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Uterine stem cells create new neurons that can curb Parkinson's disease

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The injection of uterine stem cells trigger growth of new brain cells in mice with Parkinson's disease, Yale School of Medicine researchers report in an abstract presented at the 2008 Society for Gynecologic Investigation (SGI) Annual Scientific Meeting held March 26-29 in San Diego, California.

"Previously, we were able to coax these multipotent stem cells to differentiate into cartilage cells," said 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. "Now we have found that we can turn uterine stem cells into neurons that can boost dopamine levels and partially correct the problem of Parkinson's disease."

Parkinson's disease is a degenerative disorder of the central nervous system that often impairs the sufferer's motor skills and speech. The primary symptoms are the results of decreased stimulation of the motor cortex by the basal ganglia, which is normally caused by the insufficient formation and action of dopamine.

The stem cells in this study were derived from human endometrial stromal cells that were cultured under conditions that induce the creation of neurons. These cells then developed axon-like projections and cell bodies with a pyramid shape typical of neurons.

“The dopamine levels in the mice increased once we transferred the stem cells into their brains,” Taylor said. “The implications of our findings are that women have a ready supply of stem cells that are easily obtained, are differentiable into other cell types, and have great potential use for other purposes.”

Source: Yale University

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