

Very low-fat diet for the management of chyle leaks

Information for patients
& carers



Who is this booklet for?

This booklet is for adults who need short term advice for the dietary treatment of a chyle leak.

What is a chyle leak?

Chyle is a milky coloured fluid that contains protein, long chain triglyceride fats (LCT), fat-soluble vitamins and minerals. It is transported around the body by the lymphatic system.

A chyle leak occurs when there is a damage to the lymphatic system, which may happen as a result of surgery, injury or through a disease condition. Chyle then builds up and may cause swelling in the chest or abdomen.

The aim of dietary treatment

The aim of dietary treatment is to reduce the flow of chyle through the lymphatic system to allow the damaged area to heal.

Chyle can be reduced by restricting long chain triglyceride fats (LCT) in your diet. Almost all of the fat in our diet is LCT (long chain triglycerides). As the diet is very restrictive, it should only be followed for a short amount of time, and under the supervision of a dietitian.

Low LCT fat diet = Less chyle

Medium chain triglyceride fats (MCT) can be eaten and used instead, to add energy and flavour to your diet. MCT fats go directly into your bloodstream and do not pass through the lymphatic system. MCT cooking oil is recommended and can be prescribed by your GP.

The aim is to keep your LCT fat intake as low as possible whilst ensuring you eat enough to maintain your weight. Aim for less than 10g fat each day. If you are an inpatient, ask for a Chlye leak (MCT) menu from the ward staff.

Foods that are low LCT that you can eat:

The following are foods that you can eat freely as part of a very low-fat diet:

- All fruits, fresh, tinned, dried or frozen (except olives, avocado pear and ackee)
- All vegetables, fresh, tinned or frozen
- Vegetables pickled in vinegar e.g beetroot or gherkins
- Sugar, honey, golden syrup, treacle, jam & marmalade
- Jelly & jellied sweets such as Jelly Tots®, Jelly Babies®, wine gums or Fruit Pastilles
- Boiled sweets or mints (not butter mints)
- Fruit sorbets, water ices or ice lollies
- Meringue or egg white
- Spices or essences
- Salt, pepper, vinegar, herbs, tomato ketchup, most chutneys
- Marmite®, Oxo or Bovril
- Fruit juices, fruit squashes, milkshake syrups
- Bottled fruit sauces
- Fizzy drinks, lemonade, cola, Lucozade®

If you have diabetes, please discuss this with your dietitian as you will need to continue to follow the dietary advice for diabetes. Your dietitian will be able to advise on suitable low sugar/ sugar free options

	Foods Allowed	Foods to Avoid
Bread	<ul style="list-style-type: none"> • White bread • Matzo's • Crumpets 	<ul style="list-style-type: none"> • Seeded or nut bread • Wholemeal bread • Ciabatta, Focaccia
Confectionery	<ul style="list-style-type: none"> • Boiled sweets, jelly sweets, fruit gums, pastilles, marshmallow, chewing gum, water-ices, mints, Turkish delight (not chocolate coated) 	<ul style="list-style-type: none"> • Chocolate, toffee, fudge, butter mints, Scottish tablet
Dairy Products / Dairy Alternatives	<ul style="list-style-type: none"> • Skimmed milk, condensed skimmed milk • Meritene Energis® made with water • Very low fat yoghurt or fromage frais (<0.2g / 100g) • Low fat cottage cheese • Quark (skimmed milk soft cheese) <p>(If you use a dairy free alternative, please discuss this with your Dietitian who can check the most appropriate version)</p>	<ul style="list-style-type: none"> • Whole milk, dried milk powder • Semi skimmed milk • Cream - double, single, clotted, and whipping • Cream alternatives • Full fat and low-fat yoghurt • Ice-cream • Cheese
Desserts	<ul style="list-style-type: none"> • Jelly • Sorbet • Custard, sago, tapioca made with skimmed milk • Ice-cream wafers 	<ul style="list-style-type: none"> • Milk puddings made with whole milk, instant pudding mixes • Trifle • Cakes and cheesecake • Gateaux, mousse, pies e.g. fruit, egg, custard; crumble, brownies, pastries

