YOUR IMMUNE HEALTH

# Why is the gut microbiota important for health & well-being?

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**What is the gut microbiota?**
The gut microbiota refers to a community of microbes that includes bacteria, yeasts, fungi, viruses, that inhabit our gut.
The gut microbiota is gaining recognition as a vital organ that is essential for our health and well-being[1].

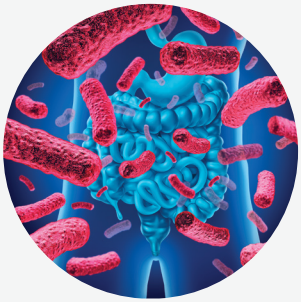
## THE IMPORTANCE OF GUT MICROBIOTA FOR HEALTH

**Production of beneficial nutrients**
The gut microbiota can transform dietary fiber to produce important nutrients such as short chain fatty acids (SCFA) which represents a rich source of energy for our daily activities[2].
It can synthetize micronutrients, such as vitamins B, K as well as amino acids important for a healthy immune system and an active mind[3,4].
The gut microbiota is also responsive to chemical transmissions in the brain that impacts mood, behaviour and cognition[5].


**1.** Mohajeri, M. H. & Al. 2018. The role of the microbiome for human health: from basic science to clinical applications. European journal of nutrition, 57 (Suppl 1), 1–14. - **2.** Morrison D.J. and Preston T., 2016. Formation of short chain fatty acids by the gut microbiota and their impact on human metabolism. Gut Microbes. VOL. 7, NO. 3, 189–200. - **3.** Hill M.J., 1997. Intestinal flora and endogenous vitamin synthesis. Eur J Cancer Prev. 6 (Suppl 1): S43-S45. - **4.** Metges CC., 2000. Contribution of microbial amino acids to amino acid homeostasis of the host. J Nutr. 130:1857S–1864S. - **5.** Cryan J.F. & Al. 2019. The Microbiota-Gut-Brain Axis. Physiol Rev. 99: 1877–2013.

## Protection from bacterial and viral infections

Early life exposure to maternal, paternal and environmental micro-organisms is essential for the creation of a rich gut microbiota that is favourable for the development of immune health.
The gut microbiota and other dietary components can train the immune system to recognise the "good" microbes and remove or supress the "bad" microbes in the gut.
This relationship is established early in life and its maintenance is intrinsically linked with our health status.
The crosstalk between the gut microbiota and the immune system generates a balance between immune tolerance (controlled immune response) and inflammation (uncontrolled immune response).
The gut microbiota also protects the host against bacterial and viral infections by competing with them for attachment to our gut cells. It also produces antimicrobial proteins, effectively neutralising, starving and killing disease causing microbes[6].



## Promotion and maintenance of gut health

The gut microbiota has been shown to promote the development of gut structure and to support the integrity and function of the gut barrier, protecting us from pathogens and harmful microbial products and promoting nutrient digestion and absorption[1,6].


**6.** Sassone-Corsi M., Raffatellu M., 2015. No vacancy: how beneficial microbes cooperate with immunity to provide colonization resistance to pathogens. J Immunol. 194:4081–4087.