

*Compared to post-operative rehabilitation only, does the addition of a pre-operative exercise program improve pain and function in individuals undergoing a total hip arthroplasty?*

To answer this question, we performed a comprehensive search of the PubMed database (August 2009) for randomized, controlled trials and systematic reviews that addressed this specific research question.

Four studies met the criteria for inclusion in this review, comparing pre- and post-operative exercise to post-operative exercise only (1,3), pre-operative exercise and education to education only (2), and pre- and post-operative exercise to advice only (4).

A 4-wk pre-operative exercise program improved pain and function prior to surgery, as well as improved pain at 4 and 12 wks post-surgery (1).

Similarly, a 6 wk pre-operative program found significant changes in function prior to surgery, but no differences remained by 8 or 24 wks post-surgery (2). However, the pre-op exercisers were less likely to be discharged to rehabilitation (2). An 8 wk home based exercise program resulted in significant improvements in function compared to control subjects at discharge and at 3 mos post-surgery, but values were similar by 24 mos (3).

The final study compared both pre- and post-operative exercise to advice only and found that 8 wks of pre-operative exercise resulted in significantly higher walking performance at 3, 12 and 24 wks post-surgery (4).

Based on this review, it can be concluded that inclusion of pre-operative exercise therapy improves pre-operative pain and function for patients with hip osteoarthritis. As expected, when exercise is continued post-surgery the functional improvements also continue. Pre-operative exercise programs that are home based may be ideal for this group due to possible difficulties with mobility.

*Check with the provider of this newsletter to learn more about exercises appropriate for this condition.*

1. Ferrara PE, Rabini A, Maggi L, Piazzini DB, Logroscino G, Magliocchetti G, Amabile E, Tancredi G, Aulisa AG, Padua L, Aprile I, Bertolini C. Effect of pre-operative physiotherapy in patients with end-stage osteoarthritis undergoing hip arthroplasty. Clin Rehabil. 2008 Oct-Nov;22(10-11):977-86. Erratum in: Clin Rehabil. 2008 Dec;22(12):1137. Lombi, G Magliocchetti [corrected to Magliocchetti, G].
2. Rooks DS, Huang J, Bierbaum BE, Bolus SA, Rubano J, Connolly CE, Alpert S, Iversen MD, Katz JN. Effect of preoperative exercise on measures of functional status in men and women undergoing total hip and knee arthroplasty. Arthritis Rheum. 2006 Oct 15;55(5):700-8.
3. Gocen Z, Sen A, Unver B, Karatosun V, Gunal I. The effect of preoperative physiotherapy and education on the outcome of total hip replacement: a prospective randomized controlled trial. Clin Rehabil. 2004 Jun;18(4):353-8.
4. Wang AW, Gilbey HJ, Ackland TR. Perioperative exercise programs improve early return of ambulatory function after total hip arthroplasty: a randomized, controlled trial. Am J Phys Med Rehabil. 2002 Nov;81(11):801-6.