Sleeve Gastrectomy Surgery
KEY POINTS

Sleeve gastrectomy involves removing around 75% of your stomach, leaving a long narrow tube as your remaining stomach. This operation reduces the volume of the stomach, decreasing your ability to eat large volumes of food and drink at one time. There is also significant hunger suppression with the sleeve, possibly due to resection of Ghrelin cells with the removed part of the stomach.

This operation has been around in its own right for about 10 years and is associated with excellent short to medium term outcomes in terms of weight loss. Weight loss is fairly reliable and vomiting is minimal. The risks of the procedure are midway between banding and bypass.

The main downside of sleeve gastrectomy is the tendency for some patients to regain some of their weight after 2-3 years. This is more likely in patients with high starting BMI (e.g. > 50 kg/m^2). Issues with chronic reflux and long term prevalence of pre-cancerous Barrett's oesophagus are still under study.

Below is a list of estimated complication rates associated with sleeve gastrectomy surgery. Note that these rates assume a good risk patient without previous weight loss surgery and within a fairly standard weight and BMI range for the clinic.

Complication	Frequency	Comment
Death	1/2000 (0.05%)	
Bleed	2%	
Leak	<1%	Severe complication
Pulmonary Embolus	1%	Clot in the lungs which may cause respiratory failure or death
Open surgery required	<1%	
Reflux symptoms	Up to 25%	Occasionally severe
Stricture or Obstruction	1%	Excessive food intolerance which may be ongoing
Barrett's oesophagus	*unknown*	Possible long term increase in this pre-cancerous condition
Nutritional Deficiencies		Watch B12, Vit D, Calcium, Iron. Multivitamins required.
Failure to lose 25% of excess weight		5%
Failure to lose 50% of excess weight		25%

Sleeve gastrectomy is irreversible by any means. Less long term data available compared to banding and bypass. Note that like many weight loss operations some degree of weight regain may occur over the long term

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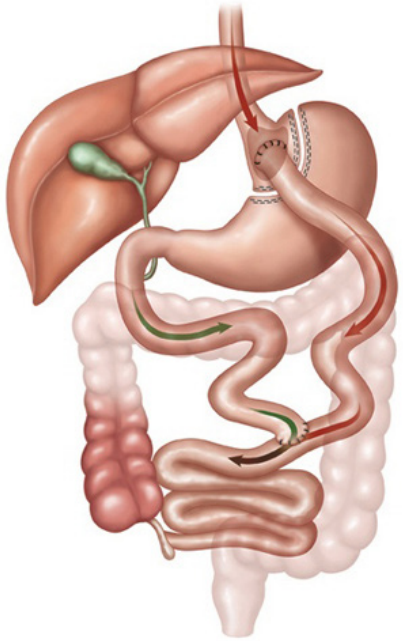
Gastric Bypass Surgery
KEY POINTS

Gastric bypass surgery involves creating a small pouch at the top of the stomach with a stapling device. This pouch is small and separated from the rest of the stomach. The intestine is joined straight on to this pouch and food is separated from the digestive juices to some extent.



The small pouch restricts portion sizes and separation from digestive juices may result in some calories not being absorbed. In addition to this, there are also hormonal changes favouring weight loss and diabetes control. Some surgeons (including Mr Clough) favour placing a ring around the pouch to prevent stretching over time. This is then termed "banded bypass".

The gastric bypass operation has been around in various forms for around 50 years and has plenty of good data and research published on its efficacy. It is known to be excellent for type II diabetes and does not involve permanent removal of any organs. There is usually less vomiting compared to gastric banding and weight loss is quicker and often greater in magnitude. Reflux symptoms usually resolve or improve markedly after bypass surgery.

Below is a list of estimated complication rates associated with gastric bypass surgery. Note that these rates assume a good risk patient with-out previous weight loss surgery and within a fairly standard weight and BMI range for the clinic.

Complication	Frequency	Comment
Death	1/1000 (0.1%)	
Leak	1%	Severe complication
Bleeding	2-5%	May require transfusion or sometimes re-operation
Open surgery required	1%	
Pulmonary Embolus	1%	Clot in the lungs which may cause respiratory failure or death
Stomal Stenosis	10-20%	Requires balloon stretching of the main join
Marginal Ulcer	2-5%	Ulcer at the main join
Small Bowel Obstruction	2%	Twist in the bowel due to re-arranged anatomy
Diarrhoea	Occasional	
Dumping Syndrome	Frequent	Depends on dietary choices
Nutritional Deficiencies		Watch B12, Vit D, Calcium, Iron. Supplements required.
Failure to lose 25% of excess weight		5%
Failure to lose 50% of excess weight		25%

Gastric bypass can be reversed, although this is a major procedure.

