

Pre-operative liver reduction diet



Why do I need to follow this diet?

If you are living with obesity and need laparoscopic upper gastro-intestinal surgery (keyhole surgery of the upper abdomen), you may need to undertake a liver reduction diet, so that your liver can be lifted out of the way during the procedure. This is necessary for bariatric surgery, gall bladder surgery and fundoplication.

The liver reduction diet (LRD) is a restricted diet that is low in calories, carbohydrates, and fat. When you follow this diet before your surgery, your body will use up its stores of glycogen. Glycogen is a form of sugar stored in the muscles and the liver. By using up these stores your liver will release water and so reduce in size.

What if I do not follow this diet?

If your liver is too large or fatty it can mean that your surgery may take longer. This means more time under general anaesthetic and a higher risk of complications. It may also mean that your surgery cannot be performed using the keyhole method. If your liver is too large, then it is likely that your surgery will be cancelled or abandoned.

How long do I need to follow this diet?

You will usually need to follow this diet for two weeks prior to your surgery. Occasionally it is necessary to follow the diet for four weeks – the team will inform you if this is relevant to you.

Will I lose weight on the LRD?

You should lose weight while on the LRD. A proportion of this weight loss will be due to water leaving the liver as your glycogen stores are used up. The LRD has been shown to be most effective if people are able to lose 5% of their weight while following the diet.

Are there side effects of following this diet?

Any side effects of following the LRD should be mild. You may experience:

- headaches
- fatigue or tiredness
- constipation
- mild dizziness.

What if I experience a change in bowel habits?

While following the LRD you may find that your bowel habits change. This can mean experiencing constipation due to a reduced intake of fibre. You can treat constipation using a mild laxative like Senna or Fybogel. You can purchase these from most supermarkets and pharmacies. Remember to drink plenty of fluids to help prevent constipation.

A very rare side effect of the LRD is diarrhoea. If you experience this, please contact the team for further advice.

I have diabetes, do I need to change my medications?

If you have either Type One or Type Two diabetes, please ring the bariatric nurse team for advice on your medications.

What does this diet involve?

The LRD consists of a plan that contains:

- 800-1200kcal
- reduced carbohydrates (ideally less than 100g per day)
- moderate protein to meet requirements and prevent muscle loss
- low fat.

You can choose between different options for your time on the LRD. Choose one option and then follow this for the duration of the diet. **Do not swap between options.**

Options for the liver reduction diet

1. Meal replacement plan (this is likely to be the most effective option)
2. Milk/yogurt plan.

On all options you are allowed to have sugar free jelly. This is optional but you can have up to one pint (one sachet) each day.

Do not have any alcohol, sugary drinks, fruit juice, smoothies or hot chocolates.

Option One – Meal Replacement Plan

The LRD is most effective when you use meal replacement products, and this is the first line option to choose. The products are readily available and contain the right amount of protein, vitamins, and minerals. By choosing this option you will not have to make decisions around food or cooking.

Summary

- Have 4 meal replacement shakes each day.
- Have 3 portions of vegetables from the list each day.
- Drink at least 1500ml of a low-calorie fluid each day.
- Limit to 100ml of skimmed milk for tea or coffee.

Step One: Choose a meal replacement

On this plan you need to buy a commercially available meal replacement product – some examples are listed below. Choose a product that has:

- about 200kcal per serving
- at least 10g of protein per serving
- 30% of your vitamins and minerals per serving
- less than 25g carbohydrates per serving.

Product	Amount	Kcal	Protein	Carbs
Slimfast ready to drink milkshake	4 shakes	816	60	88
Asda Great Shape 250ml skimmed milk and sachet	4 shakes	720	61	83
Lighterlife Mix 40g sachet with 200ml of water	4 shakes	620	52	52
USN Meal replacement shake Mix 55g (2 scoops) of powder with 200-300ml of water	4 shakes	811	100	64

Step Two: Have 3 portions of vegetables

One portion will weigh 80g, and so you have a total allowance of 240g of vegetables each day.

Choose only vegetables from the list below:

Artichoke	Brussel sprouts	cauliflower	green beans
asparagus	butternut squash	celery	runner beans
aubergine	cabbage	courgette	leek
broccoli	carrot	cucumber	lettuce
mangetout	marrow	mushrooms	onion
peppers	pumpkin	shallots	spinach
spring onion	sugar snap peas	swede	tomato

You can make your 3 portions of vegetables into soups, stir fries and salads using the following additions:

Stock cube	soy sauce	mixed herbs	curry powder
vinegar	harissa paste	lemon juice	garlic

Step Three: Drink at least 1500ml of a low-calorie fluid each day

This includes water, a no-added sugar squash or herbal teas.

