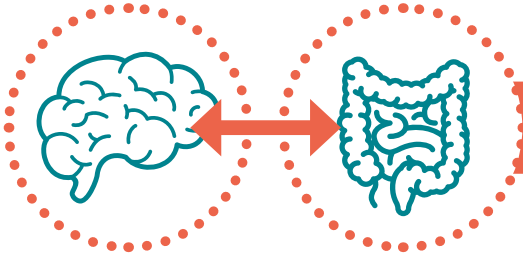


# Signs of a HEALTHY GUT



## Back to basics with the gut-brain axis

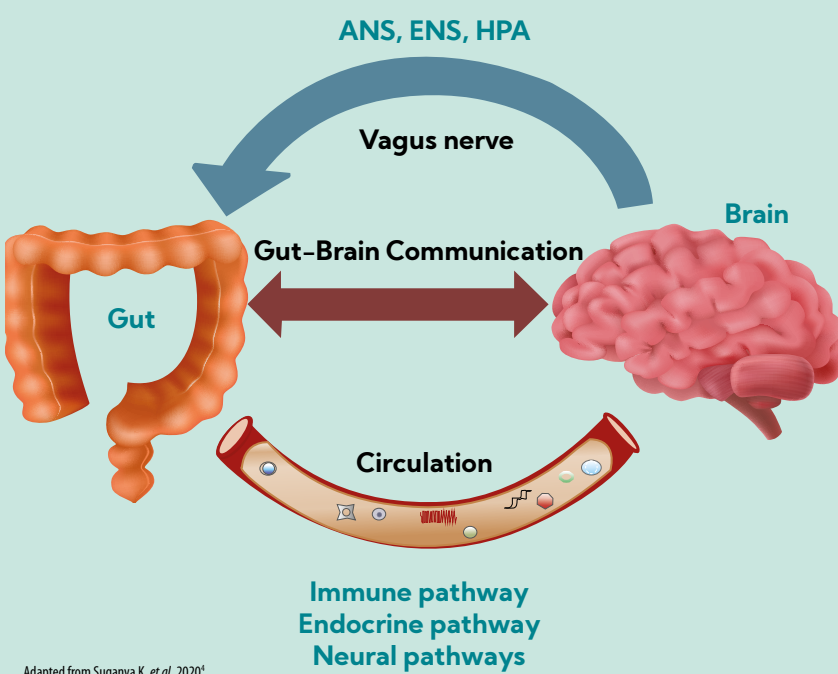
The gut-brain axis (GBA) is the communication that takes place from the brain to the gut and from the gut to the brain. The communication occurs between the central nervous system (CNS), the autonomic nervous system (ANS), the enteric nervous system (ENS) and the Hypothalamic-Pituitary-adrenal axis (HPA) linking emotional and cognitive centres of the brain with peripheral intestinal functions.<sup>1</sup>

## It's all in the gut



The enteric nervous system (ENS) is the intrinsic nervous system of the gut.<sup>2</sup> It is made up of a network of neurons that lines the gastrointestinal tract, from the esophagus to the rectum.<sup>2</sup> The ENS monitors the condition and gathers information on the state of the gastrointestinal tract.<sup>2</sup> It also plays a role in gut movement, fluid exchange between the gut and its lumen, and local blood flow.<sup>2</sup> The ENS is also called the second brain because it can work independently from the CNS.<sup>2</sup>

## Is it all in the microbiota effect?



Our body contains microorganisms that live within our gastrointestinal tract (intestinal microbiota).<sup>3</sup> The intestinal microbiota have a direct impact on the gut-brain axis by influencing the intestinal cells, the ENS and the CNS.<sup>1</sup> The communication from the intestinal microbiota to the brain and vice versa occur via signalling pathways.<sup>1</sup> Alterations of the intestinal microbiota may cause constipation and constipation-related symptoms.<sup>3</sup> It is therefore important to keep the intestinal microbiota balanced for a healthy gut.

