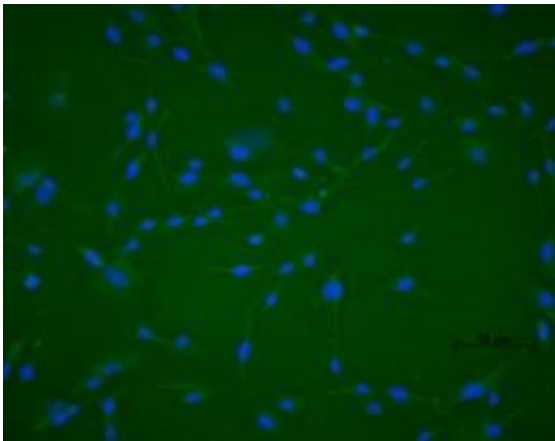


Endometrial stem cells could repair brain cells damaged by Parkinson's disease

May 6 2010



These are neurons developed from human endometrial stem cells. Credit: Hugh S. Taylor, M.D., Yale University School of Medicine

Stem cells derived from the endometrium (uterine lining) and transplanted into the brains of laboratory mice with Parkinson's disease appear to restore functioning of brain cells damaged by the disease, according to a new study by Yale School of Medicine researchers.

The findings are published in the *Journal of Cellular and [Molecular Medicine](#)*. Although these are preliminary results, the findings increase the likelihood that endometrial tissue could be harvested from women with Parkinson's disease and used to re-grow brain areas that have been damaged by the disease, according to lead author Hugh S. Taylor, M.D., professor in the Department of Obstetrics, [Gynecology](#) & Reproductive

Sciences at Yale School of Medicine, and section chief of Reproductive Endocrinology and Infertility at Yale School of Medicine.

Because of their ability to divide into new cell types, stem cells could be the key to treating many different kinds of diseases, like Parkinson's, in which the body's own cells are damaged or depleted. Parkinson's is caused by a breakdown of dopamine-producing nerve cells in the brain stem. Dopamine is a neurotransmitter that stimulates the motor neurons that in turn control muscles. When dopamine production is reduced, the nerves are not able to control movement or maintain coordination.

In their study, Taylor and his colleagues collected and cultured endometrial tissue from nine women, and verified that they could be transformed into dopamine-producing nerve cells like those in the [brain](#).

"The dopamine levels in the mice increased once we transferred the endometrial stem cells into their brains," said Taylor. "This is encouraging because women have a ready supply of stem cells that are easily obtained, can differentiate into other cell types. They may have great potential for treating multiple diseases."

Highlighting the benefits of using endometrial stem cells, Taylor said the ethical concerns surrounding the use of embryonic stem cells are eliminated when using adult stem cells. Taylor also points out that endometrial stem cells are one of the best sources for generating neurons because they appear to be less likely to be rejected than [stem cells](#) from other sources.

"This is just the tip of the iceberg of what we will be able to do with these cells," said Taylor. "We believe these neurons are only the first of many cell types derived from [endometrium](#) that will be used to treat a variety of diseases."

Provided by Yale University

Citation: Endometrial stem cells could repair brain cells damaged by Parkinson's disease (2010, May 6) retrieved 2 December 2023 from <https://medicalxpress.com/news/2010-05-endometrial-stem-cells-brain-parkinson.html>

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