Weight Loss Reduces the Risk for Symptomatic Knee Osteoarthritis in Women: The Framingham Study

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Abstract

- **Objective:** To evaluate the effect of weight loss in preventing symptomatic knee osteoarthritis in women.

- **Design:** Cohort analytic study.

- **Setting:** The Framingham Study, based on a sample of a defined population.

- **Patients:** Women who participated in the Framingham Knee Osteoarthritis Study (1983 to 1985): Sixty-four out of 796 women studied had recent-onset symptomatic knee osteoarthritis (knee symptoms plus radiographically confirmed osteoarthritis) were compared with women without disease.

- **Measurements:** Recalled date of symptom onset was used as the incident date of disease. Historical weight was defined as baseline body mass index up to 12 years before symptom onset. Change in body mass index was assessed at several intervals before the current examination. Odds ratios assessing the association between weight change and knee osteoarthritis were adjusted for age, baseline body mass index, history of previous knee injury, habitual physical activity level, occupational physical labor, smoking status, and attained education.

- **Results:** Weight change significantly affected the risk for the development of knee osteoarthritis. For example, a decrease in body mass index of 2 units or more (weight loss, approximately 5.1 kg) over the 10 years before the current examination decreased the odds for developing osteoarthritis by over 50% (odds ratio, 0.46; 95% CI, 0.24 to 0.86; \( P = 0.02 \)). Among those women with a high risk for osteoarthritis due to elevated baseline body mass index (> 25), weight loss also decreased the risk (for 2 units of body mass index, odds ratio, 0.41; \( P = 0.02 \)). Weight gain was associated with a slightly increased risk for osteoarthritis, which was not statistically significant.

- **Conclusion:** Weight loss reduces the risk for symptomatic knee osteoarthritis in women.