Prime of Life
Brain Diseases
Research Gateway to Treatment and Cure of Neurodegeneration
It started with uncharacteristic behavior—use of juvenile language, wearing showy hats, racing to cross streets ahead of changing lights at dangerous New York City intersections. Mary, a beautiful, spirited and stylish woman in her mid-fifties, was a prominent Wall Street executive, the wife of a successful private-equity fund manager, the mother of two college-aged sons, an active sportswoman, a curious traveler, a leader in charitable and professional organizations and a gardener known for her green thumb tending to the family’s country home in upstate New York.

As the symptoms progressed, her husband grew concerned. Mary exhibited inappropriate behavior in social situations and there were conduct issues at her investment firm. Her marriage had always been loving and caring, but her husband and children increasingly came under intense pressure as she became irrationally critical and upset.

Finding a cure for PSP would transform the lives of thousands while giving hope to the millions who suffer from related brain disorders.

John Q. Trojanowski, MD, PhD
Co-Director, Center for Neurodegenerative Disease Research, University of Pennsylvania
With the condition worsening, Mary had difficulty sleeping, hallucinations, mobility problems with stiffness, falls that cracked ribs. Cognitive issues progressed—during an overnight hotel stay, her husband was alerted by the desk clerk that she was wandering outside barefoot and in her nightgown. Desperately, Mary’s husband sought treatment. As dramatic as her symptoms were, more than a dozen neurologists either gave no diagnosis or the wrong one. Drug treatments seemed to make matters worse. The family spent tens of thousands of dollars in naturopathic therapies to no avail. The condition continued its inexorable march toward mortality.

Toward the latter stages of the disease, Mary was immobile, unable to speak and required around-the-clock nursing care, yet evidently had comprehension of what was being said and what was going on around her. She was a prisoner in her own body. Her inevitable death came peacefully at age 61. An autopsy determined the condition to be corticobasal degeneration (CBD), a rare and invariably fatal neurodegenerative condition that is one of several diseases in the prime of life spectrum.
The attention of top researchers, biotech firms and drug companies is rapidly turning to PSP. This is a disease where new basic science ideas are translating into drug trials as never before.

Lawrence I. Golbe, MD
Emeritus Professor of Neurology,
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Chair, Scientific Advisory Board and Director,
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Prime of Life Neurodegenerative Disorders

Neurodegeneration that strikes when we least expect it
Prime of life neurodegeneration is a spectrum of relatively rare diseases that often afflict people during productive, active years and lead to debilitating symptoms and early death. They are generally categorized as frontotemporal disorders and are characterized by progressive personality, behavior, language, and motor decline. These diseases create a level of functional impairment that significantly compromises the ability to carry out activities of daily living. There is currently no treatment and no cure, but there is hope. Research into these diseases may be a gateway to understanding and ultimately preventing, treating and curing more common neurodegenerative diseases like Alzheimer’s and Parkinson’s.

CurePSP is a leading organization within this disease spectrum, providing support for patients, families and caregivers; awareness and education to healthcare professionals; and global research funding. Current research into prime of life diseases, especially progressive supranuclear palsy (PSP), is showing great promise for unlocking the secrets of neurodegeneration.
The key to unlocking the secrets of brain disease

CurePSP is a leader in supporting research into PSP and CBD. Findings from these studies and others suggest that mechanisms in PSP, CBD, and other prime of life diseases are also involved in Alzheimer’s and Parkinson’s diseases. Common factors include gene mutations, protein pathology and environmental influences. Research funded by CurePSP and others continues to investigate genetics, stem cell and drug therapies, disease-causing proteins (prions), the role of abnormal tau aggregation, and symptomatic manifestations and biomarkers.

PSP is the prototypical disease to study as a way to understand all of the neurodegenerative disorders.

Günter U. Höglinger, MD
Director, Department of Neurology,
Hannover Medical University
President, German Parkinson Society

The “misfolding” of infectious proteins called prions in a chain reaction is a major factor in most neurodegeneration. This process is not well understood and currently cannot be halted or reversed. However, research, some funded by CurePSP, is making significant progress.

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Günter U. Höglinger, MD
Director, Department of Neurology,
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The central role of PSP in neurodegeneration research

Research into PSP is an ideal gateway to understanding the causes of other neurodegenerative diseases. It delivers potentially wide-reaching benefits in proportion to money invested. There are several reasons:

1. Reliable diagnosis as compared to other neurodegenerative diseases provides an identified patient population for clinical trials.

2. A well-validated, efficient trial outcome measure, the PSP Rating Scale, is available.


4. Many neurodegenerative diseases are characterized by tau abnormalities (tauopathies) but only a few, like PSP, involve only the tau protein. This allows researchers to target tau.

5. CurePSP’s support of brain donation helps to fund distribution of postmortem brain samples to researchers and provides families with autopsy-verified diagnosis.

6. The global PSP Genetics Consortium, a joint venture of CurePSP and the Tau Consortium, is identifying genetic mutations associated with PSP.

7. CurePSP’s Patient Engagement Program (PEP) recruits patients to participate in critical clinical trials.
How CurePSP’s research grant program works

CurePSP’s “Venture Grants” form the core of our research program. They provide up to $100,000 in seed funding for investigators whose research promises to unlock the secrets of PSP and related prime of life diseases. We give special consideration to applications from early career researchers, to ideas that could grow into projects of interest to the National Institutes of Health and other major granting agencies, and to topics conforming to our 15 areas of research focus listed on the facing page. We currently award about $600,000 per year in Venture Grants but would like to increase that—with your help.

Areas of research focus include:

**Molecular**
- Epigenetics and Epigenomics
- Post-translational modifications of tau
- RNA-based neuroprotection
- Single cell sequencing
- Tau strains

**Cellular**
- Autophagy/proteostasis
- Inflammation, including microglia
- Innate and adaptive immunity
- Synaptic dysfunction/loss
- Synaptic pruning

**Clinical**
- Diagnostic markers in very early-stage disease
- Environmental/toxic causes
- Rehabilitation strategies for motor and non-motor deficits
- Sleep physiology
- Symptomatic drug trials
For years our focus was simply to understand this constellation of neurodegenerative disorders. Now we have the information to make therapeutic breakthroughs a real, even imminent, possibility.

Virginia M.Y. Lee, PhD, MBA
Director, Center for Neurodegenerative Disease Research
University of Pennsylvania

Your donation will make a difference
CurePSP is strategically positioned at the forefront of scientific inquiry that promises prevention, treatment, and cure of neurodegenerative diseases. We have funded more than 200 research grants since 1997, a commitment that continues today.

CurePSP has donor-named research opportunities that offer involvement in exciting and groundbreaking scientific inquiry in genetics, proteins, stem-cell therapies, animal lab models, drug discovery, and early-phase clinical trials. We can discuss your areas of interest and level of involvement desired. Unrestricted contributions provide support for research, patient and family programs, and education and awareness. Tribute Gifts are a meaningful way to honor a loved one and planned giving benefactors can provide discretionary funds for major, named initiatives. Our staff provide comprehensive support for fundraising events.

Please help CurePSP in its quest to find treatment and cure for neurodegeneration. The need is urgent. The time is now.