Knowledge
FOR HEALTHCARE PROFESSIONALS

Yakult

Foundations of A Healthy Gut

SIMPLE, SCIENCE-BACKED TIPS TO SUPPORT A HEALTHIER GUT

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Contents

1.Inside The Gut

The gut refers to your gastrointestinal tract, which includes your mouth, oesophagus, stomach, small intestine, and large intestine. Your gut is a complex system that digests food, absorbs nutrients, and eliminates waste, but it does much more than that. Inside your gut lives the gut microbiome, home to trillions of microbes that support digestion, immunity, and even brain function. Together, your gut and its microbes play a vital role in your overall health.

1 Mouth

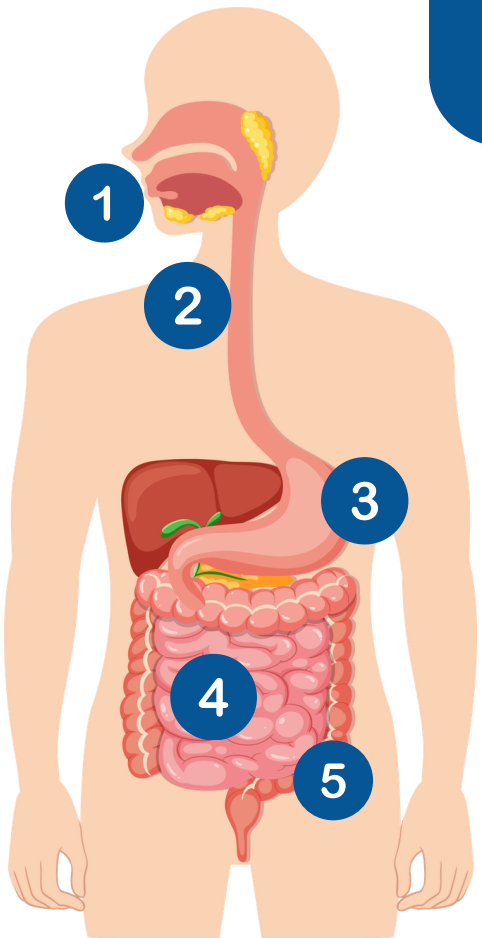
- Chews and breaks food into smaller pieces
- Saliva begins carbohydrate digestion via enzyme - amylase
- Swallowing moves food into the oesophagus

2 Oesophagus

- A muscular tube that connects the mouth to the stomach
- Moves food using rhythmic muscle contractions (peristalsis)

3 Stomach

- Secretes acid (kills off most bacteria) and enzymes (break down proteins)
- Food stays in the stomach for up to 4 hours



4 Small Intestine

- Around 6–7m long
- Main site of nutrient absorption
- Digestive enzymes and bile break down fats, proteins, and carbs
- Its lining is covered with villi and microvilli, which greatly increase surface area — helping absorb nutrients efficiently

5 Large Intestine

- Absorbs water, minerals, and remaining nutrients
- Home to trillions of gut bacteria that ferment undigested fiber, producing short-chain fatty acids (SCFAs)
- Supports immune health
- Compacts waste into stool for elimination

What is the Gut Microbiome?

The gut microbiome, located in the gastrointestinal tract, with the majority residing in the colon, is made up of trillions of microorganisms, including bacteria, viruses, fungi, archaea, and other eukaryotes. Together, they account for over half of the total cells in the human body and can weigh up to 2 kilograms in an average adult.

What Does the Gut Microbiota Do?

