



**Somerset**  
NHS Foundation Trust

# Bariatric Surgery

Weight loss surgery at Musgrove Park Hospital



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# 1. Introduction

Welcome to the Bariatric Service at Musgrove Park Hospital, Taunton. We have been carrying out surgery to help people with their weight management since 2004. Bariatric surgery aims to improve your health and quality of life. We have been awarded “International Centre of Excellence for Bariatric Surgery” status by the Surgical Review Corporation in the United States and are an ASO (The Association for the Study

of Obesity) accredited Collaborating Centre for Obesity Management. We are also a lead centre for bariatric surgery within the South West of England.

This booklet is designed to give you information about the main types of surgery we perform in Taunton. It will also guide you through the pathway from initial referral for surgery to your post-operative care. This information is important to know so that you

can make an informed choice about whether or not to have bariatric surgery.

Bariatric surgery is also known as ‘weight loss surgery’ or ‘metabolic surgery’.

## **WHO** IS Musgrove Park Hospital?

Musgrove Park Hospital is an NHS hospital where our people are at the centre of all we do – positively contributing to the health and wellbeing of our community.

## **WHY** Musgrove Park Hospital is the right choice.

We know our colleagues are what make our hospital great, everyone empowered to make the best choices for our patients, to support their colleagues and to drive forward quality, care and improvement.

## **HOW** can Musgrove Park Hospital help you?

By putting our patients at the centre of all we do, focusing on quality, safety and improvement we will deliver the highest standards and appropriate care and treatment to the community of Somerset in the right place, at the right time.

## 2. How am I referred for bariatric surgery?

We follow best practice and service guidance as recommended by the National Institute for Clinical Excellence (NICE). To obtain further details please refer to section 8.

The aim of bariatric surgery is to help you to lose some of the extra weight you are carrying, which will help to improve your health and quality of life. Evidence shows us that at three years after surgery, it may be possible to have lost 50-70% of your extra weight. This will be individually calculated for you when you meet the bariatric surgical team.

To be considered for surgery your GP will refer you to a tier three weight management service. The weight management team will work together with you towards successful and sustainable weight management by helping you to make changes in your lifestyle, with or without medication. The team carefully assess each individual and tailor a treatment plan for your needs. This plan will need to be followed for at least 6-12 months (may be significantly longer).

The team may recommend that you have blood tests, tests on your heart or lungs and, where appropriate, psychological support before they refer you for surgery. All of this will help to ensure you are properly prepared for the life changes after surgery.



## 3. What happens after my referral?

You will be invited to attend a group meeting in Taunton and a “One Stop” clinic appointment.

### 3.1 Bariatric surgery group meeting

This is led by a nurse (bariatric clinical nurse specialist or research nurse) and a specialist dietitian and **all patients must attend**. Family members, partners or close friends who will be supporting you are welcome.

At this group meeting we give you evidence-based, reliable information about all the stages of bariatric surgery and also inform you about current research studies which you may have the opportunity of participating in. You will have the chance to ask questions and speak with other patients going through the same process. This session will enable you to make a fully informed decision about surgery, understand exactly how it works and provide you with advice and practical tips about how to use surgery as a tool to achieve long term successful weight management. It outlines the possible complications and early warning signs to watch out for. We have received

positive feedback from patients about how useful this session has been.

**We require you to attend this session if you want to be considered for bariatric surgery, even if you are a support group member or have already had some bariatric surgery information from your weight management service or know someone that has had bariatric surgery in the past.**

If you have any concerns please discuss this with a team member.





### 3.2 “One Stop” clinic appointment

You will receive an appointment to attend a “One Stop” clinic in the outpatients department where you will meet the bariatric surgical team here at Musgrove Park Hospital. The purpose of this is to assess your suitability for an operation and you should set aside at **least four to five hours** for this appointment. You will be seen in individual consultations by the following team members:

- bariatric clinical nurse specialist
- bariatric dietitian
- consultant anaesthetist
- consultant surgeon
- bariatric research nurse

And you will need to have the following tests or checks:

- pre-operative blood tests
- a heart tracing (ECG)
- blood pressure and pulse check
- breathing test (peak flow)

Your case will then be discussed and the outcome agreed at our bariatric team meeting after the clinic has finished. The possible outcomes are:

- currently safe for bariatric surgery, to go on the waiting list

- currently unsafe for bariatric surgery, surgery to be put on hold. This is to ensure surgery is as safe as possible and reasons for this may include:
  - to review previous tests and/or investigations, and/or organise new ones
  - to have further assessment or support from a specialist health care professional, for example, a specialist doctor, dietitian or psychologist, to ensure you are prepared as safely as possible for surgery. This may result in a delay in being added to the waiting list (the length of the delay will depend on the reason why you are “on hold”). The team will discuss this with you

You will receive a copy of the letter we send to your GP a few weeks after the appointment stating your outcome.

If you fit the eligibility criteria, you may be offered the option of taking part in a research study. You will be contacted by the research nurse within a week to discuss this further with you.

When you are put on the waiting list for surgery you will receive notification of the date of your operation a few weeks before. Please note that we are unable to give guidance on when your operation will be. If you have any concerns or considerations (for example a booked holiday), please notify a team member.

### 3.3 Admission for surgery

Bariatric surgery is an “elective surgery” which means it is scheduled in advance. Patients are usually admitted on the day of surgery. **For all operations (except intragastric balloon placement) you will need to follow a special liver shrinking diet for two weeks before your surgery, or as directed by your surgeon** (see section 6.1).

Whilst we endeavour to meet our waiting list targets and perform surgery as planned, there are occasions where elective surgery has to be cancelled at late notice. This is due to hospital beds being needed for patients with unplanned medical or surgical emergencies. In this situation our admissions department will contact you and reschedule your appointment as soon as possible.

## 4. What types of bariatric surgery are carried out at Musgrove Park Hospital?

The main types of bariatric surgery we perform are:

- laparoscopic gastric band
- laparoscopic gastric bypass
- laparoscopic sleeve gastrectomy
- intragastric balloon placement

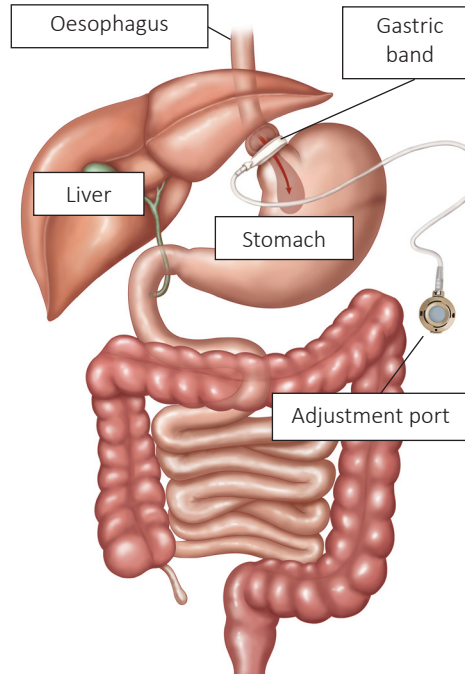
Please remember that at the surgery preparation meeting these options, risks and benefits will be explained and discussed in more detail. The information about the intragastric balloon is in a separate leaflet which will be available to you if appropriate.

## 4.1 Laparoscopic gastric band

The gastric band is a silicone band which is fitted by keyhole (laparoscopic) surgery around the top of the stomach. Depending on how well you are and where you live, this procedure is usually performed as a day case or involves one overnight stay. Once it has been in place for four to six weeks, and the port wound has healed, the band can be adjusted via the access port by inserting a needle and adding or removing sterile saline. Sometimes, depending on the amount of swelling, a small amount of sterile saline is added at the time of surgery.

### How does the band work?

Once the band has been adjusted appropriately, it works in two ways. Firstly, it generates a background sense of satisfaction related to feeling full and not hungry and is present 24 hours a day, by pressing on nerves in the stomach that report to the brain. This means that your overall level of hunger is lower. Secondly, providing you follow correct eating behaviours, when you do eat the sense of satisfaction comes more quickly with a smaller amount of food. This is because one



bite can require up to six squeezes from the oesophagus (your “food pipe”) to get it across the band, each squeeze generating a

satisfaction signal sent from the nerves to the brain.

In summary, you will have a lower level of hunger that can be controlled by a smaller sized meal. A meal containing about 20 bites should provide sufficient levels of satisfaction.

### What are band adjustments?

Fluid can be added or removed from the band using the access port which sits under the skin (so you cannot see it). It often takes several adjustments in clinic to achieve the point at which you and the band are working well together and in “the green zone” (as shown on the next page). Everybody is individual and need different amounts of fluid in their band. Adjustments are made gradually over time.

### How quickly will I lose weight?

Once your band has been optimally adjusted you can lose 1-2lbs (0.5-1kg) a week by using surgery as a tool with a healthy eating behaviour and lifestyle, after three years you could achieve 50-70% loss of the extra weight you are carrying. Weight loss is individual and patients often experience a few plateaus in the weight loss phase.

