



SPORTS RECONSTRUCTIVE SURGERY PROTOCOL

Pectoralis Major Tendon Repair

Clinical Rationale & Pathophysiology: Applies to surgical repair of complete avulsion of the sternal and/or clavicular heads of the pectoralis major tendon from the lateral lip of the bicipital groove using unicortical/bicortical anchor fixation.

CRITICAL PRECAUTIONS & IMMOBILIZATION RULES

- Sling immobilization in internal rotation strictly required for 6 weeks.
- STRICT PROHIBITION of shoulder extension, external rotation beyond neutral (0°), and horizontal abduction for 8 weeks.
- NO ACTIVE ADDUCTION or resisted internal rotation for 12 weeks.
- No weight lifting, bench press, or pushing through arm for 16 weeks.

Phase I: Tendon-to-Bone Anchor Protection (Weeks 0 - 6)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Protect anatomical fixation of pectoralis major tendon onto humerus• Prevent tension across healing tendon footprint• Maintain wrist, hand, and elbow mobility	<ul style="list-style-type: none">• Sling with abduction wedge worn 24/7• Gentle passive forward flexion limited to 90° in scapular plane• PROM external rotation strictly limited to 0° (neutral)• Active hand grip, wrist flexion/extension, and active elbow ROM• Cryotherapy and anti-edema lymphatic management

Phase II: Controlled Expansion & Early Active Movement (Weeks 6 - 12)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Wean sling gradually over week 6-8• Advance passive elevation and external rotation in controlled increments• Initiate light periscapular and rotator cuff activation	<ul style="list-style-type: none">• Progress PROM forward elevation to 140° by week 10• Progress passive ER gradually to 30° at side by week 10, 45° by week 12• Active-assisted to active forward flexion within safe limits• Gentle posterior cuff and periscapular isometrics (avoiding pec contraction)• Scapular retraction, depression, and posture training

Phase III: Progressive Resistance & Muscle Loading (Weeks 12 - 18)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Achieve symmetric full active ROM in all planes• Initiate very gentle pectoralis major isometric recruitment at week 12• Progressive strengthening of rotator cuff, deltoid, and back	<ul style="list-style-type: none">• Begin light elastic band internal rotation and horizontal adduction at week 14• Lat pull-downs (light), seated rows, bicep/tricep isotonic exercises• Closed kinetic chain wall pushups initiated at week 16• Cardiovascular cross-training without upper body impact

Phase IV: High-Level Strengthening & Return to Sport (Weeks 18 - 26+)

Rehabilitation Goals & Milestones	Therapeutic Interventions & Exercise Progression
<ul style="list-style-type: none">• Restore maximum muscular strength, power, and muscle bulk• Safe return to contact athletics, weight training, and heavy vocational labor at 6-9 months	<ul style="list-style-type: none">• Bench press progression: start with dumbbell light weights, narrow grip, avoiding deep chest stretch• Plyometric medicine ball drills and sports-specific conditioning• Isokinetic strength testing and functional sports clearance

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