

2022

Bariatric Services Team

NUTRITION AFTER BARIATRIC SURGERY

Updated January 2023

Contents

Introduction.....	3
How to eat after Bariatric Surgery.....	4
Eating behaviours.....	4
Emotional Eating	5
Lifelong habits	6
Dietary overview	6
Base meals on protein	6
Eat three meals a day	7
Portion size	7
Textured foods	7
Eating behaviours	8
Fluids	9
Choose low calorie fluids.....	9
Drink frequently	10
Alcohol.....	10
Problematic Foods.....	11
Supplementation.....	12
Food groups to consider.....	13
Protein.....	15
High protein foods.....	15
High protein yoghurts.....	16
High protein drinks – shop-bought.....	16
High protein drinks – homemade.....	17

Nutritional monitoring – blood tests 19

Group support..... 21

Useful resources..... 22

Introduction

This booklet has been written by the Gloucestershire Bariatric Services Team with the aim of giving you more information surrounding nutrition after weight loss surgery.

If you have further questions or concerns after reading this booklet, you should speak with your GP who may then refer you to us for review.

How to eat after Bariatric Surgery

Bariatric surgery is designed to help you lose weight by restricting your food intake and reducing your appetite. There may also be a degree of malabsorption, meaning that your body does not absorb all the calories and nutrients from the food you eat. Staying well and maintaining weight loss after surgery will require your co-operation with dietary and exercise recommendations for the rest of your life.

Overeating will put pressure on your stomach pouch, causing it to stretch. Not only does this mean you will not feel the same benefit from your operation, but it may also lead to complications long-term. It is important to avoid overeating. Do not expect to feel full in the lower part of your stomach, but develop your eating behaviour in response to the upper stomach pouch (behind your breastbone).

Eating behaviours

After weight loss surgery, how you eat is also important. Mindful eating means paying full attention when you eat, use all your senses and focus on slowing the whole process down. It encourages you to take your time with really enjoying your meal and become more aware of your body signals. Slowing this whole process down also helps ensure that food is chewed thoroughly.

Try to eat slowly and consciously and avoid distractions whilst eating your meals e.g. watching television. Get into the habit of putting your knife and fork down between mouthfuls. You will soon start to eat in a more relaxed way, and recognise when to

stop eating so that you are comfortably full but not in discomfort. If food is left on your plate, throw it away; don't keep it for later.

These techniques can help you not to overeat and reduce the risk of stretching your new stomach.

Emotional Eating

We know that people eat for lots of reasons; we do not just eat because we are hungry. It can be helpful to think about all the other reasons you might eat, and put strategies in place to help reduce this before your operation. Bariatric surgery will help reduce the physical hunger you experience, but all the other urges to eat remain as strong as prior to surgery. Understanding the difference between head hunger and physical hunger, and what it feels like for you, can be a helpful tool for lifelong weight management.

Over time, if there are not strategies put in place to help manage emotional eating or psychological urges to eat (“head hunger”), then this can result in weight regain and inadequate nutritional intake.

Lifelong habits

Dietary overview

After bariatric surgery, it is important to continue to eat a wide variety of foods and textures. This is to ensure your diet continues to be nutritionally adequate, and also that it is psychologically satisfying for you. You are likely to notice a reduction in portion size from what you were able to manage before your operation, so it is important that the food you eat 'packs a nutritional punch'.

We recommend ensuring your diet is made up of a variety of textures, and that you avoid particularly sloppy foods and high calorie 'crunchy' foods. For example; ice cream, cake, milkshakes, chocolate, crisps and biscuits etc. These foods can be eaten quickly and pass through your new smaller stomach easily, meaning you do not feel full and eat a larger volume of food. This can prevent you from losing further weight and usually leads to weight gain.

Aim for a calorie intake between 800-1200kcal per day. Choosing low fat foods and adjusting cooking methods, for example grilling or baking over frying, helps keep calorie intake down. You may also need to avoid high sugar foods, such as cakes, biscuits, sweets and chocolate for life.

Base meals on protein

Depending on what surgery you have had, you should aim to consume a minimum of 60-120g protein per day. This means protein foods should take up the majority of your plate (e.g. meat, fish, eggs, dairy, lentils and beans). Having a good awareness of how much protein different foods contain is

helpful. High protein yoghurts and adding skimmed milk powder to the milk you use can be a useful way of topping up your protein intake (see recipe for high protein milk later in this booklet).

Eat three meals a day

You should have 3 small meals containing textured food. This helps ensure that you have sufficient opportunity to get the nutrients you need, whilst also providing you with a regular source of energy. Try to avoid developing “grazing” eating patterns, but you may need to have 1-2 high protein snacks or drinks to meet your protein needs.

