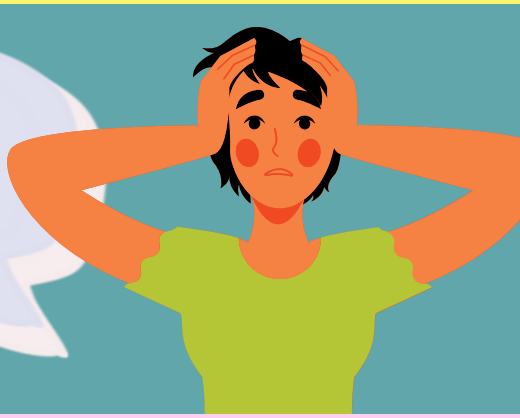
MIND YOUR GUT

THE POWERFUL CONNECTION BETWEEN YOUR BRAIN AND THE GUT

Have you ever experienced a moment where a 'gut feeling' told you something wasn't right? Or perhaps you've felt 'butterflies in your stomach' before an important event?



These common expressions are more than just figures of speech; they reflect a deep and **complex bi-directional connection** between the **brain** and the **gastrointestinal (GI) system**, known as the **gut-brain axis**.

It involves a **continuous exchange of signals** between the central nervous system (**CNS**) in the brain and the enteric nervous system (**ENS**) in the GI tract, often referred to as the "second brain." This connection is facilitated through **neural pathways**, such as the vagus nerve, as well as through **chemical signals**, including neurotransmitters and hormones. The gut **microbiome** plays a large role in this connection, and so does our **diet**.

The gut microbiome encompasses trillions of bacteria, viruses, fungi, protozoa, and their collective genetic material residing in the gastrointestinal tract.

This microbiome maintains a symbiotic relationship with our body, where both entities derive mutual benefits from each other's presence and activities.

Did You Know?

Most newborn babies first build their microbiome composition with help from their mother upon exposure to various pathogens in the vaginal canal, and then during breastfeeding.

Gut microbes produce neuroactive substances like serotonin and dopamine, which play key roles in regulating human mood, anxiety, and overall mental health.

In exchange, microbes thrive in a stable environment rich in nutrients provided by the human gut.

Gut microbes can also produce dietary **metabolites**, and influence changes in the **immune system** to produce messengers called **cytokines**, which can both affect activity in the brain

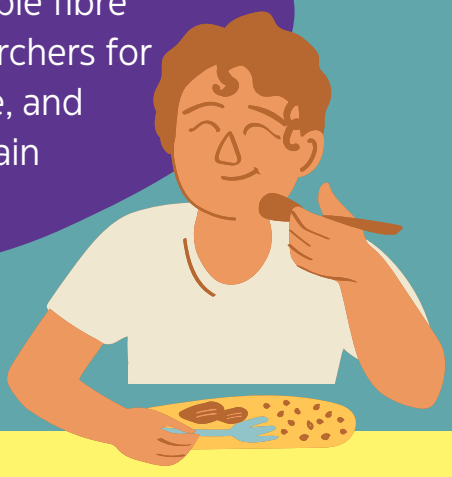
Conversely, the brain exerts considerable control over gut function. **Stress**, **anxiety**, and **emotional states** can alter **gut motility**, **secretion**, and even the **composition** of the gut microbiome, leading to symptoms such as nausea, bloating, or changes in bowel habits.

Scientists are still exploring the full impact of the gut-brain axis on human health.

An interesting study in mice found that feeding them a probiotic (food containing live bacteria or yeast) reduced the amount of stress hormones in their blood. However, when their vagus nerve was cut, the probiotic had no effect!

When the gut-brain axis does not function properly, it can lead to diseases such as multiple sclerosis, depression & irritable bowel syndrome.

A diet rich in probiotics such as kefir, sauerkraut and kimchi, prebiotics, plenty of soluble and insoluble fibre has been suggested by researchers for a healthy gut microbiome, and therefore good gut-brain communication.



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So, the next time you have a 'gut feeling,' remember that it might be your body's way of communicating with your brain, reflecting a sophisticated dialogue that influences both your physical and emotional health.