POSTOPERATIVE REHABILITATION FOLLOWING PECTORALIS MAJOR TENDON REPAIR

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

Goals
- Protect healing repaired tissue
- Decrease pain and inflammation
- Establish limited range of motion (ROM)

Exercises
- No exercise until end of 2nd week

Sling
- Sling immobilization for 2 weeks
- Passive rest for full 2 weeks
- Allow soft tissue healing to begin uninterrupted
- Allow acute inflammatory response to run normal course

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

Goals
- Gradually increase ROM
- Promote healing of repaired tissue
- Retard muscular atrophy

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

Week 3
- Wean out of sling immobilizer – week 3
- Continue passive ROM per guidelines (table 2)
  - Begin abduction to 30 degrees
  - Increasing 5 degrees per week
  - Begin gentle isometrics to shoulder/arm EXCEPT pectoralis major
  - Scapular isometric exercises

End of Week 5
- Gentle sub-maximal isometrics to shoulder, elbow, hand and wrists
- 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)

Goals
- Maintain full ROM
- Promote soft tissue healing
- Gradually increase muscle strength and endurance

Week 6
- Continue passive ROM to full
- Continue gentle sub maximal isometrics progressing to isotonic exercises
- 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)
  - Theraband 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>
<thead>
<tr>
<th>Week</th>
<th>ER@0°</th>
<th>Forward Flexion</th>
<th>Abduction</th>
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<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>50-55</td>
<td>35</td>
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<td>4</td>
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<tr>
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ER = External rotation