Portion size

Each meal should be no larger than a 7inch tea plate. Eating too large a portion may result in your new stomach stretching; you will then need to eat more to feel satisfied. This can increase the likelihood of future complications and weight gain. Stop eating when no longer hungry and avoid eating to the point when you experience discomfort.

Textured foods

Choose solid foods which require chewing. These foods will help you stay fuller for longer. This means you will be more satisfied with smaller volumes. Avoid soft foods as you will require larger volumes to feel satisfied as they will empty out of your new stomach faster. You may find if you are sometime after your surgery your appetite has returned. Choosing textured foods can help suppress your appetite.

Eating behaviours

Chew your foods well and eat slowly. This will reduce the likelihood of foods becoming stuck. Take a small bite about the size of a 20p pence piece, put your knife and fork down, chew well (about 20 times) wait about 45-50 seconds before continuing with a further bite. Do this until you think you are full and no longer hungry. Spend about 20 minutes on each meal. Any foods remaining on your plate should be discarded after this time. We call this the 20:20:20 rule.

Food will take approximately 10-20 seconds to pass from your mouth to your stomach. It will however take 20 minutes for your brain to register a feeling of fullness. If you eat too quickly you will pass the point of fullness and may suffer from discomfort, choking or regurgitation.

Fluids

Aim for a total of 2000mls daily as a minimum, but bear in mind the amount of fluid you need can fluctuate. You will need to avoid fluid at the same time as food, and try to get in the habit of taking small sips throughout the day. You can include:

- Water (tap or bottled. Low calorie. Not carbonated)
- Squash (low calorie, no added sugar or sugar free)
- Oxo, Bovril, Marmite or stock cubes
- Coffee
- Tea (including herbal teas)

The following fluids should be limited:

- Fruit or vegetable juice
- Fizzy drinks
- Alcohol

Avoid drinking fluids 20-30 minutes before and after a meal. Having drinks with meals will cause food to empty faster out of your new stomach.

Choose low calorie fluids

As liquids will flow almost straight through into your new stomach, make sure these are low calorie or free from calories. Fruit juice, smoothies and alcohol are all high in calories and should be taken in moderation. If you suffer with dumping syndrome you may prefer to avoid alcohol completely and fruit juice if not tolerated. Fizzy drinks can cause discomfort so it may be helpful to allow them to go flat first before drinking.

Drink frequently

Sometimes you may be thirsty rather than hungry. Have around 2-litres of fluid a day made up of calorie free fluids. This will help avoid constipation, headaches and dehydration.

Alcohol

Alcohol contains calories and also stimulates appetite, which is not helpful after bariatric surgery. In addition, most people experience reduced alcohol tolerance after bariatric surgery, and alcohol can also impair judgement when it comes to nutritional choices.

Problematic Foods

If you do experience discomfort or food 'sticking' the first time you eat it, try again a week or two later.

Foods you may experience difficulty with are red meat, shellfish, bread (especially fresh doughy bread), fibrous fruit and vegetables, dried fruit, nuts and rice.

Supplementation

Even with a nutritionally varied diet, we advise all people who have had bariatric surgery to take an A-Z multi-vitamin and multi-mineral daily supplement. This is to reduce your risk of nutritional deficiencies.

Your A-Z should contain the following:

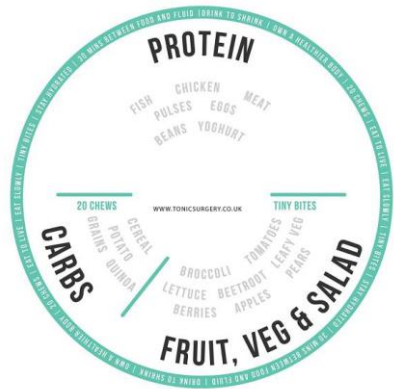
- Thiamine 1mg minimum
- Folic acid 400µg minimum (increased requirements if TTC, pregnant or lactating)
- Vitamin-A 700µg minimum (recommendation changes during pregnancy)
- Zinc 15mg minimum*
- Copper 2mg minimum
- Iron No specific dose recommended
- Selenium No specific dose recommended

*ratio required 8-15mg zinc: 1mg copper

You are likely to require other supplementation too, including calcium, vitamin-D, vitamin-B12 and iron. What you require is based on dietary assessment and your blood test results, so further advice should be provided on an individualised basis.

Food groups to consider

When putting together your meals after bariatric surgery, there are three main food groups that you will need to think about. The best source of vitamins and minerals is a varied, balanced diet, so you will need to ensure that your diet includes a mix of each foods from each food group.