Adapted from Suganya K, et al., 2020<sup>4</sup>

ANS = autonomic nervous system; ENS = enteric nervous system; HPA = hypothalamic-pituitary-adrenal axis



Keep your gut microbiota balanced to avoid constipation, which can lead to haemorrhoids.<sup>3,5,6</sup>

## Are you constipated?

Symptoms of constipation include:<sup>6</sup>

Infrequent passing of stool (fewer than three bowel movements a week)	Stools are dry, hard and/or lumpy	Stools are difficult to pass	Stomach ache or cramps	You feel bloated and nauseous	Feeling of incomplete stool evacuation

## Still unsure? Let's have a look

The Bristol stool form scale<sup>7</sup>

TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7
Type 1 and type 2 - Constipation		Type 3, 4 and 5 - Normal			Type 6 and 7 - Abnormally loose/liquid stools (and in conjunction with other symptoms) indicative of diarrhoea	



Haemorrhoids can be caused by straining during bowel movements and sitting for long periods of time on the toilet.<sup>8</sup>

## Got the gut health?



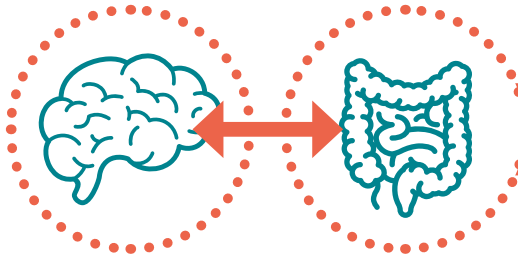
According to the World Health Organisation (WHO), gut health is defined as the state of physical and mental well-being in the absence of gastrointestinal complaints that require a consultation with a doctor.<sup>9</sup> The aspects of gut health include the effective digestion and absorption of food, the absence of gastrointestinal illness, normal and stable microbiota, effective immune status and an overall state of well-being.<sup>9</sup>

## Keep it healthy

Everything is linked to one another, and it is therefore important to keep your gut healthy to avoid constipation,<sup>3</sup> which can lead to haemorrhoids.<sup>3,5,6</sup>

References: 1. Carabotti M, Scirocco A, Maselli MA, Severi C. The gut-brain axis: Interactions between enteric microbiota, central and enteric nervous systems. *Annals of Gastroenterology*. 2015;28:203-209. 2. Furness JB. Enteric nervous system. *Scholarpedia*. 2007;2(10):4064. doi:10.4249/scholarpedia.4064. 3. Zhao Y, Yu YB. Intestinal microbiota and chronic constipation. *Springer Plus*. 2016;5:1130. 4. Suganya K, Koo B. S. Gut-Brain Axis: Role of Gut Microbiota on Neurological Disorders and How Probiotics/Prebiotics Beneficially Modulate Microbial and Immune Pathways to Improve Brain Functions. *Int. J. Mol. Sci.* 2020;21:7551. doi:10.3390/ijms21207551. 5. Robinson J. WebMD. How Chronic Constipation affects your body. 2021 [Updated 2021 January 20; cited 2022 June 23]. Available from: URL: <https://www.webmd.com/digestive-disorders/chronic-constipation-affects-body>. 6. Cleveland Clinical medical professional. Constipation. 2019 [Updated 2019 July 11; cited 2022 June 23]. Available from: URL: <https://my.clevelandclinic.org/health/diseases/4059-constipation>. 7. Blake MR, Raker JM, Whelan K. Validity and reliability of the Bristol Stool Form Scale in healthy adults and patients with diarrhoea-predominant irritable bowel syndrome. *Aliment Pharmacol Ther*. 2016;44:693-703. 8. Mayo Clinic. Hemorrhoids. 2021 [2021 May 12; cited 2022 June 23]. Available from: URL: <https://www.mayoclinic.org/diseases-conditions/hemorrhoids/diagnosis-treatment/drc-20360280>. 9. Bischoff S. Gut health: a new objective in medicine? *BMC Medicine*. 2011;9:24.

