



# Nutrition and Cancer

A guide for people with cancer,  
their families and friends

Practical  
and support  
information

For information & support, call

**13 11 20**



## **Nutrition and Cancer**

A guide for people with cancer, their families and friends

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## **Note to reader**

Always consult your doctor about matters that affect your health. This booklet is intended as a general introduction to the topic and should not be seen as a substitute for medical, legal or financial advice. You should obtain independent advice relevant to your specific situation from appropriate professionals, and you may wish to discuss issues raised in this book with them.

All care is taken to ensure that the information in this booklet is accurate at the time of publication. Please note that information on cancer, including the diagnosis, treatment and prevention of cancer, is constantly being updated and revised by medical professionals and the research community. Cancer Council Australia and its members exclude all liability for any injury, loss or damage incurred by use of or reliance on the information provided in this booklet.

## **Cancer Council**

Cancer Council is Australia's peak non-government cancer control organisation. Through the eight state and territory Cancer Councils, we provide a broad range of programs and services to help improve the quality of life of people living with cancer, their families and friends. Cancer Councils also invest heavily in research and prevention. To make a donation and help us beat cancer, visit [cancer.org.au](http://cancer.org.au) or call your local Cancer Council.



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# Introduction

This booklet has been prepared to help you understand more about nutrition, and to provide information about eating well during and after cancer treatment.

We have included tips on ways to manage common eating problems, plus recipes to make at home. We cannot give advice about the best diet for you. You need to discuss this with your doctors, nurses and dietitians. However, we hope this information will answer some of your questions and help you think about other questions to ask your treatment team or dietitian.

This booklet does not need to be read from cover to cover – just read the parts that are useful to you. Some terms that may be unfamiliar are explained in the glossary. You may also like to pass this booklet to your family and friends for their information.

## How this booklet was developed

This information was developed with help from a range of health professionals and people affected by cancer. It is based on a number of references, including the National Health and Medical Research Council's *Australian Dietary Guidelines*.<sup>1</sup>

If you or your family have any questions, call Cancer Council **13 11 20**. We can send you more information and connect you with support services in your area. Turn to the last page of this book for more details.



**Cancer  
Council  
13 11 20**

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# Why eating well is important

Eating well has many benefits for your health and wellbeing. It helps you have more energy and strength, helps you achieve or maintain a healthy weight, improves mood and helps prevent or reduce the risk of some conditions, such as cardiovascular disease, type 2 diabetes and even some cancers.

## What should I eat?

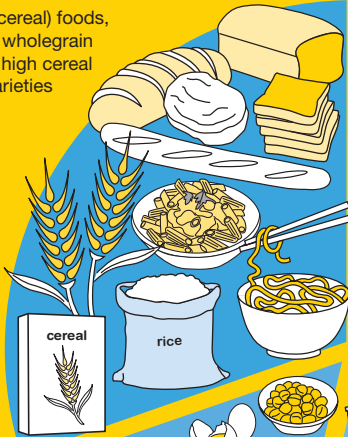
The *Australian Dietary Guidelines* provide general information about what you need to eat and how much. They were developed by the National Health and Medical Research Council (NHMRC). The guidelines include five key principles:

- Achieve and maintain a healthy weight by being physically active and choosing amounts of nutritious foods and drinks to meet your energy needs.
- Enjoy a wide variety of nutritious food from the five food groups every day: plenty of vegetables of different types and colours, and legumes/beans; fruit; grains, mostly wholegrains, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley; lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans; and milk, yoghurt, cheese and/or alternatives, mostly reduced fat.
- Limit your intake of alcohol and food containing saturated fat, added salt and added sugars.
- Encourage and promote breastfeeding.
- Care for your food; prepare and store it safely.

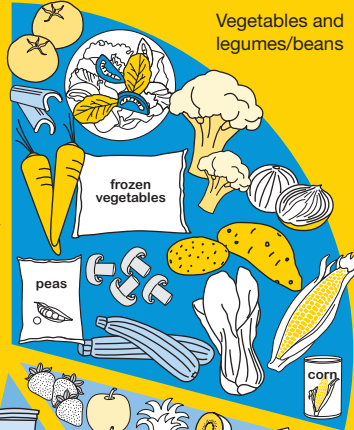
For more information about the guidelines, see [eatforhealth.gov.au](http://eatforhealth.gov.au).

# Healthy eating from the five food groups

Grain (cereal) foods,  
mostly wholegrain  
and/or high cereal  
fibre varieties



Vegetables and  
legumes/beans



Lean meats and  
poultry, fish, eggs,  
tofu, nuts and seeds  
and legumes/beans



Milk, yoghurt, cheese and/or  
alternatives, mostly reduced fat



Fruit



Drink plenty  
of water



Use small amounts



Only sometimes and in small amounts

Based on the National Health and Medical Research Council's  
Australian Guide to Healthy Eating diagram.

## Move more

Being physically active is important for health and wellbeing. Any activity that gets your body moving and speeds up your breathing and heartbeat can help you achieve or maintain a healthy body weight, improve your mood, and help prevent some conditions, such as cardiovascular disease, type 2 diabetes and even some cancers.

*Australia's Physical Activity and Sedentary Behaviour Guidelines for Adults*<sup>2</sup> encourage everyone to move more and sit less. Adults should aim to be active for most, preferably all, days of the week. To find out more, see [health.gov.au/paguidelines](http://health.gov.au/paguidelines).

## Drink less alcohol

Many people drink alcohol to relax and socialise. However, drinking too much may lead to weight gain and increase the risk of cardiovascular disease, some cancers and diabetes. For healthy men and women who choose to drink alcohol, Cancer Council recommends you follow the NHMRC guidelines<sup>3</sup> and limit your intake to two standard drinks a day. For details of standard drink sizes, see [alcohol.gov.au](http://alcohol.gov.au).



Fluids are an essential part of any diet. They allow you to stay hydrated and help your kidneys function. As a general guide, you should aim for at least 8–10 glasses of fluid per day. As well as drinking water, you can get fluid from soups, milkshakes or smoothies, fruit juices, fruit, or ice cubes.





# Nutrition for people living with cancer

Cancer itself and cancer treatment place extra demands on your body. Nutrition and exercise will help you cope better.

## How good nutrition can help

Research suggests that eating well benefits people during and after cancer treatment. It can help to maintain muscle strength, maintain a healthy weight and have more energy, all of which can improve your quality of life. Good nutrition can also help to:

- manage the side effects of treatment and speed up recovery
- heal wounds and rebuild damaged tissues – this is important after surgery, radiotherapy, chemotherapy or other treatment
- improve your body's immune system and ability to fight infections
- reduce the risk of cancer coming back.

## How exercise can help

According to research, exercise helps most people during and after cancer treatment. Being active may:

- strengthen your muscles and bones
- reduce your risk of developing new cancers and other health problems
- improve your circulation and energy levels
- reduce stress and improve your mood
- manage fatigue, a common side effect of many treatments.

Check with your doctor before starting an exercise program, or see a physiotherapist or exercise physiologist to develop an exercise plan that suits your situation. For more details, call Cancer Council 13 11 20 for a copy of the *Exercise for People Living with Cancer* booklet, or download a digital version from your local website.

## Key nutritional needs of each treatment phase

During cancer treatment and recovery, you need to adapt what you eat to cope with your body's changing nutritional needs.



### During treatment

- You may need more energy (kilojoules/calories). Eat small, frequent meals or snacks, rather than three large meals a day. For snack suggestions, see page 45.
- If you start to lose weight, see pages 36–37 for practical suggestions on gaining weight. Ask for a referral to a dietitian if weight loss is an ongoing and significant issue.
- Do some light physical activity, such as walking, to improve appetite and mood, reduce fatigue, help digestion and prevent constipation.
- Check with your doctor or dietitian before taking vitamin or mineral supplements or making other changes to your diet.



### After treatment

- Try to maintain your weight to speed up recovery.
- Eat a variety of foods and do some physical activity to rebuild muscles and recover from treatment side effects.
- If you are still experiencing treatment side effects that impact on what you can eat and drink, continue to follow the relevant suggestions in the *Treatment side effects and nutrition* chapter (see pages 14–30). You can also talk to a dietitian for further assistance.



## Recovery

- Focus on healthy eating once you've recovered from the side effects of treatment. See pages 4–5 for details on the *Australian Dietary Guidelines*.
- Maintain a healthy weight and be physically active to help lower the chance of cancer coming back. See page 6 for information on Australia's physical activity guidelines for adults.
- See your doctor for regular check-ups.
- Contact Cancer Council **13 11 20** for a free copy of *Living Well After Cancer*, or download a digital version from your local Cancer Council website.



## Living with advanced cancer

- Good nutrition can help improve quality of life.
- Adjust your food choices and eating patterns to meet your changing nutritional needs.
- Talk to your doctor about medicines suitable for boosting your appetite.
- Relax dietary restrictions, e.g. choose full-cream rather than low-fat milk.
- Consider using nutritional supplements if you can't eat enough. Discuss options with your doctor, palliative care specialist or dietitian.
- See the *Nutrition and advanced cancer* chapter (pages 42–43).

## Good oral health

Before treatment starts, see your dentist to check the health of your teeth and to identify any problems early.

This check-up is especially important if you are having radiotherapy to the head or neck, as radiation can affect your teeth and gums.