Protein

Protein foods such as meat, fish, cheese, eggs, beans or pulses should be included at each meal. This could include cooked, lean meat or fish, scrambled or poached eggs, cooked beans, peas or lentils. Aim to include 2-3 of 1-2oz (30-60g) portions of these foods per day.

Milk and dairy foods also provide protein. Low fat cheese or cottage cheese, skimmed or semi-skimmed milk and low fat or 'light' yoghurts are a good way of adding protein into your diet. Three portions of dairy foods daily will ensure you are getting an adequate amount of calcium.

Starchy carbohydrate

Carbohydrate foods such as bread, rice, pasta, potatoes and cereals may be difficult for some to digest following bariatric surgery, particularly soft, doughy white bread. You may find that crisper options (such as toast/crispbreads), or wholemeal/granary bread, is better tolerated. Aim for one small portion, about a tablespoon, per meal.

Fruit and vegetables

Aim to consume a wide variety of fruit and vegetables, aiming for 4-5 different fruit and vegetables a day.

Fat and sugary foods

Although this food group is not necessarily visible when putting together your meal, you may need to use a small amount of fat in cooking (olive, vegetable oil etc). A small amount of fat in our diets is helpful, to enhance taste and satiety of food. However, try to limit overall consumption of these foods, as having too much of them too often will likely impact the amount of weight you lose and may cause adverse symptoms like dumping.

Protein

High protein foods

Food	Portion size	Protein content
Chicken breast (no skin)	½ breast	15g
Salmon	60g	16g
Cod	60g	14g
Tuna (tinned in brine/water)	½ tin (70g)	17g
Mackerel	60g	12g
Prawns (boiled)	50g	8g
Mince (lean)	50g	11g
Liver	60g	15g
Ham	1 thick slice	6g
Pork chop (fat & bone removed)	60g	19g
Bacon	1 rasher (18g)	4g
Sausage	1 thick	8g
Cottage cheese	50g	5g
Hard cheese	30g	7g
Egg	1 medium	8g
Skimmed/semi-skimmed milk	1 pint 568mls	20g
High protein milk (see page **)	1 pint 568mls	40g
Soya milk	150ml	4g
Pulses	40g (1 tbsp)	3g
Tofu/Quorn	40g	6-7g

High protein yoghurts

High protein yoghurts are widely available, with many supermarkets now offering their own brands, which can be a more affordable option. Here are some examples:

Total 0% Greek yoghurt	54kcal, 10.3g protein per 100g
Arla SKYR	64kcal, 9.5g protein per 100g
Arla protein pouch	74kcal, 10g protein per 100g
Lindahls Kvarg	59kcal, 10g protein per 100g
Liberte fat free	80kcal, 7.5g protein per 100g
Light & free	55kcal, 9.1g protein per 100g
Graham's high protein	84kcal, 12.3g protein per 100g

High protein drinks – shop-bought

High protein milkshakes and soups are readily available from most pharmacies, supermarkets and online. We have included some examples here.

Slimfast ready to drink milkshake	(325mls, 204kcal, 15g protein)
Grenade carb killer	(330mls, 200 kcal, 25g protein)
LighterLife fast (Superdrug)	(330mls, 205kcal, 18.5g protein)
Slimfast milkshake powder*	(285mls, 227kcal, 15g protein)
*to be made up with 36.5g powder and 250mls skimmed milk	
Tesco Slim meal replacement*	(250mls, 201kcal, 18.3g protein)
*To be made up with 29g sachet and 250ml skimmed milk	
Exante meal replacement shake*	(200mls, 200kcal, 18g protein)
*To be made up with 51g powder and 200mls cold water	

High protein drinks – homemade

High Protein Milk

18g protein per 250ml serving (40g per pint)

4 tbsp (60g/ 2oz) skimmed milk powder (21 g protein)
570 ml (1 pint) cold skimmed or semi-skimmed milk (19 g protein).

Vanilla extract / unsweetened cocoa powder (optional)

Recipe:

1. Measure out the skimmed milk powder into a jug
2. Add a little of the milk and mix to form a paste
3. Stir in the remainder of the milk

Once made up, this should be stored in the fridge and consumed within 2 days. Can be used hot or cold, just as you would usually use milk.

Skimmed milk = 250mls, 179kcal, 18g protein

Semi-skimmed milk = 250mls, 216kcal, 18g protein

High Protein Fruit Smoothie (makes 2 servings)

12g protein per 225ml serving

250 ml (½ pint) high protein milk (18 g protein)

100 ml (¼ pint) low fat yoghurt (6 g protein)

100 g (3oz) fresh fruit e.g. bananas or strawberries

Combine all ingredients in a blender and blend until smooth. Sieve to remove any fruit seeds. Serve chilled on ice.

