

WHAT CAN ANIMAL RESEARCH TEACH US ABOUT NEURODEGENERATIVE DISORDERS AND THEIR TREATMENTS?

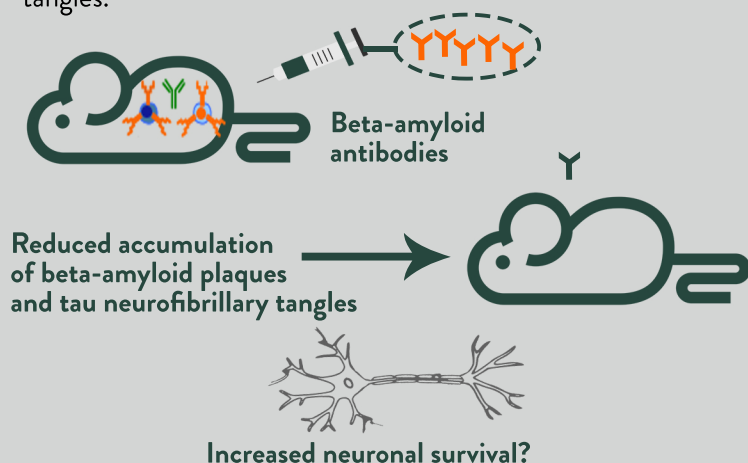
- Neurodegenerative disorders are characterized by the progressive loss of neurons in the central or peripheral nervous systems.
- More than 5 million people live with Alzheimer's disease. At least 500,000 individuals have Parkinson's disease and 30,000 people have been diagnosed with Huntington's disease. There are no known cures or treatments to slow the progression of these disorders.
- Animal research is critical for revealing the basic causes of neurodegeneration and advancing new treatment options for these debilitating disorders.



ALZHEIMER'S DISEASE

Alzheimer's disease (AD) is a neurodegenerative disorder marked by progressive memory loss. AD is associated with the accumulation of **beta-amyloid plaques** and **tau neurofibrillary tangles** in neurons in the brain regions that support memory, such as the hippocampus.

Studies in rodents suggest that a vaccine containing antibodies that target beta-amyloid can reduce its accumulation and also decrease tau neurofibrillary tangles.

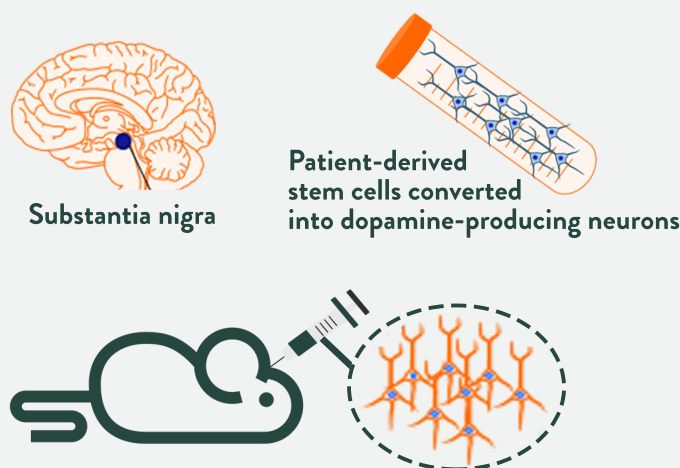


Continued biomedical research is required for the development of a vaccine to slow the progression of AD.

PARKINSON'S DISEASE

Parkinson's disease is associated with impaired motor control arising from loss of dopamine-producing neurons within midbrain regions, like the **substantia nigra**.

Ongoing studies in rodents and nonhuman primates have led to promising techniques to implant new dopamine neurons from patient-derived blood samples to reverse motor impairments.



Researchers are now examining how these new neurons can reverse the severity of Parkinson's and improve the quality of life for those who are diagnosed.

BIOMEDICAL RESEARCH IS HIGHLY REGULATED

- ✓ All research involving animals must be approved by an ethics committee called an Institutional Animal Care and Use Committee.
- ✓ Animals involved in research are cared for by veterinarians and other well-trained specialists.
- ✓ Laws, regulations and institutional policies are in place to safeguard the welfare of research animals.