Chemotherapy and bisphosphonates can also cause mouth and dental problems, especially if you already have poor dental health.

Your doctor or dentist can advise the best way to care for your teeth and mouth before, during and after treatment.

## Common questions

### Q: Can food cause cancer?

**A:** The link between food and cancer is complex. There are many different types of cancer and many different causes of cancer, only some of which are understood. Cancer starts when cells begin to grow out of control. The reason for this change is unknown, but lifestyle and diet can sometimes play a part. Poor eating habits combined with other lifestyle factors (such as smoking, too little exercise, drinking too much, being overweight and too much sunlight exposure) may, over a long period of time, increase the risk of developing some cancers.

### Q: Does excess food feed the cancer?

**A:** Cancer does not grow from eating too much food. Some people think that fasting helps treat cancer, but there's no evidence to support this. Not eating enough can leave you

feeling weak and affect your ability to cope with treatment. The important thing is to try to eat a wide variety of food, and to eat enough to meet your body's needs.

Some people worry that eating food with sugar makes the cancer grow faster. To manage this, they may eliminate all sugar from their diet, but this may mean they miss out on beneficial food such as fruit.

### **Q: Should I avoid processed meats and red meat?**

**A:** Recently, the World Health Organization classified processed meats such as bacon and salami as a Class 1 carcinogen. This means there is a definitive link with cancer, and it puts processed meats in the same category as other causes of cancer such as tobacco, alcohol and ultraviolet radiation. Red meat has been classified as a Class 2A carcinogen, which means it probably causes cancer, but the evidence isn't as strong.

These classifications do not indicate the risk of getting cancer; they describe the strength of the evidence that these foods are linked to cancer.

Cancer Council recommends limiting or avoiding eating processed meats such as bacon and salami. You don't have to stop eating red meat during or after treatment, but limit serves to 65–100 g of lean red meat (e.g. beef, lamb, pork, kangaroo, goat) 3–4 times a week (maximum of 455 g a week). Add extra vegetables to your plate, or try fish, eggs, chicken or legumes (such as chickpeas or lentils) instead of red meat.

## **Q: Is organic food better?**

**A:** Organic farmers and food producers grow and produce food without pesticides or fertilisers. They also don't use genetically modified components or irradiate food. Some people believe it's better to eat organic food because they're not eating extra chemicals in their food.

There is no strong evidence that organic food is better for you, or that it will help you recover faster or reduce the risk of cancer coming back.

Organic fruits and vegetables contain the same vitamins and minerals as conventionally grown produce. However, they can be more expensive to buy. Focus on eating a variety of fruits and vegetables, rather than whether or not they're organic.

## **Q: Should I follow a special diet?**

**A:** People often ask what they should eat after a cancer diagnosis. They may consider changing their diet to help their body cope with the effects of cancer and its treatment, and to give themselves the best chance of recovery.

Some people claim that a particular diet can cure or control cancer on its own. However, there are no special foods, diets or vitamin and mineral supplements that have been scientifically proven to do this. These unproven diets often encourage people to eliminate one or more basic food groups, include large amounts of specific fruits, vegetables or their juices, and to take special supplements.

Unproven diets, particularly those that suggest cutting out whole food groups, are likely to be low in energy (kilojoules/calories), protein, fat, iron, calcium, zinc and vitamins. Following one of these diets can cause unwanted weight loss and tiredness, and lower your immune function. This may make it harder for you to cope with treatment and lead to malnutrition. Unproven diets are often expensive and can prevent you from enjoying social occasions.

Before changing what you eat, following a specific diet, or taking large quantities of vitamins or mineral supplements (see page 40), talk to your doctor or dietitian. They can discuss the advantages and disadvantages of different diets. For more information, or for a copy of Cancer Council's booklet *Understanding Complementary Therapies*, call 13 11 20.

## Juice therapy

Juice therapy involves using fresh fruit and vegetable juice as the main source of food. Supporters claim it improves the immune system, reduces blood pressure and helps to clean out (detoxify) the body.

The health benefits of whole fruits and vegetables are well

known, but the benefits of juice therapy are not. By drinking only juice, you miss out on the fibre contained in whole fruits and vegetables. This may lead to weight loss and malnutrition.

It's best to drink fresh fruit and vegetable juices as part of a healthy balanced diet.



# Treatment side effects and nutrition

Cancer treatments kill cancer cells, but in the process they damage normal healthy cells and cause side effects. These side effects vary from person to person, and depend on the type of treatment, the part of the body treated, and the length and dose of treatment. Most side effects are temporary and go away after treatment ends. There are ways to control and manage side effects.

Some treatment side effects can, in turn, affect what you can eat and how much. These include:

- fatigue
- poor appetite and weight loss
- changes in taste and smell
- chewing and swallowing problems
- dry mouth
- nausea and vomiting
- constipation
- diarrhoea
- other types of bowel irritation
- heartburn.

Feeling anxious about the diagnosis and treatment can also affect your appetite. Talk to a family member or friend, the social worker at the hospital, or your doctor if you are experiencing these feelings.



Call Cancer Council **13 11 20** for free booklets on surgery, chemotherapy, radiotherapy and specific types of cancer, or find digital versions on your local Cancer Council website.



## Treatment and common side effects affecting nutrition

	What it is	Side effects*
<b>surgery</b>	the partial or total removal of a tumour or body part	difficulty swallowing (oesophagus, voice box), diarrhoea (bowel, stomach, pancreatic), incomplete absorption of nutrients
<b>chemotherapy</b>	the use of drugs to kill or slow the growth of cancer cells	loss of appetite, nausea, vomiting, constipation, diarrhoea, mouth sores, taste changes, difficulty swallowing, lowered immunity, fatigue
<b>radiotherapy</b> *depends on area receiving treatment	the use of radiation to kill cancer cells or injure them so they can't grow and multiply	loss of appetite, fatigue, taste changes, nausea, vomiting, diarrhoea, dry mouth, difficulty swallowing, bowel obstruction, mouth sores
<b>steroid therapy</b>	drugs given orally or by injection	increased appetite, weight gain, increased risk of infection, stomach irritation
<b>stem cell transplant</b>	the process of replacing stem cells destroyed by high-dose chemotherapy	lowered immunity, sore mouth and throat, nausea, vomiting, diarrhoea, fatigue, loss of appetite
<b>hormone therapy</b>	drugs that block the hormones that help some cancers grow	weight gain, increased cholesterol levels
<b>targeted therapy</b>	drugs that attack cancer cells while minimising harm to healthy cells	diarrhoea, nausea, vomiting, constipation, taste changes, mouth sores, fever, increased risk of infection

## Fatigue

A common side effect of treatment is feeling extreme and constant tiredness (fatigue) that doesn't improve with rest. Fatigue can be caused by treatment side effects that reduce the number of red blood cells (anaemia) or that affect your appetite.



### How to manage fatigue

- Plan ahead for when you feel too tired to cook. Prepare food in advance and store in the freezer.
- Cook in the morning when you are less likely to be tired.
- Shop online for groceries if you don't have the energy to go to the supermarket.
- Ask and accept offers of help with shopping and cooking from family and friends.
- Do regular exercise to help improve fatigue and appetite.
- Keep snacks such as muesli bars, dried fruit, nuts and crackers in handy locations, e.g. in your bag or car.
- See page 45 for a list of quick snacks you can prepare.
- Use services such as Meals on Wheels or other home delivery meal companies that bring pre-prepared food to you.
- Eat with others to encourage your appetite, particularly if you feel too tired to eat.

“ I was not as active before cancer as I am now. I walk 3–4 times a week. It gives me more energy and helps clear my mind. If I don't do any walking, I really notice the difference in my energy levels and mood. ” *Rima*

## Loss of appetite

You may lose your appetite because of the effects of cancer itself, the treatment, or other side effects, such as feeling sick, not enjoying the smell of food, or feeling upset. This is a common issue for people diagnosed with cancer.



### How to manage loss of appetite

- Eat small meals frequently, e.g. every 2–3 hours. Keeping to a regular eating pattern rather than waiting until you're hungry will mean your body gets the nourishment it needs to maintain your weight.
- Use a smaller plate – a big, full plate of food may put you off eating.
- Eat what you feel like, when you feel like it, e.g. have cereal for dinner or a main meal at lunch.
- Include a variety of foods in your diet as this may help improve your overall intake.
- Sip fluids throughout the day, and replace water, tea and coffee with drinks or soups that add energy (kilojoules/calories), such as milk, milkshake, smoothie or soup. These are also good if you find drinks or soups easier to manage than a meal. See pages 48–51 for recipes.
- Relax dietary restrictions. During treatment, maintaining your weight or regaining weight you have lost is more important than avoiding full-fat and other high-energy foods.
- Gentle physical activity can stimulate appetite, e.g. take a short walk around the block.
- Make meals as enjoyable as possible, e.g. play music, light candles or eat with friends.

## Changes in taste or smell

Some treatments and their side effects can change the way some foods taste or smell. Chemotherapy can change the taste receptors in the mouth. Radiotherapy or surgery to the head, neck and mouth area may damage the salivary glands and tastebuds on the tongue. Food may taste bitter or metallic, or may not have as much flavour as before.

People often say that, “All food tastes the same”, “Food tastes like cardboard”, “Food tastes metallic”, “I no longer like the taste of my favourite food” or “I’ve gone off red meat, chocolate and alcohol”.

