

Muhammad Ali Parkinson Center



DURING MUHAMMAD ALI'S battle with Parkinson's disease, he and his wife, Lonnie Ali, envisioned building a world-class Parkinson's center dedicated to helping patients and caregivers when they need it most. Today, the Muhammad Ali Parkinson Center at Barrow Neurological Institute, led by Holly Shill, MD, FAAN, is one of the largest Parkinson's centers in the country and a national model for comprehensive treatment, care, and research.

The Muhammad Ali Parkinson Center holds the following distinctions: Parkinson's Foundation Center of Excellence; Huntington's Disease Society of America (HDSA) Center of Excellence; Lewy Body Dementia Association Research Center of Excellence; and National Ataxia Foundation Center of Excellence.



25+

research
studies



15,071

outpatient
clinic visits



41,777

individuals impacted by
Legacy Care Program

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



CLINICAL IMPACT

117,700+

total number of
patient visits

5,800+

brain and spine surgeries

14

Centers of Excellence



GLOBAL IMPACT

59

research fellows and visiting scholars: Argentina, Austria, Brazil, Chile, China, Colombia, Czech Republic, Denmark, Finland, Germany, India, Italy, Jordan, Mexico, Pakistan, Peru, Portugal, South Korea, Spain, Taiwan, Turkey, United Kingdom

COMPASSIONATE CARE AND SUPPORT

Throughout Muhammad Ali's Parkinson's journey, Lonnie was his primary caregiver. Like Lonnie, a majority of Parkinson's caregivers are also the patient's loved one. As the disease progresses, caregivers begin to face more significant responsibilities and challenges, leading to physical, mental, and emotional burnout. That is exactly what Mary Feeley experienced after her husband, Steven Bassett, had his first fall. She says, "He was no longer steady on his feet and depended on me more for everyday things like bathing, getting dressed, and moving around the house. I remember being at my collapsing point, just completely exhausted."

To provide additional resources for caregivers like Lonnie and Mary, the Bob & Renee Parsons Foundation continued its dedicated support of the Center with a \$1 million gift to launch the Legacy Caregiver Program. An extension of the Lonnie and Muhammad Ali Legacy Care Program, the Legacy Caregiver Program will implement comprehensive interventions to reduce caregiver burden. These interventions include Movement Cafés, which offer caregivers respite and the opportunity to participate in support groups while their loved ones engage in life-enhancing exercise and creative activities. In addition, the Center is developing an online Parkinson's care training program for informal caregivers, assisted living staff, and therapists, with the goal of improving caregiver knowledge to better help Parkinson's patients.

The Legacy Care Program began a new research project to measure its impact on patients and caregivers. The team will track several quality-of-life and caregiver burden metrics, as well as follow the motor and non-motor symptoms in Parkinson's patients to evaluate the effectiveness of interventions. This study is funded through the generosity of Barrow Neurological Foundation donors.

ADVANCING MOVEMENT DISORDERS RESEARCH

Through innovative research supported by philanthropy, clinicians and scientists in the Muhammad Ali Parkinson Center aim to make groundbreaking discoveries that will stop Parkinson's in its tracks.

Gene Therapy for Parkinson's: Barrow scientist Fredric Manfredsson, PhD, and his team are investigating whether using gene therapy to deliver the protein ACMSD to the kynurenine metabolic pathway, which becomes dysfunctional in the disease process, will prevent the loss of brain cells. They have already tested this novel approach in two preclinical models of Parkinson's, with very encouraging results.

Reducing Falls with DBS: Barrow neurologist Guillermo Moguel-Cobos, MD, is conducting a study that measures the effect of deep brain stimulation (DBS) of the pedunclopontine nucleus (PPN) on gait and balance to help reduce falls in Parkinson's patients. He will also utilize sensors to better understand exactly how stimulation of the PPN helps reduce symptoms, which can further improve treatments.

Diagnosing Parkinson's and Lewy Body Dementia: Center Director Holly Shill, MD, FAAN, aims to determine whether a skin biopsy, genetics, and other biomarkers can predict a diagnosis and the progression of Parkinson's disease and Lewy body dementia. Lewy body dementias include Parkinson's disease with dementia and dementia with Lewy bodies. Dr. Shill is collaborating with several other centers on this work, with funding from Barrow Neurological Foundation and outside agencies, including the Parkinson's Foundation, the National Institutes of Health (NIH), and the Michael J. Fox Foundation.

Environmental Risks of Parkinson's Disease: Brad A. Racette, MD, FAAN, Chair of Neurology at Barrow, is renowned for his research on manganese neurotoxicity and environmental risk factors for Parkinson's. The Racette Laboratory, which receives start-up funding from Barrow Neurological Foundation, pioneered the use of state-of-the-art geospatial techniques to demonstrate the relationship between air pollution and Parkinson's risk. The team found that the association was strongest in the mountain states, although there is a strong geographic clustering of Parkinson's in the Ohio River Valley.

ON THE HORIZON

The Muhammad Ali Parkinson Center plans to expand its overall care and research programs by recruiting additional clinicians and physician-scientists. Dr. Racette and his team will continue expanding their portfolio of research studies focused on the role of environmental pollution in Parkinson's. The Center also is expanding its collaborations with scientists at Arizona's major universities, working on everything from toxins in Parkinson's disease to stem cell therapies.

In addition, Barrow Neurological Foundation will now be the presenting organization for the annual Walk the Fight & Run the Distance event supporting community outreach at the Center. The event will take place on January 20, 2024.

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



RESEARCH

327

active research studies

200+

peer-reviewed
journal publications

\$12 MILLION

in new federal research
grant support



DONOR IMPACT

3,898

total donors

\$44 MILLION

distributed to Barrow Neurological
Institute, including:

\$25.4 MILLION

designated to the
Ivy Brain Tumor Center

\$5.3 MILLION

designated to specific
centers/programs

11.9 MILLION

for basic, clinical, and
translational research

\$1 MILLION

in endowments



Holly Shill, MD, FAAN, is the director of the Muhammad Ali Parkinson Center and the Bob and Renee Parsons Chair in Parkinson's Disease and Movement Disorders.

THANK YOU FOR YOUR SUPPORT

We are grateful for your generous support of the Muhammad Ali Parkinson Center. Because of donors like you, Parkinson's patients know that they have a place where they can receive the latest treatments and compassionate, expert care. With the creation of the Legacy Caregiver Program this past year, patients' loved ones now have a place where they can go to receive much-needed support and respite.

Your generosity also allows our clinicians and scientists to explore new avenues of research in Parkinson's, including gene therapy, environmental risk factors, and deep brain stimulation to improve gait and balance. Thank you for helping us continue to provide hope to patients and caregivers living with this debilitating disease.

With gratitude,

Holly Shill, MD, FAAN

Director, Muhammad Ali Parkinson Center

Bob and Renee Parsons Chair in Parkinson's Disease and Movement Disorders

Professor, Department of Neurology, Barrow Neurological Institute

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Professor, Department of Neurology, Creighton University School of Medicine

The mission of Barrow Neurological Foundation is simple: to be the catalyst of our donors' passion for transformation by providing the resources for Barrow Neurological Institute to achieve its mission of saving human lives through innovative treatment, groundbreaking research, and educating the next generation of the world's leading neuroclinicians.

Barrow
Neurological Foundation

Barrow Neurological Foundation
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