POST-OPERATIVE PROTOCOL · PHASES I–II · PAGE 1 OF 2

OPEN PECTORALIS MAJOR REPAIR

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PRECAUTIONS

- Excessive passive external rotation
- Forceful internal rotation or adduction
- Forceful pushing motions
- Rate of progress based on tissue quality

PHASE I	PHASE II	PHASE III	PHASE IV	SLING
WEEKS 0–6	**WEEKS 8–14**	**MONTHS 4–6**	**MONTHS 6–9**	**4 WEEKS**
Immediate post-operative	Intermediate	Advanced strengthening	Return to activity	Immobilizer for sleep

I IMMEDIATE POST-OPERATIVE PHASE

GOALS Protect the surgical procedure · minimize the effects of immobilization · diminish pain and inflammation · establish baseline proprioception and dynamic stabilization

WEEKS 0–2

PROTECT

- Sling for comfort (4 weeks)
- May wear immobilizer for sleep (4 weeks) — **physician's decision**
- Elbow / hand ROM
- Gripping exercises
- Passive and active-assistive ROM (L-bar)
  - Flexion to tolerance 0–90° (week 1)
  - Flexion to tolerance 0–100° (week 2)
  - ER at 30° abduction, scapular plane, to 0° (week 1)
  - ER at 30° abduction to 10–15° (week 2)
- Isometrics (sub-maximal, sub-painful): ER, abduction, flexion, extension

WEEKS 3–4

PROGRESS ROM

- Gradually progress ROM
  - Flexion to 115°
  - ER at 45° abduction, scapular plane, to 0°
  - IR at 45° abduction, scapular plane, to 45–60°
- Initiate light isotonics for shoulder musculature — **no IR strengthening**
- Initiate scapular isotonics
  - Tubing for ER
  - Rhythmic stabilization drills
  - Active ROM, full can, abduction, prone rowing

WEEKS 5–6

BEGIN STRENGTHENING

- Progress ROM as tolerance allows
  - Flexion to 160° (tolerance)
  - ER / IR at 45° abduction: IR to 75°, ER to 25–30°
- Joint mobilization as necessary
- Continue self capsular stretching (light)
- Initiate isometric IR, sub-maximal
- Progress all strengthening exercises
  - Continue isotonic strengthening
  - Dynamic stabilization exercises
  - Wall stabilization

II INTERMEDIATE PHASE

GOALS Reestablish full ROM · normalize arthrokinematics · improve muscular strength · enhance neuromuscular control

WEEK 8

ROM AT 90° ABDUCTION

- Progress ROM as tolerance allows
  - ER / IR at 90° abduction
  - ER at 90° abduction to 45–50°
  - IR at 90° abduction to 70°

WEEK 9 — STRETCH & STRENGTHEN

- Progress ROM as tolerance allows
  - ER / IR at 90° abduction
  - ER at 90° abduction to 75–80°
  - Flexion to 170°
- Continue all stretching exercises
  - Joint mobilization, capsular stretching, passive and active stretching
- Continue strengthening exercises
  - Thrower's Ten program (for the overhead athlete)
  - Isotonic strengthening for the entire shoulder complex
  - May begin light biceps and IR isotonics
  - Neuromuscular control drills
  - Isokinetic strengthening

WEEK 10 — FULL FLEXION

- Progress ER at 90° abduction to 90°
- Progress to full flexion

WEEKS 11–14 — ADD LOAD

- Continue all flexibility exercises
- Continue all strengthening exercises
  - May begin to increase weight for biceps and IR
- May initiate light isotonic machine weight training (week 16)

III ADVANCED STRENGTHENING PHASE · MONTHS 4–6

GOALS Enhance muscular strength, power and endurance · improve muscular endurance · maintain mobility

CRITERIA TO ENTER PHASE III

1. Full ROM
2. No pain or tenderness
3. Satisfactory stability
4. Strength 70–80% of the contralateral side

WEEKS 14–20 — POWER & BALANCE

- Continue all flexibility exercises
  - Self capsular stretches (anterior, posterior, inferior)
  - Maintain ER flexibility
- Continue isotonic strengthening program
- Emphasize muscular balance (ER / IR)
- Continue PNF manual resistance
- May continue plyometrics
- Initiate interval sport program at week 16 — **physician approval necessary**

WEEKS 20–24 — INTERVAL SPORT

- Continue all exercises listed above
- Continue and progress the interval sport program (throwing off the mound)

IV RETURN TO ACTIVITY PHASE · MONTHS 6–9

GOALS Gradual return to sport activities · maintain strength and mobility of the shoulder

CRITERIA TO ENTER PHASE IV

1. Full non-painful ROM
2. Satisfactory stability
3. Satisfactory strength (isokinetics)
4. No pain or tenderness

EXERCISES — MONTHS 6–9

- Continue capsular stretching to maintain mobility
- Continue strengthening program
  - Either Thrower's Ten or the fundamental shoulder exercise program
- Return to sport participation (unrestricted)

Protocol adapted from the Open Pectoralis Major Repair rehabilitation guideline of Kevin E. Wilk, PT, DPT, Andrews Orthopaedic & Sports Medicine Center (rev. 7/07).

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