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**Physical Therapy Protocol: Pectoralis Tendon Repair**

## Patient Name:­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

## Surgery: ­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Surgery Date: \_\_\_\_\_\_\_\_\_\_\_\_

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

Goals

* Protect healing repaired tissue

Week ER @ 0° Fwd Abd

 Shoulder Flexion

 Add.

2 0 45 30

3 5 50–55 35

4 10 55–65 40

5 15 60–75 45

6 20 65–85 50

7 25 70–95 55

8 30 75–105 60

9 35 80–115 65

10 40 85–125 70

11 45 90–135 75

12 50 95–145 80

* 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)
	+ 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)
	+ 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 submaximal isometrics to shoulder, elbow, hand, and wrist
* Active scapular isotonic exercises
* Passive ROM per guidelines (Table)
	+ Flexion to 75 degrees
	+ Abuction 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 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)
* 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 abuction 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

Adapted from Manske et. al. N Am J Sports Phys Ther. 2007 Feb; 2(1): 22–33.