

Parkinson's Research



The Lonnie and Muhammad Ali Legacy Care Program, generously funded by The Bob & Renee Parsons Foundation, provides multi-disciplinary care and resources to empower Parkinson patients and support their caregivers.

→ **THE BASIC PRINCIPLES** for identifying Parkinson's disease haven't changed in two centuries since Dr. James Parkinson wrote "An Essay on the Shaking Palsy." Diagnosis centering on tremors, stiffness, slowness and postural instability may not accurately identify the disease. Thus, one in five Parkinson's diagnoses by a movement specialist may be inaccurate.

Even with a diagnosis, doctors cannot confidently predict how the disease will progress. Managing symptoms is often trial and error. When new drugs are tested, clinical trials can tell whether they work but not why. This takes a toll on patients and caregivers.

The Muhammad Ali Parkinson Center at Barrow Neurological Institute has been honored for its patient care as the only Parkinson's Foundation Center of Excellence in the Southwest. Now the Center is striving to match that distinction with research. Until scientists fully understand how Parkinson's changes the brain, a cure remains impossible, because you can't treat what you can't see.



60,000

diagnosed with
Parkinson's each year



1,000,000

patients living with
Parkinson's in U.S.



22

active Parkinson's
clinical trials

ABOUT BARROW
NEUROLOGICAL INSTITUTE



#1 IN ARIZONA
#11 IN THE UNITED STATES
for neurology and neurosurgery



CLINICAL IMPACT

92,515

BNI Clinic visits

3,135

number of neurosurgeries

1,578

number of spine surgeries

\$2.8 MILLION

amount of charity care



GLOBAL IMPACT

54

visiting scholars, research fellows and observers from Mexico, India, Egypt, Pakistan, UK, Russia, China, Chile, Spain, Brazil, Japan, France, Italy, Kingdom of Saudi Arabia, Indonesia, Turkey, Germany, Poland, Colombia, Philippines, Israel, Argentina and Thailand.

PROGRAM ACCOMPLISHMENTS

Clinical programs in the Muhammad Ali Parkinson Center have grown exponentially in the last year. The Lonnie and Muhammad Ali Legacy Care Program, generously funded by The Bob & Renee Parsons Foundation, provides multi-disciplinary palliative care, home visits, tele-medicine, support groups, and online programs for more than a thousand individuals. These programs empower patients as their symptoms progress while supporting caregivers on their journey. One webcast alone reached patients in 12 countries in Central and South America.



Nicki Niemann, MD

Two key additions to Barrow will improve our robust Parkinson's program. Nicki Niemann, MD, was recruited to see patients when Abraham Lieberman, MD retired. In addition to his clinical duties, Dr. Niemann will conduct innovative clinical trials focusing on better treatments for Parkinson's and other movement disorders.



Fredric Manfredsson, PhD

Fredric Manfredsson, PhD, joined the Parkinson's research program. His renowned research focuses on gene therapy and explores the biologic mechanisms underlying Parkinson's disease. The addition of Dr. Manfredsson positions Barrow at the forefront of basic science research into the disorder and promises exciting approaches to delivering novel treatments to patients.

RESEARCH ADVANCES

Our Parkinson's research investigates the underlying causes of the disease, works to identify medications to slow or relieve symptoms, and develops new protocols to track progression.

Holly Shill, MD, the director of the Muhammad Ali Parkinson Center, is co-lead investigator on several trials in the pipeline for the National Institutes for Health's Network for Excellence in Neuroscience Clinical Trials (NeuroNEXT). Barrow is one of just 25 neurology departments nationwide participating. These trials help patients access the most innovative therapies.

Dr. Shill led Barrow's efforts in several clinical trials – one of which tested a cutaneous nerve stimulator to calm shaking hands. Several other trials are pending results or pending publication.

Ryan Walsh, MD, PhD, leads Barrow imaging research to uncover the mysteries of Parkinson's including better ways to monitor the progression of the disease and also to determine if a patient is responding to treatments. These techniques may also lead to advances in other neurological conditions.

ON THE HORIZON

Dr. Shill and Dr. Manfredsson are working on an innovative study testing an FDA-approved anti-depressant applied directly into the brains of Parkinson's patients with the aim of controlling symptoms for longer periods of time.

While Barrow is recognized by the Parkinson's Foundation for expertise in clinical care, we seek to become a center of **research** excellence as well. The Morris K. Udall Centers of Excellence utilize a multi-disciplinary approach to reveal the causes of Parkinson's, as well as to fast-track improvements in diagnosis and treatment for patients. Barrow will expand our basic, translational and clinical research to better position the Muhammad Ali Parkinson Center to become the first Udall Center of Excellence in the Southwest. This designation also assists in securing federal research funding, and in recruiting and retaining the best Parkinson's scientists.

"We understand that Parkinson's disease cannot be cured. However, in the future, regardless of challenges we will be dealing with, we know that there will be a team to support us as we travel this challenging route."

RANDY AND SUSAN WORTMAN

↓ *The Lonnie and Muhammad Ali Legacy Care Program clinical team.*



RESEARCH

320

active research studies

839

patients enrolled in clinical trials

\$9 MILLION

in federal research grant support



DONOR IMPACT

\$3.98 MILLION

for basic and translational research

\$3.65 MILLION

for strategic initiatives including Barrow Aneurysm & AVM Research Center, Barrow Artificial Intelligence Center, neuroimaging and stroke

\$1.26 MILLION

for education and fellowship programs

\$2.52 MILLION

for community outreach programs



THANK YOU FOR YOUR SUPPORT

Thank you very much for your support of Parkinson's disease research at Barrow Neurological Institute. The support of Barrow donors will allow us to continue accepting the challenges of treating Parkinson's while we also look for new, innovative therapies for patients everywhere. We could not change the course of this horrible disease without you.

With Gratitude,
Dr. Holly Shill

↑ *Dr. Holly Shill is the Director of the Muhammad Ali Parkinson Center at Barrow Neurological Institute.*

Barrow Neurological Foundation raises awareness and funding for patient care, medical education, community outreach and research offered at Barrow Neurological Institute. Barrow is an internationally-recognized leader in neurology, neurosurgery and neuroscience research, treating patients with a wide range of conditions, including brain and spinal tumors, concussion and brain and spinal traumas, neuromuscular diseases, stroke, cleft and craniofacial disorders, and cerebrovascular disorders. It is home to several centers of excellence, including the Ivy Brain Tumor Center, Muhammad Ali Parkinson Center and Gregory W. Fulton ALS and Neuromuscular Disease Center. **www.SupportBarrow.org**



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