

Gut feels

We take a deep dive into gut health to dish up what it really is, how you can improve your gut's microbiota and the link between your gut and mental health.

Words Josh Reed

What is gut health anyway?

Gut health is more than just popping probiotics, sipping kombucha and experiencing an absence of bloating. According to the journal article "Gut Health: A New Objective in Medicine?", published in *Biomed Central Medicine* (March, 2011), five major objective criteria apply to provide the basis for what gut health is. These criteria are:

01 Normal digestion and absorption
The effective digestion and absorption of food means that you successfully absorb water, food and minerals from your gut or gastrointestinal tract (GIT). It means you have a normal transit time (how long it takes food to move from your mouth to your anus), regular bowel movements and normal stool consistency. It also means that you have an absence of abdominal pain and that you experience gastrointestinal illness (GI) symptoms, such as bloating.

02 The absence of GI
The absence of GI means that you do not have carbohydrate intolerances, enzyme deficiencies, acid peptic disease, reflux disease, coeliac disease, GI cancer, inflammatory disease or an inflammatory state. Please note, if you do experience any GI symptoms, it is strongly recommended that you follow this up with your doctor.

03 Effective immune status
A huge portion of your body's immune system is located in your gut. For good gut health, it is a requirement that your GI immune status is functioning effectively. This means having a strong and effective GI barrier function, producing normal amounts of mucus to line your GIT, having normal numbers and activity of immune cells and having immune tolerance. An effective immune status also means that there is an absence of allergies, mucosal

What to eat for good gut health?

To increase the diversity and overall health of your gut microbiota, eat a variety of different vegetables, legumes, whole grains, fruit, nuts and seeds daily. These foods will deliver a range of different fibres, such as:

- Foods rich in soluble fibre include oats, barley, legumes, tempeh, psyllium husks and fruits and vegetables.
- Foods rich in insoluble fibre include brown rice, bran, flaxseeds, root vegetables, brazil nuts and peas.
- Foods rich in prebiotics include onion, garlic, legumes, green bananas, wheat and asparagus.

Super-fibre smoothie:
Oat milk, 2 tsp chia seeds, handful baby spinach, frozen banana, frozen blueberries and 3 tbsp rolled oats. Blend all together and serve.

hypersensitivity such as irritable bowel syndrome (IBS) as well as no enhanced bacterial translocation (bacteria are not moving into where they shouldn't, such as the bloodstream).

04 A state of wellbeing
In terms of gut health, wellbeing is reflected by a normal quality of life and positive gut feelings. A major mechanism behind this is the balanced production of serotonin, your feel-good hormone that is predominantly produced in the gut and is required for peristalsis and healthy bowel motions, as well as the normal function of the enteric nervous system (ENS). The ENS comprises hundreds of millions of nerve cells that are embedded within your GIT lining. Dubbed as the second brain, the ENS plays a major role in how you feel mentally, as well as how your gut feels

physically. It communicates continuously with your brain, which is known as the gut-brain axis. If this axis is compromised, it can result in both altered gut health (IBS) and altered mental health. This is why a healthy gut and a healthy mood equals a healthy state of wellbeing.

05 A normal and stable gut microbiota
The term "gut microbiota" refers to the trillions of microbes living within your GIT and, like many different animal species living on Earth, you have numerous (up to 1000) species of microbes living within your gut. Bacteria make up the majority of these microbes; however, fungi, viruses and protozoa can also be found. These microbes live predominantly within your large intestine (colon) but they do also habituate throughout your GIT.

Your gut microbes provide you with many beneficial functions, including their role in further digesting and extracting nutrients, producing certain vitamins (vitamin B and K) and fatty acids (butyrate), as well as playing a major role in your immune system. This includes their function to form a structural barrier to stop invading pathogens.

The bacteria in your gut also forms the bulk of your stools, which means without them, you'd unlikely pass healthy bowel motions.

Unique microbiota

Like your fingerprint, your gut microbiota is unique to you. You have about one third of your gut microbiota in common with the rest of the human population, while the other two thirds are unique to you alone. This influences your health, as well as your uniqueness.

So what's living inside of you? For good guy microbial health, your gut microbiota composition and function

should be characterised by a rich number of bacteria, great diversity in bacterial species as well as vitality of gut microbes. This, including the absence of bacterial overgrowth, GI infections and antibiotic-associated diarrhoea, defines a normal and stable gut microbiota.

