

Bacteria – Sometimes bad usually good



A Science of Medicine
The Art of Care

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Overview

The gut microbes, collectively termed the *microbiome*, are highly active and versatile, and not just passive occupants of our digestive tracts. Very few of these are harmful to our health. The vast majority are helpful, even indispensable. We depend on these ‘friendly microbes’ for protection against disease-causing bacteria and viruses, for much of our energy supply, for help in digesting some foods, and for supporting the immune system. Unfortunately, these ‘friendly flora’ are at the mercy of toxins and alien chemicals taken in with heavily processed food and drink, medicinal drugs, especially antibiotics and anti-viral agents, and hostile microbes like *Salmonella* and *Listeria*. As the microbiome is essential to continuing best health, it is in our own self interest to keep this colony of microbes in in the best possible condition. Tibb recognises this, and asserts that any measures taken to prevent or treat disease, or assist in recuperation, should not obstruct, damage or destroy these friends of ours.

Changing attitudes to bacteria

For most of us, the only good microbe is a dead microbe. For many years now, microbes have been under suspicion as the main culprits for virtually every disease. The mantra is: if we only lived in a sanitary, sterile, microbe-free world, we would avoid most diseases and remain healthy. We therefore take sometimes heroic measures to ensure a sterile, germ-free environment for ourselves and our families. This is still reflected in our present day obsession with hand sanitisers, anti-bacterial soaps, germ-free toilets, the massive, unrelenting use of antibiotics in minor, trivial infections, and a morbid fear of dirt. Fortunately the true, crucial role of our gut bacteria and other microbes in maintaining our best health is now emerging. Without the teeming billions of bacteria (and other microbes) we harbour in and on our bodies, we would be very ill indeed. This awareness has resulted in an explosion of interest in products such as the probiotics, which support the microbiome.

The Father of Medicine, Hippocrates, stated: “Most diseases start at the stomach”.

What are the gut bacteria?

Microbes are microscopically small organisms. The main ones are bacteria, viruses and fungi. Whole colonies of bacteria live harmoniously on the skin and in the mouth, gut, lungs and elsewhere. These differ

An important role of gut bacteria is to resist colonisation by other microbes, which can lead to disease.

from site to site in terms of numbers and type. In our large intestines the one-hundred trillion or so gut bacteria (which largely make up our microbiome) weigh several pounds, similar in weight to our brain.

Apparently there are between 300 and 500 different species of bacteria, and counting. These live-in microbes show synergy in action. In exchange for a congenial living environment (moist, warm, safe and plenty of nutrients) the microbiome contributes enormously to our overall well-being.

What do the gut bacteria do?

This trade-off helps in many ways: it helps in the digestion of food, the supply of energy, a regular source of vitamins, support for the immune system, nourishment for the brain, and actively warding off 'bad bacteria' and the infections they bring. All in all, they are a critical part of our day-to-day state of health, and essential for our survival.

Their benefits to us can be divided into three main areas:

Metabolic input

- They help by providing certain vitamins, especially K and the B-complex, and a number of valuable minerals.
- They release energy-rich metabolites, particularly short-chain fatty acids, for use in the brain.
- They help ferment some foods which would otherwise be indigestible.

Protection

- The gut bacteria form a barrier against microbes which disturb the existing harmony within the gut space, or even lead to infective diseases.
- They help break up dense mucus plugs which accumulate in certain disorders.
- They break down alien substances such as foreign compounds and conventional drugs.

Control

- The gut bacteria form an important part of the body's immune system, so are a strong contributor to Physis.
 - They are actively involved in the formation of cells which form the inner lining of the intestine.
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Why are gut bacteria important to Tibb?

Hippocrates, Ibn Sina and other pioneers in Tibb knew little of the existence of the microbiome, as they did not have the technology at the time. However, if they were alive today they would probably regard our community of gut bacteria as a very important aspect of Physis' action in health and disease, and as further support for a sensible lifestyle. *Their* good health is an essential part of *our* wellness. They would advise us to respect and cultivate them, rather than damage or destroy.

The gut bacteria are important in Tibb for a number of reasons:

