Introduction

There are a range of operations designed to assist with weight loss and/or the 'metabolic syndrome', which comprises a range of conditions that increase your risk of diabetes, heart disease and stroke. These include obesity, high blood pressure, abnormal cholesterol and triglyceride levels and insulin resistance (where the body responds less to the insulin your pancreas makes).

This document is focused on improving your understanding of the surgical options on offer by Mr Gan, but is not intended to be a complete reference. It is not possible to incorporate all the information available in textbooks, journal articles and conference proceedings, however the focus will be on what these operations involve with regard to describing the essential elements of what is done surgically, the key risks involved, and implications in terms of your nutrition and lifestyle.

The opinions passed here are mine, and are one surgeon's perspective. There is no 'perfect' weight loss operation; otherwise everyone would be doing this! Bariatric surgeons worldwide have their own preferences as to which technique, or range of techniques, they prefer. There is quite a significant variation in the most common operations performed in different states of Australia, as well as countries of the world! Each has its pros and cons, and there is no 'risk free' option – even choosing not to undergo surgery is a risk, as obesity and its associated diseases have a very real impact on health and life expectancy! Please read the information carefully.

Mini Gastric Bypass

What is a gastric bypass?

There are different ways to perform a gastric bypass. The term 'bypass' means that there are sections of your digestive system, which your food will 'skip' (not pass through) after the surgery (just like a bypass along a highway). 'Gastric' means stomach, however this surgery will not only bypass most of the stomach, but also a length of your small intestine. In effect, the small stomach pouch holds less food, but bypassing or "skipping" the first part of your small bowel and delivering the food further down changes the way your body responds to food, reducing your hunger, and reducing the absorption of the food. The net effect: weight loss!

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What is a 'Mini Gastric Bypass'?

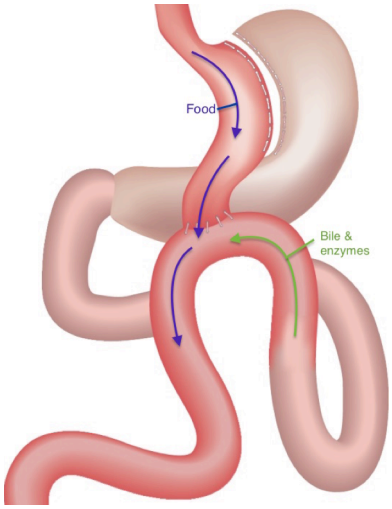
Confusingly, this operation is also known in the medical literature as a 'Single Anastomosis Gastric Bypass', 'One Anastomosis Gastric Bypass', 'Omega Bypass' and 'Mini Gastric Bypass'.

The Mini Gastric Bypass (MGB) is a bypass with only one join (or "anastomosis"). The technique is less complex than a Roux en Y Gastric Bypass, which means that the surgery does not take as long, and studies report a lower complication rate. It appears to have a low weight regain rate and has better outcomes for diabetes.

A small pouch is still created from the stomach, but this pouch is long and narrow, a bit like that created during a sleeve gastrectomy, except that it is not as long, and it is joined to the small intestine. The long and narrow pouch means that there is a longer distance to the oesophagus, which reduces the risk of developing bile reflux (where bile can move up into the oesophagus). Another important difference to traditional Roux en Y gastric bypass is that the part of the small bowel that is joined to the stomach is further downstream, meaning that there is a slightly increased risk of malabsorption. Whichever surgery you have, you MUST take nutritional supplements – for life!

Mini Gastric Bypass (MGB)

Image taken from: Deitel, Mervyn. (2016). Mini-Gastric Bypass for Bariatric Surgery Increasing Worldwide. Austin Journal of Surgery. 3. 10.26420/austinjsurg.2016.1092.



Note that about 1.5 to 2 metres of the small bowel is 'bypassed', that is, food does not run along that length of bowel. Bile and digestive fluids from the stomach and pancreas still run along that section of bowel, and join the food where it enters from the anastomosis with the stomach.

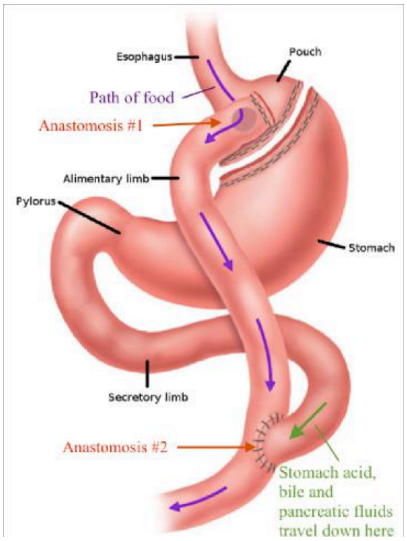
An animation of this operation can be seen on YouTube at:

https://www.youtube.com/watch?v=K35BhhqFRRM

Roux en Y Gastric Bypass "RYGB"

The "RYGB" has been around a long time, but recent studies show that it is no more effective than sleeve gastrectomy and has a higher risk of complications. It involves cutting the small intestine and creating two joins, hence it is more complex (see the diagram below). The two 'limbs' of the small bowel look like a wonky "Y" shape, which is how the name 'Roux en Y' came about – roughly, this is French for 'Y road'. My approach will be to use the Mini Gastric Bypass, and reserve a modification of the RYGB technique for the 1% of MGB patients who may experience troublesome bile reflux.

