

St George's University Hospitals



NHS Foundation Trust

Liver reduction diet in preparation for

Bariatric Surgery



Pre-operative liver reduction diet for Bariatric Surgery

Your Bariatric Surgeon requires that you to undertake a special diet shortly before your operation. The diet will be low fat, sugar, and carbohydrates. The aim of the diet is to shrink or reduce the density of your liver. A flexible liver enables the surgeon better access, this makes the surgery safer to perform with less time under anaesthesia.

This diet plan below works by reducing stores of fat and **glycogen** (a glucose and water combination) in your liver. This diet is for preparation **only. Do not** continue the diet **after** your operation. In general, most patients need **ten to fourteen days** on this diet plan before surgery. This will depend on your body shape and where you carry your weight. Some patients are advised to follow the diet for up to four weeks. Your bariatric team will advise you near the date of surgery.

Please note that as your surgery draws closer, it becomes increasingly important to stick to the diet. **Surprisingly the liver can replace its stores very quickly, so it is essential that you strictly follow the diet.** Just one carbohydrate rich meal shortly before your operation can undo all your good efforts, this can re-inflate the liver and lead to technical difficulties during the operation. There have been many occasions where surgeons have abandoned the operation for this reason. If you carry your weight around the tummy/middle of the body, then fourteen days or possibly longer on the diet may be advised. For more detail on this, please contact your Dietitian.

Keep in mind that it is common to feel tired, poorly, and emotional soon after starting this liver reduction diet. You may find it difficult to concentrate and may have much less energy. Thankfully this will soon pass. Try to keep focussed on the benefits of the weight loss sugary.

Much of the weight lost whilst on this diet is water/fluid. As a result, you may feel dehydrated and may need to drink a little more. This is particularly important during warmer months of the year. At least four pints of sugar free fluids per day is a good aim.

THE DIET OPTIONS:

You can choose any of the following Liver Reduction options and change each day if you wish to. You **do not** need to stick to one option only. Please don't mix and match foods between the options unless agreed with your dietitian. Each option is 'self-contained' with a calculated carbohydrate amount. Whichever option you choose, you can divide the foods up any way you like. You are free to decide when to eat your meals, however we feel it is best to spread them out over the day.

As the liver reduction diet marks the beginning of your '**weight loss journey**' we strongly recommend that you start taking a single multi-vitamin and mineral each day. Good brands include Centrum, Sanatogen, or '**own brands**' such as Boots, Holland & Barrett, or any of the Supermarket 'home store' branded products.

It is common that bowel pattern will change after starting this diet. Constipation may become a problem and we suggest a soluble fiber product such as 'Fybogel' to help keep regular. Some patients do remain very regular and won't need this. If constipation does become an issue, then dehydration may be the first possible cause. Do make sure you keep your fluid intake up.

Fluids: With any of the diet options you can include as much water, black tea, black coffee, sugar-free squash or sugar-free jelly as you wish. **Avoid all sugar containing drinks. No fruit juice or alcohol either.** You can add milk to hot drinks, however only the amount stated on the daily allowance for each option.

Diet fizzy drinks are allowed however in moderate quantities only, you may find they can increase cravings for sweet foods and possibly sway you to break the diet. Be careful. Please note that you **will not** be able to tolerate fizzy drinks for quite some time after your surgery.

Other details to keep in mind:

- **No sugar** allowed, use sweetener instead, this also applies to sugary cereals. Avoid them.
- Milk **is** allowed, however must be deducted from the daily milk allowance on your chosen daily diet option.
- Sugar free jelly – no limits – this is essentially water only and will keep you well hydrated.
- Sugar free chewing gum is fine.

Diabetes medications:

If you are taking any of the diabetes medications listed below, then please discuss this with the nursing team at your **'pre-operative assessment'** and or with your **Local Diabetes Team** before you start the liver shrinkage diet. This is especially important if you are on insulin.

