# Gut-brain axis

The gut-brain axis (GBA) consists of bidirectional communication between the central and the enteric nervous system, linking the emotional and cognitive centers of the brain with peripheral intestinal functions.

---

Using Caenorhabditis elegans as a model, Shi et al. uncover that a Wnt signaling pathway in the gut regulates synaptic development in the brain. A canonical Wnt signaling pathway promotes synapse formation through regulating the expression of the neuropeptides encoding gene nlp-40 in the gut, which functions through the neuronally expressed GPCR/AEX-2 receptor during development. Wnt-NLP-40-AEX-2 signaling likely acts to modulate neuronal activity. The study revealed a genetic role of the gut in synaptogenesis and identifies a novel contribution of the gut-brain axis [1)]

1)
Shi Y, Qin L, Wu M, Zheng J, Xie T, Shao Z. Gut neuroendocrine signaling regulates synaptic assembly in C. elegans. EMBO Rep. 2022 Jun 24:e53267. doi: 10.15252/embr.202153267. Epub ahead of print. PMID: 35748387.