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Prioritise gastric bypass as the most clinically and cost effective weight loss surgery

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Executive summary

Over 3 million adults in the UK are living with severe obesity (BMI ≥40, or ≥35 with comorbidities), which raises the risk of diabetes, heart disease, cancer, poor mental health, time off work, and early death. These individuals need effective, evidence-based support.

New weight-loss medicines show promise, but important questions remain about long-term results and value for money. For those with severe obesity, surgery is a proven and effective intervention. Until recently, it was unclear which operation offered the best outcomes for patients and the NHS, and there was no national policy on which procedure to prioritise.

The landmark By-Band-Sleeve trial compared three surgical procedures—gastric bypass, sleeve gastrectomy, and adjustable gastric banding. The results are unequivocal: at three years, the Roux en Y version of gastric bypass delivered the best weight loss, the greatest health gains, and the best value for money. Smaller European studies report similar patterns, supporting these findings.

Policy recommendations

- NICE should update guidance within 6 months to make gastric bypass the preferred procedure for eligible adults, reflecting superior clinical outcomes and cost-effectiveness at 3 years.
- Research funders should commission head-to-head studies comparing gastric bypass with modern weight-loss medicines on effectiveness, cost-effectiveness, acceptability, and long-term maintenance.
- Until comparative data are available between new drugs and surgery, surgery should be offered for severe obesity with gastric bypass as the default procedure.

Policy context

Severe obesity is a major public health challenge with profound consequences for individuals and the NHS. It raises the risk of heart disease, type 2 diabetes, and cancer, and is linked with lower life expectancy. Obesity is estimated to cost the NHS more than £11.4 billion annually, with wider societal costs reaching £74.3 billion annually due to lost productivity, social care, and reduced quality of life. Preventing and treating obesity is a major focus of current health policy.

Current National Institute for Health and Care Excellence (NICE) policy recommends lifestyle interventions, followed by specialist care including weight loss medicines. Weight loss surgery can be offered to people living with severe obesity. Prior to the By-Band-Sleeve trial, there was uncertainty about which surgery was best in terms of weight loss, health improvement, quality of life and costs to the NHS. Decisions were based on patient and/or surgeon preference.

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Key findings

The By-Band-Sleeve study was designed to find out which operation was most effective for patients with severe obesity. It included 1,351 patients from different backgrounds and ethnicities from 12 hospitals in England. All participants met NICE's criteria for weight loss surgery. This is the world's largest trial to date.

- **After 3 years, gastric bypass surgery achieved the most substantial weight loss.** On average after a gastric bypass, participants lost 5 ½ stones, (about 36kg). In contrast, after sleeve gastrectomy participants lost 3 ¾ stones (about 24kg) and after gastric band participants only lost 2 ½ stones (about 17kg).
- **Gastric bypass surgery resulted in the best health-related quality of life** (i.e., patients' reported well-being and daily functioning) at three years followed by those who had a sleeve gastrectomy.
- **Gastric bypass surgery achieved the most improvements in control of diabetes.** After bypass surgery the proportion of participants with diabetes reduced from 37% to 16%, whereas after sleeve gastrectomy the proportion reduced from 31% to 17%, and after gastric band surgery the proportion reduced from 34% to 26%.
- Gastric bypass also achieved the most improvement in **blood pressure and lipids**.
- Patient reported **self-esteem was substantially better following bypass** compared to sleeve gastrectomy or band.
- **Gastric bypass surgery was found to be as safe** as the other two procedures.
- Of the three procedures **gastric bypass was found to be most cost-effective for the NHS.** Although earlier upfront surgical costs are higher for bypass compared to sleeve gastrectomy and band, over time there are fewer additional health costs.

Key message

- Gastric bypass delivers superior outcomes for patients with severe obesity compared to sleeve gastrectomy or gastric banding surgery.
- Gastric bypass surgery is the most cost effective option, up to three years, for surgery for severe obesity in the NHS.
- Data beyond three years are needed, and an urgent comparison between gastric bypass surgery and the weight loss medicines recommended, to establish how the NHS can best offer more people lasting help with severe obesity.

Further information

Roux-en-Y gastric bypass, adjustable gastric banding, or sleeve gastrectomy for severe obesity (By-Band-Sleeve): a multicentre, open label, three-group, randomised controlled trial' by The By-Band-Sleeve Collaborative Group in The Lancet Diabetes & Endocrinology [open access].

Contact the researchers

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By-Band-Sleeve

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