

Low LCT, high MCT diet for Chylothorax (Infants and Children)

Nutrition and Dietetics

Information for Parents and Carers

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This leaflet is only for patients being treated by the Nutrition and Dietetic Service at Leicester's Hospitals.

What is chylothorax?

Chylothorax is the build up of milky fluid (chyle) in the chest cavity. This can happen after cardiac surgery.

Chyle is a liquid that carries some nutrients (fats, protein and fat soluble vitamins) and immunoglobulins around the body. Chylothorax happens when chyle leaks out of the lymphatic system and gathers inside the chest cavity.

Dietary change

Fat which is often found in our foods and drinks is known as long chain fat (LCT). LCT increases chyle production. LCT increases how much chyle is made in the body. Your child should reduce LCT foods you eat until chylothorax has resolved. We will replace LCT with another type of fat called medium chain fats (MCT). The Dietitian will advise you on this.

This leaflet gives examples of foods that can be eaten, reduced or not eaten at all. Your child may also be prescribed nutritional supplements to make sure they are taking in enough nutrients.

How long does the diet last?

Your child's Cardiologist will decide this. It is often around 4 to 6 weeks. The Dietitian will be able to advise on food, drinks and prescribed supplements.

**Health information and support is available at www.nhs.uk
or call 111 for non-emergency medical advice**

Visit www.uhleicester.nhs.uk for maps and information about visiting Leicester's Hospitals
To give feedback about this information sheet, contact uhl-tr.informationforpatientsmailbox@nhs.net

Specialist products on prescription:

Standard infant formulas and other milk drinks contain LCT fats. These are not suitable for your child. We will prescribe other options to support your child's growth. The dietitian will advise on these:

- **Monogen:** a nutritionally complete, whole whey protein infant formula. It has protein, carbohydrate, MCT fat, micronutrients and a very small amount of LCT fat. It will give your baby the nutrients they need. This formula will temporarily replace breast milk, standard formula and other milks. We can use this with older children, in addition to food. This formula is not suitable if your child has an allergy to cow's milk protein. If this is the case, the dietitian will develop a milk specifically tailored to your child.
- **Fortijuice:** a juice flavoured high calorie and protein supplement drink. This is fat free. Suitable for older children.
- **Liquigen:** a MCT fat emulsion. It can be added to most foods and drinks. You can add it to fat free yogurts, custard, skimmed milk, scrambled egg whites and sauces. You can use it to give your child extra calories if needed.
- **MCT oil:** You use this as a substitute for your normal cooking oil. You should be careful when cooking with MCT oil because it has a low flash point. This means that it can catch fire more easily.
- **Polycal:** a powdered neutral flavoured carbohydrate powder. It can be added to sweet or savoury foods or liquids to give extra calories.
- **Paediatric Seravit:** a powdered vitamin, mineral and trace element supplement.

Homemade milkshake recipe

1. Get 100ml skimmed milk.
2. Add up to 30ml Liquigen.
3. Add 5g Paediatric Seravit (unflavoured).
4. You can add milkshake syrup to flavour.
5. Mix together.

Can I breastfeed my child?

You will need to replace breastfeeding temporarily with a specialist infant formula until chylothorax has resolved. If you want to continue breastfeeding afterwards, you will need to maintain your breast milk supply by:

- Expressing at least 8 times a day. This includes at least once overnight.
- You can keep breast milk stored in a freezer for up to 6 months. You can give this as a feed or mixed into weaning foods when your child returns to their normal feeding.
- Expressing 2 or 3 times within a few hours (cluster expressing) can increase your milk supply.
- You are welcome to express in your child's bed space on CPICU or the ward. Being with your child while expressing can help with breast milk production.

For more information or support, you can speak with your nurse, dietitian or the National Breastfeeding Helpline online or by phone 0300 100 0212.

Weaning foods

You do not need to delay the introduction of solid foods during MCT diet. If your baby is ready, you can give this alongside the specialist infant formula.

The best foods to start with are fruits and vegetables (not avocados). You can also give baby pouches or jars which have less than 0.2g fat per serving (not per 100g).

Foods your child can eat

Foods that can be eaten freely must have **less than 0.2g fat per serving** (not per 100g). Check the product labels for this. This includes most fruit and vegetables (not avocados), skimmed milk products, water or fruit juice based drinks, and some foods you have made yourself using MCT oil. Your child can eat a set number of daily portions of food which contain 1g of LCT fat (see final page).

