

---

# Shoulder CPM Objectives and Indications

Shoulder CPM has been shown to be a safe, cost-effective means to provide passive range of motion therapy following a variety of surgical procedures. Following rotator cuff repair, it is well accepted that early passive range of motion is critical for a good outcome, while active range of motion is often limited for several weeks. Studies demonstrate that shoulder CPM is a safe and cost-effective method of rehabilitation that can dramatically impact patient outcomes following rotator cuff repair. It is especially appropriate following this procedure due to the long course of rehab required and increasing limits on the number of outpatient therapy visits that are allowed.

Additional procedures/diagnoses that are appropriate include manipulation of frozen shoulder or open release or debridement for adhesive capsulitis; total shoulder replacement; hemi shoulder replacement or resurfacing; stabilized proximal humeral fractures; and decompression for impingement syndrome.

## Shoulder CPM Supporting Documentation

### ROTATOR CUFF REPAIR REHAB/COST EFFECTIVENESS:

- Title:** Evaluation and Cost Analysis in Use of CPM after Repair of Rotator Cuff Tears  
**Source:** Unpublished manuscript; Accepted by the Institutional Review Board at Henry Ford Hospital, Detroit, Michigan, 2000.  
**Authors:** Royer C, Kolowich P, Jasper C, Donahue M, Havstad MA  
**Overview:** The use of the continuous passive motion device for the first six weeks is less expensive than physical therapy. The total saving for this period is \$990.00 per patient using the continuous passive motion device. The primary finding is the postoperative protocol for using CPM for six weeks instead of PT provides a statistically equivalent result to those protocols that utilize PT only. Given that this is the case the CPM option is the more cost-effective option.<sup>8</sup>

### ROTATOR CUFF REPAIR/OUTCOMES:

- Title:** Efficacy of a Postoperative Treatment after Rotator Cuff Repair with a Continuous Passive Motion Device (CPM)  
**Source:** *Z Orthop Ihre Grenzgeb*; 143(4): 438-45, 2005.  
**Authors:** Michael JW, et al.  
**Overview:** The authors of this German study found that postoperative treatment of a total tear of the rotator cuff with a combined CPM and physiotherapy protocol provided a significantly earlier range of motion in the shoulder joint than physiotherapy alone.<sup>7</sup>



Joints in Motion Medical, LLC  
1343 E. Wisconsin Avenue #112  
Pewaukee, WI 53072  
Phone: (866) JIM-4CPM  
Fax: (866) FAX-4CPM  
www.jimmedical.com

## **ROTATOR CUFF REPAIR/SAFETY:**

**Title:** Electromyography of the shoulder: An Analysis of Passive Modes of Exercise

**Source:** *Orthopedics* 21:11, 1998.

**Authors:** Dockery ML, Wright TW, Lastayo PC

**Overview:** Dockery, et al. (1998) evaluated different rehab protocols for passive shoulder motion in the early rehab of rotator cuff repair. The following were tested: CPM, pulley, pendulum, self-assisted and therapist-assisted exercises. For all muscle groups tested, the pulley exercise showed significantly more activity than the CPM machine. CPM and therapist-assisted passive range of motion, by being more passive, may increase the safety margin for obtaining early passive range of motion without disrupting the rotator cuff repair.<sup>2</sup>

## References and Additional Studies

1. Cofield RH, Mansat P, Kersten TE, Rowland CM: Complications of Rotator Cuff Repair. *Orthop Clin North Am* 28(2):205-13, April 1997.
2. Dockery ML, Wright TW, Lastayo PC: Electromyography of the shoulder: An Analysis of Passive Modes of Exercise. *Orthopedics* 21:11, 1998.
3. Hatakeyama et al: Effect of Arm Elevation and Rotation on the Strain in the Repaired Rotator Cuff Tendon: A Cadaveric Study. *Am J Sports Med* 29 (6), 2001.
4. LaStayo PC, Wright TW, Jaffe R, Hertzal J: Continuous Passive Motion after Repair of the Rotator Cuff; A Prospective Outcome Study. *The J Bone Joint Surg*; 80: 1002, 1998.
5. LaStayo PC, Cass R: Continuous Passive Motion for the Extremity: Why, When, and How. In Hunter JM et al, editors: *Rehabilitation of the Hand*, ed 5 St Louis, Mosby, 2002.
6. McCann PD, Wootten ME, Kadaba MP, Bigliani MD: A Kinematic and Electromyographic Study of Shoulder Rehabilitation Exercises. *Clinical Orthopedics and Related Research* 288: 177-188, March 1993.
7. Michael JW, König DP, Imhoff AB, Martinek V, Braun S, Hübscher M, Koch C, Dreithaler B, Bernholt J, Preis S, Loew M, Rickert M, Speck M, Bös L, Bidner A, Eysel P: Efficiency of a Postoperative Treatment after Rotator Cuff Repair with a Continuous Passive Motion Device (CPM). *Z Orthop Ihre Grenzgeb* 143 (4): 438-45, Jul-Aug 2005.
8. O'Driscoll SW, Giori NJ: Continuous Passive Motion (CPM): Theory and Principles of Clinical Application. *J Rehab Res Dev* 37:179,2000.
9. Royer C, Kolowich P, Jasper C, Donahue M, Havstad MA: Evaluation and Cost Analysis in Use of CPM after Repair of Rotator Cuff Tears. Unpublished manuscript; Accepted by the Institutional Review Board at Henry Ford Hospital, Detroit, Michigan, 2000.
10. Ziegler DW, Misamore GW: "Passive" Range of Motion Exercises—An E.M.G. Analysis. Methodist Sports Medicine Center Department of Research and Education, Indianapolis, IN.
11. Zuckerman JD, Lablanc J, Choueka J, Kummer F: The Effect of Arm Position and Capsular Release on the Rotator Cuff Repair; A Biomechanical Study. *J Bone Joint Surg*, 1991.