It’s common to have taste changes during treatment and for a short time afterward. Sometimes it can take several months for taste changes to return to normal.

If you have a sore mouth, sore throat or swallowing difficulties, talk to your doctor, speech pathologist, dentist or dietitian – some of the suggestions for managing taste changes (see table on the opposite page) will not be suitable.

Download a digital version of the *Understanding Taste and Smell Changes* fact sheet from your local Cancer Council website.

“During treatment, I developed an active sense of smell. I hated certain smells and did all I could to avoid them. My mouth felt very dry, which made food taste unappetising. Adding extra sauce helped.”  Helen



## How to manage changes in taste or smell

### Taste changes

- Add extra flavour to food if it tastes bland, e.g. fresh herbs, lemon, lime, ginger, garlic, soy sauce, honey, chilli, pepper, Worcestershire sauce or pickles. See the marinade recipes on page 52 for ideas.
- Experiment with different food, as your tastes may change. You may no longer like bitter drinks (e.g. tea, coffee, beer or wine) or sweet food (e.g. chocolate) even if you liked them before treatment. It is common to prefer savoury food over sweet.
- If meat tastes bad during treatment, replace it with other protein sources, e.g. cheese, eggs, nuts, dairy foods, seafood, baked beans, lentils or chickpeas.
- Add small amounts of sugar to food if it tastes bitter or salty.
- Use a straw so the taste of drinks isn't as strong.

### Smell changes

- Choose cold food or food at room temperature – hot food smells stronger.
- Reheat pre-prepared meals in the microwave so the cooking smell doesn't put you off eating.
- Stay out of the kitchen, if possible, when food is being prepared. Ask family or friends to cook.
- Turn on the exhaust fan, open a window or cook outside on the barbecue to help reduce cooking smells.

## Chewing and swallowing problems

After surgery to the mouth or throat, chewing and swallowing may be difficult and painful. Radiotherapy and chemotherapy to this area can also cause temporary problems. If teeth are extracted, chewing may be more difficult. People with dentures who have lost weight may also find their teeth become loose, which can make eating difficult.

Signs that the texture of food is causing problems include taking longer to chew and swallow, coughing or choking while eating or drinking, or food sticking in your mouth or throat like a ball.

## Changing food textures

If you're having difficulty swallowing, you may need to change the consistency of your food by chopping, mincing or pureeing (see *Types of food textures*, opposite). This can make it easier to get enough nutrition, and reduce the risk of losing weight and strength.

A speech pathologist can monitor your ability to swallow during and after treatment, and suggest modifications to the texture of your food once your ability to swallow and chew begins to improve. Ask your doctor for a referral.

Sometimes, people may need to remain on a texture-modified diet after their treatment. However, this is different for everyone and will depend on the type of cancer or treatment received. In rare cases, a person with severe difficulty swallowing will need a feeding tube to ensure adequate nutrition. If this is required, your dietitian, speech pathologist or doctor will discuss it with you.

## Types of food textures

**Soft** – Food can be chewed but not necessarily bitten. It should be easily broken up with a fork and need little cutting. Sauce or gravy can be added to make it softer.

**Minced and moist** – Food should be soft and moist and easily form into a ball in the mouth. Small lumps can be broken up with the tongue rather than by biting or chewing. Food should be easily mashed with a fork and may be presented as a thick puree with obvious lumps in it. Lumps should be soft and rounded with no hard or sharp bits.

**Smooth pureed** – Food is smooth, moist and lump-free. It may have a grainy quality and is similar in consistency to commercial pudding. The texture of smooth pureed food means it can be moulded, layered or piped to make it look more appealing.

## Texture-modified diet

If you have been told that you need to follow a texture-modified diet, you may find it difficult to know what to eat or drink. The sample menu on the following page provides some meal, snack and drink suggestions for each of the different texture categories. You can also try some of the recipes on pages 46–47.

Your dietitian can help to identify foods and fluids that will be easy to eat and drink, and can work out if the texture-modified diet is meeting your nutrition needs. A speech pathologist can also assess whether you need to change the consistency and thickness of fluids. To find a dietitian or speech pathologist, see pages 53–54.



Sample menu and snack ideas\*

	Soft	Minced and moist	Smooth pureed
Breakfast	scrambled or poached eggs	porridge or wheat biscuits with lots of milk and little texture	strained or pureed porridge
Lunch	egg and mayonnaise sandwich with crusts cut off	soup with vegetable or meat pieces no bigger than 5 mm	well-cooked pasta that has been pureed in a blender with added sauce
Dinner	casserole with small pieces of tender meat and well-cooked vegetables	moist macaroni cheese	pureed chicken blended with extra gravy or sauce
Snacks	mango	mashed banana	pureed pear pushed through a sieve
Dessert	soft cake with lots of custard	soft cheesecake without the crust	ice-cream
Drinks	fruit smoothie	milkshake	milk
Avoid	nuts, dried fruit, dry or gristly meat, raw vegetables, muesli, hard cheeses	nuts, hard vegetables, all bread and crackers, dried food, lollies (jubes, marshmallows)	meat, eggs, cereals or vegetables that have not been pureed in a blender, peanut butter

\* Some food may need modification for people requiring thickened fluid.



## Dry mouth

Radiotherapy to the head or neck area, some chemotherapy drugs and some pain medicines can make your mouth dry, cause mouth ulcers, or change the amount of saliva in your mouth. A dry mouth can increase the risk of tooth decay and infections such as oral thrush, which will make eating harder.



### How to relieve a dry mouth

- Keep your mouth clean with regular mouthwashes to prevent infections.
- Gargle with ½ tsp salt or 1 tsp bicarbonate of soda in a glass of water.
- Choose an alcohol-free mouthwash to avoid irritating your mouth further.
- Use a soft toothbrush when cleaning your teeth.
- Ask your dentist or health care team about suitable mouth rinses or oral lubricants.
- Limit alcohol and coffee as these are dehydrating fluids, and avoid smoking.
- Avoid rough, crunchy or dry foods (e.g. chips, nuts, toast, dry biscuits); salty or spicy foods that sting your mouth; or very hot or cold food.
- Soften food by dipping it into milk, soup, tea or coffee, or moisten with sauce, gravy, cream, custard, etc.
- Cut, mince or puree food to avoid drying out food with too much chewing.
- Sip fluids with meals and throughout the day.
- Chew sugar-free gum to stimulate the flow of saliva.
- Suck on ice cubes to keep your mouth moist.
- Try making the soup recipes on pages 50–51.

## Nausea and vomiting

Feeling sick (nausea) and vomiting are often side effects of cancer, its treatment or some medicines. They often occur together, but not always. Vomiting sometimes follows nausea and may be caused by treatment, stress, food odours, gas in the stomach or bowel, motion sickness or even the thought of having treatment.

### How to cope with nausea and vomiting

#### Nausea

- Have a light snack before treatment, and wait a few hours before eating again.
- Eat small meals 5–6 times during the day. Going without food for long periods can make nausea worse.
- Snack on dry or bland foods, e.g. crackers, toast, dry cereals, bread sticks or pretzels. See page 45 for more ideas.
- Choose cold foods or foods at room temperature instead of hot, fried, greasy or spicy foods.
- Eat and drink slowly, and chew your food well.
- Try foods with ginger, e.g. ginger biscuits or ginger beer.
- Avoid foods that are overly sweet, fatty, fried, spicy or oily, or that have strong smells.
- Brush teeth regularly to help reduce unpleasant tastes that may make you feel nauseated.
- Don't eat your favourite food when feeling nauseated to avoid developing a permanent dislike.
- Take anti-nausea medicines as prescribed. Let the doctor know if the medicines don't seem to be working.

Some people experience nausea and vomiting a few hours after treatment, while for others it starts 24 hours later. After a person has had a few treatments, they may connect certain sights, sounds or smells with treatment and feel nauseated when they experience them. This is known as anticipatory nausea or vomiting and is more common in people receiving chemotherapy.



## Vomiting

- Sip small amounts of fluids as often as possible. Try dry ginger ale, cold flat lemonade, soda water, Lucozade or chilled tomato juice. Sucking on a hard lolly, crushed ice cubes or an iceblock can be soothing.
- See your doctor if you can't keep fluids down, or if vomiting lasts for more than 24 hours, as you may become dehydrated.
- Introduce drinks slowly once the vomiting has stopped, e.g. clear, cool drinks; diluted fruit drinks; Bonox/Bovril (beef extract rich in iron, minerals and vitamins); clear broth; and weak tea.
- Start eating small amounts of plain foods once vomiting is under control, e.g. dry biscuits; pretzels; toast or bread; jelly; cooked cereals (such as lemon sago or boiled rice); and soft stewed fruits, such as apples, pears or peaches.
- Introduce milk gradually and in small amounts, or have yoghurt, which is more easily digested.
- Gradually increase your food intake until your eating returns to what is normal for you. Your doctor or dietitian may advise you to take a nutritional supplement on your good days to make up for the days when you can't eat properly.

## Constipation and diarrhoea

Cancer treatments may cause constipation and/or diarrhoea. These bowel changes occur for various reasons.

**Constipation** – This is when your bowel motions are infrequent and difficult to pass. It can be caused by different factors including: regularly taking opioid medicines; having a diet low in fibre; not getting enough exercise; not having enough fluids to drink (dehydration); or having a low overall food intake.