The gut microbiota performs a wide range of essential functions that help keep the body healthy and balanced. Here's how:

1 Regulates Immune Responses and Inflammation

- About 70% of the body's immune system is located in the gut, where it plays a crucial role in defending against harmful bacteria, helping to maintain a healthy balance of beneficial bacteria while preventing the overgrowth of harmful bacteria
- A balanced microbiota regulates inflammation in the body
- An imbalance (dysbiosis) may be linked to conditions like IBS, obesity, or autoimmune disorders [1]

2 Synthesis and Production of Important Substances

- Synthesises certain vitamins (like vitamin K and some B vitamins)
- Contributes to hormone and neurotransmitter production, such as serotonin [2]

3 Supports Digestion

- Helps break down complex carbohydrates, fibres, and proteins that our body can't digest alone
- This process produces short-chain fatty acids (SCFAs), which fuel our gut lining, and can assist regulating bowel movements

4 Maintains Gut Barrier Integrity

- Strengthens the gut lining to prevent "leaky gut" or unwanted substances entering the bloodstream [2]

5 Supports Brain and Mental Health

- Communicates with the brain via the gut-brain axis
- Influences mood, sleep, and stress response through microbial metabolites and neural pathways [3]

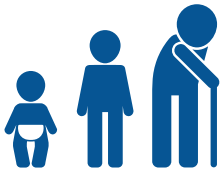
Reference:

1. Takiishi T, Fenero CIM, Camara NOS. Intestinal barrier and gut microbiota: Shaping our immune responses throughout life. Tissue Barriers. 2017;;5(4): e1373208. doi: 10.1080/21688370.2017.1373208.
2. Barandouzi ZA, Lee J, Rosas MC, et al. Associations of neurotransmitters and the gut microbiome with emotional distress in mixed type of irritable bowel syndrome. Sci Rep. 2022;12(1648). doi:https://doi.org/10.1038/s41598-022-05756-0
3. Sejbuk M, Siebieszuk A, Witkowska AM. The Role of Gut Microbiome in Sleep Quality and Health: Dietary Strategies for Microbiota Support. Nutrients. 16(14):2259. doi: 10.3390/nu16142259

2.Factors Impacting Gut Health

Gut health is shaped by both non-modifiable and modifiable factors:

Non-modifiable Factors

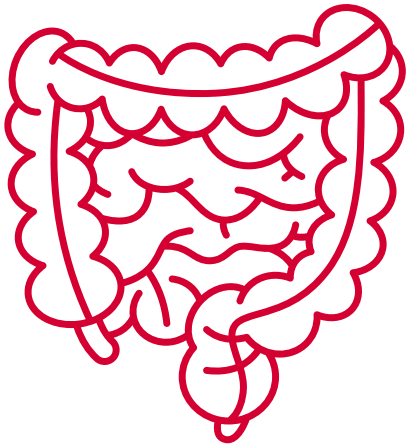


Age

Medications

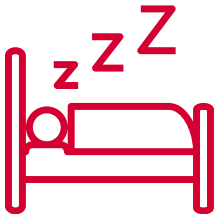
Environment

Genetics



Diet

Sleep



Stress

Exercise

Hydration

Modifiable Factors

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3.Ways to Support Gut Health

A. Diet

The foods we eat can influence the type and diversity of bacteria in our gut. A more diverse microbiota is generally associated with better digestive and overall health, making a healthy, balanced diet essential. Our gut microbes feed on the same foods we consume, particularly fibre-rich plant foods, making diet a key driver of microbial balance. Research shows that long-term dietary patterns rich in plant-based foods support the growth of beneficial bacteria, while diets high in processed foods may encourage the growth of potentially harmful bacteria. Following a balanced, fibre-rich diet is a simple yet effective way to nurture a healthy gut environment. [4]

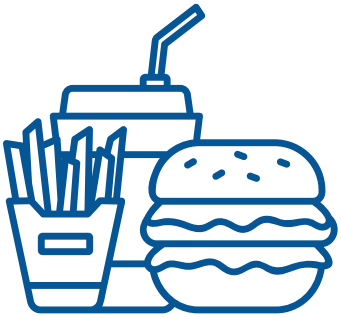
Eating more than 30 types of plant foods per week (fruits, vegetables, grains, legumes, herbs, nuts, seeds, etc.) has been shown associated with higher gut microbiota diversity.[4]

Tips for adding more plant foods in:

