



Title	The Clinical Effectiveness and Cost Effectiveness of Bariatric (Weight Loss) Surgery for Obesity: A Systematic Review and Economic Evaluation
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Aim

To assess the clinical and cost effectiveness of bariatric surgery for obesity.

Conclusions and results

Bariatric surgery, compared with nonsurgical interventions, appears to be clinically and cost effective for moderately to severely obese people. Uncertainties remain and further research needs to provide detailed data on patient quality of life (QoL), impact of surgeon experience on outcome, late complications leading to reoperation, duration of comorbidity remission, and resource use. Good-quality, randomized controlled trials (RCTs) will provide evidence on bariatric surgery for young people and for adults with class I or class II obesity. New research must report on the resolution and/or development of comorbidities, eg, Type 2 diabetes and hypertension, to assess the potential benefits of early intervention. Of 5386 references identified, 26 were included in the clinical effectiveness review (3 RCTs and 3 cohort studies compared surgery with nonsurgical interventions, and 20 RCTs compared different surgical procedures). Bariatric surgery was a more effective intervention for weight loss than nonsurgical options. In one large cohort study weight loss was still apparent 10 years after surgery, whereas patients receiving conventional treatment had gained weight. Some measures of QoL improved after surgery, but not others. After surgery, statistically fewer people had metabolic syndrome, and remission of Type 2 diabetes was higher than in nonsurgical groups. In a large cohort study, the incidence of 3 out of 6 comorbidities assessed 10 years after surgery was significantly reduced compared with conventional therapy. Gastric bypass (GBP) was more effective for weight loss than vertical banded gastroplasty (VBG) and adjustable gastric banding (AGB). Laparoscopic isolated sleeve gastrectomy (LISG) was more effective than AGB in one study. GBP and banded GBP led to similar weight loss and results for GBP versus LISG and VBG versus AGB were equivocal. All comparisons of open versus laparoscopic surgeries found similar weight losses

in each group. Comorbidities after surgery improved in all groups, but with no significant differences between different surgical interventions. Adverse event reporting varied; mortality ranged from 0% to 10%. Adverse events from conventional therapy included intolerance to medication, acute cholecystitis, and gastrointestinal problems. Major adverse events following surgery included anastomosis leakage, pneumonia, pulmonary embolism, band slippage, and band erosion. Although bariatric surgery was cost effective compared to nonsurgical treatment in the reviewed published estimates of cost effectiveness, these estimates are likely to be unreliable and not generalizable due to methodological shortcomings and the modeling assumptions. Hence, a new economic model was developed. Surgical management was more costly than nonsurgical management in the 3 patient populations analyzed, but gave improved outcomes. For morbid obesity, incremental cost-effectiveness ratios (ICERs) (base case) ranged between 2000 pounds sterling (GBP) and GBP 4000 per QALY gained. They remained within the range regarded as cost effective by the NHS when assumptions for deterministic sensitivity analysis were changed. For BMI ≥ 30 and < 40 , ICERs were GBP 18 930 at 2 years and GBP 1397 at 20 years, and for BMI ≥ 30 and < 35 , ICERs were GBP 60 754 at 2 years and GBP 12 763 at 20 years.

Recommendations

See Executive Summary link www.hta.ac.uk/project/1742.asp.

Methods

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Further research/reviews required

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