**Diarrhoea** – This means your bowel motions are watery, urgent and frequent. You may also get abdominal cramping, wind and pain. Cancer treatment, medicines, infections, reactions to certain foods and anxiety can all cause diarrhoea.

The tips on the next page may help you manage diarrhoea. You may also want to consider using oral rehydration drinks, e.g. Gastrolyte, to replace lost electrolytes. Ask your pharmacist for instructions on using these products. If these don't work, ask your doctor to prescribe anti-diarrhoea medicines.

Rest as much as possible as having diarrhoea can be exhausting.



To find out more about managing diarrhoea, call the National Continence Helpline on **1800 33 00 66** or visit **[continence.org.au](http://continence.org.au)**. Continence nurses offer confidential advice and have pamphlets on strengthening exercises that may help you 'hold on'.



## How to manage bowel changes

### Constipation

- Soften stools by drinking 8–10 glasses of fluid a day, e.g. water, herbal tea, milk-based drinks, soup, prune juice.
- Eat foods high in fibre, e.g. wholegrain breads, cereals or pasta; raw and unpeeled fruits and vegetables; nuts and seeds; legumes and pulses.
- If you are increasing the amount of fibre in your diet, increase fluids to prevent the extra fibre making constipation worse.
- Ask your doctor about using a laxative, stool softener and/or fibre supplement.
- Exercise every day. Check with your doctor, exercise physiologist or physiotherapist about the amount and type of exercise that is right for you.
- If you have had surgery for bowel cancer, see page 34 for information and speak to your health care team about specific dietary advice.

### Diarrhoea

- Drink plenty of fluids to avoid becoming dehydrated. Water and diluted cordials are better than high-sugar drinks, alcohol, strong caffeine or very hot/cold fluids. Signs of dehydration include passing urine less often and having dark urine.
- Choose low-fibre foods, e.g. bananas, mashed potato, rice, pasta, white bread, oats, steamed chicken without the skin, white fish.
- Avoid foods that increase bowel activity, e.g. spicy, fatty or oily foods; caffeine; alcohol or artificial sweeteners.
- Try soy milk or lactose-free milk if you develop a temporary intolerance to the natural sugar in milk (lactose).
- Don't eat too many raw fruit and vegetable skins and wholegrain cereals as they may make diarrhoea worse.

## Types of fibre

Fibre is found in cereals, fruits and vegetables. It is made up of the indigestible parts or compounds of plants, which pass mostly unchanged through the body. It helps to keep the digestive system healthy. There are different types of fibre.

**Insoluble fibre** – This is found in the skin of fruits and vegetables; wholegrains and cereals; fibrous vegetables such as carrots and celery; and nuts and seeds. Insoluble fibre helps to absorb water and make stools bulkier, which can help if you have constipation.

**Soluble fibre** – This is found in oats; barley; rye; legumes (lentils, kidney beans, chickpeas); peeled fruits and vegetables; avocado; and soy milk and soy products. Eating more soluble fibre can help if you have diarrhoea.

## Other types of bowel irritation

Chemotherapy or radiotherapy to the abdomen or pelvic area can irritate your intestines, leading to abdominal discomfort or more wind (gas) than usual.

### **Irritation of the large bowel (colitis) and rectum (proctitis) –**

Colitis is the inflammation of the inner lining of the large bowel (colon and rectum). Proctitis is the inflammation of the rectum. These conditions may occur after external or internal radiotherapy to the pelvic area. The severity of either colitis or proctitis depends on the dose and frequency of radiotherapy, and the size of the tumour.



## How to manage bowel irritation

- Eat and drink slowly, take small mouthfuls and chew your food well to avoid swallowing air.
- A diet low in insoluble fibre (see opposite) may reduce bowel movement and irritation in the short term.
- Avoid fatty, spicy or fried foods, rich gravies and sauces.
- Drink plenty of water.
- Eat soft or cooked fruit, fine wholemeal bread (without coarse pieces of grain or seeds) and bran to provide soft bulk.
- Reduce foods such as corn, beans, cabbage, onions, pickles and fizzy drinks, which can produce wind.
- Try some gentle exercise, such as walking, to encourage healthy bowel movement.

These conditions may make some people feel the need to empty their bowels more often, perhaps without much result. Straining can cause discomfort, and there may be some blood or mucous in bowel motions. Diarrhoea, nausea and vomiting are also common. These symptoms are usually temporary and may last for up to eight weeks after radiotherapy finishes.

**Irritation of the small bowel (enteritis)** – This may occur after chemotherapy or radiotherapy to the abdomen or pelvic area. You may experience some abdominal discomfort (like cramps or wind pain), episodes of fluid and pale bowel motions, and more wind than usual. These changes usually improve 1–2 weeks after treatment ends. Speak to your doctor if your symptoms last longer.

## Heartburn (indigestion)

Some cancers and treatments can cause heartburn, which is a burning sensation in the upper chest, oesophagus and/or throat. It's caused by the contents of the stomach coming back up into the oesophagus (reflux).

Heartburn may make you feel too uncomfortable to eat much, which could lead to weight loss. If the tips below don't relieve heartburn, let your doctor know as medication may help.



### How to manage heartburn

- Avoid large meals; try to eat 3 small meals and 3 small snacks throughout the day.
- Eat slowly and take the time to enjoy your meal. Avoid wearing tight clothing while eating, especially belts.
- Sip fluids between meals, rather than drinking large amounts at mealtimes.
- Limit or avoid foods that may make heartburn worse, e.g. chocolate, highly seasoned spicy foods, high-fat foods (e.g. fried food, pastries, cream, butter and oils), tomato and tomato products, citrus fruits, coffee (including decaf), strong tea, soft drinks and alcohol.
- Straight after eating, sit upright for at least 30 minutes and avoid lying down or activities that involve bending over (e.g. gardening).





# Nutrition concerns

After some cancer treatments, you may have concerns about nutrition-related side effects. This is because cancer and treatment can affect how the body digests, absorbs and uses food.

## Malnutrition

Malnutrition in people with cancer occurs when you eat less energy and protein than your body needs. Factors that increase the risk of malnutrition include:

- surgery for some cancer types, such as head and neck, lung and gastrointestinal cancers, which may make it difficult to swallow and to digest food
- increased nutritional needs from cancer and treatments such as chemotherapy, radiotherapy and surgery
- side effects from cancer treatments that make eating more difficult, such as nausea, vomiting and dry mouth
- some medicines
- stress, anxiety and fatigue.

Many of the eating issues discussed in the previous chapter can contribute to, or be symptoms of, malnutrition. Other signs include significant weight loss; confusion; dry, brittle hair and nails; and pale or pigmented skin.

Malnutrition can increase your risk of infection and reduce your strength, function and quality of life. It can affect how your body responds to cancer treatment and recovery. It is possible to be malnourished even if you are overweight. Talk to your doctor or dietitian if you think malnutrition is an issue.

## Food safety

Cancer and some treatments such as chemotherapy and stem cell transplants can weaken the body's immune system by affecting white blood cells that protect against infection. If you are having these treatments, you will be encouraged to take care preparing food as a weakened immune system can make you more susceptible to foodborne illness.

### Making safer food choices

Food type	Safe action	Precautions to take
<b>chicken</b>	Cook thoroughly	<ul style="list-style-type: none"><li>• Refrigerate leftover chicken immediately – don't let it cool on the benchtop</li><li>• Eat within 24 hours. Reheat until steaming hot</li><li>• Avoid purchased, ready-to-eat chicken</li></ul>
<b>meat</b>	Cook thoroughly	<ul style="list-style-type: none"><li>• Refrigerate leftover food immediately – don't let it cool on the benchtop</li><li>• Eat within 24 hours. Reheat until steaming hot</li></ul>
<b>seafood</b>	Eat well-cooked, fresh seafood	<ul style="list-style-type: none"><li>• Refrigerate leftover seafood immediately and eat within 24 hours</li><li>• Avoid raw seafood (e.g. oysters, sashimi or sushi) and ready-to-eat peeled prawns</li><li>• Avoid smoked, ready-to-eat seafood</li></ul>
<b>cold meats (home cooked)</b>	Store in fridge	<ul style="list-style-type: none"><li>• Avoid unpackaged ready-to-eat cold meats from the deli counter or packaged, sliced ready-to-eat cold meats</li></ul>
<b>sandwich</b>	Eat freshly made	<ul style="list-style-type: none"><li>• Avoid pre-made sandwiches</li></ul>

## General precautions

- Wash your hands and knives, cutting boards and food preparation areas thoroughly with hot soapy water before cooking.
- Take care when eating out, as it can be difficult to know whether food safety guidelines are being followed. Where possible, ask for meals to be made fresh and avoid pre-prepared foods that have been sitting for unknown periods of time.

