

Yorkshire Regional Centre for
Paediatric & Adolescent Oncology and Haematology

Safe Eating for Immuno-compromised Patients

Information for patients, parents
and carers



Leeds children's
hospital

caring about children

Why do I need advice on what to eat?

When your immune system becomes weakened (immuno-compromised) you are at greater risk of infections. At this time you may be at a greater risk of developing infections from food. This may include bacteria, fungus or viruses which can be found in small amounts in food. This is due to the level of your white blood cells falling which would normally help to fight these organisms. This is referred to as neutropenia.

Many foods we eat contain small amounts of bacteria or fungi. For most people this is not a problem. However, when you become immuno-compromised these can be harmful and may lead to infections.

The guidelines in this booklet will help you to lower the risk of a food-borne infection, whilst having as varied a diet as possible. Other foods which are not listed are generally safe as long as good hygiene is observed. It also gives general advice on safe food handling and storage for all patients. If you are unsure about any foods, then please ask your dietitian or a member of your health care team for advice.

Foods have been divided into lower risk foods and higher risk foods:

Lower risk foods: foods which are considered safer to eat as long as they have been stored, handled and served appropriately.

Higher risk foods: foods where there may be a risk of infection and which may be sensible to avoid.

How long do I need to keep to these guidelines?

We advise that you follow the guideline during treatment and until 3 months after your last course of treatment.

If you have had immunosuppressive therapy you need to follow the guideline until you have been off this for 3 months.

Note: immunosuppression medication could be commenced at any given point; therefore, these guidelines may need to be restarted. Please discuss with your medical team.

Please note the last section of this booklet is only for those patients who have undergone a bone marrow / stem cell transplant.

Food safety - general advice

Store, handle and cook food properly to avoid food-borne infections.

Shopping

Avoid buying food with damaged or broken packaging:

- Check all use by dates and best before dates on packaging and discard if out of date
- Transport chilled and frozen foods home as quickly as possible. Use an insulated container or cool bag to help keep food at the correct temperature
- Pack raw meats, poultry and fish in a separate carrier bag to other foodstuffs. Remember, the packaging may be contaminated
- Avoid buying foods like meat and cheese from open deli counters or sweets and chocolate from pick and mix stalls

Food preparation

- Always wash your hands with warm soapy water before handling and preparing any foods
- Wash your hands after going to the toilet, sneezing and after touching any pets, hair, dirty washing, rubbish or raw food
- Use a separate towel or use kitchen paper to dry hands. Do not use a tea towel
- Cover any cuts and grazes with a waterproof plaster

- Avoid preparing food if you have been unwell with food related sickness and / or diarrhoea until 48 hours after symptoms have passed
- Wash salad, vegetables and fruit thoroughly
- Always wash your hands after touching raw meat, poultry or fish
- Avoid washing poultry under the tap as this can spread bacteria over the sink and work surfaces. Leave unwashed

Storage

- Check fridge temperature. Fridges should be between 0°C - 5°C
- Store cooked foods and other ready to eat foods at the top of the fridge
- Store raw or raw defrosting food at the bottom of the fridge in a covered container to stop it dripping or leaking out into the fridge
- Use and store food following the manufacturer's instructions. Use within best before or use by dates
- Keep eggs in the fridge. It is recommended that these be marked with the lion brand to show they are free of Salmonella
- Check your freezer temperature. Freezers should be below 18°C
- Do not refreeze thawed food
- If food is frozen at home, label and date when put in the freezer and use within freezer star guideline on packet or inside the door of the freezer

Kitchen hygiene

- Keep the kitchen clean
- Use a food safe sanitiser or disinfectant on food contact surfaces (e.g. microwave handles, fridge door handles, taps)
- Make sure any cloths or sponges are regularly bleached, disinfected or changed
- Keep pets away from work surfaces, food and your dishes
- Avoid cross-contamination of food - change or wash chopping boards and utensils between preparing raw, cooked and ready-to-eat foods. Ideally, you should have three boards; one for raw meat and fish, one for cooked meat and one for other foods

Cooking

- Thaw meat and poultry in the fridge and not at room temperature. This is because bacteria can grow more quickly at room temperature
- Always cook raw foods thoroughly and ensure the food is piping hot all the way through. Cook meat until the juices run clear and there is no pink showing
- Always follow the manufacturer's cooking guidelines and do not shorten cooking times
- Pre-heat the oven to make sure food is cooked at the recommended temperature
- Food thermometers can be purchased from the Supermarket should you wish to check that food has cooked to a safe temperature (minimum of 75°C is recommended)

