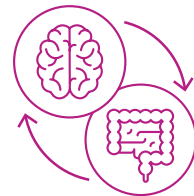


GUT-BRAIN AXIS: HOW YOUR MICROBIOTA TALKS TO YOUR BRAIN?



DEFINITION

The **gut-brain axis** is a **bidirectional communication** between the gut and brain, in which gut microbiota plays a key role.

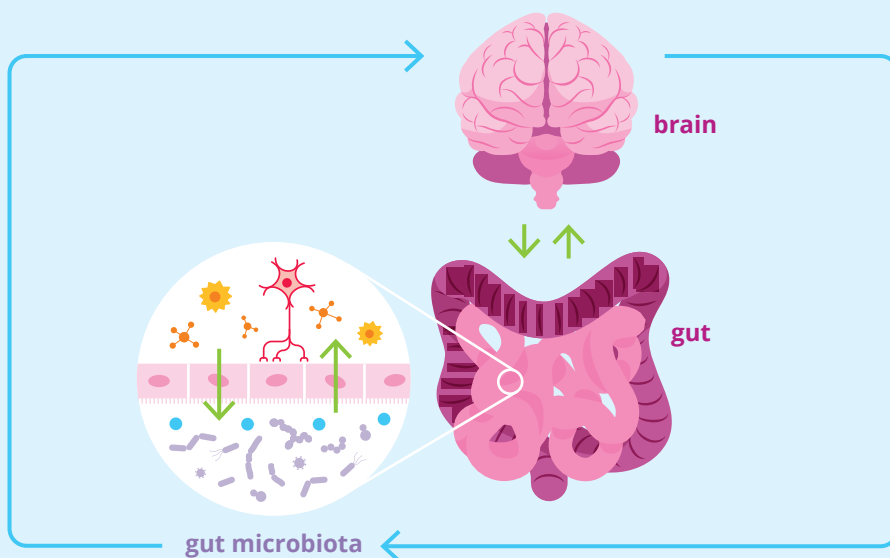
DID YOU KNOW?



Your gut is called the **second brain**: it is lined by more than **100 million neurones**.



The brain regulates the activity of the gut and vice versa



top-down

- brain to microbiota: *by secreting signal molecules*
- brain to gut to microbiota: *by modulating the gut physiology (motility, secretion, permeability, microbiota)*

bottom-up

- microbiota to brain: *by producing molecules*
- microbiota to gut to brain: *by sending signal through the gut*

Information carriers:



The gut-brain axis could be involved in the development of...



neurodegenerative diseases

Alzheimer's disease, Parkinson's disease, multiple sclerosis...

neuropsychiatric diseases

depression & anxiety, schizophrenia, autism spectrum disorder, bipolar disorder, attention deficit/hyperactivity disorder...



gastrointestinal disorders

inflammatory bowel syndrome, disorders of gut-brain interaction: Irritable Bowel Syndrome, functional dyspepsia...



skin diseases

atopic dermatitis, psoriasis, acne...



metabolic diseases

obesity, diabetes...

How to maintain good communication between the gut and the brain?

Diet



probiotics



prebiotics



fibers



healthy diet

Healthy lifestyle



sleep



environment



physical activity

Gut-brain signal management



psychotherapeutic interventions

Cognitive Behavior Therapy (CBT), hypnosis, psychodynamic, relaxation...

Under studies



Faecal Microbiota Transplantation (FMT)