Food type	Safe action	Precautions to take
<b>salad</b>	Wash thoroughly before preparing	<ul style="list-style-type: none"> <li>• Refrigerate leftover salad immediately, and eat within 24 hours</li> <li>• Avoid ready-to-eat or prepackaged deli salads, including pre-cut fruit salads</li> </ul>
<b>cheese</b>	Eat hard or processed cheese (e.g. cream cheese, cottage cheese)	<ul style="list-style-type: none"> <li>• Store cheese in fridge</li> <li>• Avoid soft, semi-soft and surface-ripened cheeses (e.g. brie, camembert, ricotta, fetta and blue)</li> </ul>
<b>other dairy products</b>	Store pasteurised milk, yoghurt and custard in fridge	<ul style="list-style-type: none"> <li>• Avoid unpasteurised or raw dairy products</li> </ul>
<b>packaged food</b>	Use within use-by dates	<ul style="list-style-type: none"> <li>• Store unused portions in fridge in clean, sealed containers and use within 24 hours</li> </ul>
<b>ice-cream</b>	Keep frozen	<ul style="list-style-type: none"> <li>• Avoid soft serve ice-cream</li> </ul>

## Managing eating side effects caused by surgery

Surgery that removes part of the digestive system, such as the oesophagus, stomach and bowel, will change the way you eat and digest food. Suggestions for coping with common dietary issues such as poor appetite, change in taste or smell, diarrhoea or nausea are covered in the *Treatment side effects and nutrition* chapter (pages 14–30).

**Surgery for bowel cancer** – When part of the bowel is removed, many people have more frequent bowel movements (diarrhoea). This usually improves in a few months, but it may take longer for some people. Your doctor or nurse might recommend a low-fibre diet to ease digestion.

If you have a stoma (a surgical opening in the abdomen that allows faeces to leave the body) after surgery, you may need to make some dietary changes until your body adjusts. Cancer Council's *Understanding Bowel Cancer* booklet has more tips on coping with a stoma. To download a copy of the Australian Government's *Improving Bowel Function After Bowel Surgery* booklet, visit [bladderbowel.gov.au](http://bladderbowel.gov.au), or call 1800 33 00 66 for a copy.

**Surgery to the head and neck area** – Your ability to chew and swallow may be affected after surgery. If you are having difficulty eating or drinking, you may be given a temporary or permanent feeding tube. This tube can help you maintain or gain weight. More information is provided in Cancer Council's *Understanding Head and Neck Cancers* booklet.

**Surgery for stomach cancer (partial gastrectomy or total gastrectomy)** – Removing part or all of the stomach will affect what you can eat and how you eat. The change in structure of the stomach may mean that foods high in sugar move through the stomach faster. This may cause cramps, nausea, racing heart, sweating, bloating, diarrhoea or dizziness. This is called dumping syndrome, and it usually improves over time. Dietary changes and medicines can help. For further details, see Cancer Council's *Understanding Stomach and Oesophageal Cancers* booklet.

**Surgery for oesophageal cancer (oesophagectomy)** – Removing the oesophagus will change how you eat. After surgery, you will have a feeding tube, then progress to a liquid diet, followed by a diet of soft or moist foods. If you cough while eating or feel like the food is getting stuck in your throat when you swallow, consult your doctor and dietitian immediately.

**Surgery for pancreatic cancer** – This will cause a significant change to what you can eat and drink. Some people develop diabetes before being diagnosed with pancreatic cancer or soon after surgery. The way diabetes is managed varies from person to person, but it usually includes a combination of dietary changes and medicines. As your body may not be able to make enough enzymes to digest food after surgery, you may need to take enzyme supplements with every meal. For more information, see Cancer Council's *Understanding Pancreatic Cancer* booklet.

For a copy of a booklet discussed here, call Cancer Council 13 11 20, or download a digital version from your local website.

## Changes in weight

### Weight loss

This is common in people with cancer because the cancer can burn a lot of energy, and treatment side effects may mean you eat less or lose your appetite (see page 17).

During active treatment, try to maintain your weight to help you stay strong and recover faster. To help avoid weight loss or to maintain your weight, eat more protein, fat and carbohydrates to increase your energy (kilojoules/calories). This approach is usually temporary to help you keep eating during and after treatment.



### How to manage weight loss

- Treat food like medicine: something you have to have. Set times for meals and snacks rather than waiting until you're hungry.
- Carry snacks such as hard-boiled eggs, muesli bars, dried fruit and nuts, crackers and fruit buns.
- Try ready-to-use drinks if travelling or if preparation is difficult. Examples include Sustagen, Ensure, and Resource Fruit Beverage. See pages 38–39 for more information on food-type nutritional supplements.
- Choose nourishing and higher kilojoule (calorie) fluids or snacks, for example, drink milk rather than water and choose cheese and biscuits over lollies.
- Include high-energy and high-protein foods at every meal or snack.

## Ways to add energy and protein

What to add	Meals and snacks
full-cream milk, cream or coconut milk	porridge, sauces, desserts, mashed vegetables, egg dishes, cream soups, scrambled eggs, milkshakes
yoghurt or sour cream	dips, salad dressings, fruit, potatoes, soups
butter, margarine or olive oil	bread, toast, mashed potato, cooked vegetables, rice, pasta
cheese (e.g. cheddar, ricotta, fetta, haloumi, cream cheese)	scrambled eggs, sauces, soups, vegetables, casseroles, salads, toast, sandwich fillings, pasta sauce, crackers
mayonnaise	egg or chicken sandwiches, potato salad, coleslaw, salad dressing
peanut butter	bread, toast, porridge, crackers, pancakes, scones, fruit, smoothies
avocado	toast, sandwich fillings, dips, salads, crackers, smoothies
nuts and seeds	porridge, muesli, yoghurt, salads, baked goods, stir-fries, desserts
egg	toast, sandwich fillings, stir-fries, mashed potato, soups, pasta sauce, salads

## Weight gain

Although it is more common to lose weight during treatment, some people gain weight. This can happen for various reasons.

- Some chemotherapy drugs and steroid medicines can cause your body to retain extra fluid in cells and tissues. This is called oedema, and makes you feel and look puffy.
- Hormone therapy lowers the amount of hormones in the body, which slows your metabolism.
- Steroid therapy can increase abdomen size, cause fluid retention and lead to a rounded, puffy face.
- Feeling stressed or upset can also make some people eat more.
- Being tired because of the treatment may mean you exercise less.

If you gain weight during treatment and are concerned, speak to your doctor or dietitian about how to best manage it.

## Food-type nutritional supplements

If treatment side effects mean you cannot eat a balanced diet, or you are losing weight without trying, food-type nutritional supplements can increase nutrient intake. They are used as snacks between meals.

Many pharmacies and supermarkets sell these specially formulated nutritional supplements. You do not need a prescription from your doctor or dietitian to buy them.

If you are having trouble swallowing, talk to a speech pathologist for directions on thickening the supplement.



## Types of food-type nutritional supplements

There are many different types of food-type nutritional supplements, including:

**Oral supplements** – Most are powder-based and often come in different flavours. There are many types to suit different nutrition needs, for example, high fibre, low lactose or low glycaemic index. You can sprinkle it on food or stir it through drinks or meals. Examples include Enprocal, Ensure, Fortisip, Proform and Sustagen Hospital Formula.

**Liquid supplements** – Most are milk-based and often come ready-to-drink. They are available in different flavours and can be low in lactose, gluten free or have a low glycaemic index. Examples include Ensure Plus, Resource Plus, Resource Protein, Resource 2.0, and Sustagen Ready To Drink.

Some liquid supplements come as a clear fluid and these are often fruit flavoured. They can be a good choice if lactose-free or low-fat supplements are needed. Examples include Enlive Plus, Fortijuce, and Resource Fruit Beverage.

**Food-type supplements** – These are available as different-flavoured soups, custards, jellies, puddings and dessert powders.

Make your own nutritional supplement to add to food and drinks using the enriched milk recipe on page 48.



## Vitamin and mineral supplements

Vitamins and minerals are an essential part of a healthy diet and play an important role in the body's immune system. It's best to get your vitamins and minerals from eating whole foods, as the body absorbs them better. If you are able to eat a variety of foods, you usually won't need to take vitamin and mineral supplements.

Many vitamin and mineral supplements contain levels of antioxidants (such as vitamins C and E) that are much higher than the average amount of nutrients needed each day for optimal health. These are called Nutrient Reference Values. More research is needed to determine the impact of using antioxidants and other vitamin supplements during chemotherapy or radiotherapy treatment. It's best for people having these cancer treatments to avoid vitamin and mineral supplements, except to treat a known deficiency of a certain nutrient.

### Using high doses of vitamins

Some people believe that taking high doses of certain vitamins will strengthen the body's immune system during cancer treatment. However, there is little evidence to support this claim. In fact, many vitamins and mineral compounds can be toxic at high levels, and may affect how chemotherapy, radiotherapy and other medicines work.



If your appetite is poor, check with your doctor or dietitian before taking any vitamin or mineral supplements.

## Your feelings about eating problems

Changes to the way you eat may make you feel anxious, particularly when you know eating well is important. If you can't eat much because of treatment side effects, you may be worried about upsetting people who have prepared food for you. These strategies may help you cope.



### Try relaxation and meditation exercises

Both of these strategies can help you feel calm and less stressed. There are many self-help CDs, DVDs and smartphone apps that will guide you through these different techniques.

### Be active every day

Studies show that people feel better when they do some exercise each day. It can also help improve your appetite and manage your weight.



### Join a cancer support group

Talking to people who have been in a similar situation to you may make you feel less isolated and provide you with practical strategies. Cancer Council can link you with others by phone, in person or online. Call **13 11 20** to find out more.



### Talk to someone about the way you're feeling

Some people find it useful to talk to someone who is not their partner, family member or friend. You may choose to speak to a social worker, psychologist, nurse or your doctor or call Cancer Council **13 11 20**.



