The Secret World of Germs

The Gut Microbiome

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Introduction

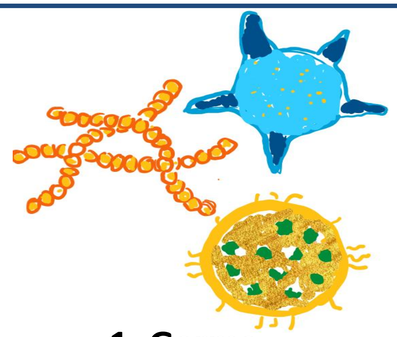
Most people think of germs as these bad creatures which cause illnesses and we should stay away and wash our hands to avoid them. However, what if I told you there is a special kind of germs that are inside you and are good for you and help you stay healthy! These are the good germs of your **gut microbiome.**

The gut microbiome is made up of trillions of **bacteria** and other microscopic organisms such as **viruses** and **fungi**. They all live within your **gastrointestinal tract** which includes your stomach and intestines (AFP, 2017). This is especially important for children as it fights off the bad germs.

Explanation of Scientific and Technical Principles

IMMUNITY
The gut microbiome makes up 80% of the body's immune system. (Cleveland Clinic, 2023) It works **to train the immune cells** to differentiate non-harmful foreign objects like food and bad disease-causing objects like pathogens which can make you extremely sick. These microbes also fight to **take up space and nutrients** away from the bad bacteria, so they die off quickly.

DIGESTIVE
The good bacterium of the gut also aids in digestion. It helps to **break down foods like starches and some fibres** which the body finds hard to break down naturally. They also help to **make some important vitamins** in the body too.



1. Germs



2. Microbiome of the Gut

Good foods	Avoid
Yoghurt, cheese, Fermented foods	Fast foods
Chocolate	Processed foods like chips
Fruits, vegetables, foods with lots of fibre	Foods high in sugar

3. How to Improve your Gut Microbiome

Explanation of Scientific and Technical Principles

GUT-BRAIN AXIS
The gut-brain axis is the connection between a brain and a gut. It explains how **gut microbes affect our emotions**. Also, how we feel affects gut health. Like increased stress can cause irritable bowel and changes in the gut microbiome have been shown to increase anxiety and depression. (Cleveland Clinic, 2023)

Significance and Impact

The gut microbiome is an extremely important part of our body; without it we would not be able to survive! It is essential that we maintain a healthy gut microbiome and there are many ways that can improve the number of good microbes we have in our gut. By maintaining a healthy diet which includes lots of **prebiotics**, which feed the good gut bacteria in your stomach (Health Direct, 2024) This could be foods like **fruits and vegetables or dark chocolate. Probiotics**, which actually contain the good bacteria are found in fermented foods such as **yoghurt** (Better Health Channel, 2023). We should should also avoid highly processed foods and high sugar as they change our gut bacteria.

References

*1.*Australian Family Physician, The gut microbiome, April 2017, *https://www.racgp.org.au/afp/2017/april/the-gut-microbiome#:~:text=Discussion,kg%20in%20an%20average%20adult. [accessed 24th April 2026]*
2. Cleaveland Clinic, Gut Microbiome, Updated August 2023, https://my.clevelandclinic.org/health/body/25201-gut-microbiome *[accessed 1st May 2026]*
3. Cleveland Clinic, The Gut-Brain Connection, Updated September 2023, https://my.clevelandclinic.org/health/body/the-gut-brain-connection *[accessed 1st May 2026]*
4. Health Direct, Gut Microbiome and your health, August 2024, https://www.healthdirect.gov.au/the-microbiome *[accessed 2st May 2026]*
5. Better Health Channel, Gut Health, March 2023, https://www.betterhealth.vic.gov.au/health/healthyliving/gut-health *[accessed 2st May 2026]*