Electrical Nerve Stimulator (TENS) or icing.

### 3-6 Weeks Post-op:

- Increased emphasis should be placed on active internal & external rotation, including active external rotation beyond 35-40 degrees. During these early weeks, combined external rotation & abduction are stressful to the subscapularis repair & should be avoided both with exercises & with Range of Motion (ROM) measurements.
- Begin combining external rotation to neutral with forward flexion & scaption (a position between forward flexion & abduction).

### 5-6 Weeks Post-op:

- Passive external rotation can generally be initiated. Progression to full passive external rotation will vary depending on tissue strength. A gentle conservative approach would involve self passive external rotation stretching with a dowel rod & with pulleys. This is progressed to low-load prolonged stretching using exercise tubing or weights. Combining the stretch with heat or ultrasound helps to further enhance the elasticity of tight tissues. External rotation should be done with the shoulder adducted.
- Full return of active & PROM in all other planes is expected by 6 weeks post-op; however abduction may remain limited until external rotation improves.

## **Total Shoulder Replacement Arthroplasty**

### **6-8 Weeks Post-op:**

- Continue to emphasize regaining external rotation both actively & passively.
- Begin isometrics every other day emphasizing the subscapularis & pectoralis major by performing internal rotation & adduction. The patient should perform 3-5 sets of 10-12 repetitions providing resistance with the uninvolved hand & a wall. Each set should be performed with the arm in varying positions to allow strengthening to occur throughout the arc. (Example: Give resistance to the subscapularis with the arm at neutral, 30 degrees of internal rotation, & 60 degrees of internal rotation).
- By 8 weeks, the subscapularis should be well healed & more aggressive strengthening can be initiated using weights or exercise tubing. These should be performed every other day. Again 3-5 sets of 10-12 repetitions is recommended. In order to efficiently strengthen the involved musculature, the weight used should be a challenge. Be sure that strengthening of the scapular stabilizers, as well as all of the muscles of the rotator cuff, is emphasized in the program.

### **8-12 weeks Post-op:**

- Continue strengthening & consider a formal work conditioning or upper extremity strength conditioning program. A structured program, supervised by an experienced therapist, is necessary to safely regain strength while minimizing the chance of injury to the involved musculature.
- By 12 weeks post-op the patient should be able to gradually return to most activities. However, activities requiring substantial shoulder ROM (golf, swimming, tennis) may need to be delayed until 6 months post-op.

### **Considerations:**

- Essentially the only motions not allowed in the early weeks are active internal rotation & active & passive external rotation beyond 35-40 degrees. Although painful, patients are generally able to function very well with these limitations & routinely remove the shoulder immobilizer to prevent external rotation.
- Regaining external rotation can be a challenge. A strong home program of heat, PROM & weighted stretches is essential for a good result.
- In case of long standing rotator cuff tears, arthroplasty can result. A total shoulder Arthroplasty is not indicated as an intact rotator cuff is necessary for stability of the glenoid component of the Arthroplasty. In cases of arthroplasty, a hemi-arthroplasty is performed instead. A hemi-arthroplasty consists of a humeral head replacement only. The rehabilitation guidelines listed above for a total shoulder arthroplasty are appropriate for a hemi-arthroplasty as well.