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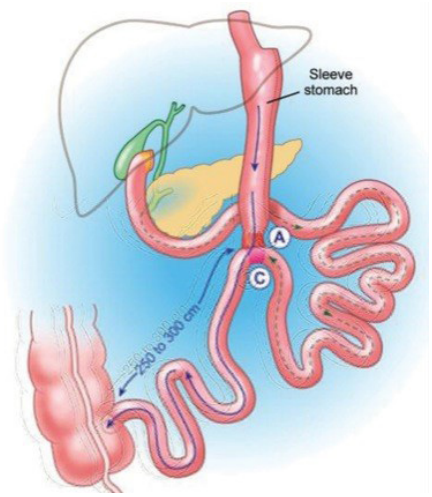
SIPS Procedure

Stomach Intestinal Pylorus Preserving Surgery

SIPS is a new variation of a well established procedure called Duodenal Switch. SIPS entails two components:

1. Perform a normal Sleeve Gastrectomy
2. Bypass half of the small bowel so that less calories are absorbed



This turns the operation into a more powerful version of sleeve gastrectomy.

For patients who have regained weight after sleeve, converting the sleeve to SIPS is relatively straightforward and should lead to further weight loss. For those looking at a more powerful and potentially more durable up-front procedure than sleeve, SIPS is an alternative that should give the same excellent weight loss as bypass but without some of the worrying possible adverse effects that may occur down the track. This should mean less chance of stomal ulcers, twisted bowel and dumping syndrome.

Because food is bypassing about half of the small bowel, strict attention to vitamin supplements and nutritional monitoring is necessary. Although duodenal switch (a calorie malabsorption procedure) has been around a long time, the SIPS variation is fairly new and has not been studied in as much detail as many other conventional procedures.

Below is a list of estimated complication rates associated with SIPS surgery. Note that these rates assume a good risk patient without previous weight loss surgery and within a fairly standard weight and BMI range

Complication	Frequency	Comment
Death	1/1000 (0.1%)	
Leak, including duodenal stump	2%	Severe complication
Pulmonary Embolus	1%	Clot in the lungs which may cause respiratory failure or death
Open surgery required	1%	
Bleeding	2-5%	May require transfusion or sometimes re-operation
Small bowel twist	<1%	
Reflux	Occasional	
Diarrhoea	Frequent	Ongoing problematic diarrhoea may be an issue for around 10% of individuals
Nutritional Deficiencies	Watch B12, Vit A, Vit D, Calcium, Iron. *Strict adherence to supplements required.*	
Failure to lose 25% of excess weight		5%
Failure to lose 50% of excess weight		15%

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Gastric Banding Surgery
KEY POINTS

Gastric banding involves placing a silicone ring around the top of the stomach which contains an adjustable balloon. The ring can be made tighter by accessing a port with a needle and injecting fluid. The port is usually located under the skin in your upper abdomen. The band should help you reduce your portion sizes and control hunger sensations.

To succeed with the band you must be able to eat a meal slowly, chewing food carefully and selecting appropriate textures which will minimise vomiting. Many patients with the band with experience vomiting to some extent which often occurs because of difficulty adapting to new eating habits.

Follow-up after banding should be frequent to enable to band to be adjusted to the correct level to induce weight loss without excessive vomiting. The level of fluid required is different for everybody.

Below is a list of estimated complication rates associated with gastric banding surgery. Note that these rates assume a good risk patient without previous weight loss surgery and within a fairly standard weight and BMI range for the clinic.

Complication	Frequency	Comment
Death	1/2000 (0.05%)	
Leak	1/500 (0.2%)	Severe complication
Pulmonary Embolus	1%	Clot in the lungs which may cause respiratory failure or death
Open surgery required	1%	
Slipped Band	2-5%	Needs re-operation or removal of band
Band Erosion	1-2%	Needs band removed
Oesophageal dilatation	1-2%?	Might cause long term weakness of oesophagus
Problem with access port	10%	Infection, migration, leakage etc. Minor re-operation
Nutritional Deficiencies		Ongoing requirement for multivitamins
Any re-operation	approx 20%	Over 5 years
Failure to lose 25% of excess weight		15%
Failure to lose 50% of excess weight		50%

Note that performing gastric bypass or sleeve gastrectomy surgery after a band has been in place results in increased complication rates due to the residual scarring from the band.

