

THE CONVERSATION

Academic rigour, journalistic flair



A Mediterranean diet is good for your gut health. Marian Weyo/Shutterstock

Coronavirus: how to keep your gut microbiome healthy to fight COVID-19

March 20, 2020 1.01am AEDT

These are unprecedented times. COVID-19 (the illness caused by the new coronavirus SARS-CoV-2) has officially been declared a pandemic by the World Health Organization. Many countries have sealed their borders and put the population under voluntary or enforced lockdown. Cultural and sporting events have been cancelled or postponed – including Euro 2020 and the Glastonbury festival – pubs and restaurants are closing, and people are panic buying staples such as toilet paper and pasta. But although it can feel like the situation is out of control, there are still plenty of things you can do to protect your health and that of the people around you.

First and foremost, follow national guidance for preventing COVID-19: avoid spreading the virus and cut your chances of catching it by regularly washing your hands, avoiding touching your face and reducing social contact. This is particularly important for protecting at-risk groups including people with existing health conditions, the elderly and pregnant women.

As well as protecting yourself from the virus on the outside, you can also build up your defences from the inside by strengthening your immune system. Many people, especially the young, develop only very mild disease. The immune system is complex and highly responsive to the world around us, so

Author



Tim Spector

Professor of Genetic Epidemiology, King's College London

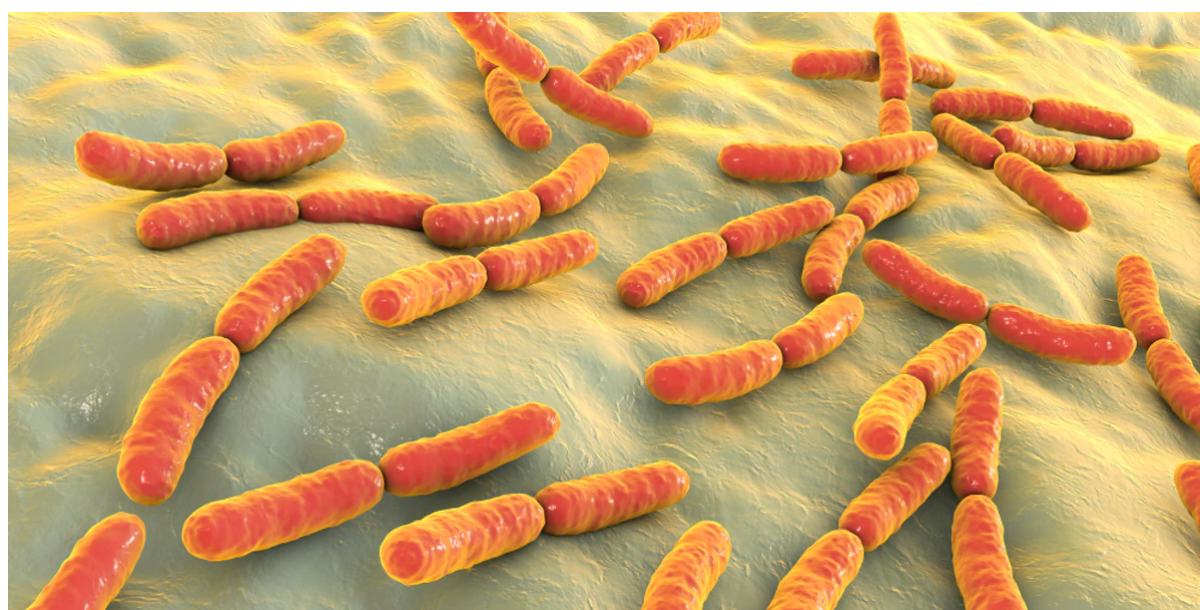
it's not surprising that many factors affect its function. What's important to know is that most of these factors are not hard-coded in our genes but are influenced by lifestyle and the world around us.

