

REGENERATIVE STEM CELL THERAPY FOR NEURODEGENERATIVE DISEASES



SUMMARY

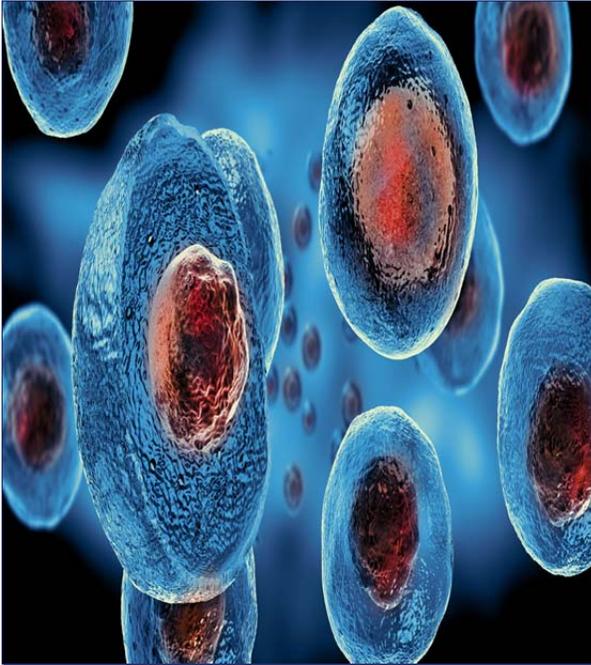
- Regenerative stem cells show great promise in neurodegenerative diseases.
- Neurodegenerative diseases involve progressive loss of specific neurons in the brain or spinal cord.
- Stem cells' ability to self-renew and transform into different cell types, including neurons, makes them a promising candidate for treating neurodegenerative diseases.

EXAMPLES OF NEUROGENERATIVE DISEASES

- Alzheimer's disease
- Parkinson's disease
- Huntington's disease
- Amyotrophic lateral sclerosis (ALS)
- Multiple sclerosis (MS)
- Progressive supranuclear palsy (PSP)
- Frontotemporal dementia (FTD)

APPLICATIONS

- Replacement of Lost Neurons
- Secretion of Neurotrophic Factors
- Modulation of the Immune Response
- Drug Delivery Systems

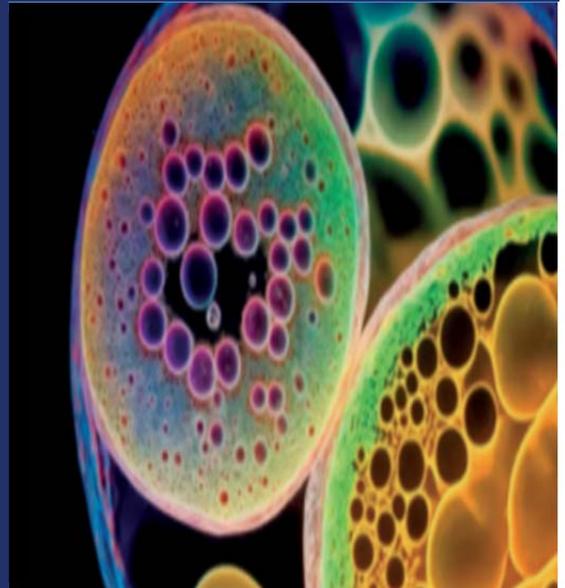


USING ENGINEERED STEM CELLS TO TREAT ALS AND RETINITIS PIGMENTOSA

Cedars-Sinai researchers are developing personalized treatments for ALS and retinitis pigmentosa using engineered stem cells derived from human induced pluripotent stem cells (iPSCs). These iPSC-derived cells produce glial cell line-derived neurotrophic factor (GDNF), which protects diseased neurons. Animal studies have shown promising results in delaying disease progression and protecting cells in the *eye* and spinal cord.

Stem Cells Highlighted as Potential Therapeutic Option in Huntington Disease

Stem cell transplantation shows promise as a potentially curative approach for Huntington's disease (HD). Various types of stem cells, including ESCs, ASCs, iPSCs, and NSCs, have demonstrated potential in preclinical studies. Patient-derived cellular models generated through stem cell reprogramming technology offer valuable insights into HD pathogenesis and therapeutic strategies.