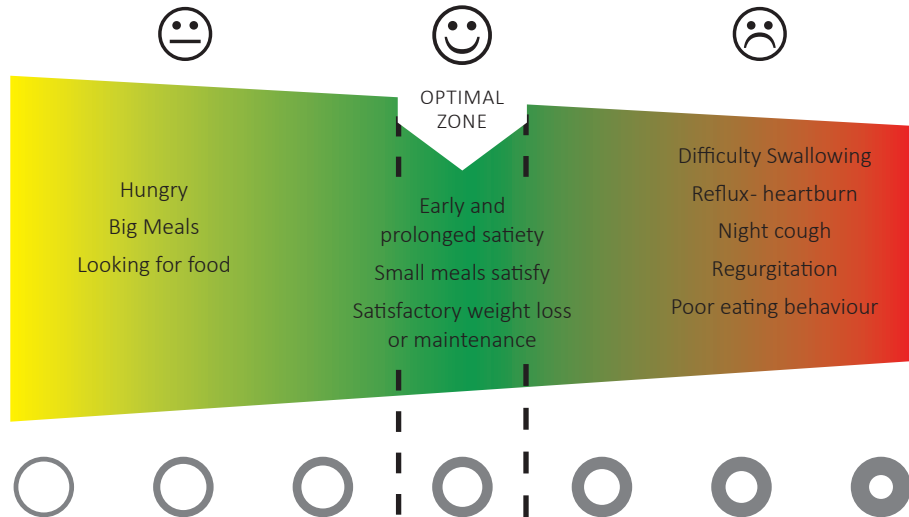


There is a risk of inadequate weight loss, or weight regain. To reduce this risk, patients need to continue to manage their dietary intake and lifestyle carefully, for life.

### What are the risks?

- general risks associated with an anaesthetic and surgery (for example, blood clots, chest infection and bleeding)
- death – 1 in 2000
- wound or access port infection
- port and tubing problems such as a leak or slow puncture requiring reoperation
- band slippage, stretching of the pouch/oesophagus or band erosion which may require repositioning or removal of the band
- in total, 10-20% of patients will require surgery for problems with their band over 10 years
- vitamin, mineral and trace element deficiencies

There may be other issues that we do not know about at this moment in time as we are still learning about the outcomes after bariatric surgery.



**Figure 1: “The Green Zone chart © CORE”, The Centre for Obesity Research and Education. This chart is used to help assess whether a band adjustment (either adding or removing fluid) is needed. The aim is to be in the optimal zone which is also known as the “green zone”.**

## 4.2 Laparoscopic gastric bypass

The procedure is known as a Roux-en-Y gastric bypass and is performed as a keyhole operation. A small stomach pouch (about the size of an egg) is made and joined to the small bowel downstream of the remaining stomach and duodenum (first section of small bowel). The pouch is no longer attached to the rest of the stomach, which is known as the remnant stomach, but the digestive juices from this filter in where the small bowel is re-joined to the duodenum (at the jejunojejunostomy). Depending on how well you are and where you live, this procedure usually involves a stay in hospital for two nights.

### How does the bypass work?

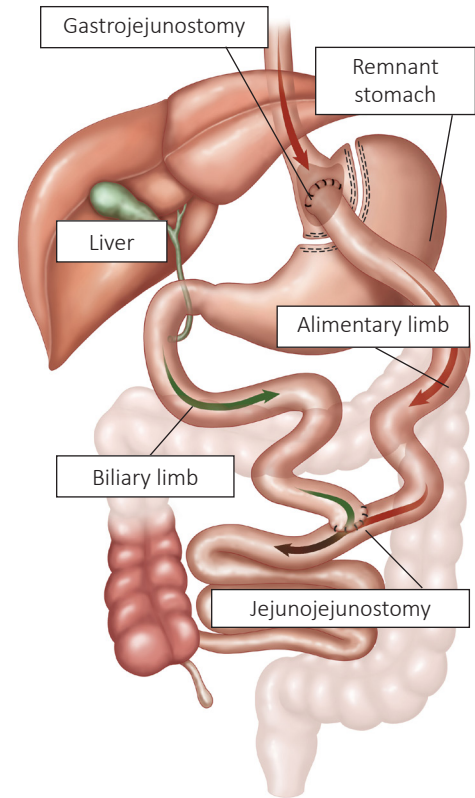
The bypass surgery leaves you with a stomach “pouch” that is much smaller in capacity so you will need to eat smaller portions. The gastric bypass works by helping to limit the amount you can eat by altering the gut hormones. The changes to the gut hormones can make you feel less hungry, increase your metabolism and affect your taste preferences. The effects of the gastric bypass are most

pronounced in the first couple of years after surgery. After this time some patients can experience an increase in appetite but before this happens you have a good amount of time to establish healthy eating habits to continue for life.

### How quickly will I lose weight?

Weight loss usually starts soon after surgery with the majority in the first four to six months. Weight loss is individual but patients often experience a few plateaus in the weight loss phase. At around 18 months after the bypass, when the hormones can normalise and appetite increases, people can regain a small amount of weight. Providing healthy eating and small portions continue, weight should plateau again. It can be up to three years after the operation before weight stabilises. If you use surgery as a tool with a healthy eating behaviour and lifestyle, after three years you could achieve 50-70% loss of the extra weight you are carrying.

There is a risk of inadequate weight loss, or weight regain. To reduce this risk, patients need to continue to manage their dietary intake and lifestyle carefully, for life.



### What are the risks?

- general risks associated with an anaesthetic and surgery (for example blood clots, chest infection and bleeding)
- death – less than 1 in 500
- reoperation – 3 in 100
- leak from staple lines at operation sites internally
- stomach ulcer (an ulcer on the join between the pouch and the small intestine) – less than 1 in 100
- obstruction due to internal hernia or adhesions (may occur any time after surgery) – 4 in 100
- vitamin, mineral and trace element deficiencies
- hair loss (in the initial weight loss phase)
- dumping syndrome (refer to section 7.4)
- reactive hypoglycaemia (low blood sugar) – 1 in 100

There may be other issues that we do not know about at this moment in time as we are still learning about the outcomes after bariatric surgery.

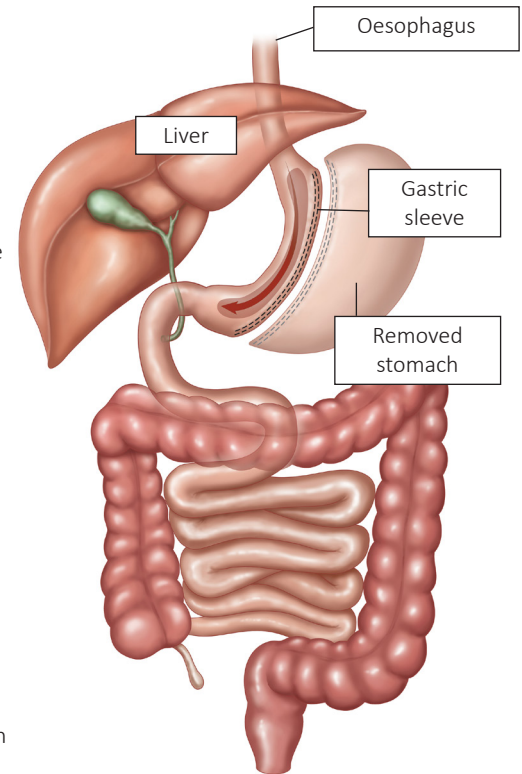
### 4.3 Laparoscopic sleeve gastrectomy

The sleeve gastrectomy is performed as a keyhole operation. The stomach is made into a narrow tube and the remaining part (about 75%) is removed. The stomach is reduced to about 25% of its original size so you will be producing less gastric acid but the digestive process is not altered. The stomach is narrowed and the remaining gastric sleeve resembles a banana in shape. Depending on how well you are and where you live, this procedure usually involves a stay in hospital for two nights.

#### How does the sleeve gastrectomy work?

The sleeve gastrectomy surgery leaves you with a stomach that is much smaller in capacity so you will need to eat smaller portions of food. It affects the gut hormones in a similar way to the gastric bypass (see section 4.2).

The speed in which the food leaves your stomach can increase and you may be at risk of experiencing dumping syndrome. Although this is less common than with the gastric bypass. For details, please refer to section 7.4.



### How quickly will I lose weight?

Weight loss is individual but generally weight loss is steadier than it is with the gastric bypass. Patients often experience a few plateaus in the weight loss phase and it can be up to three years after the operation before weight stabilises. If you use surgery as a tool with healthy eating behaviours and lifestyle, after three years you could achieve 50-70% loss of the extra weight you are carrying.

There is a risk of inadequate weight loss, or weight regain. To reduce this risk, patients need to continue to manage their dietary intake and lifestyle carefully, for life.

### What are the risks?

- general risks associated with an anaesthetic and surgery (for example blood clots, chest infection and bleeding)
- death – less than 1 in 500
- staple line leak
- narrowing of the stomach (stricture)
- reoperation – 3 in 100
- reflux/heartburn
- vitamin, mineral and trace element deficiencies
- dumping syndrome (refer to section 7.4)

There may be other issues that we do not know about at this moment in time as we are still learning about the outcomes after bariatric surgery.

## 5. Lifestyle preparation before surgery

To make the most of your bariatric surgery, increasing your understanding about your food habits is very important. Before your referral for surgery you will have received support from a weight management service and have a better understanding of what drives your eating behaviour. Many of us can turn to using food or drink as a coping mechanism during difficult times or as a reward or celebration. The more you understand your old habits the easier it will be to build different strategies.

Bariatric surgery is extremely successful for changing the physical drives to eat but emotional triggers to eat can become more difficult to manage unless you have thought about alternative ways of coping. The weight management team can support you with this.

It is important to think of surgery as a tool to use along with the healthy lifestyle, diet and activity changes you have made and may be currently making.