One thing that you can control immediately is the health of the trillions of microbes living in your gut, collectively known as the microbiome. Recent research has shown that the gut microbiome plays an essential role in the body's immune response to infection and in maintaining overall health. As well as mounting a response to infectious pathogens like coronavirus, a healthy gut microbiome also helps to prevent potentially dangerous immune over-reactions that damage the lungs and other vital organs. These excessive immune responses can cause respiratory failure and death. (This is also why we should talk about "supporting" rather than "boosting" the immune system, as an overactive immune response can be as risky as an underactive one.)

Healthy microbiome, healthy gut, healthy body

Rather than taking supplements that claim to "boost your immune system" with no good supporting evidence, the food you eat has a big impact on the range and type of microbes in the gut. A diverse microbiome is a healthy microbiome, containing many different species that each play their part in immunity and health. Microbiome diversity declines as you get older, which may help to explain some of the age-related changes we see in immune responses, so it's even more necessary to maintain a healthy microbiome throughout life.

The fine details of the interactions between the gut microbiome and the immune system are not fully understood. But there seems to be a link between the makeup of the microbiome and inflammation – one of the hallmarks of the immune response. Gut bacteria produce many beneficial chemicals and also activate vitamin A in food, which helps to regulate the immune system.



Gut bacteria produce many beneficial chemicals. Kateryna Kon/Shutterstock

Eat to feed your microbiome

The best way to increase microbiome diversity is by eating a wide range of plant-based foods, which are high in fibre, and limiting ultra-processed foods including junk food. Following a Mediterranean

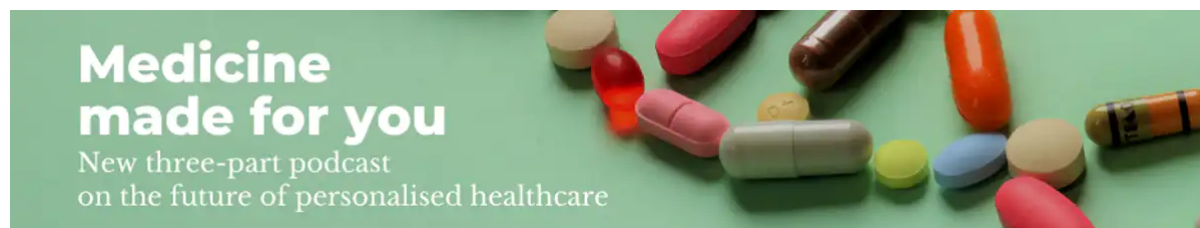
diet has also been shown to improve gut microbiome diversity and reduce inflammation: eating plenty of fruit, vegetables, nuts, seeds and whole grains; healthy fats like high-quality extra virgin olive oil; and lean meat or fish. Avoid alcohol, salt, sweets and sugary drinks, and artificial sweeteners or other additives.

If you are concerned about getting hold of fresh produce while self-isolating or quarantined, frozen fruit, berries and vegetables are just as healthy as their fresh counterparts and will last much longer than the currently recommended two-week isolation period. Canned fruit, beans and pulses are another long-lasting option.

You can also support your microbiome by regularly eating natural yoghurt and artisan cheeses, which contain live microbes (probiotics). Another source of natural probiotics are bacteria and yeast-rich drinks like kefir (fermented milk) or kombucha (fermented tea). Fermented vegetable-based foods, such as Korean kimchi (and German sauerkraut) are another good option.

Whether you're shopping for yourself, your family or for elderly relatives or friends, choosing foods that support a healthy gut microbiome is much more important than stockpiling toilet paper.

Managing your mental health, staying physically active and getting enough sleep will also help to keep your immune system in good shape. And don't forget to wash your hands!



To find out more about the importance of the gut microbiome, listen to Medicine made for you, a series by The Anthill podcast on the future of healthcare and how it could soon get a lot more personal. Listen here or subscribe to The Anthill wherever you get your podcasts.

[Immune system](#)[Gut microbiome](#)[Coronavirus](#)[Probiotic](#)[COVID-19](#)