

Alzheimer's and Memory Disorders Program



AN ALZHEIMER'S DIAGNOSIS is terrifying for both patients and their families. More than anything, those with Alzheimer's disease fear losing their sense of self, their identity, and their lifetime of memories. Their families fear the day when their loved one no longer recognizes them and becomes someone they no longer recognize. Although the Alzheimer's journey is different for everyone, the story is the same—a long and painful goodbye.

The Alzheimer's and Memory Disorders Program at Barrow Neurological Institute, led by Anna D. Burke, MD, is committed to providing world-class, comprehensive care to patients and vital support services to their loved ones. Simultaneously, the team is working tirelessly to improve early diagnosis for Alzheimer's, design new clinical trials, and develop more effective treatments.



19

active
clinical trials



3,497

outpatient
clinic visits



2,661

patients & caregivers
impacted by outreach
program



20

states reached by
outreach 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

RESEARCH THAT PROVIDES HOPE

Repurposing Drugs for Alzheimer's: Marwan Sabbagh, MD, FAAN, Vice Chair of Neurology Research, is working to repurpose two FDA-approved drugs for Alzheimer's. The first, Revlimid, (lenalidomide) is used to treat bone cancer and leukemia. The second, Mayzent, (siponimod) is used to treat multiple sclerosis. Both of these studies are being funded through R01 grants from the National Institutes of Health (NIH), with additional support for drug costs and research efforts provided by Barrow Neurological Foundation donors.

COVID-19 and Alzheimer's: Dr. Sabbagh is leading the clinical branch of a study focused on understanding the link between COVID-19 and Alzheimer's, which is being funded by a \$10 million grant from the Office of the Arizona Governor through the American Rescue Plan Act (ARPA). Dr. Sabbagh and his team are conducting studies involving Alzheimer's patients who had COVID-19 and non-Alzheimer's patients who experienced cognitive deficits as a result of COVID-19. This will allow them to determine whether the virus triggers dementia-associated disease mechanisms and uncover disease-relevant biomarkers.

Blood-Based Biomarkers: Dr. Burke is leading a study to evaluate the accuracy of a novel blood test that can be used to detect the presence of amyloid pathology, which plays a significant role in the development of Alzheimer's. The goal of this study is to provide a less invasive and less expensive way to diagnose patients with Alzheimer's.

Headset Device for Alzheimer's: Also led by Dr. Burke, this unique study utilizes a headset device that delivers gamma sensory stimulation, both visual and audio, for 60 minutes per day, with the goal of improving cognitive functioning and quality of life for those living with Alzheimer's. It is one of the only clinical trials currently enrolling patients with either mild or moderate Alzheimer's.

Lifestyle Modifications: The T.R.E.A.D. (Time-Restricted Eating in Alzheimer's Disease) trial, led by Yonas E. Geda, MD, is the first study to evaluate the feasibility of implementing intermittent fasting in patients with mild cognitive impairment (MCI). This groundbreaking work is fully funded by philanthropy.

Down syndrome and Alzheimer's: Barrow scientists Elliott J. Mufson, PhD, and Sylvia Perez, PhD, received a five-year NIH R01 grant for their study investigating the molecular events that lead to the death of neurons involved with memory and learning in Down syndrome. The study, which

received seed funding from the Foundation, has the potential to lead to new therapeutics preventing cognitive decline in both Down syndrome and Alzheimer's.

COMPASSIONATE CARE AND SUPPORT

The Program's outreach and support team, which is fully funded by philanthropy, goes above and beyond to meet the needs of patients and caregivers. In addition to ongoing programs such as Memory Cafés, Care Partner Symposiums, educational workshops, and support groups, the outreach team implemented the following new initiatives last year:

- **Multicultural Outreach:** As a part of its efforts to expand outreach to Latino communities, the team focused on raising awareness in multigenerational households by participating in school district and family-focused events. They also have been working to ensure that Spanish-language materials regarding research participation are available at all Barrow community events.
- **Community Events:** The team hosted 10 community education/outreach events last year, including presentations at an adult day center and two senior living communities.

ON THE HORIZON

A \$365,000 challenge grant has been set up to fund pilot projects testing high-risk, high-reward ideas, which means all gifts up to \$365,000 will be matched, doubling the impact of each donation. These innovative projects include using proteins from synaptosomes to identify molecular signatures in dementia spectrum disorders, profiling frontal cortex white matter astrocytes in Alzheimer's, detecting alpha-synuclein in neurodegenerative diseases, generating and characterizing induced pluripotent stem cells (iPSC) in dementia with Lewy bodies, and more.

The Program will also welcome the inaugural Dan Cracchiolo and Pam Grant Behavioral Neurology and Neuropsychiatry Fellow, DeJarra Johnson, MD, in summer 2024. Dr. Johnson is currently a neurology resident at Barrow Neurological Institute. In addition, the outreach and support team plans to continue building its Multicultural Outreach Program to include Latino-specific self-care workshops, brain health workshops, memory screenings, and more.

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



The Alzheimer's and Memory Disorders Program takes care of the patient and their family while searching for new treatments and cures.

THANK YOU FOR YOUR SUPPORT

With support from generous donors like you, the Alzheimer's and Memory Disorders Program continues to go well beyond the often-seen "diagnose and adios" approach to dementia by offering wraparound care and support for patients and their loved ones. Your generosity also allows us to conduct a wide breadth of innovative research, with studies ranging from repurposing FDA-approved drugs and blood tests detecting amyloid presence to lifestyle modifications that can potentially prevent Alzheimer's. Through this holistic approach, we will continue advancing Alzheimer's and dementia research to find more effective treatments for patients who are suffering from this terrible disease.

With gratitude,

Anna D. Burke, MD
Karsten Solheim Chair for Dementia
Director, Alzheimer's and Memory Disorders Division
Director, Neuropsychiatry
Department of Neurology, Barrow Neurological Institute

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

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