Children's Cancer and Leukaemia Group | the EXPERTS in CHILDHOOD CANCER

# Helping your child to eat well during cancer treatment

## A practical information guide for parents and families of a child or young person with cancer

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Children's Cancer and Leukaemia Group
the EXPERTS in CHILDHOOD CANCER

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# Contents

Most children with cancer will experience problems with eating and drinking at some stage. This can be due to the cancer itself, treatment or medication.

Sometimes food can taste strange, can be difficult to swallow or digest and often children just don't feel hungry. If a child is taking steroids as part of their treatment, then the opposite is true and they can feel hungry all of the time.

These problems can be short term or may last throughout treatment. Written by expert dietitians, this booklet gives practical ideas on how to help your child to eat well during cancer treatment.

# Why is it important my child eats well?

Eating well during cancer treatment is really important as a well-nourished child is able to cope better with their treatment and fight infection. It will also help their body to repair healthy body tissues that have been damaged by chemotherapy or radiotherapy. A child also needs to grow and develop in line with their age group and food gives the body energy and nutrients to do this.

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## How do I know my child is eating enough?

Your child's weight and height will be measured at clinic appointments. This is sometimes recorded on a height and weight centile chart.

Measuring your child's height and weight helps check whether they are eating enough and the effect of treatment on their growth. You will also be asked about their appetite, favourite foods and any problems they might be having with their eating and drinking.

Many parents worry about their child's diet before, during and after treatment. For some families, food and diet can become a great source of stress and anxiety.

The dietitian, doctor and nurse will be happy to discuss any concerns that you have about your child's diet, their appetite, weight, height and energy levels.

## What foods should I give my child to eat?

All children should be encouraged to eat a variety of foods. This will ensure that they get all of the energy (calories), protein, vitamins and minerals that they need for a balanced diet.

To help you give a balanced diet to your child, the following table is a guide to the nutrients contained in different foods.

| Food groups | How they help the body to function |
|---|---|
| **Protein**<br>Meat such as poultry and lean red meat, fish, eggs, meat substitute products such as Quorn™, soya products (such as tofu), pulses (beans and lentils, nuts<br>Dairy products such as milk, cheese, yoghurt and fromage frais (full-fat varieties if your child is losing weight) | Helps the body to grow, repair tissues, muscle strength, and maintain skin, blood cells and immune system. Some contain fat and are good sources of energy (calories), vitamins and minerals. Dairy foods are a great source of calcium.<br>Children with cancer who do not get enough protein might take longer to recover from illness and can have less resistance to infection. |
| **Carbohydrates**<br>Bread, potatoes, rice, pasta, cereals, chapattis, naan, roti, potatoes, sweet potatoes, yams, rice, noodles, couscous, crackers (wholegrain varieties are best for maximum fibre) | These starchy foods are the main source of energy and give the body fuel and calories for physical activity and good organ function.<br>Children with cancer may need 20% to 90% more calories than a child not having cancer treatment.<br>These foods are also good sources of energy, fibre, vitamins and minerals. |
| Sugar, honey, syrup and sugary foods such as chocolate, cakes, biscuits, sweets, fizzy drinks. | These are also carbohydrates and are good sources of energy with high calorie content. However, they have few other nutrients. |
| **Fats**<br>Butter, margarine, vegetable oil, olive oil, nut oils, ghee, cream. | These are good sources of energy and contain fat-soluble vitamins. |
| **Fruit and vegetables** | These are a good source of vitamins, minerals and fibre. They are not usually good sources of protein or energy. |
| **Water** | Fluids are essential to health and all body cells need water to function. Children can keep hydrated by drinking plenty and by eating fruit and vegetables. If your child is being sick or has diarrhoea, then they may become dehydrated so extra fluids are important. |

# Helping your child to eat when their appetite is poor

## 'My child doesn't feel hungry'

A poor appetite is a common problem for children having treatment and, for some, even before starting treatment. Many children find that they don't know what they want to eat which can make many parents feel frustrated and stressed.

If your child's appetite is poor then they may start to lose weight so children are encouraged to eat plenty of high-calorie, high-protein foods. Fat is a rich source of energy so eating lots of high-fat and sugary foods such as burgers, chips, ice cream, cakes and biscuits can be helpful.

This may seem strange at first as it seems to go against healthy eating advice but it is simply that increasing calories is more important at this stage – nutrients and vitamins can be given in other ways.