Maintaining good gut health

Gut health is determined by normal digestion, absorption, immune function, the absence of GI illness, wellbeing and undoubtedly good gut microbiota health. If you think your gut health needs a little work, you're in luck. Fortunately, your gut health can be maintained and improved through managing your gut microbes as these guys impact on all of the above factors.

What you eat, or don't eat, is the strongest tool you have for maintaining good gut health. If you consume processed foods often, your gut microbiota will become compromised. This is because these types of foods lack fibre, which starves your good gut bacteria and contributes to constipation and/or diarrhoea.

In comparison, if you consume a variety of unprocessed plant foods, you will obtain an abundance of nutrients that support your gut. Specifically, you will receive generous amounts of the different types of fibre, including soluble, insoluble and prebiotic fibres. Soluble fibres attract water and turn into gel, which softens your stools, assists transit time and aids in the passing of healthy bowel motions. Insoluble fibres add bulk to your stools, which further helps with normal stool consistency and healthy bowel motions. Prebiotic fibres are special types that are selectively fermented by your gut microbes and, in turn, result in benefits for both yourself as a whole and your gut microbes. Some of these benefits include increased numbers and diversity of your gut microbes, higher biomass and water content in your stools and increased transit time of your stool waste.

It's simple, really — eat for good gut health by eating lots of plants.

Josh Reed is an accredited dietitian (APD), sports dietitian and personal trainer based in Byron Bay. Josh operates Reed Nutrition, a dietetic consulting business specialising in gut health, plant-based nutrition, sports nutrition and chronic disease management. He also works in Aboriginal health, delivering primary prevention programs as well as clinical care.



Gut Health Recipes

Baked Papaya with Lime & Coconut Yoghurt

Recipe / Lee Holmes

Here's a zesty and refreshing source of digestive enzymes to boost gut health and start the day with a fruity twist.

Serves: 2

1 large papaya, cut in half, seeds removed

1 tsp ground cinnamon
Zest & juice 1 lime

1 cup coconut yoghurt, to serve

Preheat oven to 180°C. Line baking tray with baking paper. Place papaya on tray. Sprinkle with cinnamon, lime zest and lime juice.

Bake for about 15 mins, or until papaya is lightly coloured. Remove from oven and allow to cool slightly. Serve with coconut yoghurt.

Note: You can add some lime slices to the baking tray to caramelise them, then squeeze the juice over the papaya just before serving.

Parmesan Baked Brussels & Broccolini

Recipe / Jacqueline Atwill

This recipe is quick, wholesome and absolutely bursting with flavour! Delicious served with your choice of protein or as a fibre-packed side for pasta or risotto on colder winter evenings.

Serves: 4 as a side

8-10 Brussels sprouts, sliced

½ cup finely grated Parmesan
Sea salt
Black pepper
Chilli flakes

Heat oven to 180°C and line a large baking tray with greaseproof paper.

Arrange Brussels sprouts and broccolini on tray, drizzle with olive oil, season with salt and pepper, toss then sprinkle Parmesan all over.

Place in oven to bake for 15-20 mins. Sprinkle with chilli flakes to serve.





Prebiotic Tray Bake

Recipe / Lee Holmes

This prebiotic bake is pimped up with a tangy garlic tahini drizzle. Roasting is a great way to cheer up any vegetable that may have been left in the fridge too long. The vegetables all cook at different speeds, so some are crunchier than others, which adds to the beauty of this dish. You can, however, stagger them with cooking times if you are a perfectionist.

Serves: 4

- | | |
|---|---|
| 200g Jerusalem artichokes | 1 jicama (Mexican yam bean), peeled & thinly sliced |
| ½ lemon | |
| 200g parsnips, peeled & quartered lengthways | 12 asparagus spears, trimmed |
| 300g heirloom or baby carrots, trimmed | 60mL extra-virgin olive oil |
| 2 leeks, white part only, cut into 2cm rounds | Aleppo pepper or red chilli flakes, for sprinkling |
| 2 red onions, cut in half | Celtic sea salt, to taste |

Garlic and Tahini Drizzle

- 1 garlic clove, crushed
- Pinch Celtic sea salt
- 3–4 tbsp tahini
- 3–4 tbsp lemon juice, or to taste
- 2–3 tbsp filtered water

Preheat oven to 200°C. Line large roasting pan with baking paper.