- Add herbs, spices, nuts, and seeds to boost variety
- Frozen, canned, and dried plants count too
- Eat the rainbow – eat different coloured vegetables/fruit
- Swap single-grain options for a mixed wholegrains
- Aim for 5 serves of vegetables a day as often as you can.
  1 serve = ½ cup of cooked vegetables or 1 cup of raw salads
- Try plant-based protein sources like beans, lentils, or chickpeas in place of meat, or mix them into dishes like rice or stews for extra fibre and variety

Reference:
4. McDonald D, Hyde E, Debelius JW, et al. American Gut: an Open Platform for Citizen Science Microbiome Research.ASM.2018;3(3):e00031-18.doi: 10.1128/mSystems.00031-18

Ultra-Processed Foods and Gut Health

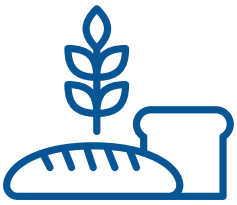


Ultra-processed foods (UPFs), such as packaged snacks, sugary beverages, and ready-made meals, are typically high in added sugars, unhealthy fats, salt, and artificial additives, while being low in dietary fibre and essential nutrients. Regular consumption of these foods can negatively affect the gut microbiota by reducing microbial diversity and promoting inflammation.

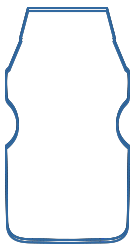
Studies have shown that UPFs can lead to an imbalance in gut bacteria (dysbiosis), decrease beneficial microbial populations, and increase intestinal permeability, all of which may contribute to systemic inflammation and various chronic health conditions.[5, 6]

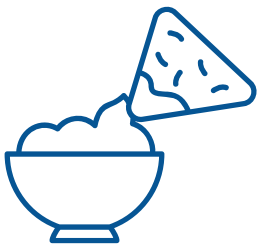
Tips to Include Gut-Healthy Snacks Instead of Ultra-Processed Foods

Opt for fresh fruit, veggie sticks, or a handful of nuts over packaged snacks. Whole foods provide natural fibre and nutrients that support gut bacteria



Snack on foods with live beneficial bacteria like plain yogurt, kefir, or fermented vegetables (e.g. kimchi, sauerkraut) to help support gut microbial diversity





Incorporate legumes, seeds, and wholegrains into your snacks, like lentil dips, chia puddings, or oat-based bars, for added prebiotics

Swap sugary drinks for water, herbal tea to support hydration

Reference:

5. Song Z, Song R, Liu Y, et al. Effects of ultra-processed foods on the microbiota-gut-brain axis: The bread-and-butter issue. Food Res Int. 2023;167:112730. doi: https://doi.org/10.1016/j.foodres.2023.112730
6. Atzeni, A., Hernández-Cacho, A., Khoury, N. et al. The link between ultra-processed food consumption, fecal microbiota, and metabolomic profiles in older mediterranean adults at high cardiovascular risk. Nutr J. 2025;24(62). https://doi.org/10.1186/s12937-025-01125-5

Foods Your Gut Will Thank You For

Prebiotic Foods

Prebiotic foods are non-digestible fibres that serve as fuel for beneficial gut bacteria, helping them produce short-chain fatty acids (SCFAs). These SCFAs support gut health by providing anti-inflammatory and immune-regulating benefits.[7] Common sources include garlic, onion, leeks, asparagus, bananas, oats, and legumes.

Probiotic Foods

Probiotic foods contain live beneficial bacteria that help replenish and support the balance of our gut microbiota. These are commonly found in fermented foods such as yogurt, kefir, miso, kimchi, sauerkraut, and fermented milk drinks like Yakult.

Some high-fibre foods can cause gas and bloating, as gut bacteria produce gas when breaking down fibre.
To avoid digestive discomfort, increase high-fiber foods gradually over 7 days to let your gut adjust.

Tip

Note: Not all fermented foods contain live bacteria. Some are pasteurised or heat-treated during processing, which kills the beneficial microbes. Examples include: coffee and chocolate beans (after roasting), shelf-stable sauerkraut, canned pickles, pasteurised kombucha, sourdough bread.

Check labels for phrases like “contains live cultures” or specific strain names (e.g., *Lacticaseibacillus paracasei* Shirota strain) to choose products with active probiotics.

