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More Adult Stem Cells for Parkinson's

By David Prentice

Editor's note. This appeared earlier today on Dr. Prentice's blog at <http://www.frcblog.com/2010/05/more-adult-stem-cells-for-parkinsons/>

Yale scientists have shown that adult stem cells from human endometrium can substitute for the brain cells lost in Parkinson's disease. Using a mouse model of Parkinson's, they showed that they could successfully transplant adult stem cells derived from one tissue, the endometrium (the lining of the uterus), into another kind of tissue (the brain) and that the adult stem cells could develop into cells with the properties of brain tissue, in particular the dopamine-secreting neurons.

The adult stem cells were obtained from nine women who did not have Parkinson's disease. In the laboratory they verified that the unspecialized endometrial stem cells could be transformed into dopamine-producing nerve cells like those in the brain. When injected into the brains of Parkinson's mice, the cells migrated to the site of damage and developed into dopamine-producing cells. Dr. Hugh S. Taylor, senior author, said:

"Endometrial tissue is probably the most readily available, safest, most easily attainable source of stem cells that is currently available. We hope the cells we derived are the first of many types that will be used to treat a variety of diseases. I think this is just the tip of the iceberg for what we will be able to do with these cells." The results are published in the Journal of Cellular and Molecular Medicine [www3.interscience.wiley.com/journal/123342192/abstract?CRETRY=1&SRETRY=0].

There may indeed be a wide range of applications for endometrial adult stem cells. Another group recently reported on use of these cells for treatment of heart damage in a patient case study.

And when it comes to Parkinson's disease, adult stem cells from various sources are moving ahead. In 2008 an Australian group has successfully treated Parkinson's in mice using adult stem cells from the nasal tissue of patients. And in February 2009, Levesque et al. published a case study showing a Parkinson's patient's own neural adult stem cells ameliorated his symptoms for almost five years.