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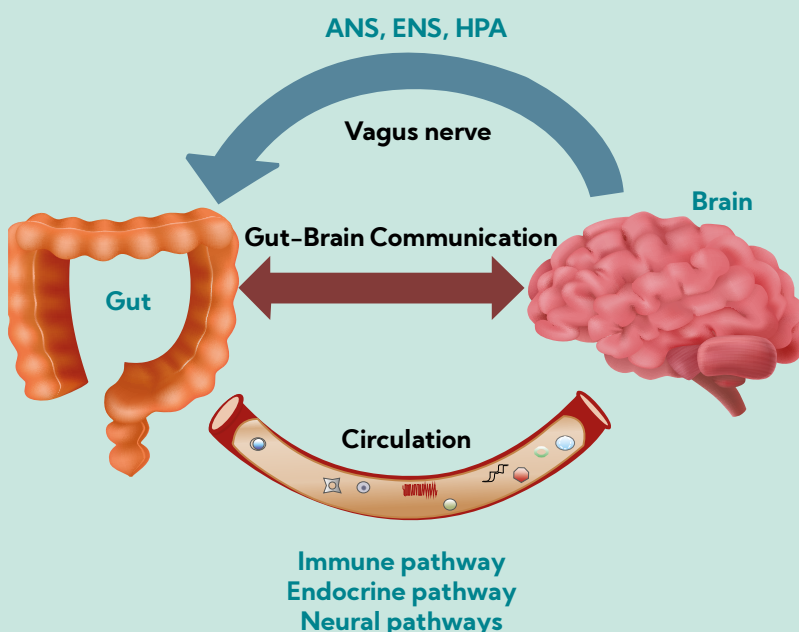
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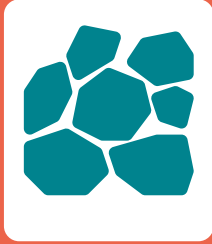
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Stools are difficult to pass



Stomach ache or cramps



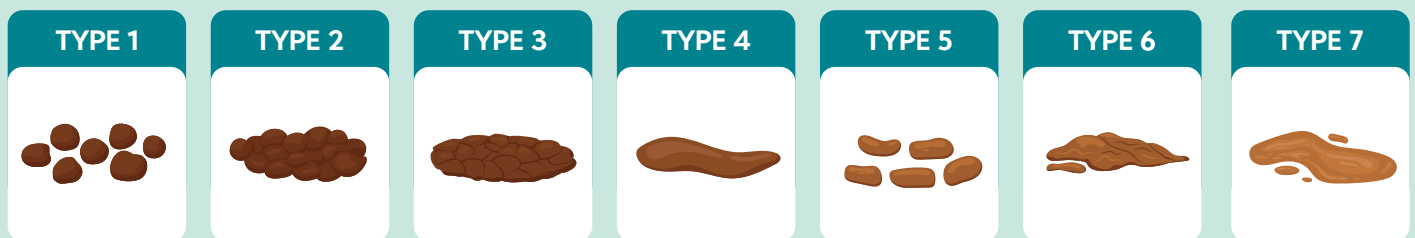
You feel bloated and nauseous



Feeling of incomplete stool evacuation

## Still unsure? Let's have a look

The Bristol stool form scale<sup>7</sup>



Separate, hard lumps, (difficult to pass)

Sausage-shaped, lumpy

Sausage-like, with cracks on the surface

Sausage-like, smooth and soft

Soft blobs with clear cut edges (passed easily)

Fluffy pieces with ragged edges, and mushy

Watery, no solid pieces

Type 1 and type 2 -  
Constipation

Type 3, 4 and 5 -  
Normal

Type 6 and 7 -  
Abnormally loose/  
liquid stools (and in  
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