## What can I do?

- Try offering small meals and snacks throughout the day so they have something small to eat or drink every 2-3 hours during the day. Many children find this easier than sticking to their usual three meals. Always keep snacks handy (see pages 13-14 for ideas on snack foods).
- Make the most of when your child's appetite is at its best. For many, this is in the morning. Try some of these breakfast ideas: porridge, pancakes with syrup or jam, yoghurt and fruit, bacon and eggs, hash browns, sausages, beans or spaghetti hoops on toast, omelette, scrambled eggs, cheese on toast. Remember, there is no need to stick to traditional breakfast foods, why not try sandwiches, custard or cakes and biscuits instead?
- Avoid filling your child up with low energy, bulky foods such as clear soups, vegetables and fruit. Add exra protein and energy by mixing in extra milk, cream, oil, nut butters (for more ideas, see page 12).
- Encourage drinks between meals and avoid letting your child 'fill up' on drinks just before a meal.
- See if your child will try nutritional supplement drinks which are available on prescription (see page 36).
- Ask friends and family to help with preparing food or cooking meals.

## Mealtime tips

- Sometimes mealtimes can be hard work leaving you and your child exhausted. Many children with poor appetites eat very slowly. Limit mealtimes to no longer than twenty minutes. After this time it is unlikely that they are going to eat any more. Concentrate on what they have eaten rather than what they haven't eaten at that mealtime.

- Don't force your child to eat, sometimes they just don't feel hungry. Wait a while and try a snack or nutritional supplement drink later.

- Even though it can be frustrating, try not to argue or nag too much about food. If mealtimes are becoming a battle or food and diet is causing you to feel stressed, speak to your child's dietitian, nurse or doctor for extra advice and support.

- Try to include the family at mealtimes and aim to eat at the same time as your child. This can help take the focus off eating and make mealtimes a social occasion.

- Don't put too much food on the plate and try a small plate - an overfull plate can be off-putting. They can always come back for second helpings.

- Encourage your child to be involved in choosing and preparing their food. Limit their choice to 2-3 different foods or snacks. Having too much choice can be overwhelming.

## Making food fun to keep children interested

Most children enjoy cooking and decorating biscuits and cakes. Making your own pizza or homemade milkshakes and smoothies can also be fun.

Many children enjoy eating out in cafés or restaurants. If you can't go out, why not have a 'pretend' restaurant at home? Use a tablecloth and write a menu. Use straws and ice for drinks. You could even serve your own version of a children's takeaway meal!

## Invite a friend over for tea

Picnics can be fun either outdoors or on the floor in your home. Ask your child to decide on what you should all eat.

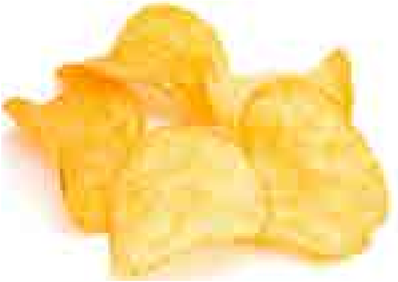
Some children, especially younger children, enjoy having food that has been arranged on their plates, for example, making a face from fish fingers, chips, tomatoes and peas or sandwiches cut into funny shapes.

# How to add extra calories and protein to food

If your child is not eating enough or is finding it difficult to maintain their weight, it might help to add extra energy (calories) and protein to their diet. Here are some ideas:

- Use full cream milk to drink, with cereals and in cooking.
- Choose full-fat foods wherever possible. These may be labelled as 'luxury' or 'thick and creamy'. Avoid foods labelled as 'light', 'lite', 'diet' or 'low fat'.
- Add extra butter, margarine, or oil to bread, potatoes, sweet potatoes, pasta, rice, chapattis, rotis, noodles, and cooked vegetables.
- Add a generous amount of nut butter (for example, peanut butter), cream cheese, honey, chocolate spread, lemon curd, jam, or marmalade on bread, toast, crackers or biscuits.
- Add mayonnaise or salad cream to sandwiches and jacket potato fillings, and salads. Try them as a dip for crisps or chips.
- Add lentils and beans to soups and casseroles.
- Add extra cheese to pizza, sauces, soups, pasta and vegetables.
- Add extra paneer to curries.
- Add cream, sour cream, plain yoghurt, mascarpone cheese or crème fraiche to sauces, soups and meat dishes.
- Add cream to porridge, custard and other milk puddings.
- Add golden syrup, nuts, seeds, dried fruit, jam or chocolate spread to porridge and milky puddings.
- Serve cream, evaporated milk, ice cream, or custard with cakes and desserts.
- Ask the dietitian about energy supplements that can be added to foods (see page 36 for more information).

