

Dietary advice after your liver transplant

Information for patients

This leaflet answers common questions about eating after you have had a liver transplant. If you would like further information, or have any particular worries, please do not hesitate to speak to your dietitian, liver transplant nurse or doctor.

Do I need to continue to follow the previous dietary advice I was given?

Prior to having your transplant you may have been advised to have a high energy and high protein diet. Once you have fully recovered from the transplant operation (which may take several months) you no longer need to follow this advice.

If you were advised to have a 50g carbohydrate snack before bed before your transplant this does not need to be continued.

If you were advised to restrict your intake of salt before your transplant, you should still be careful with the amount of salt you consume and follow a 'no added salt' diet.

More advice on a good diet to follow after your transplant is given later in this diet sheet.

Food safety

Why is food safety important?

Following a transplant, you will need to take one or more immunosuppressive medications. These help prevent our immune systems from attacking or rejecting the new organ by reducing ('suppressing') the body's own natural defence system.

Following food safety guidance is important for all transplant recipients, but it is particularly important when high doses of immunosuppressive medications are recommended or when dose changes are made. This is likely to be the case in the first six months after transplantation, but will vary for each patient.

Immunosuppressive medications weaken your immune system's ability to fight infection and increase your risk of catching all types of infection, including foodborne illnesses. It is therefore important to follow good food hygiene when choosing, preparing and storing foods and to avoid certain high risk foods known to carry certain different types of bacteria.

Symptoms of foodborne infections include:

- headaches
- high temperature
- sore throat
- vomiting
- diarrhoea

During periods of vomiting or diarrhoea, you can become dehydrated and essential medications may not be absorbed properly by your body – this could result in liver rejection.

The Food Standards Agency (FSA) recommend following the 4Cs of good food hygiene:

Wash your hands properly and keep them **clean**:

- keep hands clean when eating and preparing food
- dry hands with a separate towel, not a dishcloth

Cook food properly:

- when cooking or reheating food, always check that it is steaming hot throughout
- only keep leftovers for two days and only reheat once
- do not eat food that is past its 'use-by' date

Chill food properly:

- keep fridges at 0-5°C and freezers at -18°C or below

- cool cooked food within one to two hours and then store in the refrigerator or freezer
- defrost food in the fridge overnight or in the microwave if you intend to cook and eat it straightaway and eat leftovers within 24 hours of defrosting

Avoid **cross-contamination**:

- clean and disinfect work surfaces, chopping boards and utensils thoroughly before, in between and after preparing foods, especially raw foods
- always cover raw meat/fish/poultry and store at the bottom of the refrigerator
- keep raw and ready-to-eat food separate during storage and preparation

High risk foods

Food type	High risk foods that should be avoided	Safe alternatives
Milk	Unpasteurised milk, eg milk sold on local farms	Any pasteurised, soya or UHT milk
Cheese	<p>All unpasteurised soft cheese unless cooked until piping hot</p> <p>Homemade cheeses, eg labneh/paneer. Soft, mould-ripened (white rind) cheeses, eg brie, camembert and chevre/goats' cheese</p> <p>Blue-veined cheese, eg Danish Blue, Gorgonzola, Roquefort, Dolcelatte Cheeses from the deli counter</p>	<p>Pasteurised soft cheese, eg cottage cheese, mozzarella, feta, cream cheese, ricotta, halloumi, hard goats' cheese, paneer and labneh</p> <p>Processed cheeses such as Dairylea</p> <p>All hard cheeses (pasteurised and unpasteurised), eg cheddar, red Leicester, edam, gouda, stilton, pecorino and parmesan</p>

		<p>Mould-ripened or blue-veined cheeses if cooked until piping hot.</p> <p>It is best to buy pre-wrapped cheese</p>
Yoghurt	<p>Any form of unpasteurised yoghurt</p> <p>Yoghurt which is described on the label as 'bio' or 'probiotic' (eg Onken, Yeo valley, Rachel's, Activia)</p> <p>Probiotic drinking yoghurts, eg Yakult, Actimel, and supermarket own brands</p>	<p>Any yoghurt that does not describe itself as 'bio' or 'probiotic', eg live, plain/natural, sour cream, Greek and fruit yoghurts (eg Muller, supermarket own brands, lassi)</p> <p>Prebiotic yoghurt/products (these contain substances which promote the growth of healthy bacteria. They do not contain any live bacteria themselves)</p>
Ice cream	<p>Ice cream from ice cream vans and soft serve machines, eg whipped ice cream</p> <p>Homemade ice cream using raw eggs</p>	<p>Shop bought ice cream stored and consumed as per manufacturer's instructions, individual ice cream portions</p> <p>Homemade ice cream using pasteurised egg or an egg free recipe</p>
Meat	<p>Raw or undercooked meat or poultry</p> <p>Rotisserie chickens</p> <p>Meat or poultry from deli counters</p> <p>Cured meats, eg salami, Parma ham, chorizo and</p>	<p>Well cooked meat and poultry</p> <p>Tinned meat</p> <p>Pre-packaged cooked meats and poultry stored and used according to the manufacturer's</p>

