- Digestion



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A guide to your microbiome

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Get to know this tiny yet powerful community and discover the best ways to look after yours

Microbes – tiny living organisms such as bacteria, yeasts, and fungi –are found everywhere on earth, including your body. In fact, your body is home to trillions of microorganisms, the vast majority of which are found in your gut (mostly in the large intestine or colon).

Each human body hosts about 10 microorganisms for every human cell, and these microbes contribute to digestion, produce vitamin K, promote development of the immune system, and detoxify harmful chemicals.

Small but mighty

This community of microbes and their genes (collectively known as your gut microbiome) are essential to your health. They support your immune system, they aid in digestion, and are even capable of shaping your mood and mental well-being. Imagine them as an invisible organ, which plays an important role in maintaining optimal health.

MICROBIOME 101



Microbe
Tiny living things, too small to be seen by the naked eye. Microbes include bacteria yeasts and fungi.

Microbiota
All the microbes that live in a particular area of your body, e.g. the skin microbiota or gut microbiota.

Gut microbiome
The collection of microbes and genetic material that inhabit your gut; the bit we want to nourish.

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30 DAYS TO Better Gut Health







Where do we get our microbiome?

Scientists used to think we were first colonised by microbes at birth, but newer research suggests bacteria can actually be passed from mother to baby through the placenta. And birth still plays a major role in shaping the infant microbiome. Babies born vaginally are exposed to their mother's gut and vaginal microbiota, which helps kick-start their microbial community. In contrast, babies born by Caesarean section are initially seeded with skin microbiota instead.

In the first few months of life, the microbiome develops quickly. Breastmilk is packed with HMOs (human milk oligosaccharides), a special family of carbohydrates that feed the beneficial microbes in a baby's gut. As babies begin to eat solid foods, new families of microbes are introduced. Through the first two years of life, the gut microbiome keeps evolving, shaped by multiple factors. Skin-to-skin contact, having a pet, and playing outside can all introduce new beneficial microbes into the gut.

By the time a child turns three, their gut microbiome starts to resemble an adult's. After that, it tends to stay fairly stable, though changes can occur due to factors like illness, antibiotics, and diet. With all these influences, it's no wonder your microbiome is uniquely yours! While humans are 99.9% identical in terms of genes, the communities of bacteria and genes in our guts can be 70-80% different from one another.

How does it affect your health?

Although you might have grown up fearing microbes, your gut microbiota are essential to your health. From an early age, the bacteria in your gut train your immune system to understand what it should and shouldn't respond to. Bacteria lining your gut protect you from illness by acting as a barrier between your body's internal organs and tissues and harmful bacteria from the external environment.

Your gut microbes also help with digestion. They break down fibre and in turn produce by-products known as short chain fatty acids (SCFAs). These help keep the cells lining the gut healthy and help regulate inflammation and immune responses.

Microbes can also communicate with your brain via various pathways. For example, gut microbes produce neurotransmitters (chemical messengers) such as serotonin, which can send signals to the brain affecting how we feel. The SCFAs produced when bacteria munch on fibre are also thought to play a role in how we respond to stress. So by feeding your microbes with the right foods, you can also support your brain health.

Microbiome fact!

In any human body there are around 30 trillion human cells, but our microbiome contains an estimated 39 trillion microbial cells including bacteria, viruses and fungi that live on and in us.

How do I know if my microbiome is healthy?

Good question! With so much variation between individuals, a 'healthy' microbiome can look very different from person to person –no matter what you read online, there's no single 'healthy microbiome.' However, scientists agree that a healthy gut microbiota generally includes a diverse mix of microbes (many different species) which are resilient to stressors such as antibiotic use or infections.

On the flip side, low diversity or an imbalance in species (sometimes termed 'dysbiosis') has been linked to conditions like diabetes, allergies and irritable bowel syndrome. It's still unclear whether these imbalances contribute to disease development or are a consequence of it, and current microbial profiling can't yet predict disease risk. As we age, our microbiome naturally loses diversity and genetic richness, but the good news is that a healthy, active lifestyle can help counter some of these changes.

One last note: commercial microbiome or stool testing kits that are now widely available aren't yet advanced enough to provide useful insights, so our advice is to save your money and focus on the following healthy habits (see right-hand page, and the rest of this magazine) instead.

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HABITS TO SUPPORT YOUR *microbiome*





Through food When you eat, you're not just feeding yourself, but your microbes too. So what should you be eating to keep them happy? The most important nutrient is fibre. This carbohydrate, found in fruits, vegetables, nuts, seeds, whole grains, peas, beans and lentils, acts like fertiliser for your gut bacteria. In the UK, 90% of adults aren't eating the recommended 30 grams a day, so this is one area most of us can focus on.

Eating a wide variety of plant-based foods is important too. In one study of healthy adults, researchers found that those who ate about 30 different types of plant foods a week had more diversity in their gut microbiomes than those eating 10 or fewer. They also had fewer genes associated with antibiotic resistance. Eat different coloured fruits and vegetables, mix up your grains and choose mixed nuts and beans.

Additionally, prebiotics and probiotics can support a healthy gut microbiome. Prebiotics are specific types of dietary fibre that nourish good bacteria, while probiotics are live beneficial bacteria that help promote a healthy gut environment.



Through movement Just like your brain and body benefit from regular exercise, so does your gut microbiome. Research shows that regular exercise can increase the diversity of your microbiome.



Through rest and relaxation While some level of stress in everyday life is normal and expected, there's evidence that ongoing chronic stress can impact your gut microbiome in unfavourable ways. Chronic stress often comes from doing too much without any downtime, so make time for activities you enjoy and set aside a period of time each day to unwind and recharge.

Wrapping up Your microbiome is an ally in maintaining your health, and taking care of it doesn't have to be complicated or involve expensive supplements or tests. By incorporating simple, everyday habits – like enjoying a variety of fibre-rich foods, staying active, and building in rest and relaxation – you can help your body's microscopic helpers thrive.

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