Aspen Neuroscience, a biotech focused on developing personalized cell replacements for Parkinson's disease, has raised \$147.5 million in a series B funding round, following an initial \$70 million round two years ago. The funding round was led by GV, LYFE Capital, and Revelation Partners, with participation from several new investors. The funds will support Aspen's planned studies of its lead candidate for Parkinson's disease, ANPD001, including a patient screening cohort study and a Phase 1/2a clinical trial. The company's mission is to develop transformative treatments for neurodegenerative diseases using induced pluripotent stem cell-derived cell therapy.

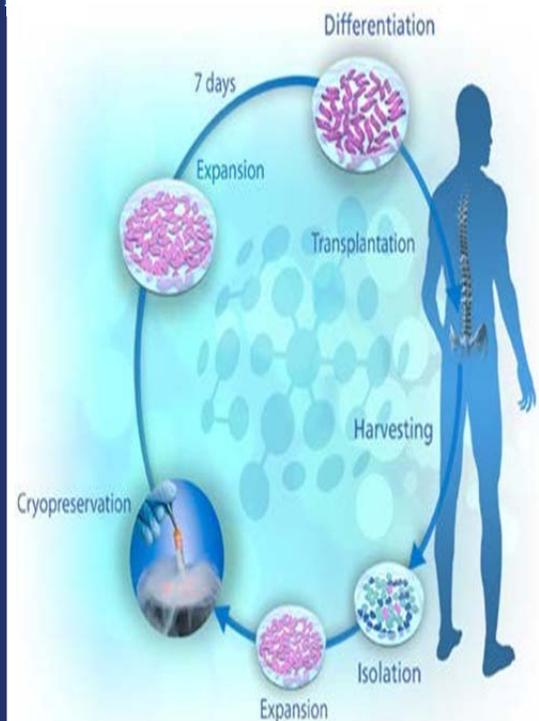
Investors take root in Aspen Neuroscience's customized cell therapy as \$147.5M round closes

HOW STEM CELLS ARE RESHAPING MODERN MEDICINE, FROM SPRAINED ANKLES TO ALZHEIMER'S

Stem cell therapy is revolutionizing medicine by repairing damaged tissues and treating various conditions. Stem cells have the unique ability to create different cell types and can be derived from sources like bone marrow, embryos, or umbilical cords. The therapy has shown promise in treating neurodegenerative diseases, disc degeneration, bone marrow disorders, and alleviating side effects of radiation and chemotherapy. The Cellular Performance Institute (CPI) in Tijuana, Mexico, is a leading center for stem cell research, providing regulated treatments using high-quality stem cells and advanced imaging techniques. Personal experiences and success stories are fueling optimism about the therapy's potential.

Treating neurodegenerative diseases with stem cell therapy

Brainstorm Cell Therapeutics is developing a treatment approach called NurOwn for neurodegenerative diseases, including ALS, Parkinson's, and Huntington's disease. The therapy involves using mesenchymal stem cells (MSCs) derived from the patient's bone marrow, which are then differentiated into cells capable of releasing neurotrophic factors. These factors promote the growth, survival, and differentiation of neurons. Brainstorm's NurOwn platform has shown positive results in animal models and has progressed to phase 3 clinical trials for ALS. The company is seeking financial and corporate partners to further develop and commercialize the therapy.



Hope Biosciences' stem cell therapy for Parkinson's disease (PD) showed promising results in a Phase II trial, with the Phase Transition Success Rate (PTSR) increasing to 33%. The trial tested autologous adipose tissue-derived mesenchymal stem cells called HB-adMSCs, aiming to restore cell function in neurodegenerative diseases. The study achieved multiple primary endpoints, including assessing motor function and monitoring adverse events. Hope Biosciences, along with its non-profit arm, sponsored and collaborated on the trial.

[Pipeline Moves: advancement prospects jump for Parkinson's disease stem cell therapy](#)

KEY PLAYERS