Reference:
7. Xiong RG, Zhou DD, Wu SX, et al. Health Benefits and Side Effects of Short-Chain Fatty Acids. Foods. 2022: 11(18). 2863. doi: 10.3390/foods11182863

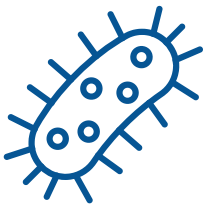
What Are Probiotics?

Probiotics are live microorganisms, mainly beneficial bacteria, that, when consumed in adequate amounts, provide health benefits to the host.[8] They are often referred to as "good" or "friendly" bacteria because they help maintain a balanced gut microbiota. Probiotics can be found in fermented foods and in supplement form.

Lifestyle factors such as poor diet, stress and some medications could negatively impact the balance of the gut microbiota. Probiotics may help to:

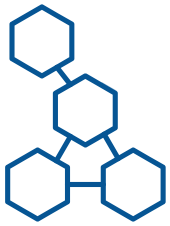
Maintain and replenish the number of beneficial bacteria, especially during and after taking antibiotics

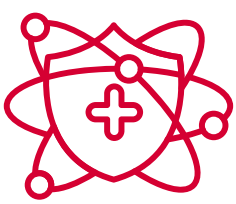
Reduce the number of potentially harmful bacteria and the toxins by-products produced



Assist with digestion and absorption of nutrients

Contribute to the formation of some vitamins





Help to enhance the immune system, particularly during winter as probiotics may help decrease the occurrence and severity of colds [9]

Reference:
8. Hill C, Guarner F, Reid G, et al. The International Scientific Association for Probiotics and Prebiotics consensus statement on the scope and appropriate use of the term probiotic. Nat Rev Gastroenterol Hepatol.2014;11:506-514.doi: https://doi.org/10.1038/nrgastro.2014.66
9. King S, Glanville J, Sanders ME, Fitzgerald A, Varley D. Effectiveness of probiotics on the duration of illness in healthy children and adults who develop common acute respiratory infectious conditions: a systematic review and meta-analysis. Br J Nutr. 2014;112(1):41-54. doi: 10.1017/S0007114514000075.

Choosing A Probiotic

Not all probiotics are the same. The actions, and health benefits can vary depending on diverse factors. An effective probiotic will have the following characteristics:

- **Survives stomach acid and bile to reach the intestines alive**
- **Contains sufficient live beneficial bacteria (measured in CFU*)**
- **Dose matters – effectiveness depends on the specific strain and evidence-based CFU amount, not just a higher number**
- **Clinically proven to provide health benefits in humans**

*CFU is the measure used to indicate the number of live, active bacteria in a probiotic product. The CFU count should reflect the number of bacteria expected to survive and remain effective until the product's use-by date.

While probiotics offer many benefits, consistency is key. Occasional consumption is unlikely to significantly impact gut health. Most benefits are seen with regular intake over 2-4 weeks, allowing probiotic strains time to establish and interact with the gut microbiota.[10] This is because probiotics do not stay in the gut permanently, they pass through and only help while they are there. Without regular intake, their levels drop too quickly to make a real difference.

Look for the full three-part name

Genus
Lacticaseibacillus

Species
Paracasei

Strain
Shirota

Lacticaseibacillus paracasei Shirota strain (LcS) is the unique probiotic strain found in Yakult. Each bottle contains at least 6.5 billion CFU of live, beneficial LcS bacteria. Backed by 90 years of scientific research, the LcS strain has been shown to survive stomach acids and reach the intestines alive, where it positively alters beneficial bacteria in the gut and supports regular bowel movements by improving stool consistency.[11]

Reference:
10. Sakai T, Makino H, Ishikawa E, et al. Fermented milk containing Lactobacillus casei strain Shirota reduces incidence of hard or lumpy stools in healthy population. Int J Food Sci Nutr. 2011;62(4):423-430. doi: https://doi.org/10.1038/nrgastro.2014.66
11. https://www.yakult.com.au/benefits/

B. Hydration

Did you know that the human body is made up of about 70% water? This makes staying hydrated even more crucial, as nearly every system in your body relies on water to function properly. Water does more than just quench your thirst, it helps your gut flush out waste, prevents constipation, supports oral hygiene by keeping bacteria moving, and leaves your mouth feeling fresh.