# Nutrition and advanced cancer

Advanced cancer means the cancer has spread to other areas of the body from where it started.

Problems with eating and drinking may arise or intensify when the cancer is advanced. It's common for people with advanced cancer to lose their appetite. This often leads to weight loss and malnutrition. By controlling nutrition-related symptoms, quality of life can be maintained. During this time, it's okay to focus on eating foods you enjoy. Soft food and clear liquids may be easier to digest.

## Nausea and vomiting

Many people with advanced cancer have problems with chronic nausea and vomiting. Nausea and vomiting may be caused by pain medicines, cancer growth, blockage of the bowel (see below) or slower digestion. Feeling tired or anxious may make the nausea worse. The suggestions on pages 24–25 may help reduce nausea and vomiting.

## Mouth problems

People with advanced cancer may have a dry mouth or a sore mouth and throat. These problems may be caused by drinking less or by some types of treatment. See page 23 for ways to ease a dry mouth. If chewing and swallowing become difficult, it may be necessary to introduce a texture-modified diet. See pages 20–22 for a description of the different food textures and sample menus.

## Blockage in the bowel

Surgery in the abdominal area sometimes causes the bowel to become blocked (bowel obstruction). This can also happen if the

cancer comes back. Because waste matter (faeces) cannot pass through the bowel easily, symptoms may include feeling sick, vomiting, or abdominal discomfort and pain.

To relieve symptoms, you may have a small tube (stent) put in that helps keep the bowel open. The stent is inserted through the rectum using a flexible tube called an endoscope.

## Cachexia

Many people with advanced cancer develop wasting syndrome (cachexia). This means the body isn't using protein, carbohydrates and fats properly. Symptoms include:

- severe loss of weight, including loss of fat and muscle mass
- feeling sick (nausea)
- feeling full after eating small amounts
- anaemia
- weakness and fatigue.

Your doctor or dietitian will discuss ways to control cachexia. They may suggest a diet high in energy and protein, nutritional supplements, or medicines such as appetite stimulants. If you continue to have problems maintaining your nutrition, your treating team may recommend feeding via a tube in your nose or stomach (enteral nutrition) or directly into the bloodstream through a thin tube inserted into a vein (parenteral nutrition).

To find out more about advanced cancer, call Cancer Council 13 11 20 and ask for a copy of *Living with Advanced Cancer*, or download a digital version from your local Cancer Council website.



# Recipes and snacks

The following quick meal and snack suggestions are for when you feel too tired or unwell to shop for food or cook. They may also help if you're missing meals while having treatment or waiting for



## Sample meal and snack ideas

### Breakfast

- baked beans on toast with grated cheese
- crumpets or muffins toasted with cheese, and fruit
- scrambled or poached egg on toast and a glass of orange juice
- tuna or sardines on buttered toast with fresh tomato
- a ham and cheese omelette with buttered bread
- toast with cheese, avocado or peanut butter, followed by sliced banana and yoghurt
- toasted muesli with full-fat milk and yoghurt

### Main meals

- fish (bought freshly prepared) or frozen fish with chips and salad
- grilled lamb cutlets, mashed potato with margarine or butter, and peas and carrots
- pasta with cheese and a ready-made sauce, e.g. pesto or bolognaise
- dhal with chapatis or rice
- salmon, tuna or egg with salad and mayonnaise, served with a buttered bread roll
- lasagne or moussaka
- frittata or quiche
- occasional takeaway food such as Thai, hamburgers or pizza (ensure the food is fresh and hasn't been kept at a warm temperature for a long time)
- refrigerated leftover foods from the previous day – reheat till steaming

appointments. Some may not seem like healthy choices, but if you have a poor appetite it's important to focus on high-protein and high-energy foods and fluids.

## Snacks

- cheese or hummus and crackers
- buttered pikelets, scones, muffins, fruit buns, finger buns and raisin toast
- celery with cream cheese or peanut butter
- hard-boiled eggs
- dried fruit and nuts
- jaffles and sandwiches – try fillings such as peanut butter, cheese, avocado, egg and mayonnaise, cold meats, salmon and tuna
- milk puddings, such as creamed rice, custard, mousse and instant puddings
- fresh or tinned fruit with custard, yoghurt, jelly, ice-cream or cream
- creamy soup made with milk, served with buttered toast
- hot chips
- instant noodles
- potato crisps, pretzels or corn chips with dips
- yoghurt or ice-cream

## Drinks

- enriched milk (see page 48) mixed with Akta-vite, Milo or Horlicks
- milkshake (see page 49)
- banana smoothie (see page 49)
- hot chocolate
- flavoured milk
- apricot lemon crush (see page 48)

## Simple meals


These meal suggestions are simple to prepare, and some can be frozen. Most of these suggestions are suitable for a soft diet or can be minced or pureed, if needed.

### Stewed fruit with custard or cream

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3–4 pieces seasonal fruit  
(e.g. pear, apple, plum),  
peeled, cored, chopped  
1 cup orange juice  
1 cup full-cream custard or  
ice-cream (or 2 tbsp cream)

Place fruit and orange juice in a medium saucepan over low heat. Cook for about 20–30 minutes, stirring occasionally until fruit softens (the total time will depend on the hardness of the fruit).


 Serve with some full-cream custard, ice-cream or cream.

### Scrambled eggs

---

2 large eggs  
30 mL cream  
1 tsp chives or other  
herbs (fresh)  
2 slices bread, toasted  
butter

Crack eggs into a bowl and add cream and chives. Whisk with a fork until combined. Heat a pan over medium heat and add a small amount of butter. Cook the eggs for 1 minute, stirring slowly so that they cook through.

 Serve with buttered toast.



## Swedish meatballs

---

500 g beef mince  
½ cup plain breadcrumbs  
1 egg, lightly beaten  
salt and pepper, to taste  
1 tbsp margarine  
2 tbsp flour  
1½ cups water

Combine mince, breadcrumbs, egg and seasoning in a bowl. Mix well with a fork and form into golf-sized balls. Heat the margarine in a frying pan and cook meatballs until brown. Remove meatballs from pan.

Combine the pan juices, flour and water and cook on a low heat until a thick gravy forms. Add the meatballs to the gravy and simmer for 1–1½ hours.

## Cheesy vegetable bake

---

oil, for greasing dish  
400 g sweet potato and pumpkin,  
peeled and thinly sliced  
1 parsnip and 1 carrot,  
peeled and thinly sliced  
4 potatoes, peeled and  
thinly sliced  
½ cup thickened cream  
½ cup cheddar cheese, grated

Preheat oven to 180°C. Brush a medium ovenproof dish with oil. Layer the vegetables in the prepared dish. Drizzle each layer with a small amount of cream. Top with the remaining cream and sprinkle with cheese.

Bake for 1 hour or until vegetables are tender and top is golden brown.



Use whatever vegetables you have.

## Nourishing drinks


Nourishing drinks are high in protein, energy, vitamins and minerals. They include ready-to-drink commercial supplements (see page 39), as well as these nourishing drinks that you can make at home.

### Enriched milk

---

1 L full-cream milk  
4 or more tbsp milk powder  
(increases nutrients)

Thoroughly mix ingredients in a jug until powder is dissolved.

 Use this enriched milk in tea and coffee, cereal, soups, sauces, milkshakes and smoothies.

### Apricot lemon crush

---

425 g can apricot halves  
in natural fruit juice  
1 cup natural yoghurt  
juice of 1 lemon  
1 tbsp honey  
2 tbsp wheatgerm  
crushed ice

Place all ingredients in a blender and blend until smooth.

## Milkshake

---

- 1 cup milk or milk alternative
- 1 heaped tbsp milk powder or recommended quantity of Sustagen Hospital Formula, Ensure Powder, Fortisip Powder, Enprocal or Proform (refer to instructions on packaging or follow the advice of your dietitian)
- 1 scoop ice-cream flavouring, e.g. chocolate, strawberry, coffee, vanilla

Place all ingredients in a blender or milkshake maker and blend until smooth.


 Serve chilled.

## Banana smoothie

---

- 1 cup milk or milk alternative
- 1 heaped tbsp milk powder or recommended quantity of Sustagen Hospital Formula, Ensure Powder, Fortisip Powder, Enprocal or Proform (refer to instructions on packaging or follow the advice of your dietitian)
- 1 ripe banana
- 1 scoop ice-cream
- 1 tsp honey (optional)

Place all ingredients in a blender and blend until smooth.

 Use whatever fruit you have – fresh, frozen or tinned.

## Soups

Soup can be easy to digest and nourishing.

- Try clear soups to stimulate the appetite and provide extra fluid. However, as they are low in protein and energy, don't have them too often.
- Add energy and/or protein to soups with meat, chicken, legumes (lentils, chickpeas, beans), cereals (rice, pasta, barley), cheese, cream, butter, margarine and oil.
- Vary the taste with nutmeg, ground cumin or curry powder.
- Puree or blend if you have difficulty swallowing.
- Thicken with pureed vegetables, cream, eggs or enriched milk.

### Foundation broth

---

250 g meat (any cut)

600 mL water

30 g cereal (e.g. sago, rice or pearl barley), washed

1 stalk celery, peeled and finely chopped

1 carrot, peeled and finely chopped

1 onion, peeled and finely chopped

salt and pepper

Remove the fat from the meat and cut into small pieces. Soak meat and bones in cold water for 30 minutes, then bring slowly to the boil. Add cereal once soup is boiling. Simmer for 1 hour.