### 5.1 Keeping on track while waiting for surgery

The team's decision to offer you surgery is based on your assessment in the "One Stop" Clinic. **If your weight increases, your operation may be postponed or cancelled.** Any further weight that you lose is an advantage as it will make the surgery easier and will reduce the risks associated with it. We strongly recommend that you continue with the diet, activity and lifestyle changes that you have already made. This will help prepare you for the dietary changes you will be making after surgery. Please contact your local weight management team or the bariatric dietitians if you require extra support.



## 6. Dietary information

### 6.1 Pre-operative liver shrinking diet

For **two to three weeks** before your surgery (as advised by the surgeon), it is vitally important that you follow the pre-operative liver shrinking diet. The diet is needed to help shrink your liver to ensure that the operation can be done easily and safely. **The diet is not optional** but is only to be followed before the surgery. It is not to be followed after the surgery or by anyone else.

When performing bariatric surgery laparoscopically, the surgeon will have to lift the liver to access the stomach. If the liver is heavy, fatty and immobile, it is difficult for the surgeons to see and access the stomach. A larger liver can make surgery impossible.

The diet is low in carbohydrate and fat and by following it, your body reduces its glycogen stores (glycogen is a form of sugar stored in the liver and muscles for energy). With each ounce (28g) of glycogen, the body stores three to four ounces (85-113g) of water. When you follow this diet your body loses its glycogen stores and some water, resulting in the liver shrinking and softening.

You may find that you lose some weight during the pre-operative diet, but it will mainly be water loss. Some people do not lose weight. If given a weight loss target, this diet should not be relied upon to help achieve it.

#### Advice for patients with diabetes

It is important to maintain good blood glucose control before surgery (avoiding blood sugars that are high or low). If you take insulin or other medications for diabetes that may cause a hypoglycaemic episode by lowering the blood sugar, you may need to decrease the dose or stop the medication while you are on the pre-operative diet. The diet is low in carbohydrates and there is a risk that your blood glucose levels could drop too low if you continue your normal medication regimen. We also advise that you check your blood glucose levels more frequently while on the pre-operative diet.

**You will be given individual advice about medication and monitoring your blood sugars at the “one stop” clinic appointment. This will also be written in your letter, sent after the appointment. Please contact us BEFORE you start the diet, if your medications have changed since this appointment or if you are unsure about what to do.**

#### Using the meal plan for the pre-operative liver-shrinking diet

As food preferences are very different, the suggestions overleaf are the type of food and amounts to eat rather than specific food items. You can incorporate the appropriate foods that suit your personal taste. It is important to include the variety of food, as outlined, to provide you with sufficient nutrition (such as protein). Nutrition plays a key role in healing after surgery. This diet allows approximately 800kcal-1000kcal per day in total and we recommend you use a dinner plate 26cm (10 inches) in diameter.

## Meal plan for liver-shrinking diet

It is recommended that you start taking one A-Z complete multivitamin and mineral tablet per day at this stage.

### Breakfast

Choose **one** of the following (with food/milk from additional daily allowance):

- 3 tablespoons plain (no added sugar) breakfast cereal
- 25g/1oz dry rolled porridge oats
- 1 Shredded wheat or supermarkets own brand
- 1 ½ Weetabix or supermarkets own brand
- 1 medium slice bread/toast with thin scrape (1 teaspoon) of margarine/butter

### Lunch

Choose **one** of the following:

- 1 slice medium sliced bread/toast
- 2 crispbreads
- ½ bagel
- ½ pitta bread

With **one** of the following (weights are when cooked):

- 2 eggs
- 60g/2oz low fat cheese (2 x match box size). Only have cheese once a day. If you have it for lunch, choose another food from the list for your evening meal.
- 8 thin packet slices of ham, chicken or turkey
- Small chicken breast without skin
- 4 rashers of grilled back bacon (with fat cut off)
- 100g/4oz meat (with fat cut off)
- 100g/4oz fish
- 100g/4oz tofu or Quorn™

**With vegetables or salad** (fresh, frozen or tinned in natural juice, can be eaten raw or cooked without fat).

Using a 26cm/10inch dinner plate, have **at least two** varieties to fill the rest of your dinner plate. For example aubergine, broccoli, cabbage, cauliflower, courgette, carrots, celery, courgette, cucumber, leek, lettuce, mushroom, onion, pepper, spinach, swede and tomatoes.

This does not include potato or sweet potato. Avocado, vegetable juice, peas, sweetcorn, beetroot and parsnips should be **avoided**.

### Evening meal

Choose **one** of the following:

- 1 average sized potato (125g/4oz boiled or mashed with milk from additional daily allowance)
- 4 egg sized new potatoes with/without skin
- 3 dessert spoons of cooked rice (any variety)
- 3 dessert spoons of cooked pasta (any variety)
- 40 strands of spaghetti (count when raw)

With **one** of the following (weights are when cooked):

- 2 eggs
- 60g/2oz low fat cheese (2 x match box size). Only have cheese once a day. If you have it for your evening meal, choose another food from the list for lunch.
- 8 thin packet slices of ham, chicken or turkey
- 1 small chicken breast without skin
- 4 rashers of grilled back bacon (with fat cut off)
- 100g/4oz meat (with fat cut off)
- 100g/4oz fish
- 100g/4oz tofu or Quorn™

**With vegetables or salad, as above.**

### Additional daily allowances

- One third of a pint (200ml) of semi-skimmed or skimmed cows/goats milk or unsweetened soya milk for drinks and food (for example cereal and mashed potato)
- Two portions of fruit. Pick **two** portions from this list:
  - 1x apple
  - 1x pear
  - 1x small banana
  - A small handful of berries/grapes
  - 3x heaped dessert spoons of fresh fruit salad
  - 2x small plums
  - 1x orange
  - 2x small clementines/satsumas
  - 3x dried apricots
  - 1x dessertspoon of dried fruit
  - 100ml/1/6 of a pint of pure fruit juice (maximum of one per day)
- One small pot (125g/4.5oz) diet/light yoghurt or low fat fromage frais
- One small pot (115g/4oz) of sugar free/no added sugar jelly
- Any of the following spices/condiments/sauces listed below can be used with food/drink:
  - With no restriction on amount:** Salt, pepper, fresh or dried herbs, spices, mustard, curry powder, lemon/lime juice, vinegar and stock cubes
  - Limit to three teaspoons/15ml per day:** Yeast extract, Bovril, soy sauce, fish sauce, Worcestershire sauce, balsamic vinegar
  - Limit to six teaspoons/30ml per day:** Vinaigrette without oil
  - Limit to five dessertspoons/50ml per day:** Gravy made from water and gravy granules (do not add meat juices/fat)

### Foods to avoid

- If you are in doubt about a food then it is best to avoid it
- It is very important to avoid foods such as cakes, biscuits, chocolate, crisps, jams and sugary drinks because of their high carbohydrate and fat content
- You must also avoid alcohol

### Fluid

In addition to the restrictions above, you can have unlimited water, tea (with milk from allowance and without sugar), coffee (with milk from allowance and without sugar), low calorie/no added sugar squash and low calorie/diet fizzy drinks.

It is very important that you drink plenty of fluids, aim for at least 2 litres (3½ pints) per day. If you need to sweeten drinks make sure you use a calorie free sweetener.

### Meal replacement drinks as an alternative to the liver shrinking meal plan

An alternative to the meal plan is to have a low calorie liquid diet, using meal replacement drinks over the liver shrinking period. You may choose to do a week of the meal plan and a week using the meal replacement drinks or alternate every few days. **However we do not recommend combining the two plans on the same day as this makes it difficult to get the right balance of nutrition.**

### Which meal replacement drinks can I use?

We recommend that the meal replacement drinks provide a total of 800-900kcal (the milk allowance provides an additional 100kcal), around 100g carbohydrate and at least 55g protein per day and contain vitamins, minerals and trace elements.

If you decide to only use meal replacement drinks (not in combination



<b>Name of meal replacement drink</b>	<b>Product description</b>	<b>Directions (use all powders as per product instructions)</b>	<b>Dose per day (every 24 hours)</b>
Slimfast® High Protein	Powder to be mixed with milk to make a shake	For each shake, using the scoop provided, mix 2x level scoops of powder with 250ml skimmed milk	4 x shakes (made up as per product instructions)
	Ready to drink shakes available in bottles of 325ml	Ready to drink shakes. Serve chilled from the fridge or add ice. Can also be served warm but do not boil as this reduces the vitamin content	4 x 325ml bottles
Tesco Slim – meal replacement shake mix	Powder to be mixed with milk to make a shake	For each shake, mix 1 sachet with 250ml skimmed milk	4 x shakes (made up as per product instructions)
Asda Great Shape – meal replacement drinks	Powder to be mixed with milk to make a shake	For each shake, mix 1 sachet with 250ml skimmed milk	4 x shakes (made up as per product instructions)
	Ready to drink shakes available in bottles of 330ml	Ready to drink shakes Serve chilled from the fridge or add ice. Can also be served warm but do not boil as this reduces the vitamin content	4 x 330ml bottles
Celebrity Slim – Shakes, Smoothies or Soups	Powder to be mixed with water	For each shake, mix 1 sachet with 200-250ml of cold water	4 x shakes, smoothies and/or soups (made up as per product instructions)
		For each smoothie, mix 1 sachet with 250ml of cold water	
		For each soup, mix 1 sachet with 200-250ml of hot but not boiling water	
Celebrity Slim Dairy and Gluten Free Shake	Powder to be mixed with cow's milk substitute to make a shake	For each shake, mix 1 sachet with 250ml of unsweetened soya/almond/oat milk (lactofree milk can be used, if tolerated, for a lactose free shake)	4 x shakes (made up as per product instructions)
USN Diet Fuel Ultra Lean Meal Replacement Shake	Powder to be mixed with milk to make a shake	For each shake, using the scoop provided, mix 2x rounded scoops of powder with 200-300ml skimmed milk	4 x shakes (made up as per product instructions)

with the meal plan) you do not need to start taking an A-Z complete multivitamin and mineral tablet.