Reheating foods

- Do **NOT** reheat rice not even in the microwave
- Refrigerating / freezing home cooked foods - cover and cool food at room temperature within 1 hour after cooking and then place in fridge or freezer
- Eat reheated food within 24 hours of preparing or defrosting it. Only reheat **ONCE** and ensure food is piping hot. Eat immediately after it is reheated

Eating out / Take aways

- Use reliable / reputable outlets
- Look for the local council environmental health five star rating guide, with five being the top score for hygiene and cleanliness
- Ask for food to be cooked fresh rather than anything standing around
- Ensure food is piping hot when served
- Avoid salad bars / deli, street vendors, buffet style restaurants, market stalls and ice-cream vans
- Avoid pre-packed sandwiches and salads from shops, supermarkets and garages
- Avoid pots of ready prepared sandwich fillings

Please note: for bone marrow transplant (BMT) patients, we advise NO take away food whilst in the BMT unit.

More information on safer shopping and eating can be found at: www.food.gov.uk/safereating

Higher Risk Foods	Lower Risk Foods
<i>Meat and Poultry</i>	
<p>Raw or undercooked meat and poultry</p> <p>Barbecued meat represents a particularly high risk and is best avoided altogether</p>	<p>Well cooked meat and poultry juices must run clear and no pink showing</p>
<p>Cooked meat from the deli counter</p> <p>Salami</p> <p>Pâté</p>	<p>Vacuum packed sliced meat</p> <p>Check use by dates and eat within manufacturer's guidelines once opened</p>
	<p>Well cooked sausages and burgers cooked in an oven or grill</p> <p>Hot dog sausages reheated thoroughly</p>
	<p>Tinned meat / tinned paste</p> <p>Once opened transfer to an airtight container, label, date and keep in the fridge. Eat within the manufacturer's guidelines</p>

Higher Risk Foods	Lower Risk Foods
<i>Dairy Products</i>	
Unpasteurised milk	Pasteurised milk, UHT milk, sterilised milk
Unpasteurised cream	Pasteurised cream, sterilised, UHT or squirty cream
Soft cheeses e.g. Brie, Camembert	Vacuum packed hard cheese e.g. Cheddar, Edam, Red Leicester
Unpasteurised cheese - Feta, Parmesan, goats' cheese	Processed cheese e.g. cheese slices, Dairylea triangles, Laughing Cow, Cheese strings
Blue veined cheese e.g. Stilton, Danish Blue	Cream cheese e.g. Philadelphia
Salad dressings containing blue cheese	Pasteurised cheese e.g. pasteurised Parmesan, Mozzarella
Yoghurt which is described on the label as bio or probiotic*	Any yoghurt that does not describe itself as bio or probiotic are acceptable to eat this includes live, plain, Greek and fruit yoghurt
Probiotic or "bio" foods, drinks or supplements e.g. Yakult, Actimel, Proviva	
*The live bacteria used in making yoghurts are not harmful. Therefore, yoghurt described as "live" is safe. However, the bacteria used in bio or probiotic foods cannot be guaranteed as safe when immuno-compromised.	
Soft whip ice-cream from ice-cream vans and ice-cream machines	Wrapped individual ice-cream or lollies Tubs of ice-cream

Higher Risk Foods	Lower Risk Foods
Eggs	
<p>Undercooked or raw eggs</p> <p>Products containing raw egg e.g. soufflé, homemade mayonnaise, mousse, soft meringue</p> <p>Any dressings containing raw eggs e.g. home / restaurant made Caesar salad dressing</p>	<p>Use only Lion branded eggs or those bought from a farmer who has a certificate to show the hens are salmonella free</p> <p>Hard boiled eggs</p> <p>Firm cooked scrambled egg or omelettes</p> <p>Shop bought mousses</p> <p>Baked shop bought products made with eggs e.g. meringue, custard tart</p> <p>Mayonnaise - most bottled mayonnaise is safe as it is generally made using dried egg powder or pasteurised eggs</p>

Higher Risk Foods	Lower Risk Foods
Fish	
<p>Raw or lightly cooked shellfish e.g. prawns, mussels and any products containing them</p>	<p>Freshly cooked fish, fishcakes, fish fingers</p> <p>Well- cooked shellfish e.g prawn curry</p>
<p>Fish pâté</p>	<p>Tinned fish, tinned fish paste</p>
<p>Raw fish e.g. Sushi</p>	<p>Frozen fish thoroughly defrosted and well cooked</p>
<p>Smoked fish e.g. Salmon</p> <p>Vacuum packed fish</p>	<p>Cooked dishes containing smoked fish</p>

