

Pectoralis Major Repair

Physical Therapy Protocol · Open Repair (Bone-Tendon or Tendon-Tendon)

Based on the Ohio State University Wexner Medical Center clinical practice guideline for pectoralis major tendon repair, the Massachusetts General Hospital rehabilitation protocol, and the University of Washington shoulder service protocol. Tendon-tendon and muscle-tendon repairs progress more slowly than bone-tendon repairs; confirm repair type and any surgeon-specific limits before advancing.



AT A GLANCE

TIMELINE	6–9 months; strengthening delayed until week 8+, bench press reintroduced last
IMMOBILIZATION	Sling in neutral/internal rotation 4–6 weeks (up to 6–8 weeks per surgeon), including at night
KEY MILESTONES	PROM flexion 75° / ER 0° by week 6 · full ROM by weeks 8–14 · push-up progression from ~week 14
RETURN TO ACTIVITY	Barbell bench press is the last exercise returned (~6 months, no 1RM through 9 months); contact sport after 6 months with surgeon clearance

KEY PRECAUTIONS

- No passive ER stretching beyond prescribed limits in Phases 1–2 (start ER to 0° in neutral; progress ~5°/week) — the anterior repair is maximally loaded by ER and horizontal abduction.
- No resisted adduction, horizontal adduction, or internal rotation until weeks 8–12; IR isometrics are the last isometric added.
- Avoid wide-grip pressing and humeral abduction beyond the frontal plane during all push-up and bench press progressions.
- Discourage 1RM bench press testing through 9 months postoperative.

PHASED REHABILITATION

PHASE 1 — PROTECTION		Weeks 0–4
GOALS	- Protect the repair - Pain and edema control - Establish protected PROM without stressing the anterior repair	
INTERVENTIONS	- Sling immobilization in neutral/internal rotation, including at night - Active elbow (in protected range), wrist, and hand exercises; gripping - From week 2: PROM ER to 0° with arm in neutral; PROM flexion to 45° - Progress ER ~5°/week and flexion 5–10°/week within pain-free range - Pendulums (supported), scapular retraction without resistance - Cryotherapy; stationary bike with sling for conditioning	
CRITERIA TO ADVANCE	- Pain controlled - Incision healing without drainage - PROM tolerated within prescribed limits	
PHASE 2 — PROTECTED MOTION		Weeks 4–6
GOALS	- Advance PROM toward phase targets - Begin sling wean per repair type - Initiate protected submaximal isometrics	
INTERVENTIONS	- Continue graded PROM: target flexion 75°, abduction 35°, ER 0° at 15° abduction - Bone-tendon repairs begin sling wean at 4 weeks; tendon-tendon/muscle-tendon repairs at 5–6 weeks - Submaximal shoulder isometrics beginning ~week 5 — no IR isometrics - AAROM supine wand flexion to 90° - Scapular stabilization without resistance; continue conditioning	
CRITERIA TO ADVANCE	- PROM flexion 75°, abduction 35°, ER 0° at 15° abduction - Minimal pain with isometrics - Surgeon clearance to discontinue sling	
PHASE 3 — ACTIVE MOTION		Weeks 6–8
GOALS	- Restore AROM in pain-free range - Begin weight bearing through the surgical side	
INTERVENTIONS	- Discontinue sling (per repair type and surgeon) - AROM elevation in pain-free range: target flexion 120°, abduction 90° - PROM ER may be advanced beyond 40° as tolerated - Begin gentle weight bearing through the surgical arm - Pulleys, wall climbs, rope-and-pulley elevation - Avoid active adduction, horizontal adduction, and internal rotation	
CRITERIA TO ADVANCE	- AROM flexion 120° and abduction 90° without substitution - No reactive pain/swelling after sessions	

PHASE 4 — PROGRESSIVE STRENGTHENING		Weeks 8–14
GOALS	- Full ROM in all planes - Initiate pectoralis and IR loading submaximally	
INTERVENTIONS	- Gain terminal ROM with stretching and grade III joint mobilizations - Add IR isometrics, then light band IR/adduction — submaximal only - Wall push-up plus progressing to table push-ups (elbow flexion not beyond 90°) - Rhythmic stabilization and dynamic stabilization drills - Rotator cuff and periscapular strengthening (rows, ER, prone Y/T) - Biceps/triceps resistance exercises	
CRITERIA TO ADVANCE	- Full pain-free ROM - Submaximal pectoralis loading without pain - Symmetric scapular mechanics	

PHASE 5 — ADVANCED STRENGTHENING & RETURN TO ACTIVITY		Weeks 14–24 (to Month 9)
GOALS	- Restore pressing strength - Graded return to weight training and sport	
INTERVENTIONS	- Single-arm pectoralis strengthening: bands progressing to dumbbell bench press with light weight/high repetitions; avoid wide grip - Push-up progression avoiding humeral abduction beyond the frontal plane - Barbell bench press reintroduced last, ~6 months, beginning ~50% of prior loads and progressing slowly; no 1RM through 9 months - Plyometric progression (chest pass to rebounder) before ballistic activity - Sport-specific conditioning	
CRITERIA TO ADVANCE	- Strength ≥85% of the uninvolved side - Pain-free push-up and dumbbell press progression - Contact sport after 6 months with surgeon clearance - Functional testing within 15% of the uninvolved extremity	

GUIDING PRINCIPLES

This protocol follows criterion-based progression over rigid time-based advancement; phased rehabilitation balancing tissue healing with controlled stress application; objective milestones (ROM, strength LSI, functional testing) to guide phase transitions; individualization based on surgical findings, tissue quality, and patient factors; and ongoing surgeon–therapist communication throughout recovery.

REFERENCES

1. Ohio State University Wexner Medical Center Sports Medicine. Pectoralis Major Tendon Repair Clinical Practice Guideline. 2020. <https://medicine.osu.edu/-/media/files/medicine/departments/sports-medicine/medical-professionals/rehabilitation-protocols/pectoralismajortendonrepair2020.pdf>
2. Massachusetts General Hospital Sports Physical Therapy. Rehabilitation Protocol for Pectoralis Major Repair. <https://www.massgeneral.org/assets/MGH/pdf/orthopaedics/sports-medicine/physical-therapy/rehabilitation-protocol-for-pectoralis-major-repair.pdf>
3. University of Washington Shoulder Service (Warne WJ). Pectoralis Major Repair Physical Therapy Protocol. <https://faculty.washington.edu/alexbert/Shoulder/Handouts/WarnePT/Pec%20Repair%20WB05.pdf>

For clinical use by licensed physical therapists treating patients of Robert Pettit, MD. This document is a rehabilitation guideline, not a substitute for clinical judgment. Progression must be individualized based on intraoperative findings, tissue quality, and patient response. Scan the QR code for the current version of this protocol.