Image taken from: http://www.intechopen.com/books/type-2-diabetes/understanding-the-effects-of-roux-en-y-gastric-bypass-rygb-surgery-on-type-2-diabetes-mellitus



Laparoscopic Sleeve Gastrectomy.

Laparoscopic Sleeve Gastrectomy is the most commonly performed weight loss operation in Australia. This operation involves removing about 70 – 80% of your stomach, leaving a long narrow tube, which holds less food than normal. Removing part of the stomach also reduces the amount of a "hunger" hormone called Ghrelin, which helps reduce appetite.

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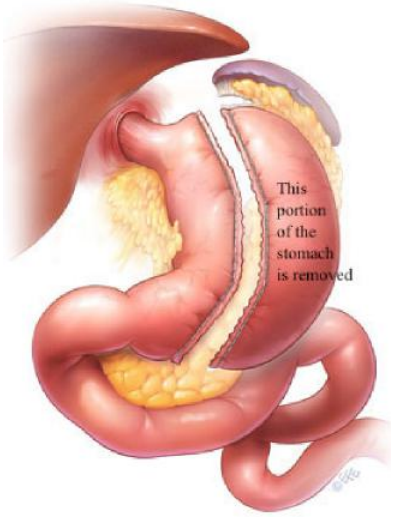
Sleeve Gastrectomy

Image taken from: http://www.ossanz.com.au/surgery sleeve gastrectomy.htm



As part of the stomach is removed, *this is a completely irreversible weight loss operation*. By contrast, gastric banding and bypass operations do not remove anything, and can be reversed.

The main risks of the surgery are leaks and bleeding from the staple line (1-3%). If a leak occurs with a sleeve gastrectomy, then it can be very difficult to treat, potentially requiring multiple procedures and/or prolonged hospitalisation. Studies indicate that there is an increased risk of developing new onset reflux (heartburn) after a sleeve gastrectomy, although other studies refute this. There is less risk of malabsorption as no food is diverted. Weight regain can occur if the sleeved stomach stretches over time.

The *irreversible* nature of sleeve gastrectomy, and the potential *severity* of staple line leaks, if and when they occur, are important considerations. The management of these leaks can be complex and may require referral to a sub-specialist unit. Nevertheless, sleeve gastrectomy certainly has an important place in the management of obesity.

Laparoscopic Adjustable Gastric Banding (LAGB).

The Lap Band® operation involves inserting an adjustable band around the upper stomach – like an adjustable "belt". There is *less weight loss* and an *increased risk of needing revisional or corrective surgery*. If you wish to discuss this further, a separate information printout can be provided.

Risks of surgery.

It is not practical to list each and every possible complication of anaesthesia and surgery – textbooks are written on these subjects!

The *general risks* of any laparoscopic procedure include, but are not limited to:

- conversion to a laparotomy (a large incision)
- Bleeding, which may require a blood transfusion
- organ injury (eg to liver, stomach wall, spleen or bowel)
- infection – deep or skin wound
- deep vein thrombosis, which can travel to the lungs (pulmonary embolus)
- air embolus (if the carbon dioxide used to inflate the abdomen gets into a large vein) – very rare.
- anaesthetic complications
- medical complications (typically, related to how fit you are for this surgery and what other medical conditions you may have – whether you know about them or not!)
- adhesions, bowel obstructions.
- hernias at the larger laparoscopic port sites

The more specific surgery related risks have been mentioned with regard to adjustable gastric banding. For other operations (sleeve gastrectomy, bypass), there are risks related to the staple line (stomach and bowel are cut and sealed by stapling and dividing instruments) or sutured sites, which can leak or bleed, including the anastomosis. These are serious complications, which will likely require further procedures, and can rarely result in death. These same risks apply to any operation involving cutting and joining bowel, such as removing parts of the large bowel for cancer or diverticulitis. If bile reflux does occur after MGB, it can be converted to a modified type of Roux en Y Gastric Bypass.

Beyond the immediate recovery period from surgery, gastric bypass has other effects, which are well described in this document from the ASMBS (American Society for Metabolic and Bariatric Surgery):

https://asmbs.org/app/uploads/2014/05/bariatric_surgery_postoperative_concerns1.pdf

Please ensure that you read it carefully! It is easy to read it online, but if you would like a printed copy, please request this.