Higher Risk Foods	Lower Risk Foods
<i>Salad, Fruit and Vegetables</i>	
<p>Avoid pre-packed salads and deli counter salads</p> <p>Avoid pre-packed lettuce</p> <p>Avoid pre-packed unpasteurised fruit e.g. chopped pineapple, sliced melon</p> <p>Avoid damaged or bruised fruit</p> <p>Avoid rice salads</p> <p>Vegetable pâté</p>	<p>All other salad vegetables are safe to eat as long as they are well washed</p> <p>Tinned fruit and pasteurised fruit pots</p> <p>Peel fruit or vegetables where possible</p>
Raw sprouted seeds e.g. alfalfa, beansprouts	Thoroughly cooked sprouted seeds
Unwashed or unpeeled raw fruit and vegetables	Wash all fruit and vegetables well in freshly run water and peel where possible
Unpasteurised fruit juice or smoothies	Pasteurised fruit juice or smoothies



Higher Risk Foods	Lower Risk Foods
<i>Water and Drinks</i>	
<p>Still bottled mineral water</p> <p>Un-boiled water that is not from a local authority supply e.g. from a borehole or private water supply</p> <p>Unpasteurised fruit juices and smoothies</p> <p>Unpasteurised milk and milkshakes</p>	<p>Carbonated (fizzy) bottled water</p> <p>If you drink water from a borehole or private water supply this must be boiled, prior to drinking</p> <p>*Freshly run tap water if from a local authority supply is considered safe to drink but you may choose to boil this of your own accord</p> <p>Listen to any advice from health / local authority regarding the need to boil your water supply</p> <p>Ensure you run the tap for a couple of minutes first and that it is a tap that is regularly used</p>
<p>*Note: tap water is felt to be a low-risk for acquiring infections. It is recognised that on rare occasions some infections may be transmitted by tap water or private water supplies in Yorkshire and the rest of the UK and therefore, you may choose to routinely boil the water for your child.</p>	
	<p>Tea, coffee</p> <p>Pasteurised cartons or bottles of drinks e.g., fruit juices, Oasis, Drench, Fruit shoots, Ribena, water with a hint of flavouring e.g. lemon, peach</p> <p>Fizzy drinks</p>

In addition to the previous advice, those patients who have undergone a stem cell transplant (allogeneic and autologous) need to follow a few further restrictions until two weeks after off immunosuppressive therapy provided there is a good neutrophil count. Please check with the doctor in clinic.

Higher Risk Foods	Lower Risk Foods
<i>Salad, Fruit and Vegetables</i>	
Uncooked berry fruits e.g. strawberries, raspberries as these are very difficult to wash thoroughly	Tinned fruit Cooked berry fruits
Raw dried fruit Products containing dried fruit e.g. muesli, Bombay mix, confectionary	Dried fruit added to baked products e.g. flapjack, cereal bars, cakes, teacakes, scones
Tofu	Pasteurised and cooked Tofu
<i>Nuts</i>	
Fresh nuts Nuts in a shell	Cooked nuts, nuts in a can Roasted nuts in a sealed packet Peanut butter
<i>Herbs and Spices</i>	
Uncooked herbs and spices Uncooked pepper – powder or ground	Cooked herbs, spices and pepper Salt

Higher Risk Foods	Lower Risk Foods
<i>Drinks</i>	
<p>Ice from a machine or American style fridge / freezer</p> <p>Ice from an open ice tray</p> <p>Unpasteurised beer</p> <p>Home brews and cask conditioned beers</p> <p>Beer where fermentation continues in the bottle (has sediment in the bottle)</p>	<p>Freshly made ice from appropriate water sources made in a fresh ice bag</p> <p>Fizzy drinks and cordials</p> <p>Tea, coffee, ground coffee (avoid grinding beans yourself)</p> <p>Draught keg beers, lager</p> <p>Canned, bottle beer or lagers</p> <p>Wines and spirits</p> <p>Check with your doctor before drinking alcohol</p>
<i>Miscellaneous</i>	
<p>Unpasteurised or farm fresh honey and honeycomb</p> <p>Manuka honey</p> <p>Unnecessarily large packets / jars of food</p> <p>Deli counter foods e.g. olives, houmus, shawirma and baklava</p> <p>Items from “pick and mix”</p> <p><i>(Avoid take aways whilst on the unit please refer to page 7)</i></p>	<p>Pasteurised or heat treated honey</p> <p>Ideally, packets should be individual portions e.g. butter, sweets, pickles or smallest containers and ensure you use clean utensils when using them</p>



For any further information, please contact your dietitian, clinical nurse specialist or medical team. We regularly check and update our information.



What did you think of your care?

Scan the QR code or visit bit.ly/nhsleedsfft

Your views matter



© The Leeds Teaching Hospitals NHS Trust • 3rd edition (Ver 1)
Developed by: The Paediatric Dietitians
Produced by: Medical Illustration Services • MID code: 20220616_007/BP

LN004564
Publication date
10/2022
Review date
10/2024