

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.

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