

FEED YOUR microbiome

Did you know there are billions of beneficial bugs brewing in your belly? By choosing foods to support these bugs, you reap rich mind-body rewards.



Words / Caroline Robertson

The ability for every environment to thrive and survive depends on a symbiotic ecosystem. Your inner ecology is composed of a unique mix of microbes known as your microbiome or microbiota. Right now, trillions of micro-organisms are communicating and co-ordinating processes to enhance your digestion, immunity, moods and much more. This gut flora family is pivotal to life and longevity.

Health blossoms when you have a diverse and abundant beneficial blend of bacteria, fungi, viruses and protozoa in your gut. Though your microbiome develops from the womb, birth canal and through breast milk, it is constantly evolving. Everybody can benefit from fertilising their gut field but especially those with allergies, candida, diabetes, digestive issues, inflammation, low immunity, mental health issues and obesity.

Your gut houses 70 per cent of your immune system, according to gastroenterologist Dr. Will Bulsiewicz. Research reveals that the microbiota is essential to synthesise amino acids, B12 and vitamin K. A healthy microbiome maintains mental health too by contributing to the creation of serotonin for balanced moods, melatonin for sleep and dopamine for action. Psychobiotics are specific bacteria that are beneficial for your mental state. For example, fermented milk products have been shown to lower cortisol levels, a stress indicator.

Ecosystem enemies

Your colony of colon carers include helpful and harmful microbes. When detrimental micro-organisms outnumber beneficial microbes dysbiosis may develop. This pro-inflammatory, immune dysregulating imbalance can contribute to conditions such as allergies, digestive disturbances, diabetes, heart disease and weight gain.

Products that promote dysbiosis include alcohol, antibiotics, artificial sweeteners, chemicals, nicotine, processed foods, some pharmaceuticals, sugar and foods containing antibiotics.



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According to a report published in *Frontiers in Endocrinology* titled 'Unhealthy Lifestyle and Gut Dysbiosis', "Instability of the gut microbiome can be caused by many factors, including infection, diet, exercise, sleep pattern." Sloth may be another microbiome adversary as the report concludes that "exercise may hold numerous potential benefits for the health of the intestinal microbiome, not only through improved insulin sensitivity, weight loss, and improved cardiovascular health, but also through its impacts on the intestinal microbiota composition."

Poor hygiene can cause oral and vaginal dysbiosis, resulting in *candida albicans* overgrowth or thrush. Dysbiosis can lead to a leaky gut, where undigested food particles enter the bloodstream and trigger an inflammatory immune response. Investigations that can confirm a dysbiosis diagnosis include an organic acids test, comprehensive digestive stool analysis and a hydrogen breath test.

Probiotic power

Since the "father of probiotics", Russian biologist Elie Metchnikoff, linked different yoghurt cultures to longevity in 1905, science has supported the health pros of probiotics. Probiotics live up to their meaning "for life". Probiotic-rich produce includes apple-cider vinegar, kefir, kombucha, miso, natto, yoghurt, select cheeses, pickled vegetables, tempeh and fermented foods. To preserve their probiotic potency, these foods should be sealed and stored properly. Ideally they will be free from sugar, gluten, dairy, nuts, additives and preservatives.

Examples of the positive application of probiotics include *L. acidophilus* bacteria for acne, allergies, candida and digestive disturbances. *Streptococcus thermophilus* in cheese promotes smoother skin by increasing the lipid ceramide barrier in the dermis.

Do you suffer symptoms of dysbiosis?

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| Abdominal cramps | Depression |
| Aching joints | Diarrhea |
| Acid reflux | Poor concentration |
| Anxiety | Skin conditions |
| Bad breath | Smelly urine |
| Bloating | Undigested food in stool |
| Chronic fatigue | Vaginal or rectal itching |
| Constipation | |

Prebiotics cultivate the gut's soil so probiotic seeds thrive. Prebiotics include fibre-rich foods such as asparagus, apple skin, banana, barley, chicory root and garlic. Those sensitive to FODMAPs (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) may find prebiotics disturb their digestion. In this case it's advisable to try the Monash University FODMAP diet. There are abundant apps, blogs and cookbooks coaching people to apply this diet without starving. Other approaches to optimise digestion are to address stress, exercise moderately, eat mindfully, optimise sleep, cultivate good posture, sip warm water, massage your stomach and don't delay toilet trips.

The Microbiome Diet

Devised by Dr. Raphael Kellman, the Microbiome Diet is designed to restore gut health and attain a healthy weight. The diet has three phases that encourage the intake of non-starchy fruits and vegetables, nuts, seeds, chickpeas, salmon, olive or sunflower oil. The three phases are as follows:

1. Remove inflammatory substances such as pesticides, processed foods, hormones and sugar. Repair with a plant-based diet. Replace lost enzymes and acid with specific supplements, herbs and spices. Re-inoculate the beneficial bacteria through prebiotic and probiotic foods.
2. Re-introduce foods such as dairy, grains, high-fructose fruit and legumes.
3. A maintenance stage designed to stabilise one's ideal weight for the long term.

More bugs, please

Food can be your medicine if you add microbiome yummys to your menu. Each country has a tradition of probiotic staples that are now widely available. Eastern Europe loves its sourdough rye breads and sauerkraut. India has its fermented rice and urad dal doshas and idli. Kombucha is thought to originate in China. Ethiopia is famous for its fermented teff pancake called injera. Yoghurt is a Scandinavian favourite. France's fromage makes it the cheese capital of the world. Kimchi is a Korean delicacy. Japan's tamari, tempeh, miso and natto are a must in every kitchen. Kefir comes from Russia's Caucasus mountains.

A gut flora feast can be nutritious and delicious. Incorporating compatible prebiotic and probiotic foods into your cuisine is simple with the right recipes. Fortunately, there are many foods that can radically restore a damaged microbiome and preserve a balanced biome. Below is an example of a day's microbiome meal plan:

Breakfast	Snack
Banana and berry smoothie with coconut kefir.	Kombucha and cruciferous vegetable puffs.
Sourdough rye toast with avocado, feta and cabbage sauerkraut.	Dinner
Snack	Miso soup.
Berries with yoghurt.	Stir-fry with tempeh, asparagus, green beans, garlic, leeks and tamari
Lunch	Beetroot with parsley.
Brown rice, broccoli, green beans and lentils with kimchi.	Baked apple with yoghurt, cinnamon, clove and nutmeg.

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