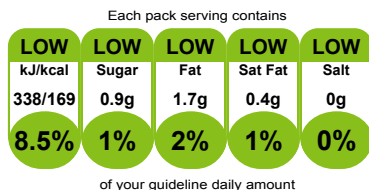
	Foods Allowed	Foods to Avoid
Drinks	<ul style="list-style-type: none"> Fizzy drinks, squash, fruit juice Skimmed milk (1 pint/day) Milkshake flavourings Tea and coffee made with skimmed milk Beer, lager, cider, wine, spirits (if allowed by your doctor) 	<ul style="list-style-type: none"> Instant chocolate drinks, cocoa, Horlicks®, Ovaltine®/ malt drinks Irish cream, cream liqueurs
Egg	<ul style="list-style-type: none"> Egg white, egg replacer 	<ul style="list-style-type: none"> Egg yolks
Fats & Oils	<ul style="list-style-type: none"> Medium chain triglyceride oil (prescribed by GP) 	<ul style="list-style-type: none"> All other fats and oils e.g. olive oil, rapeseed oil, vegetable oil, coconut oil, palm oil; butter, ghee, margarine
Fish (fresh & tinned)	<ul style="list-style-type: none"> White fish (no skin) e.g. haddock (fresh or smoked), sole, plaice, cod, whiting Crab, lobster, prawns, shrimps, crabsticks Tuna in brine/spring water 	<ul style="list-style-type: none"> Oily fish, e.g. sardines, kippers, mackerel, salmon Fish in breadcrumbs or batter e.g. fish fingers
Flours + Cereals	<ul style="list-style-type: none"> White wheatflour, rice, rye, cornflour Cornflakes®, Frosties®, Sugar Puffs®, Special K®, Cocopops®, Rice Krispies®, Ricles®, Weetabix® 	<ul style="list-style-type: none"> Wholemeal flour, soya flour, oats, bran, semolina All Bran®, muesli, Readybrek®, granola Cereals with nuts and seeds

	Foods Allowed	Foods to Avoid
Fruit	<ul style="list-style-type: none"> • Most varieties - fresh, frozen, tinned, dried 	<ul style="list-style-type: none"> • Ackee • Avocado • Olives • Coconut
Meats	<ul style="list-style-type: none"> • Cooked thinly sliced roast beef or ham 	<ul style="list-style-type: none"> • Visible fat on meat, sausages (including low fat), bacon, salami, burgers, meat paste, paté, meat pies, corned beef
Meat Alternatives	<ul style="list-style-type: none"> • Quorn 	<ul style="list-style-type: none"> • Tofu • Tempeh
Miscellaneous	<ul style="list-style-type: none"> • Sugar, honey, jam, golden syrup, treacle, marmalade • Herbs, spices, salt, pepper, vinegar, essences, baking powder • Rice cakes (not chocolate or yoghurt coated) 	<ul style="list-style-type: none"> • Lemon curd, chocolate spread and chocolate nut spread • Nuts, peanut butter, seeds (e.g. sunflower, sesame) • Guacamole and hummus • Creamy soup • Tofu
Pasta + Rice	<ul style="list-style-type: none"> • Pasta e.g. spaghetti, macaroni • Tinned spaghetti • Rice • Rice noodles 	<ul style="list-style-type: none"> • Pasta meals in a creamy sauce, cheese sauce, carbonara, mascarpone, lasagne • Egg noodles

	Foods Allowed	Foods to Avoid
Potatoes	<ul style="list-style-type: none"> • Boiled • Jacket • Mashed potato (containing skimmed milk and no butter) 	<ul style="list-style-type: none"> • Chips, crisps, low-fat crisps, roast potatoes, potato salad
Poultry	<ul style="list-style-type: none"> • Chicken or turkey (without skin and trimmed of any fat) • Wafer thin processed chicken 	<ul style="list-style-type: none"> • Roast chicken or turkey with skin, chicken nuggets, chicken in breadcrumbs or batter, chicken pie
Pulses	<ul style="list-style-type: none"> • Peas (e.g. chick peas, split peas) • Beans (e.g. kidney, baked, black eye, borlotti) • Lentils 	
Sauces	<ul style="list-style-type: none"> • Tomato ketchup, brown sauce, soy sauce, oyster sauce, barbecue sauce • Marmite®, Oxo, Bovril® • Fat free dressing, fat free mayonnaise, stock cubes • Low fat sauces (e.g. sweet chilli dipping sauce) 	<ul style="list-style-type: none"> • Salad cream, mayonnaise, pesto sauce, oil and vinegar dressing, gravy granules
Vegetables	<ul style="list-style-type: none"> • Fresh, frozen or canned vegetables, salad • Pickles • Chutney 	<ul style="list-style-type: none"> • Fried vegetables • Vegetables canned in oil

