

# Weight loss surgery associated with increased fracture risk

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Severely obese patients undergoing weight loss surgery are more likely to have increased fracture risks both before and after the surgical procedure compared to obese and non-obese people who don't need surgery, finds a large study published by *The BMJ* this week.

Obesity may not be as protective for fracture as originally thought, say the authors, and they suggest that [fracture risk assessment](#) and management should be part of [weight loss](#) care.

Guidelines should be followed on [patient adherence](#) to dietary supplements and [physical activity](#), and patients should be referred to bone specialists if fracture risk is considered high.

Benefits and risks of surgery should be considered on an individual basis to propose the type of [surgical procedure](#) best suited to the patient as the efficacy of weight loss surgeries differs in terms of resolution of chronic conditions, they add.

The study, carried out by researchers in Canada, examined the incidence and sites of fracture in severely obese patients who had undergone [weight loss surgery](#), and compared them to obese and non-obese controls matched for sex and age.

Data was analysed from the Quebec Integrated Chronic Diseases Surveillance System (QICDSS) on 12,676 patients, and 38,028 obese and 126,760 non-obese people in the control groups between 2001-2014.

Before surgery, 10.5% patients in the weight loss surgery group had at least one fracture compared with 8.1% obese and 6.6% non-obese people in the control groups.

After a mean follow-up of 4.4 years, 4.1% of the weight loss surgery patients had at least one fracture compared with 2.7% of obese and 2.4% of non-obese groups. The median time to first fracture was 3.9 years.

These increased fracture risks remained high even after adjusting for fracture history, number of comorbidities, material and social deprivation, and area of residence.

The post-operative [fracture risk](#) changed from a pattern associated with obesity in the distal lower limb fracture, to a pattern typical of osteoporosis in the upper limb, clinical spine, pelvis, hip and femur.

The authors speculate that the increased fracture risks are due to falls and obesity related conditions, such as type 2 diabetes, as well as anatomical changes, and nutritional deficiencies induced by weight loss surgery.

This is an observational study so no firm conclusions can be made about cause and effect, and the authors note several limitations, such as being unable to match participants on body mass index, and not considering other factors that may have caused [fractures](#), such as vitamin intake and drug use.

They conclude by calling for more research on preventative and therapeutic strategies to reduce the adverse effects of weight loss surgery on the bone, because of the "paucity of evidence based guidelines in this area."

In a linked editorial, Marco Bueter, a bariatric surgeon at the University

of Zurich, says that this study represents "an important contribution to the evidence" on the management of patients after weight loss surgery. Fracture risk assessment should be considered for all [patients](#), as well as "following guidelines on nutritional supplementation that include the best available evidence."

However, he also calls for more research, especially randomised controlled trials, due to the study's limitations, and explains that "our understanding of bone physiology after [weight loss] surgery remains limited, and the clinical consequences of physiological alterations remain untested by appropriate prospective studies."

**More information:** Change in fracture risk and fracture pattern after bariatric surgery: nested case-control study, *The BMJ*  
[www.bmj.com/content/354/bmj.i3794](http://www.bmj.com/content/354/bmj.i3794)

Editorial: Bariatric surgery and fractures, *The BMJ*  
[www.bmj.com/content/354/bmj.i4057](http://www.bmj.com/content/354/bmj.i4057)

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