Tips

- Carry a reusable water bottle as a constant reminder
- Hydrate with food: Include water-rich foods like cucumber, watermelon, and strawberries in your meals to boost your hydration
- Set hydration reminders: Use phone alarms or apps to nudge you to drink water throughout the day
- Add zest: Infuse your water with slices of lemon, lime, or other fruits to make it more refreshing

How much fluids do we need?

It is recommended to aim for 8 to 10 cups (1.5 to 2.5L) of fluids daily. Pregnant or breastfeeding individuals may need more fluids, while those with conditions requiring specific fluid requirements should consult with their healthcare provider.

Recent research highlights that adequate hydration promotes gut microbiota diversity and supports the integrity of the gut barrier, while dehydration can impair microbial balance and compromise gut function.[12]

Reference:
12. Redondo N, Gheorghe A, Serrano R, et al. HYDRAGUT study: Influence of HYDRAtion status on the GUT microbiota and their impact on the immune system. FASEB Bioadv. 2015l;29(S1):593.1. doi:10.1096/fasebj.29.1_supplement.593.1

C. Exercise

Regular exercise is essential not only for heart and muscle health but also for maintaining a healthy gut. Physical activity enhances gut microbiota diversity, strengthens the gut barrier, and improves overall gut function. Exercise promotes blood flow to the intestines, reduces gut inflammation, and supports a balanced microbiome, which is linked to better digestion, stronger immunity, and a lower risk of chronic diseases. By maintaining microbial diversity and gut integrity, exercise plays a key role in digestive health and overall well-being.[13]

Australian Physical Activity Guidelines (18-64yrs)[14]

Be active on most, preferably all, days

Minimise prolonged sitting, break up long periods of sitting as often as possible

Include muscle-strengthening activities on at least two days per week

Accumulate 2.5-5 hours of moderate-intensity activity, 1.25-2.5 hours of vigorous-intensity activity, or a combination of both each week

Make movement enjoyable!

Dancing is a fun way to boost your fitness, improve coordination, and lift your mood

Activities like hiking, cycling, and kayaking keep you active while letting you enjoy fresh air and nature

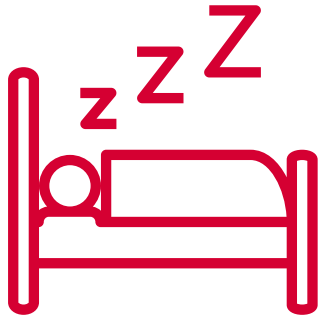
Team or solo sports help you stay fit, build strength, and make exercise more social and fun

Walking or running with a dog can make exercise more enjoyable

Reference:

13. Monda V, Villano I, Messina A, et al. Exercise Modifies the Gut Microbiota with Positive Health Effects. Oxid Med Cell Longev. 2017;2017:3831972. doi:10.1155/2017/3831972
14. Physical activity and exercise guidelines for all Australians. Department of Health, Disability and Ageing. Updated May 7, 2021. Accessed May 15, 2025. https://www.health.gov.au/topics/physical-activity-and-exercise/physical-activity-and-exercise-guidelines-for-all-australians

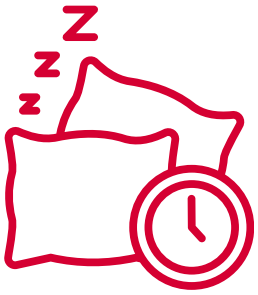
D. Sleep



Quality sleep and regular rest are vital for maintaining a healthy gut. The connection between the gut and brain, known as the gut-brain axis, means that poor sleep can disrupt gut function, and an imbalanced gut can, in turn, affect sleep quality. [15]

Research indicates that sleep deprivation can alter the composition of gut microbiota, leading to reduced microbial diversity and increased inflammation. These changes may contribute to the development of sleep disorders. Conversely, a healthy and diverse gut microbiota supports the production of neurotransmitters and hormones that regulate sleep, such as serotonin and melatonin.