To prepare artichokes, scrub well but don't peel unless skin seems too rough. Cut in half lengthways and immediately rub cut surface with cut surface of lemon, to stop browning.

Place all vegetables, except jicama and asparagus, in single layer in roasting pan. You don't want to crowd vegetables or they won't roast and crisp up, so use another lined roasting pan if necessary. Drizzle with olive oil and rub to coat well. Sprinkle chilli flakes and sea salt.

Bake for 25 mins, turning once.

Add jicama and asparagus and roast for a further 10 mins, or until asparagus is just cooked and all vegetables are golden around edges.

Meanwhile, to make garlic and tahini drizzle, mash garlic and salt to purée.

Whisk in tahini, add lemon juice and a little bit of water, whisking continuously, adding a little more water each time until sauce reaches consistency of thick cream or runny yoghurt.

Taste and adjust seasoning.

Serve roasted vegetables with garlic and tahini drizzle.

Enjoy immediately.



Fermented Turmeric & Fennel Cauliflower

Recipe / Lee Holmes

Take cauliflower to new heights in this colourful Indian-spiced ferment. Turmeric is a powerful secret weapon when it comes to good health and enjoying this supercharged spice is an ideal pick-me-up if you're feeling a little run-down, and a wonderful comfort for an upset tummy.

Makes: 500mL

- | | |
|--|-----------------------|
| 1 head cauliflower, cut into small florets | 1 tsp fennel seeds |
| 1 tsp ground turmeric | 2 tsp Celtic sea salt |
| | 500mL filtered water |

Place cauliflower florets, turmeric and fennel seeds in bowl.

Toss to mix spices through cauliflower.

Transfer mixture to sterilised 500mL mason jar, pressing down to remove any large air gaps and leaving about 2.5cm headroom at top.

Dissolve salt in filtered water, then pour over cauliflower, ensuring it is fully submerged and leaving about 2.5cm breathing room at top of jar, to allow for expansion.

Cover jar with plastic wrap, then screw lid on tightly.

Keep in warm place for 3–4 days, then open and taste test until satisfied with result — vegetables should taste tangy.

Store in fridge and use within 3–5 days.



Cajun Baked Salmon & Brussels Sprouts

Recipe / Jacqueline Alwill

Brussels sprouts are packed full of fibre to support digestive health and stabilise blood sugar levels. Team them with a delicious, essential fatty acid-rich protein such as salmon and you have an incredibly nutrient-dense meal for dinner.

Serves: 1

180g Brussels sprouts, trimmed & sliced
160g fillet salmon
3 tsp extra-virgin olive oil
3 tsp Cajun spice mix

1 tsp sesame seeds
Sea salt & black pepper
Lemon wedge, to serve
Leafy green salad, to serve

Heat oven to 180°C and line large baking tray with greaseproof paper.

Arrange Brussels sprouts and salmon on tray, drizzle with olive oil, season with sea salt and black pepper and toss with Cajun spice mix to coat.

Sprinkle sesame seeds over salmon then place in oven to cook for 8–10 mins.

If you prefer salmon well done, leave in for an additional 2–4 mins.

Serve with lemon wedge and leafy green salad. Enjoy immediately.



Wholesome Spiced Apples

Recipe / Jacqueline Alwill

Seasonal fruits cooked in spice are a favourite in our home and this recipe is on high rotation throughout the year. Adding a fat such as coconut oil as well as cinnamon to the apples not only gives delicious flavour but slows the release of sugar from the fruit into the bloodstream and helps to keep your energy levels balanced. Guess what? You, your family and your friends will absolutely love this warming dessert!

Serves: 4

2 tbsp coconut oil
700g green apples, core removed & thinly sliced

½ cup sultanas
3 tsp cinnamon
½ cup macadamias, chopped

Honey ricotta, to serve
Coconut yoghurt, to serve

Heat a large frypan on low–medium heat.

Add coconut oil, apples, sultanas and cinnamon and toss to coat.

Cover with lid and cook 12–13 mins, tossing frequently.

Remove lid and cook a further 2–3 mins.

Sprinkle with macadamia nuts and serve as is or with dollop of coconut yoghurt, or honey ricotta for something more indulgent. Enjoy whilst warm.