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## **Subscapularis Tendon/Pectoralis Major Tendon: Postoperative Protocol**

### ***Basis***

- Tendon healing back to bone is a slow process that requires many weeks under tension free conditions
- The success of tendon repair depends on factors including tear size, tissue quality, tension on the repair
- The subscapularis repair comes under tension during external rotation and forward elevation past 90. These motions are restricted more than would be for a standard superior rotator cuff tear

### ***Precautions***

- No active use of the shoulder for 8 weeks
- External Rotation to neutral only for first 4 weeks
- NOTES:** if biceps tenodesis included in surgery then no resistive elbow flexion or supination for 6 weeks (Passive and Active Range of Motion okay)

Early passive range of motion is highly beneficial to enhance circulation within the joint to promote healing. The **overall goals** of the surgical procedure and rehabilitation are to:

- Control pain and inflammation • Regain normal upper extremity strength and endurance • Regain normal shoulder range of motion • Achieve the level of function based on the orthopedic and patient goals

Exercises should be initiated within the first week following surgery. The supervised rehabilitation (outpatient physiotherapy) started after 4 weeks is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility.

**Return to activity** requires both time and clinical evaluation. To most safely and efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and endurance. Functional evaluation including strength and range of motion testing is one method of evaluating a patient's readiness to return to activity. Return to intense activities following shoulder surgery requires both a strenuous strengthening and range of motion program along with a period of time to allow for tissue healing.

### **Returning to work - Rotator cuff**

- For most sedentary jobs, I recommend taking a week off work.
- When you return to work your arm will be in a sling (for 4 weeks after surgery), but you should be able to manage as long as you do no lifting, pushing, pulling or carrying.
- You are not to raise your arm without help for six weeks after surgery. This allows the tendon to heal in the best possible position.
- You may begin light duty work involving no lifting, pushing, pulling or carrying, within two weeks after surgery; you may work at waist level and lift 5-10 pounds 3-4 months after surgery.
- Most patients can tolerate occasional work at shoulder level 4-6 months after surgery.
- Return to heavy lifting or overhead use may require 6-12 months.
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### ***Prehabilitation***

- Apply ice (PolarCare if available) as much as tolerated within a 24 hour period for first week. If using ice packs, encourage icing 20-30 minutes every 3-4 hours while awake. This is also useful after therapy.
- Sling used for 4 weeks

### ***Home Exercise Program Phase 1:*** (Weeks 1 - 4)

Follow pictorial exercises illustrated in **Shoulder Surgery- Initial Postoperative Exercises**

### ***Outpatient Physiotherapy Phase 2:*** (Weeks 4 - 8)

Instruct in basic progression of rehabilitation program and expectations for time course to recovery

#### **ROM**

- Increase forward elevation and external rotation 10 per week
- Begin use of pulleys to assist with forward elevation with hand supine to externally rotate humerus away from acromion

- May add table top stretch for forward elevation but no wall walking
- Start gentle posterior capsule stretches with cross body adduction and side lying internal rotation in abduction
- Joint mobilization of glenohumeral joint and scapulothoracic junction. Can progress to Grades III/IV as tolerated

**Strength: Start at Week 7**

- Instruct in home program and begin progressive supine two-hand press
  - Start with hands close together and progressively widen
- Instruct in home program and begin low level isometrics flexion, abduction, ER (no IR or extension)
- May start isotonic ER with light dumbbell or theraband either sidelying or standing
- Continue scapular retraction and depression exercises and add shrugs
- Low level isotonic biceps and triceps strengthening with elbow supported
- Lower body aerobic conditioning

**Sling**

- At Week 4 may discontinue use of sling in daytime with precaution of no lifting arm away from body
- May continue to wear sling at night until Week 6 to protect arm

**Outpatient Physiotherapy Phase 3: (Weeks 8 - 12)**

**ROM**

- Progressive return to full ROM
- At 8 weeks may begin internal rotation stretch behind back
- ER in progressive degrees of abduction
- Continue joint mobilization as indicated

**Strength**

- Low resistance UBE for warm-up
- Add low level isometrics in IR and extension
- Initiate Theraband isotonic strengthening program to flexion, abduction, ER (no IR or extension)
- Theraband for scapular strengthening with rows, shrugs and punches and dumps
- Closed chain scapular stabilization exercises
  - Table top balls roll, wall wash
- Assess for and correct substitution patterns

**Outpatient Physiotherapy Phase 4: (Weeks 12 - 16)**

**ROM**

- Continue flexibility training with active range of motion
- Emphasize posterior capsular flexibility and scapular mobility
- Add anterior chest wall stretching

**Strength**

- Progress to maximal isometrics in all planes
- Begin progressive resistive rotator cuff and periscapular strengthening starting with eccentric and progressing to concentric
- Progress IR/ER isotonic to 90 degrees if can be accomplished pain-free and without compensatory hiking of scapula or shoulder

**Notes**

- Resistance must be added gradually to promote contractile remodeling
- Multiple angle: start and low level and progress to horizontal as strength improves
- Submaximal resistance to painful motions should be used until the motions are pain free
- Emphasis early should be on lower weight and higher repetition to foster muscle hypertrophy
- Progress scapular stabilization program
  - Forward and reverse UBE starting with low resistance and progressing
  - Serratus, latissimus, trapezius, rhomboid and pectoralis strengthening
- May start upper extremity proprioception and functional progression activities as indicated
- Two-handed plyometrics: ball toss, chest pass, overhead pass, diagonals

**Outpatient Phase 5: (Functional Phase)**

- Continue strengthening program with progressive increase in resistance
- Can initiate isokinetic internal rotator/external rotator strengthening in plane of scapula.
- Progress to Phase II/III functional upper extremity proprioception and functional progression activities.
- Return to functional activities
- Work/sport specific conditioning to enhance endurance and coordination
- One-handed plyometrics
- Eccentric cuff strengthening
- Large muscle strengthening: lat pull downs, bench press, military press
- UBE at higher resistance