

Your diet, your gut and immunotherapy

Patient information

What is the gut microbiome?

The gut is home to trillions of tiny living organisms, mostly bacteria, but also viruses, fungi and other microbes. Together, these make up what's called the **gut microbiome**.

Most of these microbes are helpful. They help you digest food, make vitamins, protect you from harmful germs, strengthen your gut lining and support your immune system.

Everyone's microbiome is unique and is shaped by your diet, lifestyle, environment and medications.

Having lots of different (diverse) helpful bacteria in your gut is considered best for overall health.



What is the link between diet, the gut microbiome and immunotherapy in melanoma?

A healthy, diverse microbiome is influenced by what you eat. Some studies have suggested that a healthy gut microbiome is linked with better outcomes from immunotherapy in melanoma.

Two separate studies of people with melanoma receiving immunotherapy have shown:

- a better response to treatment in people with a more diverse gut microbiome obtained when eating a healthy, higher fibre diet
- a lower response to treatment in people with a disrupted or unhealthy gut microbiome.

There is also some emerging evidence to suggest that taking certain medications, like antibiotics and proton pump inhibitors (reflux medicine), may impact the response to immunotherapy. It is thought that this is due to the impact these medications can have on the gut microbiome.

How can I encourage a healthy gut microbiome?

Your everyday food choices and lifestyle habits play an important role in shaping your gut microbiome.

While there's no single 'best diet' for people having immunotherapy, eating a varied and whole food, plant-rich diet is linked with greater diversity of gut bacteria and better overall health.

Focusing on balance, variety and moderation can help keep your gut healthy and support your body during immunotherapy.



Focus on food

- Aim for **more than 30 g of fibre each day**. Good sources include wholegrain breads and cereals, oats, brown rice, legumes, vegetables, fruit and nuts.
- Try to include **around 30 different whole plant foods across the week**. Fruits, vegetables, grains, legumes, nuts, seeds, herbs and spices all count.



- Include **foods rich in phytonutrients including polyphenols** such as berries, colourful fruit and vegetables, turmeric, tea and coffee.
- Include a small serve of a **high protein food** at each meal such as fish, poultry, eggs, dairy or soy milk, or milk alternatives, legumes, tofu, nuts, wholegrain breads, higher protein pastas and grains such as quinoa.
- Include **fermented foods** such as live yoghurt, kefir, sauerkraut, kimchi and miso.
- **Limit** red meat, saturated fats, processed foods, added sugars and alcohol.

Make some lifestyle changes

Your daily habits also matter and can also shape your gut microbiome.

Smoking has been shown to reduce the diversity of gut bacteria and encourage the growth of less helpful microbes. This can contribute to inflammation in the body and may make it harder for your immune system to work at its best.

- If you smoke, talk to your healthcare team about support and strategies to help you cut down or quit. Even small steps can improve your health and may benefit your treatment.

Alcohol can also upset the balance of the microbiome. Drinking too much may damage the lining of the gut, encourage harmful bacteria and reduce the number of helpful species.

- Keeping alcohol to low levels, or avoiding it altogether, can support gut health and your overall wellbeing during immunotherapy.

A note on pre- and probiotics

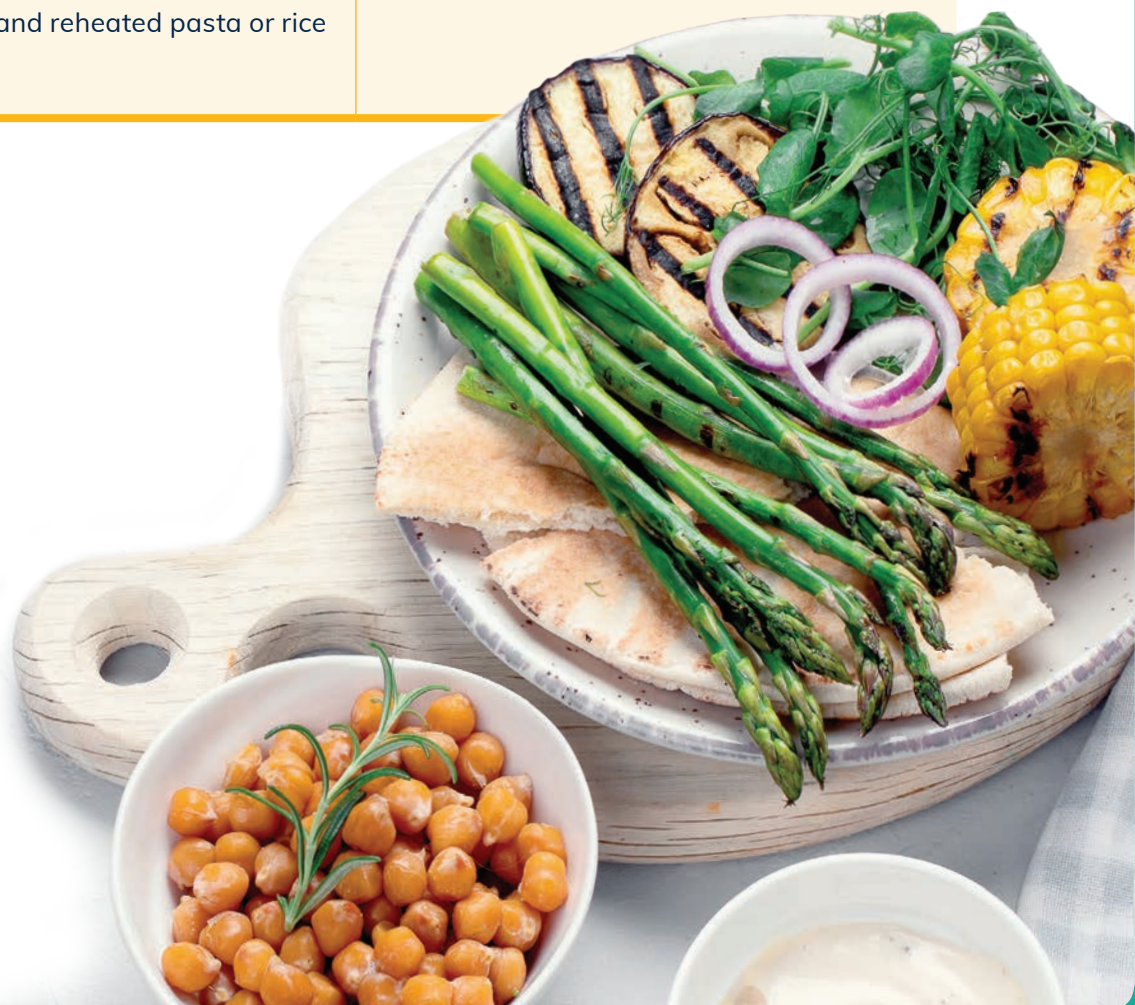
You may have heard about prebiotics and probiotics when it comes to gut health. Both play a role in supporting a healthy microbiome, but they do so in different ways.