The following meal replacement drinks are suitable and available at the time of print:

Please do not use/buy any other meal replacement drinks (including other products with a different name, made by the same manufacturer) without checking with the bariatric dietitians first as many are not suitable.

### **Fluid**

You should also drink 1-2 litres (2-3½ pints) of extra fluid a day. Suitable fluids include water, calorie free (including sugar free) drinks for example sugar-free squash, coffee and tea. You can add Bovril to hot water but limit to three teaspoons of Bovril per day. You must not have more than 200ml (⅓ pint) of skimmed or semi-skimmed cows/goat's milk, or unsweetened soya milk, per day.

### **Fibre**

The fibre content of the meal replacement drinks vary, if the drinks provide you with a total of less than 9g fibre a day you may benefit from a fibre supplement, available from chemists or supermarkets. Please follow the manufacturer's guidance. If you have difficulties managing your bowels and experience constipation or loose stool please contact the bariatric dietitians or speak with your GP.

### **Can I use the slimming bars and other products or diets as part of my liver shrinking regimen?**

No, we only advise the use of the meal replacement drinks or the liver shrinking meal plan as this will ensure that you get the right balance of nutrition.

### **How will the liver shrinking diet make me feel?**

It is common to feel tired and to have a lack of energy. The first few days are usually the hardest and then it can feel easier. Remember that this is only for the short term and it will help make your surgery possible and safer.

## **6.2 Dietary guidelines for the first six weeks after bariatric surgery**

While your stomach is settling down and healing after the operation, introduce solids very slowly. Don't be tempted to rush this stage; **we advise you should not advance faster than the timings mentioned.**

If you do not tolerate a texture well, for example if you are feeling nauseous and experience some discomfort on mashed foods, go back to puréed food for 24-48 hours and then try mashed food again. If a specific food causes problems, avoid it and choose foods that are tolerated and then retry again after a week or two. Often a difficult food stops being a problem over time.

You should continue to choose healthy options and avoid foods high in fat and sugar. Please refer to section 7.4 for information about dumping syndrome. You should also be following the 20-20-20, wait a minute rule (see section 6.3).

Please refer to the table below for guidance on when you should be eating what texture after your operation:

Type of Surgery	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7 +
Gastric Band	First 24h fluids only then sloppy puréed food	Sloppy puréed food	Thicker puréed food	Thicker puréed food	Soft, mashed food	Soft, mashed food	Normal solid food
Gastric Bypass	Fluids only	Sloppy puréed food	Thicker puréed food	Thicker puréed food	Soft, mashed food	Soft, mashed food	Normal solid food
Sleeve Gast-rectomy	Fluids only	Sloppy puréed food	Thicker puréed food	Thicker puréed food	Soft, mashed food	Soft, mashed food	Normal solid food

Information about the different food textures and guidance on portion sizes are explained next.

### Fluids

For the first six weeks we advise that you avoid fizzy drinks because the gas can cause pain/discomfort in your stomach and alcohol because it can affect healing.

You should aim for 2 litres (3 ½ pints) of fluid each day to avoid dehydration and constipation. This can be very challenging, particularly in the first week or so and at the very least you should have 1 litre (2 pints) of fluid a day. It is advisable that you try to spread your fluids out, sipping continually throughout the day. You will not be able to comfortably manage large volumes in one go.

Fluids must be sugar free and low in fat. For the “fluid” stage of texture reintroduction, it should be of a thin liquid consistency and free of bits or lumps. The preferred temperature of fluid is

individual. Suitable examples are water, tea, coffee (use non-calorific sweeteners rather than sugar), herbal/fruit teas, skimmed/ semi-skimmed milk, unsweetened soya milk, low calorie/no added sugar fruit squashes, fruit juice (restrict to 125ml per day), meal replacement/high protein drinks, consommé, bouillon, thin soup (with no lumps or bits) and meat extract in hot water. Sugar free jelly is also allowed as this dissolves to a fluid when consumed.

Patients who have had a sleeve gastrectomy or gastric bypass may be at risk of dumping syndrome (see section 7.4) with fluids that contain sugars/fat (fruit juice/meal replacement drinks).

### Sloppy puréed food

Sloppy puréed food should be a thin, smooth, uniform consistency, containing no bits and should drop easily off a spoon. Choose food that is already in this form of texture or blend/mash soft foods with a liquid (such as hot water, milk, gravy or other sauce) and if necessary sieve to achieve this consistency.

Suitable examples include low fat/diet yogurt, custard, soup, mashed potato (you can add low fat grated cheese that melts into the potato) and sauce (gravy, parsley or other sauce for flavour), well-soaked Weetabix/

supermarkets own brand or Ready Brek/supermarkets own brand porridge with lots of milk, puréed minced meat in tomato sauce, puréed cooked vegetables, puréed stewed apple and puréed tinned fruit (for example peaches, pears and apricots in their own juices).

If you are making your own puréed food, you may need to make a sauce in order to obtain the right texture when blended. Dried packet sauces can be made with skimmed milk. Tomato-based 'Cook-In' sauces are useful and gravy granules can be made up with hot water. Pureed food can be very bland so add herbs and spices for extra seasoning.

Food that is not suitable for pureeing include stringy/fibrous fruit or vegetables (such as lettuce, beans, leeks), fruit or vegetables with husks/pips/skins (ensure these are removed before pureeing), nuts, crackers, chewy/gristly meat or fish with bones.

### **Thicker Pureed food**

Thicker puréed food contains no bits but is now a thicker consistency and should not drop off a spoon as easily.

You can use the foods outlined above. By this stage you should be starting to add more protein foods such as meat, fish, chicken, beans, lentils and eggs into your dietary intake (see section 6.5). It is tastier to puree components of meals separately, for example puree the meat separately from the vegetables. Some people find it easier to buy ready-made meals and blend them to a smooth consistency with extra sauce if required.

### **Example meals for thicker puréed food**

#### **Breakfast**

- Porridge or Ready Brek (blended), or
- Weetabix/supermarkets own brand well soaked in skimmed milk, or
- Low fat/diet yoghurt or fromage frais, or
- Scrambled egg blended

#### **Lunch**

- Vegetable and lentil soup blended to a smooth consistency or
- Mashed potato with grated cheese, or
- Baked beans with mashed potato, blended

#### **Cooked dinner/evening meal**

- Cottage pie with vegetables, blended, or
- Bolognese and mashed potato, blended, or
- Fisherman's pie with vegetables, blended, or
- Cauliflower cheese with low fat sauce, blended, or
- Bean stew, blended

#### **Snacks**

- Blended milky pudding such as rice, sago or semolina, or
- Fruit custard – for example stewed apple, mashed banana or tinned fruit in natural juices (not syrup) blended with low fat custard, or
- Low fat/diet yoghurt or fromage frais, or
- Pureed tinned fruit in juice

#### **Drinks**

At this stage start to drink between meals not with them – have a drink no later than 30 minutes before your meal, and don't drink for 30 minutes afterwards. For a sleeve gastrectomy or gastric bypass this is to

avoid over-filling your stomach pouch and cause faster emptying of the food from your stomach. For a gastric band it is to avoid washing the food past the band which reduces the satisfaction/fullness signals that are triggered. You will need to drink small amounts regularly to make sure you have enough fluid throughout the day. Continue to aim for a total of 2 litres (3 ½ pints) of low calorie, non-alcoholic fluid each day.

### **Soft, mashed food**

Soft, mashed food is food that is easily mashed with a fork; it should be soft, tender and moist but will need some chewing. You can use the same foods given as examples of puréed food but for those that need modifying, mash with a fork rather than puree.

### **Solid food**

Solid food means that the food texture does not need changing i.e. you do not need to puree or mash it before you eat it. You can also reintroduce harder, fibrous textures like toast, crackers, salad, raw vegetables, hard fruit and pieces of meat. Introduce new foods slowly, one at a time. If you have any problems with a particular food, avoid it and try again in a month or so as you may be able to tolerate it better then. For further guidance from this time onwards please refer to section 6.5.

### **Portions sizes (for all texture stages)**

The amount you can eat at any one time (for example a meal or snack) will be individual and may range from a few teaspoons to three tablespoons. It also depends on the surgery you have had, the food texture stage that you are in and how active you are.

As you reintroduce different textures, it is important to listen to your body and stop before you feel uncomfortable. Follow the 20-20-20, wait a minute rule (see section 6.3).

If you can only manage a few teaspoons at a meal you should try to eat at more frequent intervals, for example six times a day. This can be a normal experience.

As your portions increase you can reduce the frequency that you eat. As a rough guide if you can manage two to three tablespoons of food for a meal, you should eat at least four times a day (such as breakfast, lunch, mid afternoon snack and evening meal). For some people this amount continues to be too much. You may need to split some of the meals into two and eat the second part a few hours later, eating little and often. In this case you may need to eat up to six times a day.

When you are able to eat a tea plate sized portion of food, return to three meals a day.

As everyone is different it is not possible to give clear guidance on portion sizes other than to advise you to listen to the signals of satisfaction/fullness from your body and stop before overeating. You should work to re-establish a structured, regular eating plan (at least three meals) for your waking day. Your individual needs will be discussed in the dietetic review appointments. If you are concerned please contact your local dietitians or the bariatric dietitians.

