

Barrow Concussion & Brain Injury Center



CONCUSSION, THE MOST COMMON type of traumatic brain injury (TBI), can cause serious impairments if not treated properly. Recently, there has been increasing concern about the safety of student-athletes, many of whom sustain at least one concussion per year and may not know the dangers of letting a head injury go unreported or untreated. Another, often overlooked, population prone to repeated concussions are survivors of domestic violence. Even after leaving their abusers, these individuals often lack access to proper medical care to treat their TBI symptoms.

The Concussion & Brain Injury Center at Barrow Neurological Institute, led by Javier Cárdenas, MD, provides comprehensive treatment for patients with concussion and TBI. The team offers the same level of expert care to domestic violence survivors as it does to professional athletes. The Center is also home to novel concussion outreach and education programs for youth athletes.



3,091

outpatient
clinic visits



560+

total patients impacted
by the Domestic
Violence Program



**OVER
1 MILLION**

Arizona student-athletes
have completed the
Barrow Brainbook

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



CLINICAL IMPACT

91,800+

total number of
patient visits

20,900+

telemedicine visits

5,700+

brain and spine surgeries



GLOBAL IMPACT

78

international
research fellows and
visiting scholars

DOMESTIC VIOLENCE BRAIN INJURY PROGRAM

The first-of-its-kind Domestic Violence Brain Injury Program, led by Glynnis Zieman, MD, provides compassionate care to survivors of domestic violence with TBI, giving them both the tools and the confidence to reclaim their lives.

The Program focuses on addressing cognitive issues that domestic violence survivors often experience, including headaches, vision changes, memory deficits, and mental health concerns. The Program also offers speech therapy sessions and partners with local shelters to provide Brains Club, a cognitive retraining workshop designed specifically for survivors of domestic violence with TBI. Additionally, it provides in-person training on TBI symptoms to shelter staff and offers a virtual course for primary care providers on how to recognize signs of TBI in patients who have experienced domestic abuse.

During the COVID-19 pandemic, there was a steep rise in cases of domestic abuse, calling national attention to the crisis. In spring 2022, *The New York Times Magazine* published a story about the hidden epidemic of TBI caused by domestic violence, which prominently featured the Domestic Violence Brain Injury Program. The story details a woman's struggle with debilitating TBI symptoms after leaving her abuser and how she came to find Dr. Zieman at Barrow, who listened to her symptoms and recommended effective therapies to get her back to living a fulfilling life. Today, this woman is attending community college and plans to become a social worker so she can help others in situations similar to the one she was experienced.

TREATMENT AND PREVENTION STRATEGIES

In addition to providing comprehensive clinical care, the Barrow Concussion & Brain Injury Center emphasizes concussion treatment and prevention through three main pillars: education, outreach, and research. To expand its expertise to more patients, the Center offers a fellowship in sports neurology with extensive training in the diagnosis and management of TBI. In July 2022, the Center welcomed sports neurology fellow Jaclyn Jacobi, MD. Dr. Jacobi will focus on clinical care for TBI, pursue research for the Domestic Violence Brain Injury Program, and have the opportunity to participate in sideline concussion care for a variety of Arizona State University sports teams.

To address growing concerns about concussions in student-athletes, the Center formed the Barrow Concussion Network, a collaboration between Barrow, A.T. Still University, the Arizona Interscholastic League (AIA), and the Arizona Cardinals, to provide concussion outreach programs. Barrow Brainbook is the first state-mandated concussion education course for high school athletes. Now in its eleventh year, Barrow Brainbook has reached more than 1 million Arizona student-athletes and is also offered in Spanish. The Center's telemedicine program connects Certified Athletic Trainers to Barrow neurologists in real time during games, so they can assess student-athletes as soon as a concussion is suspected. Additionally, the Center provides training sessions for athletic trainers on concussion detection.

Dr. Cárdenas continues to investigate innovative ways to improve post-concussion assessments. He is conducting a study with the NFL that looks at two specific parts of the post-concussion assessment: vision and balance. Both tests are designed to enhance the detection of concussion at the time of the injury. One test is performed on the sidelines of live games, immediately after a player sustains a concussion, while the other is performed in the locker room if the athlete is removed from the game.

ON THE HORIZON

The Center plans to launch an updated version of Barrow Brainbook, which will be available in a mobile-friendly format and will reflect current trends in concussion education, focusing on overall brain health, repeated head impact, recognizing the signs and symptoms of a concussion, and keeping an eye out for teammates. Barrow Brainbook 3.0 will be available for the world to see when the Super Bowl comes to Arizona on February 12, 2023.

The Domestic Violence Brain Injury Program plans to expand its services outside of local shelters by partnering with Native American communities across Arizona, as well as an organization that helps teens who have just aged out of the foster care system. The Program also plans to expand its research efforts and has several studies underway to evaluate the scope of head injuries sustained by domestic violence survivors and the effectiveness of interventions. Additionally, the Program is in the process of obtaining a copyright for the Brains Club curriculum so it can provide the workshop to other shelters nationwide.

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



RESEARCH

397

active research
studies

791

patients enrolled
in clinical trials

\$14 MILLION

in federal research
grant support



DONOR IMPACT

\$20 MILLION

total distributed to Barrow
Neurological Institute,
including:

\$3.5 MILLION

designated to specific
centers/programs

\$15.4 MILLION

for basic, clinical, and
translational research

\$1.5 MILLION

in endowments



Javier Cárdenas, MD, sees patients from all walks of life at the Barrow Concussion & Brain Injury Center.

THANK YOU FOR YOUR SUPPORT

Thank you for your support of the Barrow Concussion & Brain Injury Center. As the first-of-its-kind center in the nation, our mission is to help as many patients as possible by not only treating existing TBI and concussions, but also providing strategies to prevent further injuries. We are dedicated to offering every patient who comes to the Center the best treatments, tools, and rehabilitation services to overcome their injuries and start living life to the fullest.

We also strive to provide the same level of care and expertise to our domestic violence survivors as we provide to our professional athletes. With support from grant funding and generous donors like you, we are able to do this by offering survivors of domestic violence comprehensive care regardless of their financial situation or insurance status. On behalf of the entire concussion team, thank you for your support and dedication.

With gratitude,

Javier Cárdenas, MD

Director, Barrow Concussion & Brain Injury Center

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 by educating the next generation of the world's leading neuroclinicians.

Barrow
Neurological Foundation

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