

# COBRE Spurs New Research on Parkinson's Disease, Alzheimer's Disease

Cleveland Clinic Lou Ruvo Center for Brain Health and the University of Nevada, Las Vegas (UNLV) are making significant progress in their collaborative research to learn more about Alzheimer's disease and Parkinson's disease. Their work is supported by an \$11.1 million, five-year federal grant that established Southern Nevada's first Center of Biomedical Research Excellence (COBRE) and the Center for Neurodegeneration and Translational Neuroscience (CNTN).

## The Mystery of FOG

The researchers are investigating these two serious diseases in innovative ways. One study is looking at a common, disabling Parkinson's disease symptom, freezing of gait (FOG) — unexpected episodes during which patients experience an inability to start walking or to continue moving forward. FOG is one of the most common causes of falls in individuals with Parkinson's disease, and can result in serious injuries that undermine health and function. Currently, understanding of why FOG occurs is limited, and there are few effective treatments.

Led by Lou Ruvo Center for Brain Health movement disorders specialist Brent Bluett, DO, this study is using three approaches to learn about FOG. Over a three-year period, Parkinson's patients with and without FOG will undergo a clinical evaluation, neuropsychological testing and MRI scanning.



*Brent Bluett, DO, Sarah Banks, PhD, and Jefferson Kinney, PhD*

"We will compare participants' cognitive profiles and link them with structural and functional areas of the brain, with the goal of finding predictors of FOG so it can be treated before it advances," says Dr. Bluett.

## Immune Regulation and the Brain

Neuroinflammation (prolonged immune system activity in the brain) is the focus of a study led by Jefferson W. Kinney, PhD, of UNLV. In the past decade, research has found that neuroinflammation is present in the brain in Alzheimer's and other neurodegenerative diseases. Neuroinflammation aggravates the amyloid plaques and tau tangles that accumulate in brain cells in Alzheimer's disease and impair function.

Dr. Kinney and colleagues are probing the molecular and cellular mechanisms that regulate or contribute to inflammation in Alzheimer's disease. They have demonstrated that GABA, a neurotransmitter involved in immune regulation, isn't functioning properly in Alzheimer's disease, and they are publishing results of this research.

"Targeting GABA with therapeutic agents has the potential to reduce inflammation and slow disease progression," says Dr. Kinney.

Also focusing on neuroinflammation is Lou Ruvo Center for Brain Health Head of Neuropsychology and COBRE Investigator Sarah Banks, PhD, ABPP/CN, who is using PET scans to investigate neuroinflammation in the brain cells of individuals with Alzheimer's disease and Parkinson's disease.

## Partner With Us

Around the country, COBRE grants from the National Institutes of Health support collaborations among researchers with complementary backgrounds and expertise, with the aim of strengthening institutional biomedical research capacity.

But research can't be conducted without volunteers. If you're interested in participating in these or other research studies at the Lou Ruvo Center for Brain Health, contact us at 855.LOU.RUVO or [healthybrains@ccf.org](mailto:healthybrains@ccf.org) or learn more online at [clevelandclinic.org/brainhealthtrials](http://clevelandclinic.org/brainhealthtrials).