### **Vomiting**

Occasional vomiting or regurgitation may be part of this early phase while you re-introduce foods and learn new behaviours however it should not be a regular, daily occurrence. To avoid it, ensure you follow the guidance in this section. If you are still vomiting regularly and things are not improving or you are concerned, contact the team.

## 6.3 Considering how you eat:

### The 20-20-20, wait a minute rule

The 20-20-20, wait a minute rule means:

- Each mouthful should be small, about the size of a 20 pence piece
- The meal should consist of no more than 20 small bites/mouthfuls
- Aim to chew each bite 20 times (about one second per chew)
- Then wait a minute between each swallow
- The meal should last 20 minutes, no longer than 30 minutes

This will help you to eat mindfully and have control over your portion size. It also helps to avoid vomiting/regurgitation. It is important to practice this immediately so that it becomes a habit for you.

## 6.4 Vitamin, mineral and trace element supplementation and nutritional monitoring after bariatric surgery

After any type of bariatric surgery there is a risk of developing vitamin, mineral or trace elements deficiencies. This is because you will be eating smaller portions of food, which results in difficulty in getting sufficient vitamins and minerals from your diet. The gastric bypass and sleeve gastrectomy reduces absorption of some nutrients. **We therefore recommend that all patients who have had bariatric surgery take certain vitamin and mineral supplements for the rest of their lives.** Most supplements are available on prescription, but others you will have to purchase yourself.

Which supplements and how much you need to take, depends on which type of bariatric surgery you have. We also advise that you have regular blood tests after bariatric surgery to monitor your nutrition.

You will be given further guidance on this in the preparation meeting and one stop appointment. You will receive a supporting leaflet to explain what you need to take and by form of a letter, we will send a copy of the information to your GP.

If you choose not to follow these recommendations, including the timings of when to take the supplements, or you choose alternative products, you increase your risk of developing nutrient deficiencies. These can have various symptoms and may lead to complications such as osteoporosis (thinning of the bones). Some complications may be irreversible.

Your GP or our team may recommend changes to your supplements, for example depending on your dietary intake or the results of your blood tests.

Our guidelines are reviewed regularly and may be subject to change according to the latest evidence. For our latest guidelines please refer to the Bariatric Surgery section on our Taunton and Somerset NHS Trust website or speak to a team member.

## 6.5 Eating well for life after bariatric surgery

In the long-term after surgery, it is important to continue a healthy eating and lifestyle plan to get the best weight management success.

### Eating behaviour

It is very beneficial to eat mindfully with limited distractions; tasting the flavours and thinking about the textures. Additionally, continue to follow the 20-20-20, wait a minute rule. This will help you to stay in control of your weight management after surgery.

## Protein

Protein is essential for growth and repair of the body and maintenance of good health. After bariatric surgery it is really important to include lean/low fat sources of protein (see below) with each meal/snack. Prioritise protein over the other food groups.

Animal sources of protein	Dairy sources of protein	Plant sources of protein
<ul style="list-style-type: none"><li>• Lean meat</li><li>• Lean poultry</li><li>• Fish and other seafood</li><li>• Eggs</li></ul>	<ul style="list-style-type: none"><li>• Milk</li><li>• Dried skimmed milk powder</li><li>• Low fat/diet yoghurt</li><li>• Low fat/diet fromage frais</li><li>• Low fat cheese (hard or soft)</li></ul>	<ul style="list-style-type: none"><li>• Soya or lactose free milk and milk product alternatives</li><li>• Beans</li><li>• Chick peas</li><li>• Lentils</li><li>• Soya or tofu</li><li>• Mycoprotein (Quorn™)</li><li>• Nuts or nut butter</li><li>• Seeds or tahini</li></ul>

It is important to prioritise food and establish good eating habits. Most people can get sufficient protein from their dietary intake however if you are concerned about this, particularly in the early stages after your procedure, you may choose to include a protein supplement for the short term.

There are many products available to buy over the counter but it is important to choose whey protein and check the ingredients and nutritional content label to ensure that they are not too high in calories and sugar. For example a whey protein that provides around 100 calories and 20g protein in a serving/scoop is a suitable choice. Individual advice will be given by the bariatric dietitian at your first review appointment. Vegan alternatives can also be discussed.

## Food tolerance

Sometimes people cannot tolerate the texture or taste of foods they used to like (although this may improve with time) and so it is important to find alternatives, particularly with the protein foods. You can choose any proteins from the three groups above. You can also try different preparation or cooking methods to change the textures if necessary. Everyone is different and so we are unable to provide clear advice on which foods you may experience difficulties with. Some people do not experience any difficulties.

## Fluids

The advice is the same as section 6.2

## Further support

The bariatric dietitians are available to support you in making changes to your eating habits and activity levels – don't hesitate to ask for help if you are struggling. We recognise that it is difficult to change eating habits and that you will need support long-term. It is really important to attend your dietetic appointments to check that you are nutritionally well, even if you feel things are going well.

## 7. General information about bariatric surgery

### 7.1 Before your operation

#### Anaesthetist

Your anaesthetist has been specially trained to treat people who are overweight and will look carefully at your medical history and tests that have been performed. Depending on these findings, arrangements may be made for a high dependency unit bed for the first 24-48 hours after your surgery.

The anaesthetist will explain the procedure, the risks involved, and conduct an examination of your mouth and neck to assess management of your airway during the general anaesthetic. There is a very small chance of damaging teeth if this management is found to be difficult.

#### Cigarette smoking

This surgery represents a turning point in your life so if you are a smoker, you must stop smoking before surgery. Smokers are much more prone to experiencing problems with anaesthetics and recovery from surgery. **Our consultant anaesthetists will advise you to stop smoking at least six weeks before your surgery.** After surgery it increases the risk of poor wound healing and developing an ulcer. You can ask for support from your local NHS Stop Smoking Service or GP. If you are struggling and want to use an alternative method of smoking that is available on the high street, please discuss this further with a team member before using it.

#### Medication

If you have diabetes please refer to the “Advice for patients with diabetes” in section 6.1 as you may need support from your GP or

diabetes nurse before and during the liver-shrinking diet.

We will write to your GP about the above advice after you have seen the surgeon, anaesthetist, bariatric clinical nurse specialist and bariatric dietitian.


Prior to your admission, speak with your GP or pharmacist regarding your medication requirements after surgery. Your regular medications will have to be crushed or in liquid form for two weeks after your operation. You will be given individual advice at the “One Stop” appointment.

A number of patients find that they experience indigestion type discomfort after surgery. Windex or Rennie Deflatine are available from shops and can be helpful. Taking peppermint tea can help settle any rumblings. You may want to bring a small supply of the wind medication and/or the peppermint teabags into hospital with you.

#### Emotional support

For many patients a big question is “Who should I tell about the surgery?”. You may find it useful to talk to your immediate family and close friends so that they too understand the changes you are making with food and how you eat. They may want to support you during the period of the operation and afterwards. Learning a new way of eating can take time and effort. Some people can also experience taste changes and difficulty tolerating foods they normally enjoy. There will be days when you feel emotional about your decision. This is a normal experience. You may want to use a diary to track your progress and you may want to take photographs to act as a visual prompt for the journey you are taking. If you are getting a relative or friend to take a photo





of you, stand in a doorway – you will find the door frame a useful reference point for photographs taken to track your progress. You could keep a list of reasons for having surgery and wanting to lose weight.

#### **Patient support networks**

You can talk to other patients who have been through the same surgical experience as you. Please note however that everyone's experience is individual and your journey may be quite different from that of others. You can access the support networks as listed in section 8. For information or support from health care professionals please contact our team.

#### **Planning your recovery**

We advise to allow two weeks after the band and three-six weeks after the bypass and sleeve gastrectomy to recover from surgery before you return to your normal lifestyle. You will need to make alternative arrangements for any commitments you may have in this time such as caring for another or work.

#### **Venous clot formation**

The most significant risk associated with this surgery is a blood clot in the lungs (thromboembolism). For this reason patients

are encouraged to get out of bed as soon as possible after the operation and anti-coagulant drugs are given to prevent blood clots forming.

**If you develop any sort of cough or cold or become unwell in the week prior to your operation it is important to let the hospital know immediately.**

## 7.2 Your hospital stay

### Admission

You will usually be admitted to hospital on the day of the operation, although occasionally patients are asked to come in the day before for medical reasons. Here is a suggested list of items to bring into hospital with you: sleepwear (one set for each day of your stay); dressing gown, slippers, any medications, spectacles/hearing aid, toiletries. Bring a small bag/case with you as space is very limited on the ward. Please **do not bring any valuables in with you**. When planning for your clothing to go home, choose clothes which are not too tight around your waist and flat shoes. For ladies, bring a soft bra without underwire to avoid rubbing on your wounds post operatively. Bring in your normal medications, either in their normal tablet form if they can be crushed, or in soluble or liquid form (see note on **Medications** above). Patients who have Obstructive Sleep Apnoea need to bring their CPAP machine with them.

Please make sure you have a thorough bath or shower before admission, concentrating on

the stomach area. This **may** help reduce the risk of infection.

Jewellery, make up, nail varnish and false nails must be removed.

Prior to your operation, any remaining or repeat tests that need to be done will be completed. The surgeon and anaesthetist will also visit you to answer any remaining questions that you may have and ask you to sign the consent form for the operation.

You may feel nervous about your operation, if you feel you are becoming overly anxious or you are starting to panic, please speak to one of the staff in the Surgical Admissions Lounge.

There is a very small chance that your operation may be cancelled on the day if beds are needed for emergency patients.