Insulin:

Always consult with your regular diabetes specialist before starting this diet plan. It is essential to reduce the insulin dosage when you start this low carbohydrate diet plan to prevent hypoglycemia (low blood sugar). You will need to check your blood glucose readings at least three times per day whilst on the liver reduction diet plan. Seek advice if you are having any abnormal blood glucose readings or unusual symptoms.

SGLT2 Inhibitors:

Please **stop these medications the day before you start the liver shrinkage diet.** Failing to do so may cause diabetic ketoacidosis:

- Canagliflozin (Invokana)
- Dapagliflozin (Forxiga)
- Empagliflozin (Jardiance)
- Ertugliflozin

GLP-1 Agonist medications:

These also need to be stopped **the day before you start the liver shrinkage diet and at least two weeks before** your surgery date.

- Semaglutide (Rybelsus, Ozempic, Wegovy)
- Liraglutide (Victoza, Saxenda)
- Dulaglutide (Trulicity)
- Tirzepatide (Mounjaro) – Dual GLP-1 and GIP Agonist agent

Cultural and religious considerations:

- Foods described herein are not necessarily certified Kosher or Halal
- Some meal replacement products such as Slim Fast are certified as Kosher/Halal
- Foods certified as Kosher and Halal typically have the same carbohydrate value as any other, so all weights and measures remain the same.
- Undertaking the liver reduction diet during Ramadan can be very challenging. We suggest discussing this with your Dietitian in advance if there are no alternative dates for surgery.

THE LIVER REDUCTION DIET OPTIONS

Option 1: Soup and Yoghurt diet:

- Four cans of low calorie, non-cream based or diet soup.

Plus

- Four low fat and low sugar yoghurts (up to 200g each) any brand is fine – choose low fat, low sugar products. For sugars look keep it to 10g or less per 100g
- 200ml skimmed, semi skimmed, lactose-free *or soya* milk for hot drinks.
- Other fluids: water, black tea, black coffee, sugar-free squash or sugar-free jelly.

Approximately ~ 780kcal

105g Carbohydrates

13g Fat

53g Protein

Notes:

Option 2: Liquid meal replacement option:

Please choose any of the ready mixed meal replacement products. There are many on the market. They are all relatively the same. The options are usually a sweet milk style or soup product. You can choose any of these products according to preference. Many of the meal replacements come as a pre-mixed drink. Others are a sachet or powder that is simply made up as per the instructions. If in doubt, please call or email your Dietitian.

- Five 325ml meal replacement drinks, e.g. Slim-Fast, Weight Watchers, Tesco – Ultraslim
- No other foods allowed.
- Other fluids: water, black tea, black coffee, sugar-free squash or sugar-free jelly.

Approximately ~ 1100kcal

110g Carbohydrates

30g Fat

67g Protein

Notes:

Option 3: A low fat, low sugar, and low carbohydrate whole food diet:

The following liver reduction option is a nice framework for healthy eating. It simply places the diet into three balance meals at regular intervals. Each meal provides a specified amount of carbohydrate, protein and vegetables/salads and fruits.

Breakfast:

- Small bowl of cereal (45g maximum), no added sugar – milk to be taken from the daily allowance
- **OR**
 - 1 thick slice of toast with low fat spread used sparingly, one or two eggs, and one/two tomato's, spinach and mushroom.
- **OR**
 - 1 sachet original porridge oats – with water or milk from the daily allowance
- **OR**
 - 1 ½ Weetabix with milk taken from your daily allowance below.

Lunch & Evening Meal:

- **Carbohydrate:** 50g portion – this is equivalent to one **thick** slice of most commercial breads – e.g. Hovis Wholemeal thick sliced bread. Alternatively, you could have 2 large tablespoons (**50g**) - **cooked carbohydrate** – this is approximately the size of a large egg. See the allowance list below.
- **Protein:** Small portion up to a **175g** uncooked weight – you can make your choice of lean meat, or fish, salmon, tuna, chicken, turkey, pork or beef
 - **vegetarian protein alternatives include** Small portion cheese 30g, **or** 2 eggs (not fried), **or** Tofu **or** Quorn* based vegetarian dish – a single portion only.