Add vegetables to soup and simmer for 30 minutes. Remove bones, and season to taste with salt and pepper.


## Creamy potato and leek soup

---

1–2 tsp olive or vegetable oil  
2 leeks, sliced  
1 tsp cumin seeds  
1 kg potatoes, peeled and chopped  
5 cups vegetable or chicken stock  
½ cup cream

Cook leek in a large saucepan with oil until soft. Add cumin seeds and cook for 2 minutes. Add potato and stock to the pan and bring to the boil.

Simmer for 25–30 minutes until potatoes are tender. Puree in a blender or food processor until smooth.

 Stir in cream and serve.

## Vegetable soup

---

1 tbsp olive or vegetable oil  
3 cups diced vegetables  
2 tbsp flour  
2 chicken stock cubes  
3 cups water  
3 tbsp tomato paste  
400 g can butter beans  
½ cup milk  
½ cup cream  
½ cup rice

Heat oil and fry vegetables for 5 minutes. Add flour and stir. Add crumbled stock cubes, water, tomato paste and butter beans. Simmer for 30 minutes or until vegetables are tender.

Blend the soup in a blender or food processor until smooth. Return soup to saucepan and add milk, cream and rice. Simmer for 15–20 minutes until rice is cooked.

 Use potatoes, carrots, etc.

## Marinades

Marinating helps to tenderise, add flavour or change the taste of meat or tofu. The following marinades are enough for four serves of beef, pork, lamb, chicken or tofu.

- For best results, marinate the meat or tofu in the fridge for at least 2 hours or overnight.
- Drain the marinades before cooking to prevent stewing and splattering.
- When using a marinade that contains honey or sugar, cook the meat on a lower heat than usual to stop the marinade charring.

### Asian marinade

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2 tbsp soy sauce  
1 tbsp sesame oil  
1 tbsp sherry  
1 tbsp honey  
2 tsp garlic

### Red wine marinade

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¼ cup red wine  
2 tbsp soy sauce  
2 tbsp Worcestershire sauce

### Honey mint marinade

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½ tsp sesame oil  
1 tbsp lemon juice  
½–1 tsp minced chilli  
1 tbsp mint leaves, chopped  
2 tsp honey



# Practical help and information

Eating well and managing nutrition-related side effects can feel overwhelming. You may have many questions and you may want to consult the following health professionals.

## Accredited Practising Dietitian

This health professional has a university qualification in science, nutrition and dietetics. Using scientific evidence, they modify people's diets to help treat disease symptoms and to get the most out of food without the use of supplements.

Dietitians work in all public hospitals and most private hospitals. Ideally, you should see a dietitian connected to your cancer centre. Ask your doctor or nurse to arrange an appointment.

The Dietitians Association of Australia (DAA) can also help you locate an Accredited Practising Dietitian in your area, or one who specialises in cancer or has experience with particular clinical conditions. Visit [daa.asn.au](http://daa.asn.au) or call 1800 812 942. Dietitians in private practice may also have their own website.

If your doctor refers you to a dietitian as part of a Chronic Disease Management (CDM) plan, you may be eligible for a Medicare rebate for up to five visits per calendar year. Most private health insurers provide a rebate depending on the type and level of cover.

## Nutritionist

The term nutritionist refers to both qualified nutrition scientists and naturopathic nutritionists. Some dietitians also call themselves nutritionists.

Nutritionists working in the natural health industry should have at least a diploma of nutrition, or equivalent, from a university or naturopathic college. Those working within a naturopathic framework are usually employed in private practice or in a holistic medical or complementary therapies centre.

To find an accredited nutritionist, visit the Nutrition Society of Australia website at [nsa.asn.au](http://nsa.asn.au).

### **Speech pathologist**

This health professional studies, diagnoses and treats people having difficulties with speech, language, fluency and voice. Speech pathologists can also help people who have problems swallowing food and drinks. They need a university degree to work in hospitals and the community setting.

To find a speech pathologist, call 1300 368 835 (outside Victoria), 9642 4899 (Victoria only) or visit [speechpathologyaustralia.org.au](http://speechpathologyaustralia.org.au).





# Help for carers

If you're caring for someone with cancer, it can be challenging knowing how to deal with eating issues caused by the cancer and its treatment. It's natural for a carer to worry about the diet of the person they're caring for. There are many reasons why the person may not feel like eating.

## How to help with eating issues

- Learn more about how cancer and its treatment affect eating. You will then be prepared for changes in appetite, taste and other side effects.
- Read about different ways of coping with eating issues. See the *Treatment side effects and nutrition* chapter (pages 14–30).
- Try not to focus on how little the person is eating or drinking. Instead, gently encourage them to eat high-energy foods when they are feeling well.
- Serve small amounts of food at a time, and freeze the leftovers.
- Have ready-to-eat food for when they feel like eating. For example, tinned fruit in the cupboard, yoghurt in the fridge, frozen meals in the freezer.
- Keep mealtimes flexible and be willing to try new ideas or recipes. See the *Recipes and snacks* chapter (pages 44–52) for suggestions.
- Make meals as enjoyable as possible – eat together, play music, set the table with candles and flowers.
- Follow safe food handling practices when preparing food (see pages 32–33).
- Accept that during treatment the focus is on eating and not on eating nutritious food all of the time.

## If your child has cancer

The nutritional needs of children with cancer are different to adults, as children continue to grow and develop during treatment.



### Work closely with your doctor and dietitian

They will monitor your child's weight and growth closely during treatment.



### Be flexible

Let your child eat when they feel like it, not just at mealtimes. Be flexible in food choices – allow your child to have the same foods often or breakfast cereal for dinner if that's what they prefer.



### Encourage them to eat nutritious food

Try not to make an issue of your child's reluctance to eat. Instead, encourage them to eat nutritious, high-energy foods when they are feeling well.



### Offer occasional treats

Allow your child to eat fatty or sugary foods like cake, chips and chocolate occasionally. These foods are useful high-energy snacks if they are all your child wants to eat. During treatment, any nourishment is better than none. Have takeaway food occasionally, as it can tempt fussy eaters.



### Make mealtimes fun

Focus on making mealtimes as relaxed as possible and an opportunity to come together to share stories and discuss any problems. Regular family meals also give a child a sense of stability.



### Eat at the table

Discourage your child from eating in front of the television as it can be distracting.

## Looking after yourself

Caring for someone who is unwell can be exhausting and stressful. Try to look after yourself and share your worries and concerns with somebody neutral, such as a counsellor or your doctor. If you can, arrange some time off to rest or to participate in activities you enjoy. Accept offers of help from family, friends and neighbours, and ask for help if you need it.

The *Why eating well is important* chapter (pages 4–6) is a brief guide to what to eat and how much to exercise to maintain your health and wellbeing.

Many cancer support groups and cancer education programs are open to carers, as well as people with cancer. They offer valuable opportunities to share experiences and ways of coping.

Support services such as Home Help, Meals on Wheels or visiting nurses can help you in your caring role. There are also many groups and organisations that can provide you with information and support, such as Carers Australia, the national body representing carers in Australia. Carers Australia works with Carers Associations in each of the states and territories. Phone 1800 242 636 or visit [carersaustralia.com.au](http://carersaustralia.com.au) for more information and resources.



Call Cancer Council **13 11 20** to find out more about carers' services and to get a copy of the *Caring for Someone with Cancer* booklet, or download a digital version from your local Cancer Council website.



# Useful websites

The internet has many useful resources, although not all websites are reliable. The websites listed below are good sources of support and information.

## Australian

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Cancer Council Australia.....	<b>cancer.org.au</b>
Cancer Connections.....	<b>cancerconnections.com.au</b>
Carer Gateway.....	<b>carergateway.gov.au</b>
Carers Australia .....	<b>carersaustralia.com.au</b>
Department of Health .....	<b>health.gov.au</b>
Dietitians Association of Australia .....	<b>daa.asn.au</b>
healthdirect Australia.....	<b>healthdirect.gov.au</b>
Nutrition Australia.....	<b>nutritionaustralia.org</b>
Australian Dietary Guidelines .....	<b>eatforhealth.gov.au</b>
A Healthy and Active Australia .....	<b>healthyactive.gov.au</b>

## International

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American Cancer Society.....	<b>cancer.org</b>
Macmillan Cancer Support (UK).....	<b>macmillan.org.uk</b>
National Cancer Institute (US).....	<b>cancer.gov</b>
World Cancer Research Fund International Continuous Update Project.....	<b>wcrf.org</b>



# Question checklist

You may find these questions helpful when thinking about what to ask your doctor about nutrition issues associated with your cancer treatment. If your doctor gives you answers that you don't understand, ask for clarification.

- Will this cancer treatment affect what I can eat?
- Should I be on a special diet?
- Should I avoid any particular food during treatment?
- What other changes to my diet can I expect?
- Why am I losing/gaining weight?
- Why am I feeling sick?
- Why am I so tired?
- How long will the mouth ulcers take to heal?
- How can I reduce nausea?
- Will medicine help to manage the nausea?
- Will these symptoms go away and, if so, when?
- Should I take vitamin supplements?
- Do I need to change my diet after treatment ends?
- Can you refer me to a dietitian?