	pepperoni	instructions Cured meats if cooked until piping hot
Pâtés	Meat and vegetable pâtés	Tinned pâtés
Egg	Raw or undercooked eggs Sauces, desserts and dressings made with raw eggs, eg homemade mayonnaise, aioli, Caesar salad dressings, hollandaise and béarnaise sauces, chocolate mousse and egg-nog	Use lion stamped eggs and cook well Shop bought mayonnaise Products made with pasteurised egg
Fish	Raw/undercooked fish and shellfish, eg sashimi, oysters and caviar Sushi made with raw fish/shellfish Fish and shellfish from open deli counters Cold smoked fish, eg smoked salmon and trout, ready to eat fish and shellfish unless consumed within 24 hours	Fish and shellfish if cooked until piping hot Tinned fish Sushi made with cooked seafood or vegetables Pre-packaged fish and shellfish stored and used according to the manufacturer's instructions Consume cold smoked fish/ready to eat fish including smoked salmon within 24 hours of opening the packet
Fruit & Veg	Unwashed fruits, vegetables and salad Unpasteurised fruit juice and smoothies	Wash all fruit, vegetables and salad Pasteurised fruit juice and

	Raw sprouted seeds	smoothies Well-cooked sprouted seeds
Sandwiches	Ready to eat sandwiches that contain high risk foods, eg cured meat or smoked salmon	All other pre-packaged sandwiches which have been stored and consumed according to manufacturer's instructions
Rice	Reheated cooked rice and rice dishes	Freshly cooked rice served immediately

Eating out and takeaways

Eating out or consuming takeaways within the first 6-8 weeks after transplantation should be avoided. After this period, eating out can be enjoyed when following the basic principles outlined below.

Check the food hygiene rating on the Food Standards Agency mobile phone app or website (www.ratings.food.gov.uk), which lists all the ratings for both local and out-of-area food establishments.

Tips to enjoy eating out safely

- check the eating area is clean and tidy
- avoid all high-risk foods on the menu or enquire if unsure
- try to order a plated meal that is cooked fresh to order
- avoid foods from salad bars and deli counters
- ensure your meal is piping hot and thoroughly cooked when it arrives
- avoid rice that has already been cooked; ask for it to be cooked fresh
- beef burgers should be well done
- if transplant recipients need to eat from a buffet it is recommended to try to be first in the queue and not to go

back for further servings as there is a risk the food may have been contaminated by other diners

Eating abroad

It is especially important to be very vigilant with food safety when eating abroad. If you are thinking about travelling abroad, please discuss this with your transplant team in advance.

A balanced diet

When you have fully recovered from your liver transplant operation you should follow a balanced diet. This should contain a variety of foods from five different food groups. It is important to make sure you get enough energy (calories) and protein from food, as well as essential vitamins and minerals.

The five essential food groups are:

- bread, rice, pasta, cereal and potatoes
- fruit and vegetables
- meat, fish, eggs, beans, pulses and other vegetarian alternatives
- dairy or dairy alternative foods
- oils and spreads

The Eatwell Guide below shows the proportions of these food groups in a healthy diet.

Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

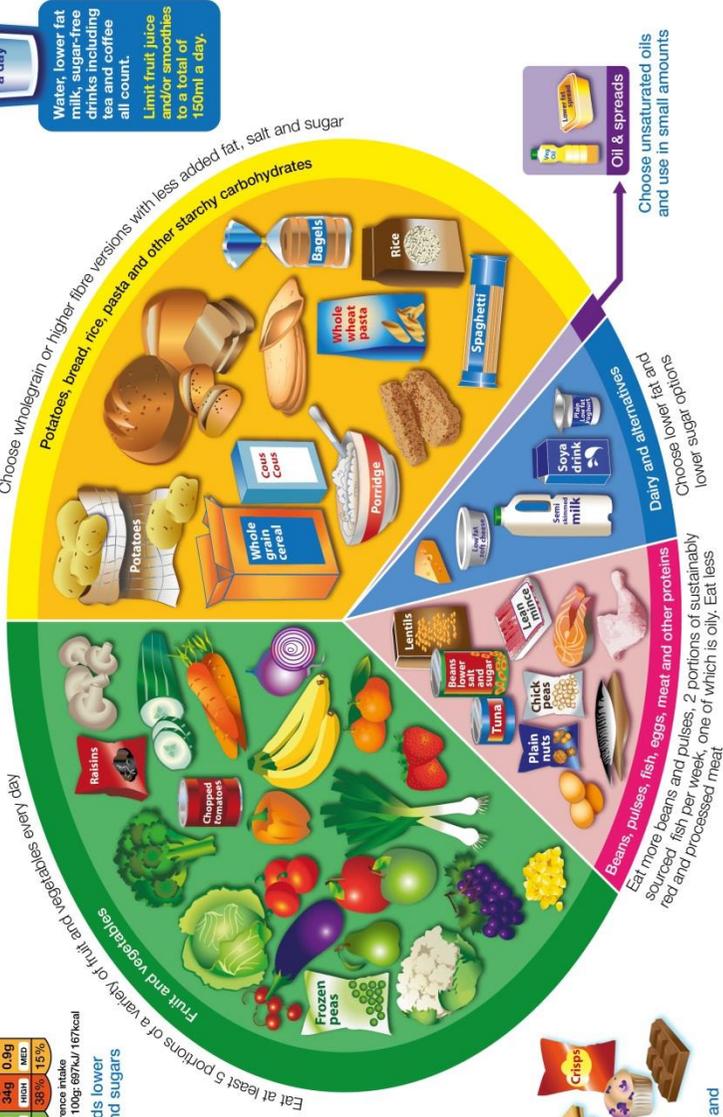
Each serving (150g) contains

Energy	1600kJ	380kcal	13%
Fat	3.0g	LOW	4%
Saturated fat	1.3g	LOW	7%
Salt	0.9g	MOD	38%
Sugar	24g	MOD	15%

of an adult's reference intake

Typical values (as sold) per 100g/100kcal / 100kcal

Choose foods lower in fat, salt and sugars



6-8 a day
Water, lower fat milk, sugar-free drinks including tea and coffee all count.
Limit fruit juice and/or smoothies to a total of 150ml a day.

Per day  2000kcal  2500kcal = ALL FOOD + ALL DRINKS

Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland. © Crown copyright 2016

Managing weight gain

Eating healthily is important to maintain good health, reduce risk of diseases and help maintain a healthy weight.

A number of things can lead to weight gain after a transplant, including a general feeling of wellbeing, possible steroid induced hunger, and a reduction in symptoms you were experiencing before your transplant, for example nausea and/or feeling full very quickly.

If you are overweight or obese you are more likely to have or be at risk of developing cardiovascular disease, high blood pressure, raised blood fats, stroke and diabetes.

There are lots of things you can do to control your weight, such as:

- eat regular, planned meals and try not to snack on high-energy foods between meals
- decrease portion sizes – use a smaller plate or bowl and serve food on individual plates
- eat fewer foods that are high in fat and sugar, eg fizzy drinks, cakes, biscuits, fried foods, crisps, chocolate
- choose lower fat cooking methods such as grilling, baking and boiling
- fill up on plenty of fruit and vegetables
- eat small portions of more filling, high fibre foods such as wholemeal/brown bread, pasta and rice
- shop from a list and avoid shopping when you're hungry
- exercise regularly at a level you can manage
- a steady weight loss of about half to one kilogram (1-2lbs) per week is the safest way to lose weight and means you are more likely to keep the weight off rather than rapid weight loss over a short amount of time

Foods that interact with medications

Some foods, plant compounds and herbal remedies can interact with immunosuppressive medications and prevent them from working properly.

It is not recommended to take any ‘alternative’ medicines or high dose vitamins without first speaking to your transplant team.

Grapefruit, grapefruit juice, Seville oranges and pomelo should be avoided as they can interact with your immunosuppressive medications.

More information

For more information about the nutrition and dietetic service at the Royal Free London visit our website:

www.royalfree.nhs.uk/services/services-a-z/therapy-services/nutrition-and-dietetics

Your feedback

If you have any feedback on this leaflet or for a list of references for it, please email: rf.communications@nhs.net

Alternative formats

This leaflet is also available in large print. If you need this leaflet in another format – for example Braille, a language other than English or audio – please speak to a member of staff.

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