# Ideas for high calorie savoury snacks and quick meals



- Crisps, nuts, corn chips, dips, olives.
- Oven or microwave chips with dips or ketchup.
- Oven-baked potato shapes such as waffles with dips or sauce.
- Snacks on toast, for example, cheese, beans, tinned spaghetti shapes.
- Breadsticks, cheese sticks and cheese dip.
- Cheese slices, cheese spread triangles, cheese and crackers, cheese strings.
- Slices of pizza, sausage rolls, pork pie, pasties.
- Sandwiches – experiment with the fillings. Try them toasted!
- Spicy sausages, cocktail sausages.
- Jacket potatoes with beans, cheese, tinned tuna, chilli
- Omelettes, scrambled eggs.
- Samosas, pakoras, onion bhaji, poppadums with chutney and raita.
- Mini spring rolls, sesame toast, dim sum (meat or vegetarian), satay (chicken, meat or vegetarian), prawn or vegetable crackers with sweet chilli sauce.
- Fried dumplings/bakes with ackee and saltfish or fried plantain chips, flour chips, patties, pulori, doubles, bun and cheese.
- Houmous with carrot sticks or taramasalata and pitta bread, falafel.
- Fish fingers, fish pie, fishcakes, chicken nuggets.
- Savoury rice, instant noodles.
- Pasta with sauce: pesto, cheese (macaroni cheese), bolognese and creamy tomato.

## Ideas for high calorie sweet snacks and puddings

- Muffins, crumpets (sweet or savoury topping), fruit buns, toasted teacakes, scones, Scotch pancakes.
- A slice of cake or a cake bar, flapjack, chocolate caramel slice, doughnut, Danish pastry, biscuit.
- A bowl of breakfast cereal.
- Croissants, brioche and other breakfast pastries.
- Toast and butter with jam, honey, marmalade, marmite, lemon curd, chocolate spread, peanut butter or cheese.
- Tamarind balls, coconut drops.
- Chocolate
- Homemade drinks e.g. milky coffee, hot chocolate, milkshake, smoothie, lassi, carrot juice.
- Sweets e.g. fruit jellies, marshmallows, fruit pastilles.
- Readymade milkshakes and yoghurt drinks.
- Mousse, whipped desserts such as Angel Delight, ready made chocolate desserts and trifles.
- Milk puddings such as rice pudding and custard (hot or cold).
- Fruit jelly and purées.
- Ice cream, sorbet, choc ices, ice lollies.
- Yoghurts such as fromage frais, Greek-style, thick and creamy or full-fat.
- Cheesecake, cream cakes, vanilla slices.
- Pancakes with fruit, ice cream, maple syrup or chocolate spread and chopped bananas.

# Problems that may affect your child's ability to eat

## 'My child feels sick'

Your child may feel sick or actually be sick, which can happen for many reasons that might be down to the cancer itself, treatment or your child's medication.

### What can I do?

- There are many anti-sickness (anti-emetic) medicines available. Ask your child's doctor or nurse which would be most suitable.
- Avoid strong smells as they often make sickness worse. Avoid stuffy rooms; fresh air can help to get rid of stale cooking smells.
- Cold food or food at room temperature usually smell less than hot foods – for example, offer tinned fruit, biscuits, dry toast, yoghurt, cereal or ice cream.

- Encourage your child to eat and drink slowly.
- Try to get your child to eat small amounts of food throughout the day, little and often, rather than having large meals. See if your child could try chilled nutritional supplement drinks. (See page 34).
- Sucking boiled sweets, fruit sweets, mints, or ice-lollies may help. Dry toast or ginger biscuits may help settle your child's stomach.
- Some children find sipping fizzy drinks such as ginger ale, cola, or fizzy water helpful.
- Avoid very greasy foods as they can make sickness worse.

## 'My child has a sore throat or mouth'

A sore mouth and throat (mucositis) is a common side effect of chemotherapy and radiotherapy which can make it hard for your child to eat or swallow.

