

A gut feeling about neural stem cells

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Proper function of the digestive system requires coordinated contraction of the muscle in the wall of the intestinal tract, regulated by the enteric nervous system. Damage or loss of these neurons can result in intestinal motility disorders, such as Hirschsprung's disease, for which there is a dearth of effective treatments. In principle, disorders of the enteric nervous system could be treated by cell therapy, but it was previously unknown whether transplanted stem cells could migrate to the appropriate location in the gut and then become neurons that could properly innervate the bowel.

In this issue of the [Journal of Clinical Investigation](#), Heather Young and colleagues at the University of Melbourne, isolated [neural stem cells](#) from mice, cultured them to promote the formation of neural [precursor cells](#), and implanted them into the muscle in the colons of recipient mice.

Young and colleagues found that these cells were able to migrate away from the transplantation site and develop into neurons that provided stimulation to the portions of the gut that regulate motility.

These findings suggest that the transplantation of neural stem cells is a promising therapeutic avenue for the treatment of gastrointestinal motility disorders.

More information: Transplanted progenitors generate functional enteric neurons in the postnatal colon, J Clin Invest.
[doi:10.1172/JCI65963](https://doi.org/10.1172/JCI65963)

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