

Bugs in your gut

The ensemble of microorganisms that resides in the gut are crucial to good health and wellbeing.

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THE digestive system is made up of the gastrointestinal tract, which is also known as the GI tract or gut.

It comprises the mouth, oesophagus, stomach, and small and large intestines, as well as the rectum and anus. The liver, pancreas and gallbladder are also parts of the digestive system.

The digestive system plays a vital role in maintaining a healthy body.

The gut digests food to release energy and nutrients; the latter are then absorbed for various body functions. It also functions to eliminate unused waste materials after digestion.

The gut also forms 80% of the immune system. Found on the walls of the small intestine, specialised immune cells (known as Peyer's patches) identify harmful bacteria within the gut and assist in fighting pathogens by triggering the formation of antibodies.

The gut is also home to a diverse community of microorganisms, called gut microbiota, which play an important role in ensuring that the digestive system functions efficiently.

The gut microbiota consists of the entire population of microorganisms living in the digestive system, comprising both "good" and "bad" bacteria.

An estimated population of 100 trillion microorganisms lives in the gut, including about 1,000 different types or species of bacteria.

Importance of a balanced gut microbiota

A balanced gut microbiota is essential to good gut health. It can ensure proper gut movement and digestive function.

A good gut microbiota can also break down potentially toxic food compounds and block pathogenic compounds from entering the body.

A well-balanced gut microbiota will also produce certain vitamins, like vitamin B12 and K, as well as help strengthen the immune system and maintain overall health.

However, dysbiosis or imbalanced gut microbiota can happen when there are insufficient good bacteria to prevent bad bacteria from adversely affecting the digestive system in your body.

Dysbiosis can lead to diarrhoea or loose stools, change in bowel habit, constipation, and excessive bloating or burping.

Imbalance in gut microbiota also contributes to tummy discomfort or pain, excessive fatigue, and even lack of concentration.

Many factors influence the composition, richness, diversity and balance of gut microbiota in the digestive system.

Some begin at birth, while others are habits that can be changed.

Babies born through vaginal delivery are exposed to maternal vaginal bacteria, and will develop their first gut microbiota and stimulate their immune system earlier than babies born via Caesarean section.

Also, the gut microbiota of pre-term infants has reduced diversity, higher level of potentially pathogenic bacteria, and lower number of health-promoting bacteria, when compared to full-term infants.

In addition, breastfed newborns have been demonstrated to carry a more stable and uniform population of bacteria when compared to formula-fed babies.

Mother's milk is reported to contain more than 600 species of bacteria and an abundance of prebiotics that stimulate the growth of good bacterial species.

Furthermore, dietary intake plays a major role in determining the balance and composition of gut microbiota.

Studies have shown that changes in diet result in considerable and rapid changes in the make-up of gut microbiota. High-fat or

high-sugar diets may lead to gut dysbiosis, while a fibre-rich diet has been shown to promote a healthy gut microbiota.

Apart from that, certain lifestyle habits and practices have been known to affect gut microbiota.

Studies show that regular physical activity can increase the abundance of good bacteria in the gut, in contrast to sedentary lifestyle.

Taking certain medications, especially broad-spectrum antibiotics, can disrupt the balance of gut microbiota by increasing the level of opportunistic pathogens and decreasing the number of beneficial bacteria.

Excess stress has also been reported to have a negative impact on the overall function of the gut.

Improving gut health

The balance of gut microbiota is vital in maintaining gut and overall health.

There are various ways to control the balance of gut microbiota and improve gut health, especially through a healthy diet and lifestyle:

- Practise balance, moderation and variety in your daily diet.

Use the Malaysian Food Pyramid as your guide to healthy eating.

Make sure to follow the three basic principles when planning meals: Balance, Moderation and Variety.

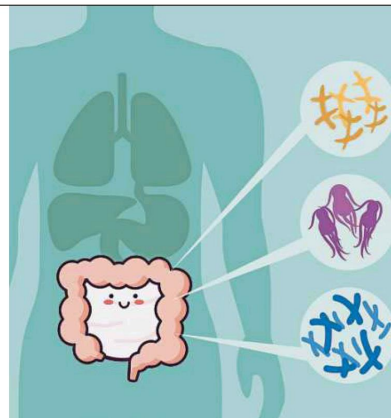
A balanced diet means to eat from all food groups daily, and to consume more food from the bottom levels and less from the higher levels.

Practise moderation by eating the right amount of food following the recommended servings for each group.

Opt for smaller servings if you are physically inactive.

Also, eat a variety of foods from each of the food groups so as to obtain all essential nutrients for the body.

- Include foods rich in fibre. Dietary fibre helps to keep foods



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moving through the gut more easily and gives the correct consistency and bulk to stools.

Some dietary fibres may also have other health benefits, including lowering cholesterol level, control of blood sugar and weight management.

Fibre can be obtained from foods such as legumes and whole grains, as well as whole grain products, vegetables and fruits.

Consuming sufficient amounts of these foods will enable us to meet the recommended intake of 20-30g of dietary fibre daily.

- Consume probiotic-rich foods.

Nourish the gut with probiotic foods such as cultured milk and fermented milk products containing probiotic cultures, to keep the gut microbiota in balance and maintain good gut health.

- Consume prebiotic-rich food.

Prebiotics are specific dietary fibres that promote the growth of healthy bacteria in the gut by acting as a food substrate for the bacteria. Examples of prebiotic-rich foods are banana, asparagus and onion.

- Reduce intake of fried and fatty foods.

Oily and fatty foods are more difficult to digest. Choose foods prepared with healthier cooking methods such as steamed, grilled, boiled and stir-fry, instead of deep-fried foods.

- Drink plenty of water.

Sufficient fluids are needed to prevent constipation and aid in food digestion.

Fibre pulls water into the colon to create softer, bulkier stools,

allowing them to pass through more easily. Drink at least eight glasses of plain water daily.

- Be active.

Maintain a physically active lifestyle and a healthy body weight to ensure that your gut is in optimal working condition.

Get at least 150 minutes of moderate exercise or 75 minutes of vigorous exercise per week.

Try to be active every day in as many ways as you can (e.g. climbing stairs, housework, gardening).

Make sure to cut down on physical inactivity and sedentary habits (e.g. watching TV, sitting down, playing digital/electronic games).

A balanced gut microbiota is essential for gut health, which in turn can have important impact on the overall health of a person.

On the other hand, an unhealthy gut and imbalanced gut microbiota can lead to various health complications, especially predisposing a person to various forms of gastrointestinal problems.

Follow the practical tips above to improve gut health. Keep your gut healthy for your overall health and well-being.

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