Perspective Open Access

University of Calgary researchers probing the gut - the inner tube of life - have for the first time discovered specific factors in its workings that in the future may help improve treatment for patients facing gut damage or gastrointestinal disorders.

The findings from Snyder Institute for Chronic Diseases researchers immediately improve the understanding of factors that help regulate the enteric nervous system, the system of nerves that control the gastrointestinal tract [1]. Researchers can now explore novel ways to treat gastrointestinal disorders using approaches based on these new findings, though the transition to treatment is likely years away.

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The study's findings may impact future treatments for gastrointestinal diseases and disorders such as irritable bowel syndrome, inflammatory bowel disease and slow transit constipation, among others.

We have uncovered microbial factors that help regulate the function and structural integrity of the enteric nervous system. These and other gastrointestinal diseases with manifested changes in enteric neural control are all hard to treat [2]. Our findings could impact approaches to their treatment.

Be aware, though, that there is a big jump from mice to men. In other words, translating our findings will be important, and our results are in only at the starting point of this journey.

The study examined the effects of microbiome depletion and restoration in animal models using approaches that cause structural and functional changes in the gut [3]. The researchers discovered that while microbiome depletion caused a loss of neurons, natural microbiome recovery restored gut function and promoted the growth of new neurons.

The findings from our work provide clues as to the mechanisms that control 'plasticity' or the ability of the gut nervous system to be repaired if it undergoes damage.

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