- **Prebiotics** are a type of fibre that feed the helpful bacteria already living in your gut. By providing a food source for these bacteria, prebiotics encourage their growth and activity, helping to keep your microbiome balanced.
- **Probiotics** are live bacteria that can provide a health benefit when eaten in the right amounts.

While prebiotic and probiotic supplements are available, not all over-the-counter supplements are equally effective and research has found that some variants may have a negative impact on immunotherapy treatments. This is why it is best to try to meet your pre/probiotic needs through your diet. Including a variety of these foods in your diet can give your good gut bacteria the nourishment or diversity boost they need.

Food naturally rich in:

Prebiotics	Probiotics
<ul style="list-style-type: none">• Onions• Garlic• Leeks• Asparagus• Greenish bananas• Chickpeas• Cooked, cooled and reheated pasta or rice• Apples	<ul style="list-style-type: none">• Yoghurt (look for varieties that include lactobacillus bacteria)• Kefir• Fermented foods such as sauerkraut, kimchi and miso



Managing your appetite and diet during immunotherapy

Immunotherapy can sometimes affect your appetite, taste or digestion. This can make it harder to eat well.

It's important to speak with your treatment team if you are experiencing side effects that impact your appetite, weight or digestive health. They can connect you with an Accredited Practising Dietitian (APD), who can give you personalised advice and support.

Some general strategies that may help to manage your appetite and diet during immunotherapy include:

- **Eat small, frequent meals** if a big plate of food feels overwhelming.
- **Keep nutritious snacks handy.** Consider nuts, yoghurt, fruit, boiled eggs or smoothies.
- **Experiment with textures and flavours.** If food tastes bland, try adding herbs, spices, citrus or pickled vegetables. If chewing or swallowing is difficult, softer foods or soups may be easier.
- **Stay nourished when you feel nauseous.** Plain crackers, ginger tea, low fat dairy or cold foods may be easier to manage.
- **Focus on keeping your weight steady.** This can help you feel stronger and recover more quickly.



Eating for a healthy gut

You don't need to follow a strict diet when receiving immunotherapy. Instead, focus on balanced, colourful meals and snacks that you enjoy.

Below is an example of a one-day meal plan to show how simple choices can boost your fibre intake and support your gut health.

Meal	Suggestion	Fibre
BREAKFAST	Muesli bowl Combine: <ul style="list-style-type: none">• ½ cup of whole oats with a tsp of flax or hemp seeds or a seedy oat-based muesli• ½ cup of berries or grated apple• Greek yoghurt, milk or kefir with a sprinkle of cinnamon	7 grams
MORNING SNACK	Banana or kiwi fruit	2 grams
LUNCH	Tuna salad Combine: <ul style="list-style-type: none">• ½ cup of quinoa• ½ cup of four bean mix salad• A small can of tuna• 2 cups of salad (e.g., capsicum, cucumber, cherry tomatoes, carrot, cabbage, spinach etc) Finish with chopped parsley and a vinegarette dressing.	18 grams
AFTERNOON SNACK	Vegetable sticks (e.g. carrot, celery, red capsicum) with hummus or tzatziki 30g almonds	6 grams
DINNER	Salmon and vegetables Combine: <ul style="list-style-type: none">• Grilled salmon (or marinated tofu for a plant-based option)• 1½ cups of cooked vegetables (e.g., steamed broccoli, cauliflower, zucchini, peas, beans, carrots, corn, etc)• A cup of cooked brown rice	10 grams
EXTRA SNACKS	Small fruit salad and a cultured yoghurt with 1 teaspoon flaxseeds	6 grams
ESTIMATED DAILY FIBRE INTAKE		49 grams





Where can I find more information and support?

The advice and guidance presented in the brochure is general in nature. An **Accredited Practising Dietitian (APD)** is best placed to support you in making changes to your diet to help build a healthy gut microbiome. You can speak with your treatment team about being referred to an APD.

For more help or information about supportive care services in melanoma, you can visit Melanoma Institute Australia at melanoma.org.au or Melanoma Patients Australia at melanomapatients.org.au.

Please note: The information in this brochure is of a general nature and should not replace the advice of healthcare professionals. All care has been taken to ensure the information presented here is accurate at the time of publishing (December 2025).

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