

# **Clinical Outcomes of Pectoralis Major Tendon Repair with and without Platelet-Rich Plasma**

Jared A. Hanson, BA; Marilee P. Horan, MPH; Michael J. Foster, MD; Kaitlyn E. Whitney, BS;  
Justin J. Ernat, MD; Dylan R. Rakowski, BS; Annalise M. Peebles, BA; Johnny Huard, PhD;  
Matthew T. Provencher, MD, MBA, MC, USNR (ret.); Peter J. Millett, MD, MSc

*Research Performed at the Steadman Philippon Research Institute in Vail, CO*

## **ABSTRACT**

**Purpose:** The purposes of this study were to 1) assess clinical outcomes following pectoralis major tendon (PMT) repairs, and 2) compare outcomes of PMT repairs augmented with and without leukocyte-poor platelet-rich plasma (LP-PRP).

**Methods:** A retrospective review of prospectively collected data was performed of patients who underwent a PMT repair from 05/2007 to 06/2019 with a minimum of 2-year follow-up.

Exclusion criteria included revision PMT repair, PMT reconstruction, and concomitant repair of another glenohumeral tendon/ligament. LP-PRP was injected surrounding the PMT repair prior to wound closure. Patient reported outcome (PRO) data was collected preoperatively and evaluated at final follow-up using the American Shoulder and Elbow Surgeons Score (ASES), Single Assessment Numeric Evaluation Score (SANE), Quick Disabilities of the Arm, Shoulder and Hand Score (QuickDASH), and Short Form 12 physical component summary (SF-12 PCS), patient satisfaction with outcomes.

**Results:** Twenty-three men (mean age, 38.6 years; range, 20.5-64.3 years) were included in the final analysis. Mean time from injury to surgery was 30 days (range, 3-123 days). Follow-up was obtained for 16/23 patients (70%) at a mean of 5.1 years (range 2.0-13.0 years). Significant

improvement in PROs was observed (ASES:59.0→92.4, p=0.008; SANE:44.4→85.9, p=0.018; QuickDASH:44.4→8.5, p=0.018; and SF-12 PCS:42.5→52.6, p=0.008). Median satisfaction was 9/10 (range, 6-10). Patients receiving LP-PRP had superior ASES (99.6 vs. 83.0, p=0.001), SANE (94.8 vs. 74.6, p=0.005), QuickDASH (0.24 vs. 19.1, p=0.001), and patient satisfaction (10 vs. 9, p=0.037) scores compared to those without PRP. PROs were unchanged based on chronicity, mechanism of injury, or tear location. One patient had revision surgery at 3.4 years due to adhesions.

**Conclusion:** PMT repair produces improved PROs at final follow-up when compared to preoperative values. Physicians could potentially consider augmentation of repairs with LP-PRP, which may further improve repair outcomes.

**Level of Evidence:** Level 3, Retrospective comparative therapeutic trial

**Key Words:** Pectoralis major repair outcomes, Platelet-rich plasma, Orthobiologics

**Full Text Citation:**

Hanson JA, Horan MP, Foster MJ, Whitney KE, Ernat JJ, Rakowski DR, Peebles AM, Huard J, Provencher MT, Millett PJ. Clinical Outcomes of Pectoralis Major Tendon Repair with and without Platelet-Rich Plasma. *Arthrosc Sports Med Rehabil*. 2022 Sep 6;4(5):e1739-e1746. doi: 10.1016/j.asmr.2022.06.021. PMID: 36312699; PMCID: PMC9596906.