Dr. Tyler Kent
Tylerkentmd.com
PECTORALIS TENDON REPAIR REHABILITATION PROTOCOL

The following Post-Operative Pectoralis Repair Guidelines were developed for patients undergoing open pec repair. Progression is both criteria-based and patient specific. Phases and time frames are designed to give the clinician a general sense of progression and will be dependent on adequate soft tissue healing time. The program should balance the aspects of tissue healing and appropriate interventions to maximize function.

For patients with comorbidities such as diabetes, osteoporosis or high Body Mass Index (BMI), healing times and range of motion (ROM) progressions may be delayed.

Typically, patients are discharged from the hospital on the day of surgery. The arm is placed in a sling to protect the repair. At 4 weeks (Post-Operative Phase 2), the sling weaned until no longer needed. Patients are encouraged to have one physical therapy session at 2 weeks for patient education. Patients are kept non-weight bearing and no active ROM for 4 weeks. During this period, they are encouraged to elevate the arm and control swelling.

Phase I, 0-4 weeks. Limited internal or external rotation, protect the repair.

PRECAUTIONS	- Sling 4-6 weeks when not exercising or bathing - No humeral extension behind mid-line of body - No active external rotation - No resisted internal rotation - No resisted horizontal adduction
Post-Operative Goals	- Pain and edema control; Cryotherapy and elevation - Home Exercise Program (HEP) daily - Protect surgical repair and incision - Wrist, hand, shoulder Range of Motion (ROM) ROM: - Shoulder Forward Flexion (FF) to 90° with arm adducted - Shoulder ER to 0 Full elbow and wrist ROM; Initiate Distal Strengthening
Treatment Recommendations	- Cryotherapy and edema control - TENS with ice - Pain-free distal AROM: Wrist and hand AROM, shoulder pendulums - ADL training - Initiate and emphasize importance of HEP - Gentle passive ROM in supine to FF 90°, ER to 0° - Supine therapist assisted PROM - Supine patient AAROM - Bicep/Tricep strengthening at 4 weeks
Criteria for Advancement	- Decreasing discomfort at rest - Adequate wound healing - Independent with ADLs - Independent with home exercise program (HEP)

Phase II, 4-8 weeks. Begin gentle isometric strengthening; gradual increase in ROM

PRECAUTIONS	- No active shoulder adduction - Avoid pain with therapeutic exercise & functional activities - No humeral extension posterior to midline
Post-Operative Goals	- Wean from use of sling at 6 weeks - Restore full passive FF - Restore ER to 60° by 8 weeks - Restore normal scapular stability and scapulohumeral rhythm - Increase strength and endurance
Treatment Recommendations	- Continue phase I exercises as appropriate - Supine therapist assisted PROM - Patient A/AA ROM - Manual scapular exercises in side-lying position - Active scapular retraction in seated or standing position - Scapular retraction with elastic bands (Week 6) - Physioball stabilization exercise (Week 6) - Hydrotherapy (Week 6) o AAROM FF, gentle IR/ER, gentle row with flotation devices - Isometric deltoid strengthening: anterior, posterior, and middle - Manually resisted isometric IR and ER (Week 6) - Upper body ergometry (Week 6) - Sub max wall isometric IR and ER (Week 7-8)
Criteria for Advancement	- Complete incision healing - Must meet ROM advancement criteria as listed above - Tolerance of exercises without discomfort

Phase III, 8-12 weeks. Regain full ROM, begin AROM and progressive strengthening

PRECAUTIONS	- Avoid pain during ROM and strengthening exercises - No forced stretching - No humeral extension posterior to midline
Post-Operative Goals	- Restore Full AROM (except humeral extension) - Improve scapular strength - Improve rotator cuff strength - Initiate light resistive muscle strengthening exercises
Treatment Recommendations	- Wand exercises - Pulleys - Serratus punch, seated row (arc) - Rotator cuff strengthening with elastic bands - Dumbbell press (light weights) - Wall pushup - Horizontal Adduction (flys)
Criteria for Advancement	- Full ROM - Tolerance of exercises without discomfort

Phase IV, 12-20 weeks. Improve Strength

PRECAUTIONS	- Avoid pain with therapeutic exercise & functional activities - Avoid sport activity until adequate strength development and MD clearance
Post-Operative Goals	- Physical Therapy (PT) 1-2x/week - HEP daily - Increase flexibility - Increase strength
Treatment Recommendations	- Gentle pectoral stretches - Continue pectoralis strengthening (dumbbell press, chest press, flys, push-ups) - Continue scapular strengthening - PNF diagonal patterns (D1 and D2 flexion and extension) - Initiate plyometric program
Criteria for Advancement	- Full ROM (including humeral extension) - Tolerance of exercises without discomfort

Phase V, 20+ weeks. Return to all activities

PRECAUTIONS	- Avoid high weight, low repetition bench pressing - Avoid sport activity till adequate strength development and MD clearance
Post-Operative Goals	- Physical Therapy (PT) 1-2x/week - HEP daily - Return to gym program - Sports specific activities depending on sport
Treatment Recommendations	- Continue pectoralis strengthening (dumbbell press, chest press, flys, push-ups) - Continue to advance UE strengthening and flexibility - Advance plyometric program
Criteria for return to all activities	- Quantitative assessments = 90% of contralateral extremity - Movement patterns, functional strength, flexibility, motion, endurance, power, and accuracy to meet demands of sport. Increase cardiovascular load to match that of desired activity. - Collaborate with ATC, performance coach/strength and conditioning coach, skills coach and/or personal trainer to monitor load and volume as return to participation. - Consult with MD on timing return to sport including any limitations.