

Fonty, Gérard

gerardfonty@orange.fr

Honorary Research Director at the CNRS. President of GREFFE (Scientific group for reflection and information for sustainable development), France
Forum Origine, Diversité et Territoires
Workshop n°3, Session n°1

Microbes in the human body: an army of faithful companions and true allies

The human body is home to a whole community of microorganisms: bacteria, archaea, fungi and viruses, grouped under the term "microbiota".

Humans do not host one, but several microbiota. The same micro-organisms are not found in all areas of the body and their proliferation depends entirely on where they are found. Many factors influence the nature of the microorganisms capable of proliferating in a given area of our body: source of nutrients, humidity conditions, presence or absence of oxygen, pH, etc.

We harbour microorganisms in the skin (skin microbiota), in the respiratory tract (lung microbiota), in the mouth (oral microbiota), in the intestine (gut microbiota) and in the genital organs (vaginal microbiota). In the course of evolution, they have become faithful companions and valuable allies. We have, in fact, developed a real mutualism with them.

All of these microorganisms carry out numerous biological functions that are essential to our health. For each microbiota to function optimally, it is imperative that it is not ignored, neglected or, worse, mistreated. The disturbances, called dysbiosis, caused to each of them can be at the origin of the development of severe pathologies. The dialogue and symbiosis that exist between each microbiota and the host are indeed fragile. Any change in the composition of the microbiota disrupts this relationship.

On our body and in its cavities, we host more microbial cells than there are cells forming our own organism and the number of microbial genes is greater than the number of genes in our own genome. Together with the billions of microbial cells that accompany us faithfully from birth to death, we form a "supra-organism".

If humans really want a long life free of health problems and wish for the sustainability of their species, it is high time they stepped down from their pedestal and considered that they are nothing without the most 'primitive' living beings on the planet. We will never dominate microbes. Human microbiota: armies of soldiers that protect and defend us. Moreover, after our death, won't our bodies serve as food for them? !!!!! We must respect them.

Bibliographic references

Fonty G. Bernalier-Donadille A., Forano E. et Mosoni P. (2019). Consommation et digestion des végétaux. Rôles des microbiotes et fonctions essentielles à la biodiversité. Edition Quae.

Pichon M., Lina B. et Josse L. (2018). Caractérisation et impact du microbiote bactérien respiratoire sur les maladies virales. *Virologie*, 22 (3) : 161-172

Selosse M-A. (2017). Jamais seuls. Ces microbes qui construisent les plantes, les animaux et les civilisations. Editions Actes Sud.