

Dramatic improvement in Parkinson disease symptoms

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Successful intranasal delivery of stem cells to the brains of rats with Parkinson disease yielded significant improvement in motor function and reversed the dopamine deficiency characteristic of the disease. These highly promising findings, reported in *Rejuvenation Research*, a peer-reviewed journal published by Mary Ann Liebert, Inc. highlight the potential for a noninvasive approach to cell therapy delivery in Parkinson disease—a safer and effective alternative to surgical transplantation of stem cells.

In this groundbreaking study, mesenchymal stem cells (MSCs) delivered via the nose preferentially migrated to the [brain](#) and were able to survive for at least 6 months. Substantial improvement in motor function—up to 68% of normal—was reported in the MSC-treated rat model of Parkinson disease. Levels of the neurotransmitter dopamine were significantly higher in affected rat brain regions exposed to MSCs compared to the non-treated brain regions, reported Lusine Danielyan and an international team of researchers from University Hospital of Tübingen, University of Göttingen Medical School, and University of Tübingen (Stuttgart, Germany; HealthPartners Research Foundation, St. Paul, MN; German University in Cairo, Egypt; Harvard University, Cambridge, MA; Institute of Molecular Biology NAS RA, Yerevan, Armenia; and Geneva University Hospital, Switzerland.

The authors present their findings in the article, "Therapeutic Efficacy of Intranasally Delivered Mesenchymal Stem Cells in a Rat Model of Parkinson Disease." They explain that intranasal delivery of MSCs

avoids the tissue trauma and related inflammation and brain swelling associated with surgical implantation of therapeutic [stem cells](#). Importantly, this noninvasive delivery method would also make it possible to provide repeated stem cell treatments over time.

Provided by Mary Ann Liebert, Inc.

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