Tips



- Aim for 7-9 hours of quality sleep each night
- Stick to a consistent sleep schedule, including weekends
- Establish a calming bedtime routine to help your body wind down
- Limit screen time and bright lights in the hour before bed
- Avoid caffeine in the afternoon – even 6 hours before bedtime can affect sleep
- Exercise regularly, but avoid vigorous activity in the hour before bed

Reference
15. Sejbuk M, Siebieszuk A, Witkowska AM. The Role of Gut Microbiome in Sleep Quality and Health: Dietary Strategies for Microbiota Support. Nutrients. 16(14):2259. doi: 10.3390/nu16142259

E. Stress Management

Ever heard of getting "butterflies in your stomach"?

That is because your intestines have their own independent nervous system, they are often called the "second brain." This powerful connection means that when we are stressed, it not only affects our minds, it can also upset our gut. Ongoing stress can change how our gut moves, increase sensitivity, weaken the gut lining, and upset the balance of good bacteria. This can lead to problems like bloating, discomfort, and worsen conditions such as IBS or reflux.[16]

Interestingly, the connection goes both ways: an unhealthy gut can also send signals back to the brain, influencing mood and even contributing to anxiety or depression.[16]

Healthy habits for stress relief

Practicing mindfulness or short meditation sessions may help lower stress hormones and improve emotional regulation

Spending time with friends, family, or support groups can boost mood and provide emotional support during stressful times

Regular exercise like walking, yoga, or swimming boosts mood by increasing feel-good chemicals like endorphins

Learning to say no and making time for quality sleep and breaks helps prevent burnout and restores energy

Reference:
16. Madison A, Kiecolt-Glaser JK. Stress, depression, diet, and the gut microbiota: human-bacteria interactions at the core of psychoneuroimmunology and nutrition. Curr Opin Behav Sci. 2019;28:105-110. doi: 10.1016/j.cobeha.2019.01.011

4.Gut Health 5-Week Challenge

To make building gut-friendly habits more fun and motivating, try our Gut Health 5-Week Challenge Bingo!

Each square represents a simple habit that supports your gut, like eating a new plant food, drinking enough water, getting good sleep, or moving your body.

Tick off a square each time you complete an activity.

Aim to complete a full row, column, or even the whole board each week!

Use this bingo card to track your progress, challenge yourself, and build consistency.

See how many rows you can complete in five weeks, and notice the difference in how you feel!

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5.Gut Health Fill-in-the-Blank

Fill in the blanks to see how much you have learned about building a healthy gut. This quick quiz is a fun way to reinforce key habits!

- Drinking enough _____ helps support the gut lining and promotes smooth digestion.
- A diverse _____-rich diet feeds good gut bacteria and supports a balanced microbiome.
- Managing _____ through mindfulness or relaxation techniques can protect both gut and mental health.
- Aim for ____ to ____ hours of sleep per night to support gut health.
- Regular _____ increases blood flow to the gut and promotes bowel regularity.
- The gut and _____ communicate through a two-way connection known as the gut-brain axis.
- Fermented foods contain live _____ that help maintain a balanced and diverse gut microbiota.
- Eating 30 or more different _____ foods per week has been linked to a more diverse microbiome.

Gut Health Fill-in-the-Blank

Fill in the blanks to see how much you have learned about building a healthy gut. This quick quiz is a fun way to reinforce key habits!

ANSWER

- Drinking enough water helps support the gut lining and promotes smooth digestion.
- A diverse fiber-rich diet feeds good gut bacteria and supports a balanced microbiome.
- Managing stress through mindfulness or relaxation techniques can protect both gut and mental health.
- Aim for 7 to 9 hours of sleep per night to support gut health.
- Regular exercise increases blood flow to the gut and promotes bowel regularity.
- The gut and brain communicate through a two-way connection known as the gut-brain axis.
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- Eating 30 or more different plant foods per week has been linked to a more diverse microbiome.