- The first Tibb Lifestyle Factor is: "*Environment, Air and Breathing*". Best health exists when the person's temperament, lifestyle and environment are in harmony, and disease arises when this harmony is disturbed. So changes in the gut contents, whether for good or for ill, will disturb this harmony. *Protecting gut bacteria is a positive aspect of this Lifestyle Factor.*
 - The second Tibb Lifestyle Factor is: "*Food and Drink*". Our microbiome is constantly exposed to the products of food digestion, and any other substances present. Therefore the nature of what we eat and drink is very important health-wise. The type of food, how processed it is, what toxins it contains and the microbes it contains, all influence the gut bacteria's state of health.
 - An important part of Physis is the immune system. Physis is the governor of the body, *the "doctor within"*, which underpins the powerful phenomenon of inner healing. It controls all processes related to life. We know much of our immune system is related to the digestive tract, including the microbiome it hosts. So by helping the gut bacteria to achieve optimum power, we can strongly support this inner healing. *A basic principle of Tibb is that all health-affirming measures should support and protect, not impede or oppose, Physis.*
 - Another major Tibb Lifestyle Factor is: "*Elimination and Retention*". Our body takes from the environment, in this case food, what it can use, and returns what it cannot. The removal of waste and toxins is therefore paramount for best health. The microbiome plays a major role in this process, and this can be adversely affected by drugs (especially antibiotics) and toxins. The latter include the thousands of new-to-nature agro-chemicals, pesticides, and preservatives present in food and drink. *Proper elimination of toxins is therefore essential for good microbiome health.*
 - The variety and number of bacteria and other microbes in our body is unique. This is powerful additional support for one of the basic tenets of Tibb, namely, *temperament*. This concept embraces genetic make-up, physique, personal habits, and behaviour characteristics. The variation in gut bacteria is yet one more point of support for the need to take a person's temperament into consideration during diagnosis, treatment and follow-up.
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Gut bacteria and antibiotics

Since their introduction decades ago, antibiotics have without doubt had a major beneficial impact on the treatment of acute, life-threatening infections. Unfortunately, their widespread and indiscriminate use has resulted in a number of serious, unintended consequences. One has been an undesirable impact on our gut microbiome. The rampant use of antibiotics is capable of disturbing the existing harmony between the different microbes within the digestive tract. Broad spectrum antibiotics drastically reduce the overall population of most bacterial species living in the gut. Even the more selective antibiotics can seriously upset the balance between different bacterial species, so allowing a “population explosion” of ‘bad bacteria’ which were previously in small numbers. This can have pathogenic consequences.

Even a single course of antibiotic treatment can disturb the harmony within the microbiome, and it may take some time to recover from this. The diarrhoea or *Candida* infection that often follows antibiotic use are probably due to infection with alien, hostile microbes which are themselves resistant to the antibiotic being used.

Antibiotics in pregnancy. The new-born child of mothers taking antibiotics frequently, especially during the later stages of pregnancy, is less likely to have the normal, desirable microbiome. It may be lacking in numbers, or range of microbe species, or it may have a shortage of the friendly bacteria needed to ward off hostile, infection-bringing microbes. The same applies to the increasing numbers of babies whose mothers have opted for Caesarean section.

Helping our gut bacteria

Most bacteria resident on and in us do not cause disease, but are actually highly beneficial. Tibb maintains

Just changing from a high-fat, high-sugar diet to one with more fibre can reshape our microbiome, giving it a healthier profile.

that they are major players in maintaining the harmony in our internal environment, so any treatment for preventing or treating disease should assist these friends of ours – not obstruct, damage or destroy them.

Antibiotics should be used with discretion and restraint; otherwise they may inflict damage on our microbiome.

From the ***Lifestyle Factor*** perspective, nutrition plays a major part. Avoiding or reducing intake of intensively processed and sugar dense foods, and replacing these with fresh, seasonal fruits, vegetables, beans, seeds and nuts is advised. Fermented foods such as sauerkraut, sourdough bread, pickles, yoghurt and kefir also help. *High fibre foods are an excellent way of sustaining our gut bacteria.*

Becoming more physically active seems to improve the quality of the person’s microbiome. Athletes appear to have better gut bacteria profiles.

Probiotics are dietary supplements containing live “good” bacteria or yeasts which boost the number and health of the microbiome. They are taken to restore harmony to the normal gut flora after antibiotics or other agents have severely disturbed it. Certain dairy products, especially live yoghurt and buttermilk, are popular sources of probiotics.

All these measures will support Physis by improving the activities of the immune system, lower inflammation, and generally lead to much better health.

Summary

The body is host to the microbiome, several trillion microbes, present as a multitude of species. The

The body's microbiome is involved in many other bio-medical processes – e.g. weight control, inflammation and mental health.

microbes have made their home in or on the body, mainly in the gut, mouth and on the skin. The numbers hugely exceed – by around seven-fold – the number of human cells in the body, and make up approximately three percent of the body's mass.

In the past microbes especially bacteria were strongly linked to infections such as sore throat and bronchitis. We now know that most bacteria in the gut are not bad or threatening to our health, but are in fact beneficial. They are actually necessary for maintaining good health. They play a very important part in nutrition, energy, vitamin and the immune system. Having the right balance of gut bacteria may be the key to enjoying a long and healthy life.

Tibb encourages treatment which supports the beneficial, life-affirming benefits of the gut microbiome. Physis is actively supported by adherence to the Lifestyle Factors, and reining in habits or situations which impede it. It recognises that the uniqueness of each of us, our temperament, is reflected in the diversity of the gut microbiome, and accepts it as further proof of the importance of a person's temperament in healthcare. Although Tibb recognises the need for antibiotics in acute, life-threatening and emergency situations, it affirms that it must be done with responsibility; otherwise the gut bacteria's beneficial roles can be severely curtailed.

Further Reading

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