### What can I do?

- If your child has a sore mouth or throat, contact their doctor or nurse who can give medicine to help such as sprays or mouthwashes.
- Choose soft food, for example, shepherd's pie, fish pie, macaroni cheese. It may help to use extra sauces and gravy on food.
- Avoid very hot food and drinks; try warm, cool or frozen food and drinks to see which temperature is most comfortable.

- Rough or sticky food can also be hard to eat. Whilst your child has a sore mouth or throat, they might find it easier to avoid food such as crisps, bread, crispbread, peanut butter and doughnuts. Have yoghurt, mousses, ice cream and powdered desserts such as Angel Delight instead.
- Salty, acidic and spicy food will irritate sore areas. Avoid food such as curry, chillies, pepper, tomato sauces, oranges and other citrus fruits, fruit juices and sharp tasting fizzy drinks, vinegar, and crisps.
- If your child's mouth is very sore, try blended (liquidised) food or creamy soup.
- Encourage your child to drink nutritional supplements and milkshakes (see pages 33-37).

## 'My child has a dry mouth'

Radiotherapy, some chemotherapy drugs, and painkillers can cause a dry mouth. This can affect taste buds and can also increase the risk of tooth decay and also mouth infections such as oral thrush.

### What can I do?

- Ask your child's doctor or nurse about mouthwashes and medication that can help lower the risk of getting thrush. Artificial saliva and pastilles are available and can help with a dry mouth.
- Offer sips of cool drinks to help moisten your child's mouth. It will help if those drinks contain energy or protein, for example, milkshakes, milk, fizzy drinks, fruit juices and fruit

squash (hot or cold). Crushed ice, ice-lollies, or flavoured ice cubes to suck can help.

- Choose soft moist foods that have sauces, gravy, custard or cream.
- Avoid sticky, chewy or dry foods such as bread, cold meat, chocolate.
- Some children find sucking sweets, sugar free chewing gum or eating citrus fruits helps. Take care with strong, citrus flavours and salty foods if your child's mouth is sore.

## 'My child's sense of taste has changed'

Most children suffer from taste changes during their treatment. This can be due to chemotherapy, radiotherapy, medication and sometimes the cancer itself. A dry mouth can also affect taste buds. For some children, their sense of taste returns to normal a few weeks into treatment, some after treatment, and for a few it takes a little longer before foods taste pleasant again.

### What can I do?

- Ask your child's doctor or nurse about mouth care, especially if the mouth and tongue looks coated or if the saliva seems thicker than normal.
- Many children prefer strong tasting savoury foods such as ham and cold meats, spicy sausages, crisps, marmite.
- If your child finds that red meat has a metallic taste, try chicken, fish, eggs, cheese, beans or pulses instead.
- Try highly-flavoured herbs and spices, marinades, sauces and pickles to flavour foods.

- If your child dislikes the flavour of salty food, try offering more sweet food instead.
- If there is a horrible taste in the mouth all of the time, try getting your child to suck fruit sweets or mints to mask the taste. Strong tasting drinks are sometimes helpful too.
- Concentrate on food that your child can taste and enjoy. The taste changes tend to come and go. Many children stick to a few things for a few days or weeks because they taste best. Don't worry too much but if your child is avoiding many different types of food, ask to see a dietitian for more advice.

## 'My child has diarrhoea'

This can happen because of cancer treatments, certain medicines such as antibiotics as well as a stomach bug. Uncontrolled diarrhoea can lead to weight loss, dehydration, poor appetite, and weakness.

### What can I do?

- Talk to your child's doctor or nurse who will try to work out the cause of the diarrhoea and give any necessary medicine.
- Encourage your child to drink plenty of fluids throughout the day. Fluids include milk and milkshakes, fruit juices, soup, custard and jelly as well as tea, coffee and water. Ask for advice on how much fluid your child should drink.
- Look out for the symptoms of dehydration. These include mouth dryness, dizziness, passing urine less often or passing small amounts of dark coloured urine.
- Try to get your child to eat small amounts of food and snacks

instead of big meals (see page 8 for ideas about snacks) to help your child's stomach and intestines recover.

- Cut down on high-fibre foods such as dried fruit, baked beans and lentils as these can make poos looser.
- Ask the dietitian, doctor or nurse if your child needs to avoid any specific foods or if you are concerned in any way.

## 'My child is constipated'

Constipation may be due to your child's cancer, treatment or medication such as painkillers. Many children feel sick and go off their food when they are constipated.

