

Barrow Concussion and Brain Injury Center



↑ Javier Cárdenas, MD, is the director of the Barrow Concussion and Brain Injury Center, which is the nation's most comprehensive concussion prevention, treatment, and education center.

EACH YEAR, approximately 1.5 million Americans sustain a traumatic brain injury (TBI). The most common type of TBI, concussion, is highly prevalent among survivors of domestic violence, athletes of all ages, and children and older adults who fall. However, about 50 percent of all concussions go unreported or undetected. If these injuries are not quickly recognized and treated properly, even seemingly minor incidents can lead to long-term impairments.

The Barrow Concussion and Brain Injury Center, led by Javier Cárdenas, MD, is the first of its kind in the nation. It offers comprehensive, compassionate, cutting-edge treatment and rehabilitation for those with concussion, traumatic brain injuries, and spinal cord injuries. The Barrow Concussion Center is also home to novel outreach programs that provide concussion education to youth athletes and treat survivors of domestic violence who have suffered from a brain injury.



2,468

outpatient clinic
visits in the past year



1 MILLION

student-athletes in
Arizona have completed
the Barrow Brainbook



1,000

domestic violence
survivors have
attended Brains Club

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



CLINICAL IMPACT

77,600+

total number of patients
seen at Barrow annually

22,200+

telemedicine visits

5,700+

brain and spine surgeries



GLOBAL IMPACT

11

research fellows and
visiting scholars from
Brazil, Columbia, India,
Ireland, Pakistan, Russia,
Thailand, and Turkey

PROGRAM ACCOMPLISHMENTS

The Barrow Concussion Center's multidisciplinary approach to concussion treatment and prevention includes three main areas: education and fellowship, youth outreach, and domestic violence survivor outreach.

Education and fellowship: Barrow is one of only seven institutions in the country that offers a fellowship in sports neurology with extensive training in the diagnosis and management of traumatic brain injury. Through a collaboration with Arizona State University, Barrow fellows have the unique opportunity to participate in sideline concussion care for women's soccer, women's lacrosse, men's football, and men's hockey.

Youth outreach: The Barrow Brainbook—an interactive, web-based course—is the nation's first mandated concussion education module for high school athletes. It is now in its tenth year and has provided concussion education to over one million student-athletes in Arizona. To celebrate this milestone, Dr. Cárdenas and Arizona Cardinals wide receiver Christian Kirk hosted a news conference, during which, Christian, a Scottsdale Saguaro High School graduate, credited the Barrow Brainbook for keeping him aware of concussion risks throughout his career. The Barrow Concussion Center also utilizes the ImPACT Baseline Test and provides sideline consultations to athletic trainers throughout the state with their concussion telemedicine program.

Domestic violence survivor outreach: Recognizing the correlation between concussion and domestic violence, the Barrow Concussion Center developed a one-of-a-kind Domestic Violence Traumatic Brain Injury Program. The concussion team partners with local community shelters to identify, treat, and provide cognitive retraining to domestic violence survivors with TBI, giving them both the tools and confidence to reclaim their lives.

The transition to telemedicine during COVID-19 presented a major challenge for this underserved population, as many shelters did not have updated technology. The Barrow Concussion Center obtained cellular-enabled iPads and distributed them to participating shelters across Arizona. The concussion team outfitted the iPads with everything necessary for a patient visit with a Barrow doctor over Zoom and began appointments immediately.

RESEARCH ADVANCES

After being postponed due to COVID-19, Dr. Cárdenas will begin a study with the National Football League (NFL) that focuses on two specific



Glynnis Zieman, MD, works with concussion survivors of domestic violence at several women's shelters in Phoenix. Dr. Zieman also travels to rural Arizona to treat patients.

parts of the concussion assessment. First, it will look at near point of convergence—the eye's attempt to focus on something that is close to it—after a concussion. Then, it will look at balance after a concussion using a tool that can measure instability. Both of these tests will be performed on the sidelines, right after a player sustains a concussion. Using the data collected, Dr. Cárdenas will identify whether these measures indicate the severity of a concussion, so the tools can be used to help in the evaluation process.

ON THE HORIZON

The Barrow Concussion Center is releasing the Barrow Brainbook in Spanish in fall 2021. This will serve the roughly 30,000 high school athletes in Arizona with Spanish as a first language. The concussion team also plans to expand Brains Club, which provides cognitive retraining workshops to domestic violence survivors, by replicating it in shelters across the United States. Additionally, the Barrow Concussion Center is preparing to have a major presence at the 2023 Super Bowl, which will be hosted in Arizona. The concussion team is planning to participate in events leading up to the Super Bowl and Dr. Cárdenas will be present on the sidelines at the game.

BARROW NEUROLOGICAL INSTITUTE BY THE NUMBERS



RESEARCH

320+

active research
studies

791

patients enrolled
in clinical trials

\$11.7 MILLION

in federal research
grant support



DONOR IMPACT

\$28 MILLION

total distributed to Barrow
Neurological Institute,
including:

\$21 MILLION

designated to specific
centers/programs

\$5 MILLION

for basic, clinical, and
translational research

\$1.7 MILLION

for endowed research chairs



↑ Javier Cárdenas, MD, sees patients from all walks of life in the Barrow Concussion and Brain Injury Center.

THANK YOU FOR YOUR SUPPORT

Thank you for your support of the Barrow Concussion and Brain Injury Center. Our mission is to help as many patients as possible by preventing and treating concussion and TBI in people from all walks of life. We strive to offer each of our patients tools to not only overcome their injuries, but also to start living their lives to the fullest again. Thanks to your generosity, we are able to provide the same level of care and expertise to domestic violence survivors as we provide to professional athletes.

On behalf of the entire concussion team, thank you for your support and dedication.

With gratitude,

Javier Cárdenas, MD

Director, Barrow Concussion and Brain Injury Center

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.