### Going to theatre

You will be given a theatre gown to wear that opens at the back and compression stockings. Most patients walk to the operating theatre and you will be anaesthetised on the operating table so that you do not have to be moved once you are asleep. There will be several people working in the theatre and

preparing you for surgery. An intravenous drip will be inserted into your arm and various other items including an oxygen mask, oxygen saturation monitor and blood pressure cuff put into place.

### Immediately after the operation

You will wake up either in the recovery room (part of the operating theatre suite) or back on a ward. You may still be connected to your drip, oxygen mask, oxygen saturation monitor and blood pressure cuff. For the first few hours while you are still recovering from the anaesthetic your blood pressure and pulse will be monitored frequently, this may disturb your overnight sleep. Your pain should be managed with medication. You will want to sleep at first so advise family and friends to leave you in peace. You will be sitting upright in bed and you will find this the most comfortable position for a few days.

Do not be surprised if your urine is green (or if your hair or mouth has some blue staining) – dye is used during the operation to check for leaks and this is the dye leaving your body.

Once you are awake you will be allowed to start taking sips of water and the staff will

encourage you to stand up and move around as soon as you are able. This is important to prevent blood clots forming and problems associated with your chest. This will reduce possible shoulder or diaphragm pain due to air in your abdomen from surgery. Your intravenous fluid drip is usually taken out the following morning.

#### **Length of hospital stay**

Although this will depend on how well you are feeling after surgery, generally patients who have a gastric band have an overnight stay and those who have a sleeve gastrectomy or gastric bypass stay one to three nights.

#### **Pain relief**

Many patients find that the operations are not as painful as they had expected. This is partly because using the 'key-hole' (laparoscopic) surgical technique is far less painful than the original open (laparotomy) type of surgery. Pain relief will be given before your surgery (as a 'pre-med') and during the operation itself. In Recovery, extra analgesia is given by injection if required. Once you are drinking, it can be given in liquid or soluble tablet form.

## **7.3 Discharge from hospital**

### **Exercise**

Many patients feel more energetic quite soon after the operation. Start walking more as soon as you feel able. With time you should gradually try to increase this until you are walking for a total of 30 minutes per day. You should aim to walk at a speed that makes you slightly short of breath and slightly sweaty. You can swim once your wounds have completely healed, which is usually two weeks after your surgery.

### **Follow up**

Within a few weeks of being discharged from hospital, you should receive details of your follow up appointments with the bariatric dietitian (and bariatric clinical nurse specialist if you have a band). You should also receive follow up from your local weight management team. If you do not receive these appointment letters please contact the secretaries for the relevant services. Please refer to section 7.5 for information on long term follow up.

### **Medications**

After you come to your first assessment appointment ("One Stop") with the surgeon, bariatric dietitian, bariatric clinical nurse specialist and anaesthetist we write to your GP to let him or her know what is needed regarding your medicines but you or your GP are welcome to ring us at any stage if there are questions.

**Lansoprazole** – You will need a medicine called a proton pump inhibitor to reduce the amount of stomach acid that you produce in order to aid healing. You will be prescribed lansoprazole.

- Gastric band – lansoprazole is needed for one month
- Gastric bypass and sleeve gastrectomy – lansoprazole is needed for three months

**Clexane** – This is a small injection which thins your blood to help prevent a blood clot. If you have a gastric bypass or sleeve gastrectomy, these injections continue at home for seven days from the day of the operation. Nursing staff will show you or your main carer how to carry out the injections. You will be sent home with supplies and should be discharged

with a sharps box, if not, use a large screw top jar to store the used needles. When your injection course has been completed, please check with your local GP surgery regarding safe disposal.

**Vitamin/mineral supplements** – Please refer to section 6.4 and the leaflet “Vitamin and Mineral Supplementation and Monitoring for Patients Having Bariatric Surgery” which you will be given separately. Organise your supplements before you come into hospital so they are ready to take after you have been discharged.

**Pain Relief** – Once home, if you need to take anything for discomfort or pain, soluble paracetamol tablets are recommended – let them stand for 15 minutes so that the fizz disperses before taking them. Non-steroidal anti-inflammatory pain killers (such as ibuprofen, diclofenac, meloxicam, naproxen) have been known to cause stomach ulcers and are best avoided post-operatively. Alternatives include oramorph and tramadol. Modified-release painkillers (agents with the suffix MR) are also best avoided after a gastric bypass as there may no longer be sufficient



gut to enable complete absorption and they may exit the body before exerting their full effect. Immediate release preparations should be used instead but the medicine is required more frequently.

**General Considerations** – Some drugs carry specific advice following bariatric surgery. Your prescription should be discussed with your pharmacist and dose adjustments made where necessary. After all bariatric surgery you will need to have crushable forms of your normal medication for at least two weeks after the surgery, unless they are very small tablets. A pill crusher from a pharmacy will make this easier for you. If your doctor or pharmacist says that your medicines are not suitable for crushing, you will need to have them in soluble or liquid (sugar free) forms. After two weeks, you should be able to resume taking tablets.

### **Sleeping**

You will find it more comfortable to sleep propped up with several pillows in a semi-sitting position.

### **Stockings**

You will be given compression stockings to wear after your surgery. These are to help prevent blood clots in your veins. It may be possible to remove your stockings in the first week after discharge, providing you are moving around freely and frequently. Before you go home we recommend that you ask nursing staff about your specific situation as advice can alter according to the individual patient.

### **Wounds**

Following gastric band, sleeve gastrectomy and gastric bypass, the five to six small wounds on your abdomen will either be glued or covered with waterproof dressings after the operation and should be left for seven days (only change if the wound is oozing or the dressing has lifted off and is no longer waterproof). The wounds are usually healed enough to remain uncovered. Any stitches used are dissolvable. If the wounds are glued, the glue will disperse of its own accord after several weeks and you can shower as normal from the day after surgery. You should not

bath/soak the wounds until they have healed due to the risk of wound infection.

If you notice any sign of wound infection (pain, redness, swelling or pus), you are advised to visit your practice nurse for a wound check, redressing and swabbing of the wound if necessary. If you have had a gastric band and you are concerned that the longer access port wound has become infected, you should ring the bariatric clinical nurse specialist.

## 7.4 An A-Z of possible problems after surgery

**If you have any problems relating to your surgery between discharge from hospital and your first outpatient appointment and it is during working hours, Monday to Friday, please contact the team (telephone numbers are provided at the end of this booklet). On evenings and weekends please contact your GP or dial 111 for out-of-hours advice. If you cannot reach medical support and you are very unwell, please attend your local A&E department.**

### **Bowel disturbances**

Your body will take a little time to adjust to the smaller quantity of food you are eating and you may become constipated. To prevent or treat constipation, drink more water (at least 1.5 to 2 litres/3-4 pints per day in total) and try to ensure you have fibre in your diet for example, puréed stewed fruit from week two onwards. If these measures do not help, you can obtain Lactulose liquid at the chemist

provided you are not experiencing any abdominal pain. This tastes very sweet but for patients who have a gastric bypass or sleeve gastrectomy it should not cause 'dumping syndrome' as the sugars are not absorbed. If Lactulose is not effective, your GP may agree to prescribe a Macrogol powder, which dissolves easily in water. Bulk-forming laxatives such as Fybogel are not recommended as you are unlikely to be able to drink the volume of fluid required.

Diarrhoea may also be experienced and can be due to several reasons. If these symptoms persist, then contact the bariatric dietitian or bariatric clinical nurse specialist.

If you have abdominal swelling, pain and vomiting and you are not passing wind, you need to seek immediate medical advice.

### **Dental problems**

Some people experience dental problems which may be associated with bariatric surgery such as loosening, cracking, chipping or loss of teeth. You should seek advice from a Dentist.

### **Dry skin**

Many patients report developing very dry

skin when losing weight rapidly. You can help prevent and combat this by drinking plenty of fluids, taking your multivitamin and mineral supplements and applying a good moisturising cream daily.

### **Dumping syndrome (Bypass/Sleeve patients only)**

After a gastric bypass and sleeve gastrectomy, food empties from your stomach quickly into the small intestine resulting in changes to the hormones and blood sugar levels. It is not dangerous but it can be very unpleasant. This may be avoided by:

- not eating or drinking too much or too quickly in one episode
- not having food/drink high in sugar and/or fat
- chewing well enough
- leaving 30 minutes either side of eating to have a drink
- not consuming alcohol
- not having food/drink that contains caffeine

The symptoms can range from mild to severe and include sweating, flushing, feeling light headed and/or faint, palpitations, nausea,

diarrhoea, abdominal pain, shakiness and loss of concentration. They can occur from 30 minutes, and late, up to three hours after eating/drinking. Making healthy food choices, basing meals and snacks on lean protein sources (for further detail see section 6.5), eating small amounts regularly, sipping caffeine free and calorie free fluids little and often and avoiding drinking with mealtimes will help avoid dumping syndrome. Some patients do not experience dumping syndrome.

If you do experience dumping syndrome, lie down until the feeling/discomfort has passed. When you have recovered think about what may have caused it to help you avoid it happening again. If you are buying food, get into the habit of checking labels of processed foods and look for low sugar (sugar content of less than 5g per 100g of product) and low fat (total fat content of less than 3g per 100g of product).

Despite making healthy food choices and keeping good portion control, some people may experience the symptoms above or more severe symptoms such as losing

consciousness, memory loss, prolonged headaches or vomiting. This is rare but can happen at any stage after surgery and be a result of **reactive hypoglycaemia** (low blood sugar). The team can advise you on how to manage it; this will involve further tests, medications and further dietary advice. People who experience reactive hypoglycaemia need to follow a strict plan to help manage it. Please talk to us if you have any concerns.