### What can I do?

- Talk to your child's doctor or nurse who will try to work out the cause of the constipation and give any necessary medicine, such as laxatives.
- Ask your child's doctor, dietitian or nurse how much fluid they should be aiming to drink each day so that you can make sure your child has the right amount.
- Make sure your child drinks plenty of fluids throughout the day as this helps to keep your child's poo soft and easy to pass.
- Encourage your child to be active as this helps to keep the bowel moving.
- A high-fibre diet (roughage) might not help if the constipation is due to medicines or treatment. Please speak to your child's dietitian, doctor or nurse to see if increasing the fibre in their diet would be useful. Sometimes, a high-fibre diet can make children feel bloated and windy.

# ‘What if my child can’t eat enough?’

# ‘My child is still losing weight, what should I do?’

For some children, it can be very difficult to eat enough and maintain their weight. Parents can become worried and stressed with trying to coax their child to eat by desperately trying to find food that they want to eat. In these cases, your child’s dietitian would usually recommend **nutritional support** as a way of supporting your child so that they can still get the vitamins and nutrients they need. This can be through a number of different ways:

## Dietary supplements

These can be taken between or after meals to give your child additional nutrition above what they are able to eat. The supplements recommended will depend on your child’s taste preferences and age (see pages 34-37 for more information).

## Tube feeding

If your child continues to struggle with their eating, is losing weight or is not able to take the supplement drinks, then your child's dietitian may advise that your child starts tube feeding.

Some parents feel upset about taking this step but tube feeding is very common and for some treatments or certain types of cancer, nearly all children will need tube feeding at some point. It is certainly not your or your child's fault but simply comes down to the side effects of treatment.

**The two main types of tubes used are nasogastric and gastrostomy:**

- **Nasogastric tube (NG)** is a thin, soft tube that goes down the nose and into the stomach
- **Gastrostomy tube (PEG)** is a feeding tube which is surgically placed directly into your child's stomach

The dietitian will discuss the best type of feeding tube for your child. The feeds put through the tubes are all nutritionally complete with the right calories, protein, vitamin and mineral intake for your child. Feeding tubes can also be used for extra water and medication which is useful for a lot of children. Hospital staff will teach you how to give the feeds so you can continue to give them safely at home.

Often when tube feeding is started, families and patients find that they feel less stressed around food and mealtimes, and parents are no longer 'nagging' their child to eat. Many parents feel a sense of relief that this pressure has been lifted in the knowledge that their child is still having food but in a different way.

## Intravenous feeding (PN)

Occasionally, it is not possible to give extra nutrition through a feeding tube. In these cases, **intravenous nutrition** or **parenteral nutrition** (TPN or PN) is a specialist form of nutrition given via your child's central line (Hickman or Portacath).

It is usually only available in your child's main treatment hospital and is not available for home feeding. PN is given when a child's tummy needs a rest for a while usually because of sickness or diarrhoea. The PN will provide energy, protein, vitamins and minerals. Blood levels need to be closely monitored when a child is receiving PN.

# Helping your child when they are eating too much

## 'My child is always hungry. What can I do?'

When children are given high doses of steroids (such as prednisone or dexamethasone) as part of their treatment, they can develop a big appetite and feel hungry all the time. This constant craving for food even during the night can be difficult to manage and can cause frustration and stress at home. Children on steroids often gain weight quite quickly but it is worth remembering that some of this weight is fluid.

To limit fluid retention and excess weight gain, plan meals and snacks that are filling but are not high in calories or salt. Starchy foods such as bread, potatoes, rice and pasta are great to fill up on as well as plenty of fruit and vegetables. Portion sizes and how the food is prepared or cooked, such as grilling instead of frying, can also help. As some children feel hungry all of the time, keep the portions at mealtimes smaller but have more 'filling' snacks throughout the day.

When children stop taking steroids, most have a drop in appetite and often lose the weight they have gained. If your child will be having steroids for a while, it is a good idea to try and monitor excess weight gain, if possible, to avoid weight loss issues further down the line, particularly for teens.

Constant hunger and overeating is a common problem for children taking steroids, and hospital staff have lots of experience and knowledge in how to deal with it. If you are concerned in any way, please do talk to your doctor, nurse or dietitian as they can offer help and advice on how to manage appetite at home or may assess your child's steroid dosage to see if it can be reduced.

