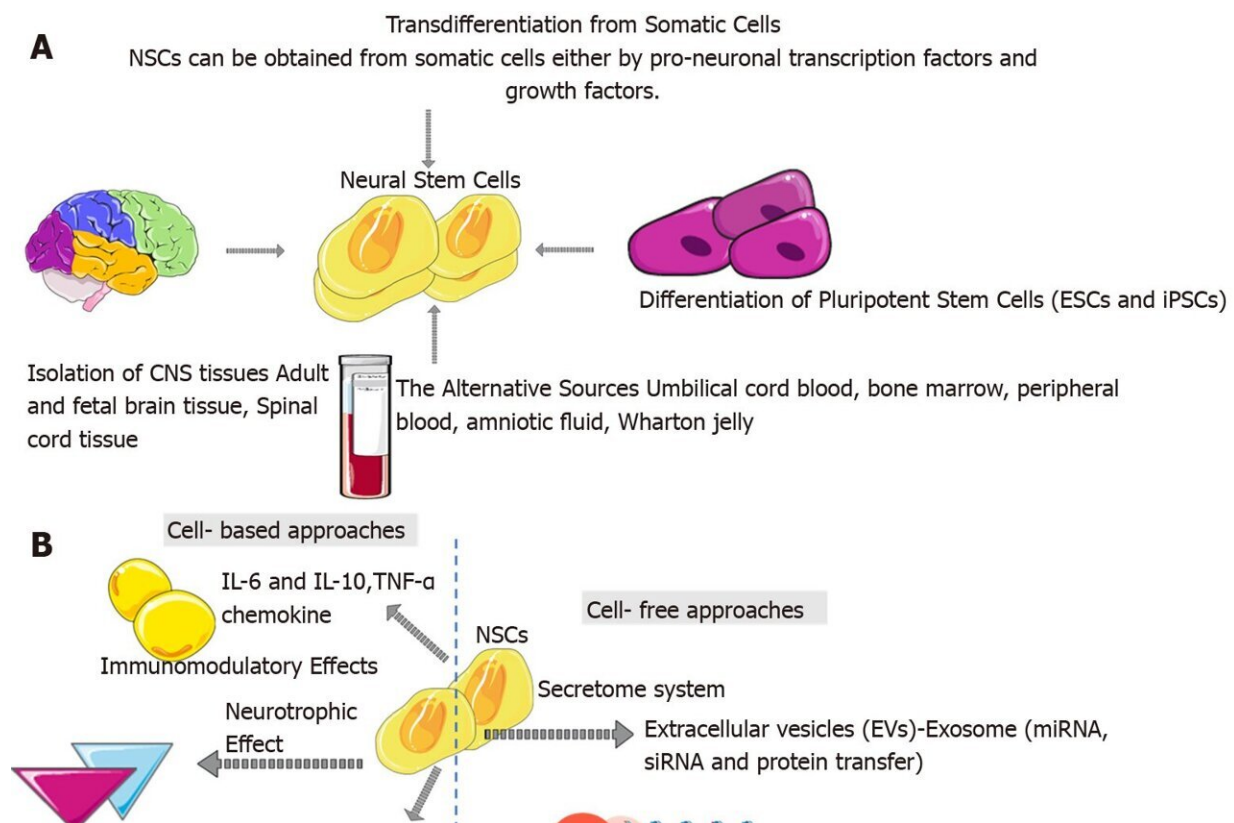


# Neural stem cells for Parkinson's disease management: Challenges, nanobased support, and prospects

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Emergence of neural stem cells in the adult brain and alternative sources of neural stem cells. Credit: *World Journal of Stem Cells* (2023). DOI: 10.4252/wjsc.v15.i7.687

Parkinson's disease (PD), characterized by loss of nigrostriatal dopaminergic neurons, is one of the most predominant neurodegenerative diseases affecting the elderly population worldwide. The concept of stem cell therapy in managing neurodegenerative diseases has evolved over the years and has recently rapidly progressed. Neural stem cells (NSCs) have a few key features, including self-renewal, proliferation, and multipotency, which make them a promising agent targeting neurodegeneration.

It is generally agreed that challenges for NSC-based therapy are present at every stage of the transplantation process, including preoperative cell preparation and quality control, perioperative procedures, and postoperative graft preservation, adherence, and overall therapy success.

In a new review published in the *World Journal of Stem Cells*, a research team has provided a comprehensive, careful, and critical discussion of experimental and [clinical data](#) alongside the pros and cons of NSC-based therapy in PD. Given the state-of-the-art accomplishments of stem cell therapy, [gene therapy](#), and nanotechnology, the researchers shed light on the perspective of complementing the advantages of each process by developing nano-stem cell therapy, which is currently a research hotspot.

They conclude that although various obstacles and challenges remain, nano-stem cell therapy holds promise to cure PD. However, continuous improvement and development from the stage of laboratory experiments to the clinical application are necessary.

**More information:** Tuba Oz et al, Neural stem cells for Parkinson's disease management: Challenges, nanobased support, and prospects, *World Journal of Stem Cells* (2023). [DOI: 10.4252/wjsc.v15.i7.687](https://doi.org/10.4252/wjsc.v15.i7.687)

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