#### **Eating habits and changes**

The change that occurs to your eating will be very dramatic, particularly in the early stages after your operation. Many people feel very excited during this stage but it is also very common for people to feel apprehensive and worried. This is usually a transition and will settle down after a while.

You may experience changes to your normal food preferences in terms of taste and textures. This may feel strange and lead to negative emotions, again this is usually a transition and should settle.

Although the team will be monitoring your weight after surgery this is not the only

consideration. The types of food and the way you are eating are very important for your general health and wellbeing. It is common for people to feel very preoccupied with weight loss in the early stages post-operatively, but if this continues it can lead to anxiety about weight and weight regain.

Sometimes previous eating habits (such as hiding food, eating secretly or feeling out of control with food) can return.

If you are feeling concerned about any aspect of your eating please discuss this with a member of the team. If these worries persist it may be useful to discuss this further with the psychologist.

#### **Excess skin**

Significant weight reduction in people who have been overweight for many years can mean that the skin and underlying tissue do not naturally return to their original size. This can lead to loose skin, particularly on the arms, legs and abdomen and some patients find this extremely distressing. Although there are a number of surgical procedures for removing excess skin, these will not be routinely funded through the NHS and plastic



surgery following weight loss will only be considered in exceptional circumstances and if criteria guidelines are met. You will need to discuss this with your GP if it becomes a major problem.

We recommend good nutrition, good hydration, moisturising daily and as appropriate, regular physical activity.

#### **Gallstones**

Rapid weight loss by any means can lead to the formation of gallstones. If you suffer from episodic upper/right sided upper abdominal pain, this can indicate that you have a gallbladder problem and you should therefore make an appointment with your GP.

#### **Hair loss**

Some people who lose weight very quickly find they shed a lot of hair. As your weight loss stabilises to a gentle pace, you should find this slows. Try to ensure you take the multivitamin and mineral supplements recommended and have a protein food with each meal, as explained in section 6.5. If it continues or you are concerned please contact your local dietitians or the bariatric dietitians.



## Hernia

There is a small risk (3%) of developing an internal hernia following a gastric bypass. This can cause abdominal pain and vomiting at any time following surgery, even many years later, and can require a further operation to resolve the problem.

### High fever, sweating, rapid pulse rate

If these symptoms occur and do not resolve rapidly, seek medical help immediately as they may indicate that you have a problem at the surgery site.

Contact your GP, local hospital or phone the bariatric office or bariatric clinical nurse specialist.

## Hunger

Initially after the gastric band is fitted you may feel a difference, such as a reduction in appetite, this is due to the swelling around the band following surgery. This swelling goes down and you will probably feel hungry again and be ready for a band adjustment. It can take several adjustments before you feel that the band is helping to reduce your hunger so please be patient.

With the gastric bypass, although your stomach will have been reduced to the size of an egg initially and some of your bowel will have been bypassed, you may still feel hungry from the old part of the stomach which is sealed off. This can grumble with hunger pangs for a few weeks and can be quite upsetting because you may feel that the operation hasn't worked. Be patient and things will settle down, you are welcome to ring the bariatric clinical nurse specialist or the bariatric dietitian to discuss it further if it is troubling you.

Patients with a gastric bypass or sleeve gastrectomy may find that they have little appetite from the time of the operation owing to changes in their gut hormones. This can be a positive thing, but some people find it unsettling that they don't have a desire for food. Again, talk to a member of the bariatric team if you are struggling with a sense of loss and are grieving enjoyment of certain foods.

At around 18 months after a gastric bypass it is common for hunger levels to increase slightly and for people to experience a small amount of weight gain. During this

time, it is important to remember that your stomach pouch is still very small and continue to maintain healthy eating choices and behaviour. It is a normal experience but it can lead to feeling confused and may affect your mood. If you need extra support to help you manage this, please contact your weight management service, local dietitian or GP.

After any bariatric surgery if you feel hungry, **always ask yourself 'is this a physical hunger or head hunger'** as it is common for people to get the two confused. Head hunger is a craving triggered by emotion or habit and it may feel physical. However if you are eating a range of foods at regular intervals your body is less likely to be physically hungry. Recognising that you will feel satisfied with a much smaller portion after surgery can take time. Following the 20-20-20 wait a minute rule can help to manage this.

## Medications

Please refer to information in section 7.3 for lifelong considerations.

## Reactive hypoglycaemia

Please refer to 'dumping syndrome' on page 30.

### Scar tissue

There is a small risk of adhesions (scar tissue) forming inside the abdomen after any operation, including bariatric surgery. This can cause abdominal pain and vomiting, even many years later. You may require a further operation to resolve the problem.

### Vomiting

Follow the advice given in section 6.2

**Band** – Vomiting is not common. The band is adjusted very slowly until you reach the green zone. Occasionally, you may regurgitate if you eat too fast or too much, or if the food hasn't been chewed well enough. Remember the 20-20-20 wait a minute rule.

**Bypass and Sleeve** – Occasionally, you may vomit or regurgitate food and/or digestive juices (which can be frothy) if you eat too fast, too much, or the food is the wrong texture.

### Shortness of breath, chest pain or calf swelling and pain

Although rare, these signs may indicate that you have developed a blood clot and you should seek medical help immediately from your GP surgery or local hospital.

## 7.5 Other things to take into consideration

### Alcohol

You will only be eating a small amount and so you may be more sensitive to the intoxicating effects of alcohol than you used to be. Remember alcohol contains calories without any nutrients and can be high in sugar. For patients who have had a gastric bypass or sleeve gastrectomy it can also cause dumping syndrome. Alcohol is sometimes used as a way of coping therefore you need to be careful that you do not use alcohol in a way you may have previously used food. If you feel concerned about your drinking habits please discuss this with a member of the team.

### Band adjustments

Your first appointment will be approximately six to eight weeks after your operation with the bariatric clinical nurse specialist or, on occasion, the surgeon. The gastric band is usually inserted in an unfilled state. At your initial post-op appointment you will have your first gastric band adjustment, providing your access port wound has healed. Fluid is injected into the access port

with a needle. You will need to have sloppy/puréed consistency food for 24 hours after an adjustment as it can cause temporary stomach swelling. You will continue to have further appointments to adjust your band until you reach the “Green Zone” of optimal adjustment, at which you are losing weight (or maintaining weight loss), able to eat small solid meals and not feeling hungry.

There may be times when you come to clinic and the clinician will recommend that some fluid is removed (for example if you are assessed as over adjusted) or will not consider it necessary to do a band adjustment. They will always discuss the reasons for this with you

### Blood tests (regular and lifelong)

It is essential that you know that after having any type of bariatric surgery you must have regular routine nutritional blood tests to check that you are not developing any nutrient deficiencies. You need to arrange the tests every three months in the first year after surgery and then at least annually for the rest of your life. We will write to your GP so that they are aware of this information but you have to arrange them.

## Diabetes (type 2)

If you take Metformin, this will be stopped for six weeks post-operatively. However, if your capillary blood glucose levels remain high (more than 11mmol/l on more than three occasions) Metformin can be restarted soon after surgery when taking fluids with nutritious content (for example soups and juice) or a sloppy puréed diet. Otherwise it should be restarted six weeks post-operatively. After a gastric bypass this should be at half its previous dosage as it tends to be absorbed better but you are advised to contact your usual diabetes carer, i.e. GP/practice nurse/hospital diabetes physician, about this. All other anti-diabetic tablets are usually stopped.

If you have used insulin pre-operatively, your insulin requirements will decrease after surgery, although not all patients are able to completely discontinue it. After discharge, you should continue to monitor your capillary blood glucose levels before meals and contact your usual diabetes carer if you develop hypoglycaemia (“hypos”) which do not improve with insulin dose reductions or if you have persistent high blood glucose levels

(more than 11mmol/l) that do not improve with an increase in insulin dose.

### Driving

After bariatric surgery you should be able to drive after two weeks. It is your responsibility to inform your insurance company that you have had surgery. You must be able to do an emergency stop and look over your right shoulder comfortably.

### Eating disorders

If you are bulimic (i.e. make yourself vomit after food or use laxatives to manage your weight), if you binge eat or if you regularly overeat in response to how you feel, make sure you have discussed this with a health professional **before** the surgery.

Eating disorders may occur after surgery but they take a different form. Please talk to one of the bariatric surgery team and/or your GP if you have any concerns about the way you are eating after surgery.

### Emotion

It is fairly common for patients to feel tearful, irritable, vulnerable and more anxious in the first few weeks after surgery. This is a normal response; your body will be recovering

from the surgery and anaesthetic as well as adjusting to the changes resulting from bariatric surgery. If you are concerned about your mood following the surgery please discuss this with a member of the bariatric surgery team. You do not need to wait until you feel these symptoms are significant before you discuss them.

### Exercise

Physical activity has many advantages including reducing loss of muscle mass and increasing loss of fat stores after bariatric surgery, improving physical health, increasing well-being and improving opportunities for social interactions (for example ability to play with children/grandchildren without becoming tired too quickly). Most people lose weight more quickly and feel energetic fairly soon after the operation. Start walking as soon as you feel able. Listen to your body and gradually introduce other forms of exercise. If you have joint pain, try non-weight bearing exercise such as cycling or, once wounds are fully healed, swimming. If you have reduced mobility, try to be more active in the home at a level that suits your abilities; small changes can make a big difference.

### Feeling cold

Weight loss can result in individuals being sensitive to colder temperatures and needing to wear warmer clothing.

