Diabetes, Weight & Bariatric Surgery
KEY POINTS

One of the most devasting legacies of the recent obesity epidemic is the sharp rise in cases of Type II diabetes, which is strongly associated with overweight and obesity.

Body Mass Index

Your Body Mass Index (BMI) is calculated based on your weight, but also takes into account your height. It helps establish how your weight might impact on your current and future health. The healthiest BMI range is between 18.5 and 25 kg/m^2. With BMI 40 kg/m^2 the risk of death from any cause each year is about double that of someone in the healthiest range. Currently approximately 5% of the Australian population have a BMI of over 40.

It has been shown in one study that with BMI of just 30 kg/m^2, the risk of diabetes is up to 60 times the risk of those in the healthy BMI range [1]. So type II diabetes is extremely sensitive to weight.

How can weight loss surgery help diabetics?

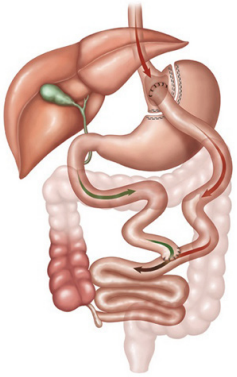
Weight loss improves the ability of insulin to control body sugar levels. Gastric bypass surgery may have a particularly strong effect against diabetes which is partly independent of weight loss. Hormones called GLP-1 and PYY are increased after bypass surgery and work on the pancreas to help it fight diabetes. Loop Duodenal Switch surgery (SIPS/SADI) is even more effective than bypass and may avoid some of the extreme swings in blood sugar levels sometimes seen in bypass.

How effective is weight loss surgery in resolving diabetes?

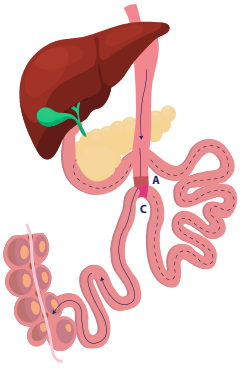
Diabetics can expect resolution or improvement in over 80% of cases, depending on the severity and length of diagnosis of the diabetes. The choice of operation is also an important factor. Other conditions which may improve with weight loss surgery include sleep apnoea, hypertension, asthma and stress incontinence.

Getting off your diabetic medications is a worthwhile goal with weight loss, but it is important to remember that best diabetic control may involve continuing with some level of medication. If you take insulin for diabetes, it may be possible to cut down significantly on the dosage required for good control or sometimes do away with injections altogether. A diabetes specialist (endocrinologist) will help guide you to achieving optimum diabetic control whilst weight loss is occurring.


GASTRIC BAND


GASTRIC BYPASS


SLEEVE GASTRECTOMY



SIPS/SADI

Over the page: some important studies on obesity surgery & diabetes...

References
1. Zhaoping L, Bowerman S, Heber D. Health Ramifications of the Obesity Epidemic. Surg Clin N Am 2005; 85:681-701

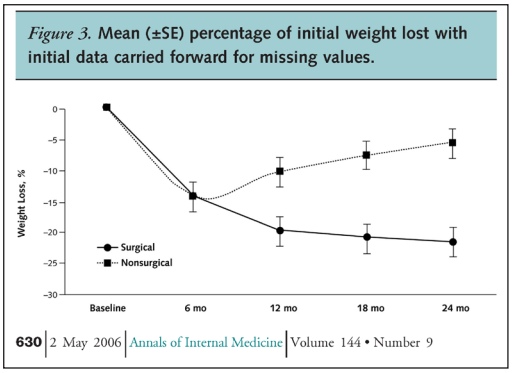
Diabetes, Weight & Bariatric Surgery
(PAGE 2)

Information from key trials in bariatric surgery (for those interested in facts and figures):

Gastric Banding Randomised Controlled Trial

A study published in 2008 looked at gastric banding surgery for treatment of obesity and diabetes. A group of obese diabetics underwent either gastric banding or dietary programmes for a period of 2 years. There were in the lower spectrum of BMI (30 - 35) and had diagnoses of diabetes for under two years.

- Gastric banding group diabetes resolution rate: 73%
- Dietary group diabetes resolution rate: 13%



Meta-analysis: Bariatric Surgery & Diabetes

In 2009 a major meta-analysis was published looking at a large collection of studies done on the outcomes of diabetes after bariatric surgery. This study concluded that complete resolution of diabetes occurred as follows:

Gastric Banding: 56.7%. (158 studies included)
Gastric Bypass: 80.3% (221 sudies included)

In practice, the possibility of "resolution" of diabetes with bariatric surgery depends on how severe your diabetes is and how long you have had it for.

Buchwald et al. Am J Med (2009); 12(3):248-256.e5

Sleeve gastrectomy and diabetes?

Sleeve gastrectomy is a newer procedure and its effects on diabetes are still under investigation.

A comprehensive review including 27 studies was published in 2010 with the following results averaged from all the data:

Resolution of diabetes: 66%
Any improvement: 97.1%

Thus sleeve gastrectomy is a viable option for treatment of type II diabetes and obesity and in some cases may represent a lower risk approach than bypass.

Gill et al. SOARD (2010); 6:707-713

Consensus Conference

In 2009 a gathering of world experts on diabetes and obesity surgery occurred in Rome, Italy, to develop guidelines for the role of bariatric surgery in the treatment of diabetes. The conclusions from this conference were as follows:

"GI surgery (ie, RYGB, LAGB, or BPD) should be considered for the treatment of T2DM in acceptable surgical candidates with BMI 35 kg/m^2 who are inadequately controlled by lifestyle and medical therapy."

"A surgical approach may also be appropriate as a non-primary alternative to treat inadequately controlled T2DM in suitable surgical candidates with mild-to-moderate obesity (BMI 30–35 kg/m^2)."

Rubino et al. Ann Surg (2009)