

# Diet and exercise for knee osteoarthritis produces greater improvement in knee pain, function

September 24 2013

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Among overweight and obese adults with knee osteoarthritis, combining intensive diet and exercise led to less knee pain and better function after 18 months than diet-alone and exercise-alone, according to a study in the September 25 issue of *JAMA*.

"Osteoarthritis (OA) is the leading cause of chronic disability among [older adults](#). Knee OA is the most frequent cause of mobility dependency and diminished quality of life, and obesity is a major risk factor for knee OA. Current treatments for knee OA are inadequate; of patients treated pharmacologically, only about half experience a 30 percent pain reduction, usually without improved function," according to background information in the article.

Stephen P. Messier, Ph.D., of Wake Forest University, Winston-Salem, N.C., and colleagues conducted a study to determine whether a 10 percent or greater reduction in body weight induced by diet, with or without exercise, would reduce joint loading and inflammation and improve [clinical outcomes](#) more than exercise alone. The randomized trial was conducted between July 2006 and April 2011. The diet and exercise interventions were center-based with options for the exercise groups to transition to a home-based program. The study included 454 overweight and obese older community-dwelling adults (age 55 years or older with a [body mass index](#) of 27-41) with pain and radiographic knee OA. The interventions consisted of intensive diet-induced weight loss

plus exercise, intensive diet-induced weight loss, or exercise.

Of the participants, 399 (88 percent) completed the study (returned for 18-month follow-up). Retention did not differ between groups. Among the findings of the study:

- Average weight loss was greater in the diet and exercise group and the diet group compared with the exercise group;
- When compared with the exercise group, the diet and exercise group had less [knee pain](#), better function, faster [walking speed](#), and better physical health-related quality of life;
- Participants in the diet and exercise and diet groups had greater reductions in Interleukin 6 (a measure of inflammation) levels than those in the exercise group;
- Those in the diet group had greater reductions in knee compressive force than those in the [exercise group](#).

"Osteoarthritis and other obesity-related diseases place an enormous physical and financial burden on the U.S. health care system. The estimated 97 million overweight and obese Americans are at substantially higher risk for many life-threatening and disabling diseases, including OA. The findings from [this trial] suggest that intensive weight loss may have both anti-inflammatory and biomechanical benefits; when combining weight loss with exercise, patients can safely achieve a mean long-term weight loss of more than 10 percent, with an associated improvement in symptoms greater than with either intervention alone," the authors write.

**More information:** [doi:10.1001/jama.2013.277669](https://doi.org/10.1001/jama.2013.277669)

Provided by The JAMA Network Journals

Citation: Diet and exercise for knee osteoarthritis produces greater improvement in knee pain, function (2013, September 24) retrieved 24 April 2024 from <https://medicalxpress.com/news/2013-09-diet-knee-osteoarthritis-greater-pain.html>

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