Our factsheet 'Dexamethasone' is available free of charge from your child's hospital or online at **www.cclg.org.uk/publications**

Physical activity helps to use up extra energy too as well as building up strength and stamina. It can also help in lots of other ways such as emotional wellbeing, reducing sleep problems and constipation. Our booklet 'Keeping active during and after treatment' is available free of charge from your child's hospital or online at **www.cclg.org.uk/publications**


CANCER DRUGS FACTSHEET

Dexamethasone

What is dexamethasone?

Keeping active during and after treatment

# Common questions from parents

## ‘Are there foods my child should avoid?’

When your child is ill or having treatment, they can be more at risk of getting infections such as food poisoning. It is best to avoid the following items:

- Raw or lightly cooked eggs (choose eggs with the ‘Lion Mark’)
- Pâté
- Cheese made from unpasteurised milk, mould-ripened cheeses such as brie and camembert and blue cheeses such as stilton and gorgonzola. Avoid unpasteurised milk.
- Raw and undercooked meat
- Raw shellfish (well-cooked shellfish are safe to eat)

Good food hygiene is also important. You can find further information on the NHS Choices website. The Food Standards Agency publishes the food hygiene ratings for restaurants and cafes in England and Wales.

If your child is having a stem cell or bone marrow transplant, they may be advised to avoid other foods as well. Check with the dietitian, doctor or nurse.

## ‘My child eats the same thing every day. Should I be worried?’

This is very common and is usually because the child has taste changes or other treatment side effects. Many children stick to ‘safe foods’ that they know taste ok or don’t make them feel sick. This tends to go in phases and usually improves over time. If you are concerned, ask the dietitian to check if your child is getting all the nutrients that they need.

## ‘I can’t get my child to eat fruit or vegetables’

Try to serve some fruit or vegetables with each meal or snack to help keep up the routine of eating fruit and vegetables. For example, add a spoonful of peas and some grated carrot to a pasta sauce, place a few slices of cucumber next to a sandwich or make ‘fruit kebabs’ for pudding. Fruit juices, homemade milkshakes and smoothies are also a useful way of including fruit in the diet.

## 'I'm worried about giving my child lots of junk food'

All food has some nutritional value, even fast foods or 'junk food'. Burgers, fries and pizzas are all high in energy and contain some protein, vitamins and minerals. Many children like how these foods taste, as they are usually highly flavoured and salty. As your child's appetite improves, and they feel better, encourage them to eat a wider variety of food.

Try involving your child in food preparation at home and add extra flavouring to make food more tempting. If you are worried, ask the dietitian to check their diet.

## 'Should I give my child a vitamin or mineral tablet?'

If your child is eating a varied diet, they probably don't need to take a vitamin or mineral supplement. However, if their appetite is poor or their diet is limited, always ask your child's dietitian, doctor or pharmacist for advice as supplements can be given if your child has a known deficiency, for example, vitamin D. Many nutritional supplement drinks contain vitamins and minerals.

It is important to know that some vitamins, herbs and minerals can be harmful as they can interfere with the medicines your child is taking so they can become less effective or increase side effects. Even vitamins like A, C and E in excess can cause harm by interacting with chemotherapy or radiotherapy.

## 'What is the difference between a registered dietitian and a nutritionist?'

Your child's hospital team will include a qualified specialist paediatric dietitian who will assess your child's nutritional intake, monitor their nutritional status throughout treatment and make sure that the right nutritional support is given.

All dietitians who work in the NHS are registered with the HCPC (Health Care Professions Council) which is a regulatory body that aims to protect the public from unprofessional or unethical behaviour. It also makes sure that dietitians are competent and that their advice about diet is based upon sound scientific evidence.

Nutritionists, nutritional therapists, or nutrition consultants do not have the same qualifications and are not regulated or nationally registered. This means that they have had varied training and may lack specialist expertise in children and cancer. In some circumstances, the advice they give may be linked to selling nutritional products, such as vitamins and mineral supplements, which can be expensive and even harmful.

## ‘Anti-cancer’ diet mythbuster

You may come across a number of diets online or in the media that claim to treat cancer. However, there is no medical evidence that such diets can cure or help patients with cancer; and some can even interfere with medical treatment. They are quite often difficult to follow, are low in energy and may cause weight loss.

Eating well with plenty of calories and nutrients to boost energy and maintain weight is essential for children having cancer treatment. It is important to talk to your child’s doctor or dietitian before starting on any new diet or nutrition plan so they can discuss any likely effects on your child’s condition.