Food labels

Read all food labels to check their level of fat. As most of the fat in food is LCT, this will be indicated as 'total fat' on the nutrition label. Aim to choose foods which are less than 0.5g of fat per serving where possible.



Meal Ideas

Meal	Examples
Breakfast	Low fat cereal with skimmed milk from the table (see page 5) or Toast (two slices white bread) with jam or honey
Snack	Piece of fruit or crumpet with jam or honey
Lunch	Sandwich made with white bread, turkey, tomatoes and, cucumber. Very low fat fromage frais. A piece of fruit or Jacket potato with baked white fish/tuna/baked beans or low fat cottage cheese
Snack	Low fat cereal bar or tinned fruit in juice, or low fat yogurt
Evening Meal	Pasta with plain skinless chicken breast with tomato sauce (onions, garlic, chopped tomatoes, herbs) or Tuna salad with cous cous or Stir fry lean chicken/prawns/Quorn with plain/boiled rice and stir-fried vegetables (using MCT cooking oil and soy sauce)

Meal	Examples
Dessert	Sorbet with ice cream wafers OR fruit and reduced fat fromage frais
Snack	Matzo's crackers with reduced fat cottage cheese OR Rice cakes (not chocolate or yoghurt coating)

Nutritional supplements

You may be advised by your Dietitian to take nutritional supplement drinks to help meet your nutritional needs. These supplements will be either low in fat or may contain MCT fat.

Cooking tips

- Add herbs and spices to increase the flavour of meals
- Use tinned tomatoes to make sauces
- Very low fat yoghurt can be used to make creamy sauces
- Try cooking onions and spices in small amount of water before making curry sauces
- Use salad leaves, tomatoes, cucumber, ketchup, pickle or chutney to moisten sandwiches instead of butter, margarine or mayonnaise
- Try using fat free yoghurt and low fat cottage cheese, baked beans, lentils and kidney beans as low fat sources of protein
- Use yeast extract, cornflour and stock to make gravy

Instructions for using MCT oil:

- When using MCT oil for frying foods, allow a longer time than usual as browning occurs more slowly with this oil. **MCT Oil smokes at a lower temperature than other oils** – be careful when cooking with it. Do not use a high heat. The temperature should be kept as low as possible, as the oil gives a bitter taste if overheated
- MCT oil should always be stored in a cool place with the cap tightly screwed on after each use

Monitoring your weight

As this is a very restrictive diet, it is important that you monitor your weight. If you are losing weight, speak to your Dietitian for further advice.

Vitamins, mineral and essential fatty acids

This diet is intended for short term use, ideally less than two weeks. However, if it is required for longer, your dietitian may recommend vitamin, minerals and essential fatty acid supplementation.

Do not use supplements containing omega 3 or 6.

If you have been advised to follow any other diets or you have a specific condition, such as diabetes, you need to continue with the recommended advice also.

Reintroducing fat into your diet

Your specialist team will advise you when it is safe to reintroduce fat into your diet. Once your team recommends starting to include fat in your diet, we would recommend a gradual reintroduction of fat at each meal time. Build up the amount of fat in your meals gradually until you are eating a normal amount for you. Please discuss this with your Dietitian if you need support.

Additional Information

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If you have any queries please contact:

Dietitian

Contact number

If we are unavailable, please leave an answer phone message with your name and contact details and we will return your call.

If you have any suggestions or comments regarding this leaflet please let your dietitian know.