Rehabilitation following:
Reverse Total Shoulder Arthroplasty (RTSA)

Background:

The RTSA is a specific type of shoulder replacement. It involves reversing the normal anatomy of the shoulder by placing the ball on the socket, and the socket is placed in the position of the humeral head. This is biomechanically allows shoulder motion even when the rotator cuff is not working.

The indications for a RTSA include: shoulder arthritis associated with a massive rotator cuff tear, irreparable rotator cuff tears, complex proximal humerus fractures, revisions of previous shoulder replacements.

The reverse shoulder replacement was originally introduced by Dr. Gramont in France in 1985. These operations have been performed in the United States since FDA approval in 2004. The results of this operation are very promising but its use is still approached with caution.

Restrictions:

The RTSA does not have long term follow up, but just like most all joint replacement surgeries, complications when they occur can be severe. Therefore, we try to avoid scenarios that could result in fracture or dislocations. The following are life-time restrictions:

1. Patients should not lift more than 25lbs. overhead with the operated arm.
2. Patients should not use the operated arm for upper extremity weight bearing.
3. Patients should not forcefully stretch the arm in adduction/internal rotation as in reaching up the back. (position of instability)
4. Patients should not forcefully stretch the arm in extension/external rotation as in reaching to the back seat of a car (position of instability)

Phase I: (weeks 0-2)

Goals:
- Soft tissue healing
- Pain reduction

Sling Wear:
- Patients should wear the sling at all times except when showering, dressing or exercising the shoulder. When the sling is removed to shower, the hand should rest across the stomach.
Exercises:
- Codman exercises (bent over arm pendulums)
- Hand, wrist and elbow AROM as tolerated.

Modalities:
- Patients may continue to ice 3-5 times per day for 20-25 minutes per time.
- GameReady
- Sensory E-stim (no muscle contractions)

**Phase II (weeks 2-6)**

Goals:
- Increase Passive Range of Motion (PROM)

Precautions:
- Stretching exercises should not be forceful.
- Each patient will achieve a different range of motion.
- External rotation stretches at the side should be limited to 20-30 degrees.
- Shoulder extension and internal rotation/adduction should be avoided. (hand behind back)

Sling Wear:
- Patients should continue to wear the sling at all times except for the above listed.
- You can take it off if you are simply resting in a chair with your arm supported by pillows. When getting up return to sling wear.

Exercises:
- Codman exercises
- Supine passive forward elevation progressively to 120 degrees as tolerated
- Table slides to tolerance
- ER to 20-30 degrees
- Scapular Mobilization (shoulder shrugs, scapular retraction)

Modalities:
- Patients may continue to ice 3-5 times per day for 20-25 minutes per time.
- Game-Ready ice machine
- Sensory E-stim (no muscle contractions)
Phase III (weeks 6-12)

Goals:
- Continue to increase PROM through stretching daily
- Begin AAROM and AROM.

Precautions:
- Avoid placing hand behind back.
- Avoid combined extension and external rotation (no ER past 30 degrees)
- Avoid combined IR/ADD higher than the belt line/lumbar spine region.

Sling Wear:
- Patients may discontinue the sling and attempt normal swing when walking.

Exercises:
- Continue PROM exercises (no restrictions on forward elevation).
- Begin AAROM
  - Doorway Pulley
  - Finger Ladder/Wall walks
- Begin AROM (forward elevation) in supine position (flat bench) and then progress with supine inclination (incline bench).
  - Begin deltoid and pectoral strengthening using supine bench press with progressive inclination.
    - Initiate bench press plus maneuvers
    - 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 3sets increase incline/weight.
      - Repeat process; increase weight by 2lbs.
      - Continue the process until strength as increased.
      - Gradually continue to add more weight within lifetime restrictions.
- Prone rows/scapular retraction (progress weight gradually, given lifetime restrictions).
- Supine arm raises to 90 degrees followed with plus maneuver for serratus anterior activation.
- Begin resistance band exercises:
  - I’s/T’s/Y’s as tolerated
    - Complete within ER guidelines of < 30degrees
Phase IV (weeks 12 and beyond)

Goals:
- Increase AROM of shoulder and increase strength

Precautions:
- No lifting more than 25
- No excessive motion up the back
- No excessive motion out to the side

Exercises:
- Continue AAROM with doorway pulley and wall walks
- Continue AROM for endurance and strength building (raising arm in air and holding)
- Continue strengthening with progressive incline supine press
- Continue strengthening with deltoid isometrics
- Progress to light weights (5-10lbs) of forward elevation in scapular plane.

Phase V (Lifetime)

I hope you are satisfied with your shoulder. It has been my pleasure being your surgeon. I recommend stretching your shoulder 3-5 times per week to maintain good joint health and to exercise the shoulder within the lifetime restrictions 2-3 times per week as a maintenance program to keep your shoulder strong.

Best Wishes!