Department of Nutrition and Dietetics

Nutritional information after a liver transplant

High protein, high energy
Initially, following your transplant; your body needs more energy and protein for healing from the operation, this takes several months as the wounds inside are continuing to heal even after you have healed on the outside. You will therefore need to continue with your high energy, high protein diet while you heal.

If you are coming back to Addenbrooke’s for your follow up appointments with the doctors, a dietitian will also see you in that clinic to check how you are doing. You can ask to see a dietitian in this clinic at any time to answer any nutritional concerns or questions you may have.

Grapefruit, Seville Oranges and Pomegranate
After a transplant you should avoid eating and drinking food containing grapefruit, Seville Oranges (used to make marmalade), pomelo and pomegranate because these foods interfere with the levels of the immunosuppressant medication. You should also check food and drink which may contain these foods such as mixed fruit juices and marmalade.

Food hygiene advice
After your transplant you will have to take immunosuppressant medications for example Tacrolimus, Cyclosporin, Sirolimus, Mycophenolate Mofetil, Azathioprine, and Prednisolone. These reduce the activity of your immune system in order to help prevent your new liver being rejected.

The role of your immune system is to fight infections in your body. Because the activity of your immune function is lower than normal it means you are more likely to pick up infections. You are at risk of getting a food borne infection such as Listeria, E-coli and Salmonella. If you have Listeria you may not experience any symptoms or you may experience mild ‘flu like’ symptoms such as a temperature, headache, diarrhoea or a sore throat. A more serious infection can arise if the Listeria spreads in the body. If you follow the advice below, you will reduce the risk of getting a food borne infection.

Guidelines on specific foods and drinks to avoid to reduce your risk of food borne infections
The list of foods below are to be avoided by everyone initially after a transplant to minimise the risk of food borne infection. It is recommended that you avoid these foods while your immunosuppressant medication is at a high level.
Once you are on a maintenance dose of your immunosuppression medication, you can relax the restrictions as long as you are sensible. This is usually about six months after your transplant. It is important to avoid undercooked pork and undercooked shellfish for ever.

If you are ever put back on to a higher dose of immunosuppressant medication, for example with to treat rejection, you should restrict these foods again until your maintenance dose is restarted.

<table>
<thead>
<tr>
<th>Types of food to avoid</th>
<th>Alternative choices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Milk</strong></td>
<td></td>
</tr>
<tr>
<td>Unpasteurised milk, for example milk sold on local farms, some goat and sheep milk.</td>
<td>Pasteurised milk, tinned milks UHT milk, dried milk.</td>
</tr>
<tr>
<td>Please note: all cow’s milk sold in the supermarket is pasteurised.</td>
<td></td>
</tr>
<tr>
<td><strong>Yoghurts</strong></td>
<td></td>
</tr>
<tr>
<td>Unpasteurised yoghurts. Yoghurt which is described on the label as bio or probiotic. Probiotic and ‘bio’ drinks, for example Yakult, Actimel.</td>
<td>Any yoghurt that does not describe itself as bio or probiotic.</td>
</tr>
<tr>
<td>Please note: all yoghurt is pasteurised unless the label states otherwise.</td>
<td></td>
</tr>
<tr>
<td><strong>Cheeses</strong></td>
<td></td>
</tr>
<tr>
<td>Soft mould-ripened cheeses such as Brie, Camembert, Dolcelatte, Roquefort, Cambozola, Danish blue. Soft sheep and goats cheeses. Cheese made with unpasteurised milk.</td>
<td>Hard cheeses such as Cheddar, Red Leicester Edam, Parmesan(cut off any visible rind) and Stilton Processed cheese, for example Philadelphia, Dairylea and Kraft. Cottage cheese. Pasteurised feta.</td>
</tr>
<tr>
<td>Please note: cheeses made with unpasteurised milk must be labelled as ‘made with raw milk’ or ‘made with unpasteurised milk’</td>
<td></td>
</tr>
<tr>
<td><strong>Eggs</strong></td>
<td></td>
</tr>
<tr>
<td>Raw eggs or undercooked eggs. Dishes containing raw egg, such as homemade mayonnaise, mousse hollandaise sauce and egg nog.</td>
<td>Hard boiled eggs. Well cooked scrambled egg. Well cooked omelette. Shop bought mayonnaise.</td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td></td>
</tr>
<tr>
<td>Raw fish such as sushi. Raw or lightly cooked shellfish. Raw oysters, caviar. Avoid smoked salmon unless eaten directly from a freshly opened packet.</td>
<td>Well cooked fresh, frozen, tinned fish. Well cooked shellfish, for example prawn curry.</td>
</tr>
<tr>
<td>Meat</td>
<td>Raw or undercooked meats, including rare meats for example steak tartare. Smoked/cured meat, for example salami. All deli counter meat. Rotisserie chicken.</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pate</td>
<td>Unpasteurised meat and vegetable pate/paste (requiring refrigeration).</td>
</tr>
<tr>
<td>Fruits &amp; Veg</td>
<td>Unwashed Fruit. Unwashed Vegetables. Salads from the deli/salad bar, such as coleslaw and potato salad.</td>
</tr>
<tr>
<td>Ice cream</td>
<td>Soft ice-cream for example Mr Whippy, McFlurry. Slush puppy. Homemade ice-cream. Milkshakes from a soft ice-cream style machine, for example MacDonalds and Burger King milkshakes.</td>
</tr>
</tbody>
</table>

**Guidelines on how to look after your food and drinks to help reduce your risk of infection**

**Shopping**
- Check the ‘use-by’ date to make sure they are still current.
- After shopping for fresh foods put them in the fridge or freezer as soon as possible.

**Food preparation**
- Wash your hands properly.
- Protect cuts and wounds before handling food.
- Wash and dry utensils (for example knives), work surfaces, such as chopping boards between preparing cooked and raw foods to avoid cross-contamination.
- Wash all fresh fruits and vegetables before preparation.

**Cooking**
- Thaw meat and poultry in the fridge, not at room temperature.
- Cook meat, poultry, shellfish and eggs thoroughly.
- When reheating food ensure that it is piping hot.
- Never reheat food more than once.
- When using the microwave follow the cooking and standing times.
**Storing food**
- Check the temperatures of the fridge and freezer regularly, ensuring fridge is less than 5°C and freezer less than -18°C.
- Never refreeze thawed food.
- Cover all foods in the fridge.
- Store the cooked food at the top of the fridge and the raw goods at the bottom.

**Eating out and abroad**
- When eating out or having a takeaway, ensure the food is well cooked. If possible avoid buffets.
- Try to ensure that you only go to reputable restaurants/eateries and avoid food sold on streets or markets.
- Take extra care when abroad, as food hygiene may be poorer.
- Ensure BBQ’d meat is thoroughly cooked, not left for long periods between cooking and eating.

If you have any queries, please do not hesitate to contact your Dietitian.

Dept of Nutrition and Dietetics, Liver Transplant Dietitians - 01223 216655

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site.
For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:
- If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.info@addenbrookes.nhs.uk.
- Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

**Document history**
**Authors** Nutrition and Dietetics
**Department** Cambridge University Hospitals NHS Foundation Trust, Hills Road, Cambridge, CB2 0QQ www.cuh.org.uk
**Contact number** 01223 216655
**Publish/Review date** January 2016/January 2019
**File name** Nutritional_information_after_a_liver_transplant_v5.doc
**Version number/Ref** 5/PIN2556