### Fertility

Losing weight can increase fertility quickly and dramatically for some. We strongly recommend that women do not get pregnant for at least 12-18 months after bariatric surgery, when your weight has stabilised. Pregnancy before this time puts the body under stress and can cause the baby harm.

**You need to consider using contraception to avoid a pregnancy for at least the first 12-18 months, even if you have previously struggled to conceive.** If you have a gastric band placed then you can continue with any contraceptive method you choose, which will include oral contraception such as the pill. However, if you have a gastric bypass or sleeve gastrectomy, this may have an effect on how well oral contraception is absorbed and in these situations we advise patients to have non-oral forms of contraception. This could be either a coil, the injection or an implant. It would be a good idea to make an

appointment with your GP to talk this through before you have been listed for surgery.

### **If you fall pregnant at any point after bariatric surgery, please contact the team for specific guidance.**

With the gastric band, it can be adjusted during the period of pregnancy if you are struggling to take in sufficient nutrients or are vomiting. The band can then be re-adjusted at a later stage.

### Long term follow up

Patients who have a gastric band, gastric bypass and sleeve gastrectomy will be seen in Taunton approximately eight weeks after the operation by the bariatric dietitian.

Patients referred by the Taunton weight management service will also be offered a dietetic appointment at 18 months.

If you have a gastric bypass and sleeve gastrectomy you will be seen by the bariatric clinical nurse specialist at six months and twelve months after the operation. At two years you will be offered a further review in clinic or by telephone with subsequent yearly telephone reviews.

People who have a gastric band see the bariatric clinical nurse specialist around six to eight weeks after the operation to assess the band and make an adjustment as required. Further follow ups with the bariatric clinical nurse specialist are arranged for band assessment/adjustment as needed, until the band is optimally adjusted. A yearly telephone review will be offered.

Throughout the pathway, additional follow up with clinicians will be arranged according to individual need.

It is important that you attend all follow up appointments you are given. Inform us if you are unable to attend so that it can be rearranged. It is also important to contact us if you feel you have not been given the follow up you need or have not received any appointments from us so that we can arrange this for you.

If you have not been referred to us by Taunton weight management service, your dietetic and medical care will be handed back to your local team (but surgical reviews with the bariatric clinical nurse specialist, and if required surgeon, will continue in Taunton).

### **Mental health issues**

Bariatric surgery aims to help patients reduce their weight, improve their general health and extend their life expectancy. Many patients feel that their quality of life has improved, which can have a positive impact on your psychological wellbeing. However, the surgery is unlikely to solve any existing psychological problems which have occurred alongside weight difficulties.

Not being able to use food or drink to manage emotions can be difficult. Spend time before surgery developing other ways of taking care of yourself both physically and emotionally.

If after surgery you feel that your mood has dropped or you have become excessively worried about things, discuss with your GP or a member of the team.

If you live within Somerset or are under the care of the Taunton Consultant Endocrinologists, it may be possible to refer you to one of the psychologists at Musgrove Park Hospital who work specifically with people pre- and post-bariatric surgery.

If you are receiving care from a community

mental health or talking therapies service, letting them know you are about to have bariatric surgery will help you to receive the post-operative support you need.

### **Pouch size**

You may stretch the pouch if you continue to eat food portions that are too large over a very long period of time (for instance 12 months). To avoid this follow the eating guidance. Please also refer to “Hunger” in section 7.4.

### **Research**

The bariatric team at Musgrove Park Hospital are regularly involved in research and you may be approached to enter into a research study, but you do not have to agree to take part.



### **Vitamin B12 injections**

Patients who have a gastric bypass and sleeve gastrectomy will need regular vitamin B12 injections. An injection is recommended because surgery impairs/prevents absorption of vitamin B12 from your diet. We routinely recommend that vitamin B12 injections are every three months for the rest of your life with the first injection being six months after surgery. This is done at your GP surgery. Occasionally, for individual cases and under dietetic or medical supervision, the frequency may need to change. We do not recommend relying on any other forms of vitamin B12 supplementation (for example oral, nasal or sub-lingual) as they have not been shown to safely maintain levels. Vitamin B12 deficiency has the potential to cause irreversible symptoms relating to nerve damage. By following our guidelines you greatly reduce your risk of this.

### **Weighing yourself**

It is up to you if you would like to monitor your own weight. For those that do, we recommend that you do not weigh yourself any more frequently than weekly. For more

information please refer to “Eating Habits” in section 7.4.

### **Weight loss**

Whilst we have given general guidance on weight loss in section 4, under the different types of bariatric surgery, we encourage you to keep an open mind and remember that the

amount and rate of weight loss is individual. There may be periods of weight plateauing whilst still in the weight loss phase. You will be told what 50-70% excess weight loss means to you at the “one stop” appointment. If you have any concerns or questions, please speak with a member of the team.



## 8. Further information and support

You are actively encouraged to find out all you can about bariatric surgery so that you are absolutely sure that you have made the correct choice to go ahead with an operation.

### National guidance on obesity healthcare

**www.nice.org.uk** The National Institute for Clinical Excellence (NICE) provides national guidance and advice to improve health and social care. The NICE guidelines for obesity can be accessed from their website.

### Information from healthcare professionals

**www.bomss.org.uk** The British Obesity and Metabolic Surgery Society (BOMSS) is a nationally and internationally recognised society for healthcare professionals working in bariatric surgery in the United Kingdom. Their website provides a variety of information about bariatric surgery for professionals and patients.

**www.ifso.com** The International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) is a federation composed of national associations of professionals working in bariatric surgery. Their website provides a

variety of information about bariatric surgery for professionals and patients.

### Patient support information

There are many support networks and places to access further information for patients, please refer to the Bariatric Surgery section on our Taunton and Somerset NHS Trust website or speak to a team member for more details. If you haven't already done so, you are strongly advised to link with a patient network as you will find it very helpful to talk to others who are going through the same process, or who have previously had surgery.

Please note that support groups and sources of information are not always regulated by healthcare professionals and it cannot be guaranteed that information is correct and evidence based. If you have any concerns or questions please contact a bariatric surgery team member from Musgrove Park Hospital for advice.

**www.wlsinfo.org.uk** Online support group, discussion boards and information about obesity surgery in the UK.

**www.oen.org.uk** Obesity Empowerment Network UK is dedicated to giving people affected by obesity a public voice through empowerment. Their mission includes to improve access to healthcare and treatment for individuals with obesity.

### Books

“Living with Bariatric Surgery – Managing Your Mind and Your Weight” by Denise Ratcliffe (2018)

“The Emotional First + Aid Kit – A practical guide to life after Bariatric Surgery” by Cynthia L Alexander (2009).

“Cut Down to Size – Achieving success with weight loss surgery” by Jenny Radcliffe (2013).

## 9. Surgical team

Our surgical team at Musgrove Park Hospital includes:

Mr Richard Welbourn	Consultant Surgeon
Mr David Mahon	Consultant Surgeon
Mr Hamish Noble	Consultant Surgeon
Mr Matthew Mason	Consultant Surgeon
Dr Nicholas Kennedy	Consultant Anaesthetist
Dr Steve Harris	Consultant Anaesthetist
Dr Mohammad Lone	Staff Grade Anaesthetist
Dr Jane Bellamy	Consultant Anaesthetist
Dr Ruairi Moulding	Consultant Anaesthetist
Dr Abigail Hine	Consultant Anaesthetist
Dr Mark Abou-Samra	Consultant Anaesthetist
Dr Vanessa Snowden-Carr	Lead Clinical Psychologist
Dr Emma Stapley	Clinical Psychologist
Beth Greenslade	Lead Bariatric Dietitian
Alex Sandercock	Bariatric Dietitian
Amy Bull	Lead Weight Management Dietitian
Alice Murray-Gourlay	Weight Management Dietitian
Helen Kohler	Lead Bariatric Clinical Nurse Specialist
Zoë Hall	Bariatric Clinical Nurse Specialist
Nicki Salter	Lead Research Nurse
Maxine Nixon	Research Nurse



## 10. Contact details

For more information or to contact one of the team please call:

### **Bariatric Surgery Secretaries**

01823 343562  
8.30am-4.30pm

### **Bariatric Clinical Nurse Specialists**

01823 343561  
8.30am-5.30pm  
BariatricSpecialistNurses@tst.nhs.uk

### **Bariatric Research Nurses**

01823 343514  
8.30am-4.30pm

### **Bariatric Dietitians**

01823 343394  
8.30am-4.30pm

### **Upper GI and Bariatric Surgery Service**

Old Building, Musgrove Park Hospital,  
Taunton TA1 5DA  
[www.somersetft.nhs.uk/bariatric-surgery/](http://www.somersetft.nhs.uk/bariatric-surgery/)

To rearrange or book an appointment, please have your details ready and call:

### **Outpatients Appointments Team**

01823 342403  
8.30am-4.30pm

For questions specifically about your admission please call:

### **Admissions**

01823 342108  
8.30am-4.30pm

### **Disclaimer**

There are many sources of information from other services available to the public which may be different to our information. Please ensure you that you follow the advice and guidelines from our Bariatric Surgery Service.

### **Credits**

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© World Obesity

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Your notes...

**Upper GI and Bariatric Surgery Service**  
**Somerset NHS Foundation Trust**  
Musgrove Park Hospital  
Taunton  
Somerset  
TA1 5DA

**01823 342100**  
[www.somersetft.nhs.uk](http://www.somersetft.nhs.uk)



**outstanding care**  
**listening and leading**  
**working together**