

SURGERY

Long-term cardiovascular benefits of bariatric surgery

Weight-loss surgery reduces cardiovascular-related morbidity and mortality in the long term, according to findings of the nonrandomized, prospective, controlled Swedish Obese Subjects (SOS) study.

To date, nonsurgical means of weight loss, such as lifestyle intervention and antiobesity therapeutics, have failed to decrease the incidence of adverse cardiovascular events. In fact, although nonsurgical weight loss is known to ameliorate risk factors for cardiovascular disease, paradoxically, it has also been linked to an increased incidence of cardiovascular events later in life. This finding might be due to the fact that risk factor improvement over long time periods requires sustained and very large weight loss, which is hard to achieve without surgical intervention.

Sjöström *et al.* previously reported a reduction in diabetes mellitus and cancer incidence and overall mortality in the SOS population. Now, the researchers report on the incidence of fatal and nonfatal acute myocardial infarction and stroke, considered separately and combined.

Overall, 2,010 individuals aged 37–60 years and with a BMI ≥ 34 kg/m² in men and ≥ 38 kg/m² in women who underwent bariatric surgery were matched with 2,037 controls with obesity who received standard care (ranging from

advanced lifestyle advice to no treatment, depending on the health center). The surgical procedures included gastric bypass (13.2%), banding (18.7%) and vertical banded gastroplasty (68.1%). The median follow-up was 14.7 years.

Whereas participants treated with bariatric surgery lost 23%, 17%, 16% and 18% of body weight on average after 2, 10, 15 and 20 years, respectively, the control group exhibited maximum changes in body weight of 1%.

The number of cardiovascular-related deaths was reduced in the surgical group compared with the control group (28 versus 49 events). Moreover, bariatric surgery was associated with a reduced number of total first-time (fatal or nonfatal) cardiovascular events compared with standard care (199 versus 234 events). These findings remained statistically significant even after multivariable adjustments for baseline conditions. Whereas the benefit of bariatric surgery on long-term cardiovascular health was independent of baseline BMI, high baseline insulin levels were a strong predictor of surgical treatment benefit.

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Original article Sjöström, L. *et al.* Bariatric surgery and long-term cardiovascular events. *JAMA* 307, 56–65 (2012)