Milk and milk products	<ul style="list-style-type: none"> • Skimmed milk. • Low fat cottage cheese, skimmed milk soft cheese. • Diet yoghurt or fromage frais (Muller Light, Light & Free, Activia Fat Free, Fage Total 0% fat).
Fish	<ul style="list-style-type: none"> • Plain white fish, canned white crab meat.
Meat	<ul style="list-style-type: none"> • See page 5
Biscuits and cakes	<ul style="list-style-type: none"> • Meringues, Dutch crispbakes, 99% fat free crackers, Ryvita, sponge fingers, ice cream wafers, rice cakes.
Puddings	<ul style="list-style-type: none"> • Jelly, tinned fruit, sorbet, ice lollies (not ice cream), yoghurts (see above), meringues. • Custard made with skimmed milk and custard powder (not instant or ready made). • Homemade semolina or rice pudding made with skimmed milk.
Sugar	<ul style="list-style-type: none"> • Sugars, syrup, treacle, honey, jam, marmalade.
Soups, sauces, spreads	<ul style="list-style-type: none"> • Clear soup, low calorie soups. • Stock cubes and stock pots. • Ketchup, brown and barbecue sauce. • Pickle, chutney, vinegar, Marmite, Bovril. • Cooking sauces (< 0.5g per 100g), fat free salad dressing.
Fats and oils	<ul style="list-style-type: none"> • Liquigen, MCT oil.
Eggs	<ul style="list-style-type: none"> • Egg white only.
Cereals, breads	<ul style="list-style-type: none"> • Rice, potatoes (boiled, jacket potato, roasted, mashed with skimmed milk). • White flour, corn flour. Spaghetti in tomato sauce. • Breakfast cereals: cornflakes, rice krispies, wheat biscuits (maximum 2 biscuits).
Fruit	<ul style="list-style-type: none"> • All fresh, frozen, tinned excluding avocado. • Dried fruit (not chocolate / yoghurt coated).
Vegetables	<ul style="list-style-type: none"> • All vegetables, pulses and lentils except olives.
Drinks	<ul style="list-style-type: none"> • Fruit juices, fruit squashes, fizzy drinks. • Skimmed milk shakes (skimmed milk with Crusha syrup). • Tea and coffee with skimmed milk.
Sweets	<ul style="list-style-type: none"> • Jelly babies, jelly tots, Fruit Pastilles, fruit gums, wine gums, mint imperials, extra strong mints, Polos, Skittles, Drumstick Squashies, Haribo (always check individual labels). • Sherbet, marshmallows, boiled sweets (not hum bugs) and fruit lollipops.
Others	<ul style="list-style-type: none"> • Salt, pepper, herbs, spices.

Foods to avoid

Milk and milk products		
• Full fat milk	• Semi-skimmed milk	• Evaporated milk
• Condensed milk	• Hard cheese	• Cream cheese
• Processed cheese	• Full fat yoghurt	• Ready made / instant custard
• Full fat fromage frais • Ice cream	• Foods containing cheese like pizza	
Meat		
• Processed meats and meat products		• Sausages, including quorn
• Meat pies / pasty / pastries	• Chicken nuggets / fingers / burgers	• Meat paste or pate
• Chicken, beef, lamb, pork, ham (see exchange list)		• Beef burger
Fish		
• Oily fish: herring, kipper, pilchard, sardines, salmon, mackerel		• Fish paste
Others		
• Processed potato: croquets, smiley faces		• Potato waffle (unless 99% fat free)
• Crisps and most corn snacks	• Chips	• Coleslaw
• Veggie burgers / sausage	• Nuts	• Chocolate
Eggs		
• Yolks or foods containing whole egg		
Fats and oil		
• All cooking oils	• Butter, lard, suet,	• Margarine, Olive oil spreads
Biscuits and cakes		
• Most biscuits	• Cookies	• Pastries including croissants, fruit pies or
• Any biscuits containing nuts or chocolate		

Foods to avoid

Sauces, spreads, soups

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| • Cream of soups | • Meat soups | • Chocolate spread |
| • Gravy made with meat juice | • Salad cream, mayonnaise | • French dressing, vinaigrette |
| • Nut and nut based products like peanut butter | | |

Cereals and breads

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| • Ready Brek | • Museli | • Bread containing nuts |
| • Cereals containing nuts: crunchy nut cornflakes, fruit and fibre | | • Bread (see exchange list) |

Drinks

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| • Hot chocolate, Highlights | • Horlicks. | • Ovaltine |
| • Carton milkshakes | • Yoghurt drinks | |

Others

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| • Yorkshire puddings | • Foods in batter or breadcrumbs |
| • Most tinned or jar sauces (check labels) | |

Sweets

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| • Chocolate | • Popcorn | • Toffees, Fudge, Liquorice Allsorts |
| • Humbugs, butter mints, soft mints, | | |

LCT daily fat allowance

Your child is allowed to have _____ g LCT fat per day.

The list below is of foods which all have 1 gram of LCT fat. You must measure these foods carefully to make sure that your child does not have too much LCT fat.

Meat:

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| • 30g chicken (white) | • 50g turkey (white) | • 30g lean ham |
| • 15g lean beef / 20g beef mince | • 10g lean lamb | • 15g lean pork |
| • 100g / 1 tablespoon ravioli in tomato sauce | | |

Vegetarian option:

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| • 30g quorn | • 25g tofu |
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Fish:

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| • Half a grilled fish finger | • 100g tuna canned in spring water | • 60g prawns |
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Bread / cereals:

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| • 1 slice wholemeal bread | • 2 slices white or brown bread | • 1 chapatti made without fat |
| • 1 pitta bread | • Pasta 200g (cooked weight) | |

Vegetables:

- Baked beans 254g (half a tin)

Cakes and biscuits:

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|---------------------|-----------------------------------|--------------------------|
| • 1 jaffa cake | • 2 rich tea | • 1 x 30g pack iced gems |
| • 1 slice malt loaf | • 1 pack Ella's Kitchen puff pops | |

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔
على هذه المعلومات بلغة أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

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Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

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