Rehabilitation following:
Total Shoulder Arthroplasty (TSA)

Background:

The TSA involves replacing the humeral head with a metal prosthesis made of titanium and cobalt chrome alloy. The glenoid is covered with a plastic socket which is cemented in place. This operation has been performed for over forty years with a good track record of success.

It is important to realize that the subscapularis, a rotator cuff muscle, must be cut and then reattached to complete this operation. It takes approximately twelve week for tendons to heal, and the subscapularis should be protected during this time by avoiding external rotation (ER) stretching and internal rotation (IR) strengthening.

Restrictions:
The following are lifetime restrictions:

1. Patients should not regularly lift more than 35lbs overhead with the operated arm.

2. Patients should not use the operated arm for upper extremity weight-bearing (push-ups, crawling, leaning on walker)

Phase I: (weeks 0-6)

Goals:
• Maintain the passive forward elevation obtained at surgery.
• Promote soft tissue healing. Protect subscapularis repair.

Sling Wear:
• Patients should wear the sling at all times except when showering, dressing or stretching the shoulder. (6weeks unless otherwise directed by physician or ATC)
• Patients may continue to ice the shoulder 3-5X/day for 20-25 for the first few weeks or as needed.

Restrictions:
• No stretching of the shoulder into external rotation (ER) beyond neutral.
• No active range of motion of shoulder (AAROM/AROM).
Exercises:
- Stretching exercises should be performed 5X/day!
  - Pendulums
  - Supine passive forward elevation stretches.
    - This should be done with the patient using the other hand to move the operated extremity. Each stretch should be held for a minimum of ten seconds. Goal of 140 degrees of passive forward elevation by 2-4 weeks
  - Table slides sitting parallel to table edge.
  - Doorway pulley if tight
- PROM/AROM of elbow, wrist, and hand
  - Elbow curls with 0-5lbs. dumbbells
  - Ball squeezes
  - Finger web exercises
  - Forearm curls
- Scapular stabilizers
  - Shoulder shrugs (minimal weight 0-5lbs.)
  - Shoulder blade pinches/rows (minimal weight 0-5lbs.)

**Phase II: (Weeks 6-12)**

Goals:
- Transition to AROM, and light strengthening.
- Continue to increase PROM aggressively

Precautions:
- No ER beyond 25 degrees’ weeks 6-10
- Ok to progress as tolerated weeks 10-12, stop at 50 degrees.

Sling Wear:
- Patients may discontinue (D/C) sling wear at this time
- Focus on regaining normal shoulder swing with gait.

Exercises:
- PROM
  - Continue supine passive forward elevation; >140 degrees.
  - May progressively stretch IR to get hand behind and up the back.
  - Initiate AAROM for flexion, ER and IR; ER to 30 degrees only.
    - Wall walks
    - Finger ladder
    - L-Bar for flexion and ER
  - Initiate AROM for flexion, ER and IR; ER to 25 degrees only.
    - Forward elevation with 5 second hold (progress hold time).
- Continue posterior RC isometrics (submaximal, non-painful)
  - Scaption
  - ER
  - IR
- Prone rows/scapular retraction (progress weight gradually, given lifetime restrictions).
- Initiate bench press plus maneuvers
  - Supine arm raises to 90 degrees followed with plus maneuver for serratus anterior activation.
- Initiate progressive inclination supine bench presses (0, 20, 40, 60, 80 degrees)
  - Begin on flat bench
  - Begin with no weight
  - When able to complete 20-reps for 3 sets increase incline and weight
    - Repeat process; increase weight to 2 lbs.
    - Continue the process until strength as increased.
    - Gradually continue to add more weight within lifetime restrictions.

**Phase III: (weeks 12 and beyond)**

**Goals:**
- Increase AROM of shoulder and increase strength

**Precautions:**
- No lifting greater than 35 lbs

**Exercises:**
- Continue AAROM, AROM all planes.
- May actively ER as tolerated; no restrictions
- May stretch in ER as tolerated; no restrictions
- May begin AROM and isometrics for IR as tolerated; no restrictions
- May stretch in IR as tolerated; no restrictions
- Continue with progressive incline presses and bench press pluses
- Begin seated rows
- Lat pull-downs
- Progress forward elevation in scaption with light weights (5-10 lbs)