High Protein Fruit Punch

10 g protein per 250ml serving

200 ml ($\frac{1}{3}$ pint) sugar free non-carbonated beverage

2 tbsp (30g/ 1oz) skimmed milk powder

4 ice cubes

100g (3oz) fresh fruit e.g. bananas or strawberries

Combine all ingredients in a blender and blend until smooth

High Protein Custard

18g protein per 250 ml serving

Custard powder can be combined with the fortified milk to make a high protein custard. It should be thin enough to pass through a straw. If you like your custard sweetened, use a sweetener such as Hermesetas™ or Candarel™.

High protein soups

You can make your own soups, or buy them ready made, but ensure they are blended well, with no bits or lumps. You may need to sieve them if necessary.

Try to choose soups that contain protein. You can also add skimmed milk powder to boost the protein content.

20g of skimmed milk powder contains 70kcal and 7g protein.

Whey protein isolate powders

23g protein per 25g scoop serving (variable)

Whey protein isolate powders and ready prepared protein drinks are low in fat and carbohydrate. They can be an expensive option, but many find them more palatable. They also come in a variety of flavours, including neutral flavours that can be added to soups.

Nutritional monitoring – blood tests

For all types of bariatric surgery routine nutritional blood tests are needed regularly. We recommend; at three, six and twelve months for the first year, and then yearly after that, for life.

Blood testing will be more frequent if any deficiencies are suspected or identified by a health care professional. If a deficiency is found, you may be offered further dietary advice or advised to take extra, or different, supplementation.

We advise that you have the following routine nutritional blood tests:

- Full blood count
- Urea and electrolytes
- Glucose
- Liver function tests
- Iron
- Ferritin
- Folate
- Vitamin B12
- Calcium
- Phosphate
- 25-Hydroxyvitamin D
- Lipid profile (only if pre-existing dyslipidaemia)
- HBA1c (only if you have pre-operative diabetes)
- Zinc (Annually)
- Copper (Annually)
- Selenium (Annually after Roux-en-Y bypass)

Other nutritional tests may be done following the advice of a health care professional.

- Vitamin A
- Vitamin E
- Vitamin K
- PTH
- Magnesium

Group support

There are various bariatric surgery patient support groups. These can be a useful source of ideas and support, but please remember everyone's experience is different. Many groups are not moderated by healthcare professionals, and there are inconsistencies and inaccuracies in some nutritional advice given.

WLSinfo

<http://www.wlsinfo.org.uk/>

This is a well-moderated discussion forum which was founded in 2002 by Ken Clare, specialist bariatric nurse. WLSinfo has since become ObesityUK (<https://www.obesityuk.org.uk/>). ObesityUK have several support groups around the UK, and periodically organise presentations from healthcare professionals. They also have a Facebook page: Obesity UK Bariatric and Metabolic Surgery Support Group.

Useful resources

There can be a lot of misinformation out there on bariatric surgery. Below is a list of trusted resources where you can gain further information.

- **Bariatric surgery videos.** *Have a listen to one of our Bariatric surgeons, Mr Oliver Old, talking about what you can expect from bariatric surgery* <https://www.gloshospitals.nhs.uk/our-services/services-we-offer/specialist-weight-management/>
- **Weight loss surgery information.** *Provides general information on all types of surgery, complications, dietary recommendations, surgeons, support groups and more.* <http://www.wlsinfo.org.uk/>
- **Weight loss surgery information.** *Discusses options, benefits, risks and long term recommendations.* <https://patient.info/healthy-living/obesity-overweight/weight-loss-surgery>
- **Weight loss surgery information.** NHS website contains information on types of surgery, risks and life after surgery. <https://www.nhs.uk/conditions/weight-loss-surgery/>
- **Bariatric cookery book.** Highly recommended by our patients. www.bariatriccookery.com
- **Carbs & Cals.** Information on portion size, calorie and protein content of foods/meals. (Book also available from online retailers). <https://www.carbsandcals.com/>
- **Living with Bariatric Surgery.** Denise Radcliffe. Easily accessible book which gives an “eyes wide open” approach to bariatric surgery

NOTES

NOTES

NOTES

[Blank Page]

Department of Nutrition and Dietetics
Gloucester Royal Hospital
Great Western Road
Gloucester
GL1 3NN

With



Three Counties Oesophagogastric
Centre

Review Date: January 2025