

# Strength training, self-management improve outcomes for knee osteoarthritis

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Researchers participating in the Multidimensional Intervention for Early Osteoarthritis of the Knee (Knee Study) determined that physically inactive, middle-aged people with symptomatic osteoarthritis benefitted equally from strength training regimens, self-management programs, or a combination of the two. Details of this study are available in the January 2010 issue of *Arthritis Care & Research*.

Osteoarthritis (OA) is the most common form of [arthritis](#) and the second leading cause of disability in the United States. Currently OA is the most prevalent chronic condition among women, afflicting 35-45% of women by the age of 65. A number of studies have compared strength training protocols with self-management programs in older patient populations, but few have examined the potential benefit of using both approaches in conjunction. "We hypothesized that combining the 2 treatments might enhance the outcomes," said Patrick McKnight, lead author of the [Knee Study](#).

The Knee Study, conducted at the University of Arizona Arthritis Center in Tucson, AZ, was a 24-month unblinded, randomized intervention trial to compare the effects of strength training programs, self-management programs, and a combination of both. The 273 study participants were between the ages of 35 and 65 years, reported pain and disability due to knee pain on most days in one or both knees for a period of no more than 5 years, and had Kellgren/Lawrence classification grade 2 radiographic evidence of knee OA in one or both knees.

Study participants were randomly assigned to 1 of 3 treatment groups. The strength training group engaged in a 9-month initial phase designed to improve the core areas of stretching and balance, range of motion and flexibility, and isotonic muscle strength. The second, 15-month phase of this group concentrated on developing independent, long-term exercise habits. The second study group participated in a 2-phase self-management program designed to educate participants and provide one-on-one treatment advice. The combined group participated in both the complete strength training and self-management programs. A total of 201 out of 273 participants completed the 2-year trial, with the self-management group achieving the highest compliance rates.

The study team set out to demonstrate that a combination of OA treatment programs would prove most effective, however, the study failed to uncover significant differences in results among the 3 study participant groups. All 3 groups demonstrated improvements in physical function tests and decreased self-reported pain and disability. "The logic behind the combined treatment was that the different factors addressed in physical and psychological treatments might produce an additive effect if administered together," said Dr. McKnight. "These results suggest otherwise. Instead, the comparison of the 3 treatment arms showed no difference, suggesting similar benefits for all 3 over a 2-year period."

Given the higher rate of compliance in the self-management group, the Knee Study researchers suggest that self-management may be a less intrusive and equally effective early treatment for knee OA. The CDC also recommends self-management activities to decrease pain, improve function, stay productive, and lower health care costs, including self-management education programs such as the Arthritis Foundation Self Help Program (AFSHP), or the Chronic Disease Self Management Program (CDSMP) to manage arthritis on a day-to-day basis.

**More information:** "A Comparison of Strength Training, Self-Management, and the Combination for Early Osteoarthritis of the Knee." Patrick E McKnight, Shelley Kasle, Scott Going, Isidro Villanueva, Michelle Cornett, Josh Farr, Jill Wright, Clara Streeter, and Alex Zautra. Arthritis Care and Research; Published Online: December 28, 2009 ([DOI: 10.1002/acr20013](https://doi.org/10.1002/acr20013)); Print Issue Date: January 2010.

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