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Intragastric Balloon
KEY POINTS

The Orbera Intragastric Balloon is an example of an **endoscopic** treatment for weight loss. Endoscopic treatments are performed using a fibre optic flexible scope inserted via the mouth into the stomach. Therefore the procedures involve no surgical scars and are generally quite safe.

The Orbera intragastric balloon is a well studied endoscopic intervention for weight loss that has been implanted in Australia for over a decade.

A 600ml fluid filled balloon is inserted into your stomach where it stays until removal. It gives you a sense of satiety and reduced appetite, reducing your desire for food and portion sizes. It can produce moderate weight loss over this time and has a good safety profile.

It may be suitable for patients who do not qualify for conventional weight loss surgeries

*** Please note that the balloon must be removed after a 6 month period. Reimplantations may be possible subsequently however ***

Orbera Intragastric Balloon

Below is a list of estimated complication rates associated with the intragastric balloon. Note that these rates assume a good risk patient without previous weight loss surgery and within a fairly standard weight and BMI range for the balloon

Complication	Frequency	Comment
Death	1/3000	
Stomach Perforation	1/1000	Severe complication
Stomach lining damage	5%	Ulceration or inflammation - should resolve upon removal
Bleeding	2%	May require transfusion or rarely a procedure to control
Reflux symptoms	common	
Balloon deflation	1%	
Balloon migration	1%	The (deflated) balloon can move downstream into the bowel
Bowel obstruction	0.5% (1/200)	A migrated balloon might become stuck in the bowel
Premature removal	10-15%	

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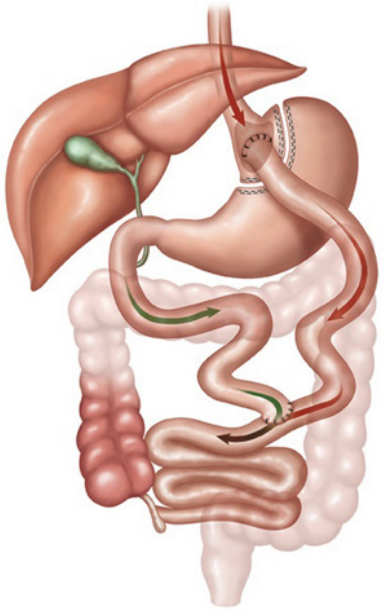
Revision to Bypass
KEY POINTS

Sometimes it may be necessary to convert an old weight loss operation such as gastric banding or stomach stapling to a different operation. In this case our preferred option is often gastric bypass. This is because of the extensive literature available detailing outcomes of revisional bypass and the fact that if you are going to accept the risk of further operative complications you might as well end up with a powerful operation with less risk of further revision.



Revising banding or stapling to bypass is more complex than having a bypass up front. This is because of the scar tissue and altered anatomy related to the previous operation which makes the bypass surgery more difficult. Complication rates are therefore higher than an upfront bypass. Because of this, you need to have a good reason to undertake revisional bypass. This usually means that your BMI is still high (e.g. > 40 kg/m^2) and you may still have diabetes or other obesity-related medical problems. It should be clear that successful weight loss with your previous operation cannot be achieved. We will often investigate you with gastroscopy and barium swallow to assess your current anatomy.

Sometimes we prefer to remove your band if you have had gastric banding surgery and wait three months to let the tissues recover before embarking on the bypass itself.

Below is a list of estimated complication rates associated with revisional gastric bypass surgery. These rates may depend on your previous surgery.

Complication	Frequency	Comment
Death	1/1000 (0.1%)	
Leak	2%	Severe complication
Pulmonary Embolus	1%	Clot in the lungs which may cause respiratory failure or death
Open surgery required	2-5%	
Bleeding	2-5%	May require transfusion or sometimes re-operation
Stomal Stenosis	10-20%	Requires balloon stretching of the main join
Marginal Ulcer	2-5%	Ulcer at the main join
Small Bowel Obstruction	2%	Twist in the bowel due to re-arranged anatomy
Diarrhoea	Occasional	
Dumping Syndrome	Frequent	Depends on dietary choices
Nutritional Deficiencies		Watch B12, Vit D, Calcium, Iron. Supplements required.
Likely further weight loss		Between 5 and 15 units of BMI

Gastric bypass can be reversed, although this is a major procedure.

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