**Many parents have asked the following questions:**

### ‘Should my child eat an organic diet?’

Some studies have shown that organic fruit and vegetables may have increased levels of some vitamins and minerals and less contaminants. However, there is no evidence that organic foods are better for cancer patients. All fruits and vegetables, whether they are organic or not, should be washed thoroughly before eating.

### ‘Does sugar feed cancer?’

Glucose is the main fuel for all the cells in our bodies but most cancer cells use up more glucose than normal cells. Cutting out sugar does not mean that the cancer cells will die as we can also get glucose from carbohydrates such as bread and pasta, milk and even from fruit and vegetables. Some cancer cells can also adapt to changes in the availability of glucose.

If we don’t have enough glucose in our blood, our bodies will ‘make’ glucose from other nutrients such as protein or break down muscle and fat stores to provide this energy. Our bodies don’t choose which cells get what fuel so the glucose we eat goes to whichever body tissues and cells need them, even cancer cells. We have carefully regulated blood sugar levels and our bodies will not allow blood sugar levels to get low enough to ‘starve’ a cancer cell. Cutting carbohydrates out of your child’s diet means a loss of energy and other important nutrients such as fibre, vitamins and minerals.

## ‘Should my child avoid milk and dairy products?’

Milk and dairy products are an important part of a child’s diet as they provide energy, protein, calcium and some vitamin D. Milk substitutes such as soya milk, oat milk and almond milk are much lower in energy and protein, and don’t naturally contain much calcium. If your child has cut out dairy foods from their diet, please speak to the dietitian about the best milk substitute to use.

There has been some concern that dairy products can cause cancer in adults but research hasn’t proven this link. In fact, there is some evidence that dairy products can protect against certain cancers. Some people are concerned about the presence of growth factors in milk. Unlike in the USA, these growth factors are naturally occurring and are mainly destroyed by our own digestion. They cannot bind to cancer cell receptors in the same way as human growth factors. For further information about nutrition and cancer claims in the media please see the Cancer Research UK website or the Behind the Headlines section on NHS choices.

## Nourishing and supplementary drinks

There are many different nutritional supplement drinks and powders on the market. Some are available to buy from supermarkets or chemists, others are available on prescription. They are very useful if your child isn't eating well or has lost weight. There are many types and flavours to choose from, so it should be possible to find one that your child will like. Some of the supplements are not suitable for very young children. Always check with your child's dietitian, nurse or doctor before starting your child on supplementary drinks.

### Homemade drinks

Making your own high energy and protein drinks at home can be relatively easy and fun to make. You can use full fat milk, milkshake powders and syrups, fresh or tinned fruits, yoghurts or ice cream to make nutritious drinks for your child. Using a blender can help to make them smooth. By mixing different fruits and yoghurts together, you can make some new, unusual flavours that might appeal to your child.

### Drinks available to buy

There are lots of different milkshakes, yoghurt drinks and smoothies available to buy in supermarkets. These can be high in energy and some can also contain protein. Don't forget to try hot drinks too such as hot chocolate, Horlicks and Ovaltine; these are all high in energy.

You can also buy high energy, high protein powder drinks from chemists and supermarkets, for example, Meritene, Complan and Nutriment. They are available as neutral, sweet and soup-flavoured drinks. They are made with either milk or water and can be served hot or cold. You can add ice cream to make a thick milkshake too.

## ‘Nutritionally complete’ supplementary drinks

Your child’s doctor or dietitian may prescribe ‘nutritionally complete’ drinks that give extra calories, protein, vitamins and minerals in a milkshake-type drink, yoghurt drink or juice. These are available in a variety of flavours and are taken as well as food. It is best to offer them between meals and try to get your child to eat something small at mealtimes. The dietitian will recommend how many drinks your child needs to take each day. The following are some examples of drinks that are available.

### Milkshake-type drinks

There are a wide range of flavours with most available in small, easy to hold plastic bottles. There are a few products specifically designed for young children, for example, Paediasure Plus, Fortini and Frebini.

### How to use:

- The sweet-flavoured drinks are best served cold or poured over ice.
- The chocolate-, coffee- or vanilla-flavoured drinks can be warmed (do not boil).
- Mix sweet- or neutral-flavoured supplements into homemade milkshakes and smoothies.
- The yoghurt-flavoured drinks are best served chilled.

