

# Adherence to recommended exercise improves physical function, reduces pain for OA patients

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Patients with osteoarthritis (OA) of the knee or hip who adhere to the recommended home physical therapy exercises and physically active lifestyle experience more improvement in pain, physical function, and self-perceived effect according to a study from researchers in The Netherlands. Research also shows that maintenance of exercise behavior and physically active lifestyle after discharge of physical therapy improves the long-term effectiveness of exercise therapy in patients with knee or hip OA. Details of the study are available online and will publish in the August print issue of *Arthritis Care & Research*, a journal of the American College of Rheumatology.

Individuals with OA of the hip or knee experience pain, reduced muscle strength, decreased range of joint motion, and joint instability. According to the World Health Organization (WHO) OA is one of the ten most disabling diseases in developed countries. Further WHO estimates state that 80% of those with OA have limitations in movement, and 25% cannot perform major daily life activities. Often OA patients are referred to physical therapy in order to reduce impairments and improve overall physical function to meet demands of daily living. Although [exercise therapy](#) has beneficial short-term effects, earlier research has shown that after discharge of exercise therapy the positive treatment effects decline over time and finally disappear in the long-term.

The Dutch research team conducted an observational follow-up study on 150 patients with OA of the hip and/or knee who were receiving exercise therapy. The study subjects were followed for 60 months to assess adherence to self-directed exercise (during and after prescribed physical therapy treatment period) on patient outcomes of pain, physical function, and self-perceived effect. Three forms of adherence, which is defined as the subject's behavior that corresponds to agreed recommendations by his or her physical therapist, were measured—adherence to home exercises, home activities, and increased [physical activity](#). Researchers used a self-report questionnaire to measure participants' adherence to home exercise (e.g. muscle strengthening exercises) and activity (e.g. walking or cycling). Assessment of adherence started at baseline, and then took place again at 3, 15, and 60 months.

Patient outcomes of pain and physical function were measured using the Western Ontario and McMaster Universities [Osteoarthritis](#) Index (WOMAC) score. The WOMAC scale ranges from best to worst, meaning lower scores represent less pain and improved physical function. Participants' physical performance was measured by the time (in seconds) it took to walk the distance of 5 meters with improvement in performance noted by a reduction in time to complete the walk.

Results show at the 3-month follow-up 57.8% of study subjects adhered to the recommended exercises and 53.8% to recommended activities. Adherence to exercise was significantly associated with a decrease in pain (-1.0 points on a scale from 0 to 20), and improvements in self-reported physical function (-2.3 points on a scale from 0 to 68) and physical performance (-0.29 seconds compared with the base-line time of 4.8 seconds to walk 5 meters (16 feet)). "Better adherence to home exercises and being more physically active improves the long-term effectiveness of exercise therapy in patients with OA of the hip and/or knee," said lead study author, Martijn Pisters, M.Sc., PT.

A higher level of moderate or vigorous intensity physical activity was significantly associated with a decrease in pain, physical function and physical performance, as well as a positive self-perceived effect. The authors found that one hour per week more of physical activity at a moderate level resulted in an improvement in self-reported physical function of -0.24 on a scale from 0 to 68. During the physical therapy treatment period, the patients' physical activity increased by 1.5 hours of moderate or vigorous intensity physical activity per week. After the treatment period, physical activity declined by 0.5 and 1.3 hours respectively at the 15- and 60-month follow-up.

Additionally, researchers noted a decline in exercise adherence upon completion of [physical therapy](#) with only 44.1% of patients and 30.1% still exercising at the 15- and 60-month follow-up, respectively. Similarly, adherence to home activities decreased at the 15- and 60-month follow-up with only with 29.5% and 36%, respectively, of study subjects being adherent. "Future research should focus on how exercise behavior can be stimulated and maintained in the long term to improve outcomes for patients with OA," concluded Mr. Pisters.

**More information:** "Exercise Adherence Improving Long-Term Patient Outcome in Patients with Osteoarthritis of the Hip and/or Knee." Martijn F. Pisters, Cindy Veenhof, Francois G. Schellevis, Jos W.R. Twisk, Joost Dekker, and Dinny H. De Bakker. *Arthritis Care and Research*; Published Online: March 16, 2010 ([DOI: 10.1002/acr.20182](https://doi.org/10.1002/acr.20182)); Print Issue Date: August 2010.

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