You will need nutritional supplements, and blood tests to monitor your levels of nutrients, indefinitely. Compliance with these is essential in order to avoid the risks of developing malnutrition-related diseases, which can be very serious. A separate information sheet is provided, summarising the supplements recommended.

Avoiding **ulceration** at the anastomosis: You will need to avoid non-steroidal anti-inflammatory drugs (NSAIDs), such as Nurofen, Voltaren and many other

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similar drugs, as these increase the risk of ulcers forming. SMOKING is also strongly associated with ulcer formation (as well as cancer, emphysema, etc!).

Note that ALCOHOL is more readily absorbed after gastric bypass surgery, and "a little may go a long way"! Do not drink and drive!

Gallstones: Rapid weight loss can lead to the formation of gallstones, no matter how the weight is lost. Report any new types of upper abdominal pains to your surgeon so that this can be investigated. A drug called Ursofalk (ursodeoxycholic acid) can reduce this risk if taken in the first 6 months, however it is not rebated for this purpose and is therefore very expensive. If gallstones move *into the bile duct* in someone who has had a gastric bypass, the treatment is more complex.

Some other general resources you may find helpful include:

International Federation for the Surgery of Obesity (IFSO) and metabolic disorders: http://www.ifso.com/bariatric-surgery/alternative-intestinal-procedures/one-anastomosis-gastric-bypass/

Obesity Surgery Society of Australia and New Zealand (OSSANZ): http://www.ossanz.com.au/obesity surgery.htm

American Society for Metabolic and Bariatric Surgery (ASMBS): http://asmbs.org/patients/bariatric-surgery-procedures

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Take a little time to think about what you have read, and if you have any specific questions, write them down here:

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Date:

I, _____ , acknowledge that I have read and understood the information provided in this document, and recognise that not all potential complications or adverse events can be comprehensively listed. I understand the importance of taking nutritional supplements for life and that there can be serious consequences if I don't.

Signature:

Gastric Sleeve / By-pass surgery – Work up Day

We welcome you to St John of God Warrnambool Hospital and trust our team will assist you with your surgery preparation. We understand your time is valuable and this session does take approximately 2 ½ hours of your time. This session is aimed at assisting you with your planned surgery to ensure you have the best outcome possible. You will also be able to ask questions on the day so are fully informed and we can allay any concerns you may have. All things discussed with you are confidential.

Nursing staff

Will coordinate your work up day and explain what will happen after you get back to the ward. You can ask the nurse any outstanding questions you have and if she can't answer them she will source someone who can. You will also meet the Nurse in charge of the ward where you will receive you post operation care.

Dietitian Review – 1 hour

- Discussion of goals/motivations around surgery, ensuring they are realistic
- Awareness of the surgery and what it involves, benefits of short term and long term
- Discussion of current nutritional intake
- Eating behaviours
- Barriers to change
- Pre-op and post-op diet support
- Healthy eating support long term including use of multivitamins

During a one-hour discussion the dietitian and yourself will discuss the procedure in more detail ensuring that your motivations in undertaking this surgery and the goals you hope to reach are achievable. Discussion on what the surgery involves and your expectations ensures that you have a full understanding of the short and long term benefits. A brief discussion of your current eating patterns and foods is also completed to ensure any nutritional gaps can be addressed with the use of a multivitamin or long term changes to your eating pattern.

Education on the use of Optifast prior to your procedure and the use of a liquid and puree diet post operation will be completed at this time. Contact information is provided for ongoing support. The information obtained from this discussion is essential to long term dietitian support and areas of education in the future, ensuring that you are able to achieve your goals and maintain optimal weight loss.

Mental Health Review – 30 to 45 minutes

The purpose of seeing a mental health practitioner ensures that as far as possible you are psychologically prepared for your procedure and it is an opportunity to discuss any vulnerabilities / concerns to maximize a positive outcome post your procedure.

It is very important that you speak freely as the "right attitude" will assist to achieve what has been very difficult for you up to this point. You have made a decision to address your weight issue and we wish to help you to achieve your Goal.

Physiotherapy Review – 10-15 minutes

The Physiotherapist will help you get up and out of bed for the first time and teach you a safe technique that avoids increased pressure on your surgical incisions while also assessing you for any possible chest complications plus teach you preventative strategies to avoid these during your admission.

Your Physiotherapist will also help guide you on exercise recommendations pre and post-surgery including type, frequency and duration.

At the end of the session we would appreciate your feedback and we will provide you with a small survey. Your feedback enables us to continue to improve our services for all of our patients.

Gastric Sleeve / By-pass Work Up Day		Policy No:	WBCI 084
Developed by:	Allied Health Practitioners	Date Compiled:	April 2017
Approved by:	Quality Committee	Date Approved:	May 2017
Reviewed by	New Information	Date Next Review:	May 2020