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## **Pectoralis Major Repair Rehab Protocol**

### ***POST OPERATIVE MANAGEMENT***

- Pain control-ice and anti-inflammatories
- Sling immobilization for 4-6 weeks. Exercises do not begin until end of week 2

### **PHASE I – IMMEDIATE POST-OPERATIVE PHASE (WEEKS 0-2)**

#### **Week 0-2:**

- Protect healing repaired tissue
- Decrease pain and inflammation
- Establish limited range of motion (ROM)
- No exercise until end of 2nd week
- Sling immobilization

#### **Week 2:**

- Sling immobilization until 3rd week
- Begin passive ROM per guidelines (see table)
- External rotation to 0 beginning 2nd week—increasing 5 degrees/week
- Forward flexion to 45 degrees—increasing 5-10 degrees/week

### **PHASE II – INTERMEDIATE POST-OPERATIVE PHASE (WEEKS 3-6)**

#### **Week 3-4:**

- Wean out of sling immobilizer
- Continue passive ROM per guidelines
- Begin abduction to 30 degrees—increasing 5 degrees/week
- Begin gentle isometrics to shoulder/arm EXCEPT pectoralis major
- Scapular isometric exercises

#### **Week 6:**

- Gentle submaximal isometrics to shoulder, elbow, hand, and wrist
- Active scapular isotonic exercises
- Passive ROM per guidelines
- Flexion to 75 degrees; Abduction to 35 degrees; External rotation at 0 degrees of abduction to 15 degrees

### **PHASE III – LATE POST-OPERATIVE PHASE (WEEKS 6-12)**

#### **Week 6:**

- Continue passive ROM to full
- Continue gentle sub maximal isometrics progressing to isotonics
- Begin sub maximal isometrics to pectoralis major in a shortened position progressing to neutral muscle tendon length
- Avoid isometrics in full elongated position

#### **Week 8:**

- Gradually increase muscle strength and endurance

- Upper body ergometer
- Progressive resistive exercises (isotonic machines)
- Thera band exercises
- PNF diagonal patterns with manual resistance
- May use techniques to alter incision thickening
- Scar mobilization techniques
- Ultrasound to soften scar tissue

Week 12:

- Full shoulder ROM Shoulder flexion to 180 degrees
- Shoulder abduction to 180 degrees
- Shoulder external rotation to 105 degrees
- Shoulder internal rotation to 65 degrees
- Progress strengthening exercises
- Isotonic exercises with dumbbells
- Gentle 2-handed sub maximal plyometric drills:
- Chest pass
- Side-to-side throws
- BodyBlade
- Flexbar
- Total arm strengthening

**PHASE IV – ADVANCED STRENGTHENING PHASE (WEEKS 12-16+)**

*Goals:*

- Full ROM and flexibility
- Increase muscle strength and power and endurance
- Gradually introduce sporting activities

*Exercise:*

- Continue to progress functional activities of the entire upper extremity
- Avoid bench press motion with greater than 50% of prior 1 repetition max (RM)
- Gradually work up to 50% of 1 RM over next month.
- Stay at 50% prior 1 RM until 6 months post-operative, then progress to full slowly after 6 month time frame

KEYS\*\* Don't rush ROM; Don't rush strengthening \*\*  
 Normalize arthrokinematics; Utilize total arm strengthening

**Table 1: Motion limits per week**

<b>Week</b>	<b>ER @ 0 Adduction</b>	<b>Forward Flexion</b>	<b>Abduction</b>
<b>2</b>	0	45	30
<b>3</b>	5	55	35
<b>4</b>	10	65	40
<b>5</b>	15	75	45
<b>6</b>	20	85	50
<b>7</b>	25	95	55

<b>8</b>	30	105	60
<b>9</b>	35	115	65
<b>10</b>	40	125	70
<b>11</b>	45	135	75
<b>12</b>	50	145	80

(Mankske RC, Prohaska D; NAJSPT 2007)

**Criteria for discharge:**

1. Full, pain free range of motion
2. Strength is equal bilaterally
3. Has met specific functional/activity goals
4. Has been cleared by physician