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Losing weight to reduce knee joint loads in knee osteoarthritis. A good investment?

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Introduction
Obesity is a primary risk factor for knee osteoarthritis progression. The combination of increased load and changed joint biomechanics may explain this. Thus, to reduce deterioration of the health status in knee osteoarthritis (OA) patients, joint loads must be reduced. The aim of the study was to investigate the effect of weight loss on the knee joint loads during walking.

Methods
177 obese (BMI>30) symptomatic knee OA patients were studied before and after a 16 weeks weight loss intervention obtained using the Cambridge Weight Plan ®. Gait analyses were obtained at self-selected walking speed. Joint loads were calculated using standard inverse dynamics, and a knee model (1).

Results
A mean weight loss of 12.1kg (12%) was observed. The change in the knee joint loads was 186.6 N (SE 14.7N). The reduction in body mass corresponded to 118.7 N resulting in an average 1.6 times reduction in knee joint loads compared to the weight loss.

Conclusion
The weight loss resulted in a larger reduction of the knee joint loading than could be explained by the corresponding loss in body mass. These results suggest that weight loss may be very effective in prevention of disease progression.

1. Conflict of interest
None disclosed

2. Funding
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