## Homemade milkshakes: what to include?

- Milk (add 1-2 tablespoons of skimmed milk powder which gives extra protein)
- Fresh, tinned or frozen fruit: bananas, berries and readymade smoothie mixes work well
- Yoghurt
- Ice cream
- Whipped or ‘squirty’ cream
- Chocolate flakes or sprinkles
- One tablespoon of peanut butter or other nut butters
- Oats and seeds can add extra texture and minerals

### Juice/squash flavoured drinks

These are non-milky and have a similar taste to squashes or cordials, for example, Paediasure Plus Juce, Fortini Smoothie. They are also available in a variety of flavours. These are best served chilled or even frozen. If your child finds the texture a bit too thick, add some fizzy drinks or fruit juice to dilute them slightly.

## Energy supplements

Your child's doctor or dietitian may also recommend and prescribe extra calories through energy supplements. These are available as liquids or powders and your child's dietitian will give advice on how much to use each day.

### Glucose polymer powder

These are highly soluble, tasteless powders that dissolve easily in liquids and most soft foods. For example, Maxijul, Vitajoule, Polycose.

### How to use them in food and drinks:

- Add three heaped tablespoons of powder to 550ml (one pint) of water. Stir and leave to dissolve, warming gently if necessary. Use it to dilute fruit squash, add to packet soups, gravies, sauces, or jelly.
- Add three heaped tablespoons of powder to 550ml (one pint) of full cream milk. Use this to make drinks, puddings, sauces, and soups.
- Add three heaped teaspoons of powder to all nourishing drinks, tea, coffee, hot milky drinks, cold milk, fruit juice, squash, fizzy drinks and hot savoury drinks.

- Add two tablespoons of powder to a bowl of breakfast cereal, milk pudding, custard, yoghurt, tinned or stewed fruit.
- Add two teaspoons of powder to a bowl of soup, mix into baked beans, pasta, stews and casseroles, sauces or mashed potato.

### Glucose liquid

These are glucose drinks, available in fruit flavours and neutral. Examples include Polycal, Maxijul Liquid and Calsip.

### How to use them:

- Mix equal amounts of the liquid with still or fizzy water, fruit juice or fizzy drinks, such as lemonade or cola.
- Make ice cubes or ice-lollies by mixing two-thirds of the drink with one-third of water. Pour into an ice cube tray or lolly mould and freeze.

The manufacturers of nutritional supplements have a wide range of recipe ideas and advice on using their products. Ask your dietitian for some recipe ideas for the nutritional supplements.

We hope this booklet has answered some of your questions and our suggestions have been helpful.

**If you need more help or advice, please ask to see your child's dietitian who can give an evidence-based personalised nutrition plan for your child.**

# Contact list

Dietitian's name: ..............................

Direct telephone number: ..............................

Office location: ..............................

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Notes and questions: ..............................

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# Sources of information and support

### Eating well with neutropenia: A guide for people with blood cancer

(2017) Published by Bloodwise, **www.bloodwise.org.uk**

### Food Standards Agency

The FSA provides information to the public and government on food safety. It has a useful section where you can check the food hygiene rating of catering outlets across the UK. They also have a useful 'scores on the door' app for finding food hygiene ratings.

**www.food.gov.uk**

### NHS Choices

A wide range of nutrition and diet information and advice, including guidance on healthy eating, budget shopping, food safety and the nutritional requirements of children and adults.

**www.nhs.uk/livewell/goodfood**
**www.nhs.uk/news/food-and-diet**

### CCLG Parents and Carers Group

Post a message to our closed Facebook group for help and advice from other parents and experts.

**www.facebook.com/groups/892551090944185**

Children's Cancer and Leukaemia Group | the EXPERTS in CHILDHOOD CANCER

**Children's Cancer and Leukaemia Group (CCLG) is a leading national charity and expert voice for all childhood cancers.**

Each week in the UK and Ireland, more than 30 children are diagnosed with cancer. Our network of dedicated professional members work together in treatment, care and research to help shape a future where all children with cancer survive and live happy, healthy and independent lives.

We fund and support innovative world-class research and collaborate, both nationally and internationally, to drive forward improvements in childhood cancer. Our award-winning information resources help lessen the anxiety, stress and loneliness commonly felt by families, giving support throughout the cancer journey.

If you have any comments on this booklet, please contact us. CCLG publications on a variety of topics related to children's cancer are available to order or download free of charge from our website.

Children's Cancer and Leukaemia Group
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Clinical Sciences Building
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Leicester LE2 7LX

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