Salad/Vegetables: Please see allowable examples in the table below – **green columns**.

Be careful of those in the red column – they are rich in carbohydrate, however, are allowable in 50g portions and will therefore be your 'carbohydrate' substitute for the day if you happen to choose any from the red column.

Your daily allowance in addition to the above:

- 1/3-pint semi-skimmed milk (200ml) for use in drinks and on cereal – soya milk if you prefer
- 2 portions of fruit only (e.g. apple, orange, banana, pear)
- 1 low fat, low sugar yogurt. Choose ones with 10g sugar per 100g or less.

Carbohydrate allowance: Measure out a 50g **cooked portion** of potato, rice, pasta or noodles, plantain (green banana), yam, taro, gari, parsnips, beetroot, peas, sweet corn, baked beans, lentils or pulses, chickpeas. Foods chosen from this carbohydrate group should weigh 50g or less in total. That does **not** mean 50g of each! Alternatively, you can choose one **thick** slice of most commercial breads – e.g. Hovis Wholemeal thick sliced bread.

***Quorn** and other vegetarian **protein** products: please don't choose the 'ready meals', you are best advised to go with a 'single food product' such as Quorn burger, sausage, or mince.

Please **do not take any** other foods or drinks that are not on this list.

Approximate nutritional value ~ 1000kcal, 83g Carbohydrate, 35g Fat and 94g Protein

(Varies +/- 10g dependent on the options chosen)

Vegetables or salads		Vegetables or salads allowed in moderation* (counts as carbohydrates)	
Artichokes	Leek	Baked beans*	Peas
Asparagus	Lettuce	Beetroot	Plantain (green banana)
Aubergine	Mange tout	Black eyed beans	Potato
Baby corn	Marrow	Broad beans	Soya beans
Beansprouts	Mushrooms	Butter beans	Sweet corn
Broccoli	Okra	Cannellini beans	Sweet potato
Brussels sprouts	Onion	Cassava (gari)	Taro
Butternut squash	Peppers	Chickpeas	Yam
Cabbage	Pumpkin	Haricot beans	
Carrot	Radish	Kidney beans	
Cauliflower	Runner beans	Lentils	
Celeriac	Shallots	Parsnip	
Celery	Spinach		
Courgette	Spring onions.		
Cucumber	Sugar snaps		
Green beans	Swede		
Green leafy vegetables	Tomato		
Kale	Turnip		

* These are allowed at breakfast lunch or dinner as a carbohydrate substitute, up to 2 tablespoons or 50g per meal.

Other considerations for option 3

Seasonings: pepper, garlic, chili, herbs, spices, soya sauce, Worcestershire sauce and mustard can be used. Table sauces such as tomato ketchup, brown sauce and gravy can be used in very small amounts, however, do keep it to a sensible amount.

Salad dressings: Use lemon/lime juice or balsamic vinegar mixed with 1 teaspoon of olive oil, or zero fat salad dressings. Avoid salad cream and mayonnaise. Low fat – diet salad dressings are allowable.

Hunger: If you are increasingly feeling hungry whilst on this diet plan, then do consider increasing your intake of salads or vegetables (from the green column) and possibly your fluid intake of calorie-free drinks.

Fluids: Water, black tea, black coffee, sugar-free squash or sugar-free jelly.

For further information or support during the diet, then please feel free to contact your dietitian. Please leave a message if there is no answer, as we may be on ward rounds or in the clinic.

Bariatric Dietitian Contact Number: 0208 725 1022

Please go to link below for additional information and resources
www.stgeorges.nhs.uk/service/surgery/general-surgery/bariatric-service/