# Glossary

## **anaemia**

A reduction in the number or quality of red blood cells in the body.

## **balanced diet**

Having a diet that includes a wide variety of food to give you the energy, protein, vitamins and minerals you need to stay healthy.

## **cachexia**

Loss of body weight and muscle mass, and weakness.

## **calories**

See energy.

## **carbohydrate**

The part of food made of sugar and starches. Main sources include grains such as rice, wheat, corn, barley, rye, oats, starchy vegetables (potato and sweet potato), lentils and peas. Products made from these grains, such as breads, cereals and pasta, are also major sources of carbohydrates.

## **chemotherapy**

The use of drugs to treat cancer by killing cancer cells or slowing their growth. May be given alone or in combination with other treatments.

## **colitis**

Inflammation of the inner lining of the colon and rectum (large bowel).

## **constipation**

Difficulty passing a bowel motion regularly or often.

## **diabetes**

A disorder in which sugars are not taken up in the body properly because

the pancreas does not produce enough of the necessary hormone (insulin), or the body has become resistant to the effect of insulin.

## **diarrhoea**

Opening the bowels very frequently. Motions may be watery.

## **dietitian**

A university-qualified health professional who supports and educates patients about nutrition and diet during treatment and recovery. Also known as an Accredited Practising Dietitian.

## **digestion**

The breakdown of food in the stomach and bowel so the nutrients can be used by the body.

## **digestive system**

The body system that processes food and drink, absorbs nutrients and disposes of solid waste. Also called the gastrointestinal (GI) tract.

## **energy (kilojoules/calories)**

Energy is counted in kilojoules or calories and provides fuel for our daily activities. Energy is obtained from food and drink.

## **enteral nutrition**

Receiving all or part of daily nutrition requirements through a feeding tube.

## **fatigue**

An extreme feeling of tiredness and lack of energy.

## **feeding tube**

A flexible tube used to provide nutrition to people unable to swallow.

**fibre**

The part of plant foods that cannot be digested. It helps the body move food through the digestive system.

**foodborne illness**

Illness caused by eating food that contains bacteria, viruses or parasites.

**heartburn (indigestion)**

A sensation of tightness or burning in the chest. It is caused by stomach acid backing up into the oesophagus and throat (reflux).

**immune system**

A network of cells and organs that defends the body against attacks by foreign invaders, such as bacteria and viruses.

**intolerance**

Inability to digest a particular food properly.

**kilojoules**

See energy.

**lactose**

A type of sugar found in milk and some milk products. Lactose is digested by an enzyme found in the digestive system called lactase.

**lactose intolerance**

Occurs when people have trouble breaking down lactose. A person with lactose intolerance may be able to digest dairy products that are low in lactose, such as hard cheeses.

**laxative**

A medicine that stimulates bowel movements and relieves constipation.

**malnutrition**

An imbalance of energy, protein or other nutrients in the body that can impact health and how the body responds to treatment and recovery.

**metabolism**

The chemical process by which food is changed into energy in the body.

**minerals**

Components of food that are essential for the body (similar to vitamins). Examples include, iron, calcium and magnesium.

**nausea**

Feeling sick or wanting to be sick.

**nutrition**

The process of eating and digesting food that the body needs.

**nutritionist**

Provides information and support about nutrition. Has at least a diploma of nutrition, or equivalent, from a university or naturopathic college.

**nutritious/nourishing**

Food that is a good source of energy (kilojoules/calories) and/or protein as well as vitamins and minerals.

**oesophagus**

The passage that carries food from the throat into the stomach.

**parenteral nutrition**

The delivery of calories and nutrients into a vein.

**proctitis**

Inflammation of the rectum.

**protein**

An essential part of food which the



body needs to repair itself and build muscle.

### radiotherapy

The use of radiation, such as x-rays, gamma rays, electron beams or protons, to kill cancer cells or injure them so they cannot grow and multiply. Also called radiation therapy.

### side effect

Unintended effect of a drug or treatment.

### speech pathologist

A university-qualified health professional who helps with speech or swallowing difficulties.

### stoma

A surgically created opening to the outside of the body.

### surgery

An operation by a surgeon to remove or repair a part of the body affected by cancer, create a stoma, or insert a prosthesis.

### symptoms

Changes in the body that a person feels or sees, which are caused by an illness or treatment, e.g. pain, tiredness, rash or stomach-ache.

### vitamins

Essential substances found in food. The body needs vitamins to burn energy, repair tissue, assist with metabolism and fight infection.

### white blood cells

One of three types of cells found in the blood. They help fight infection. Types of white blood cells include neutrophils, lymphocytes and monocytes. Also called leucocytes.

### Can't find a word here?

For more cancer-related words, visit:

- [cancercouncil.com.au/words](http://cancercouncil.com.au/words)
- [cancervic.org.au/glossary](http://cancervic.org.au/glossary)
- [cancersa.org.au/glossary](http://cancersa.org.au/glossary)

## References

1. National Health and Medical Research Council, *Australian Dietary Guidelines*, Commonwealth of Australia, Canberra, 2013.
2. Australian Government Department of Health, *Australia's Physical Activity and Sedentary Behaviour Guidelines for Adults (18–64 years)*, Commonwealth of Australia, Canberra, 2014.
3. National Health and Medical Research Council, *Australian Guidelines to Reduce Health Risks from Drinking Alcohol*, Commonwealth of Australia, Canberra, 2009.
4. World Cancer Research Fund and American Institute for Cancer Research, *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*, American Institute for Cancer Research, Washington DC, 2007.



## How you can help

At Cancer Council, we're dedicated to improving cancer control. As well as funding millions of dollars in cancer research every year, we advocate for the highest quality care for cancer patients and their families. We create cancer-smart communities by educating people about cancer, its prevention and early detection. We offer a range of practical and support services for people and families affected by cancer. All these programs would not be possible without community support, great and small.

**Join a Cancer Council event:** Join one of our community fundraising events such as Daffodil Day, Australia's Biggest Morning Tea, Relay For Life, Girls' Night In and Pink Ribbon Day, or hold your own fundraiser or become a volunteer.

**Make a donation:** Any gift, large or small, makes a meaningful contribution to our work in supporting people with cancer and their families now and in the future.

**Buy Cancer Council sun protection products:** Every purchase helps you prevent cancer and contribute financially to our goals.

**Help us speak out for a cancer-smart community:** We are a leading advocate for cancer prevention and improved patient services. You can help us speak out on important cancer issues and help us improve cancer awareness by living and promoting a cancer-smart lifestyle.

**Join a research study:** Cancer Council funds and carries out research investigating the causes, management, outcomes and impacts of different cancers. You may be able to join a study.

To find out more about how you, your family and friends can help, please call your local Cancer Council.



# Cancer Council 13 11 20

Being diagnosed with cancer can be overwhelming. At Cancer Council, we understand it isn't just about the treatment or prognosis. Having cancer affects the way you live, work and think. It can also affect our most important relationships.

When disruption and change happen in our lives, talking to someone who understands can make a big difference. Cancer Council has been providing information and support to people affected by cancer for over 50 years.

Calling 13 11 20 gives you access to trustworthy information that is relevant to you. Our cancer nurses are available to answer your questions and link you to services in your area, such as transport, accommodation and home help. We can also help with other matters, such as legal and financial advice.

If you are finding it hard to navigate through the health care system, or just need someone to listen to your immediate concerns, call 13 11 20 and find out how we can support you, your family and friends.

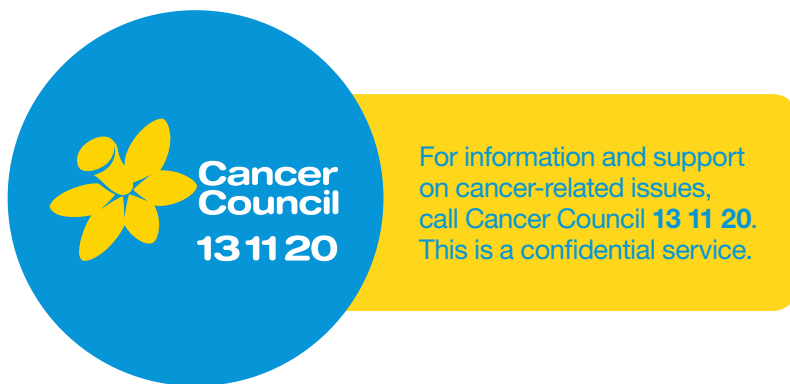
Cancer Council services and programs vary in each area.  
13 11 20 is charged at a local call rate throughout Australia (except from mobiles).



**If you need information in a language other than English, an interpreting service is available. Call 13 14 50.**



**If you are deaf, or have a hearing or speech impairment, contact us through the National Relay Service.**  
[www.relayservice.gov.au](http://www.relayservice.gov.au)



## Visit your local Cancer Council website

**Cancer Council ACT**  
actcancer.org

**Cancer Council NSW**  
cancercouncil.com.au

**Cancer Council NT**  
nt.cancer.org.au

**Cancer Council Queensland**  
cancerqld.org.au

**Cancer Council SA**  
cancersa.org.au

**Cancer Council Tasmania**  
cancertas.org.au

**Cancer Council Victoria**  
cancervic.org.au

**Cancer Council WA**  
cancerwa.asn.au

**Cancer Council Australia**  
cancer.org.au

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To support Cancer Council, call your local Cancer Council or visit your local website.*