Tea and coffee can also contribute to your overall fluid intake but aim to keep caffeinated drinks to less than 4 mugs per day and make up the rest of your fluid intake with water or squash. Preferably you should drink black tea or coffee.

Step Four: 100ml skimmed milk allowance for tea / coffee

If it is not possible for you to drink black tea and coffee, then you may have a maximum 100ml milk allowance each day.

Sample day

Breakfast	1 shake
Am snack	1 shake
Lunch	1 shake
Evening meal	1 shake
	1 bowl of vegetable soup (made from allowance)
Evening snack	Sugar free jelly (optional)

Option Two: Milk and yogurt plan

This option is available if you do not wish to use meal replacement shakes.

Summary

- 3 pints of skimmed, semi-skimmed, unsweetened soya or lactofree milk each day.
- You can flavour the milk with no-added sugar milkshake syrup, instant coffee, or vanilla extract.
- 2 x 125g of fat free yogurt each day.
- 1 salty drink each day (Bovril, stock or consommé) -optional.
- Drink at least 1500ml of low-calorie fluid.
- Supplement your diet with a complete A-Z vitamin and mineral supplement.
- Consider a fibre supplement (optional).

Step One: Drink 3 pints of milk each day

Choose the type of milk you like best or is most suitable for you. Skimmed, semi-skimmed, lacto-free and unsweetened soya milk are all suitable options. Avoid oat and rice milk as these are higher in carbohydrates. You can flavour your milk with coffee, vanilla extract or sugar-free syrups (Monnin or Crusha).

Type of milk	Kcals	Protein (g)	Carbohydrates (g)
3 pints of skimmed milk	580	60	82
3 pints of semi skimmed milk	783	60	80
3 pints of Soya milk	560	58	8.4
3 pints of lacto-free semi skimmed milk	650	58	44

Step Two: Have 2 x 125g fat free yogurts each day

You can have a total of 250g of fat free yogurt each day. Make sure that you choose one without any added sugar. Each pot should contain less than 10g of carbohydrates.

Type of yogurt	Kcals	Protein (g)	Carbohydrates (g)
2 x 125g fat free yogurt	135	18	13-20
Alpro yogurt alternative, 250g	165	9	19

Step Three: Supplement with a salty drink (optional)

Although this is not required, you may want to have a salty drink each day if you like savoury flavours.

To make a salty drink add 1 teaspoon of Bovril, beef extract, Marmite, or yeast extract to a mug of hot water. You can also to use stock cubes or consommé.

Step Four: Drink at least 1500ml of low calorie fluids each day

This includes water, a no-added sugar squash or herbal teas.

Tea and coffee can also contribute to your overall fluid intake but aim to keep caffeinated drinks to less than 4 mugs per day and make up the rest of your fluid intake with water or squash. Use milk from your 3 pint allowance for your tea or coffee.

Step Five: Supplement your diet with a complete A-Z vitamin and mineral supplement

As this LRD option does not contain all your essential vitamins and minerals **you will need to take a complete vitamin and mineral supplement.** You can buy these from your local chemist, supermarket, or health food shop. Here are some examples of suitable options:

Centrum Advance	Sanatogen A-Z complete
Tesco A-Z multivitamins and minerals	Boots A-Z
Holland & Barrett ABC to Z	Asda A-Z multivitamins and minerals

Step Six: Consider a fibre supplement (optional)

This LRD option lacks fibre and so you may experience constipation. To relieve this, try a laxative like Fybogel. Make sure you are drinking plenty of fluids to help this work and contact the bariatric team if problems persist.

Example day

Breakfast	1 pint of chosen milk flavoured with coffee
Am snack	Sugar free jelly
Lunch	1 pint of milk 1 x 125g pot of fat free yogurt
Evening meal	$\frac{3}{4}$ pint (420ml) of milk 1 salty drink
Evening snack	1 x 125g fat free yogurt

Contact us

If you have any questions or need further information, please contact the Bariatric Nurse team:

Telephone: 01872 252133 or 07789 615828

If you would like this leaflet in large print, braille, audio version or in another language, please contact the General Office on 01872 252690

