

Abbott, Hennepin County Medical Center And University Of Minnesota Collaborate To Launch The Nation's Largest, Single-Center Prospective Study On Concussion And Traumatic Brain Injury

- Researchers aim to develop a standard approach for evaluating and diagnosing traumatic brain injury, including concussion
- Study will include various evaluation methods, including analysis of blood-based biomarkers, eye tracking and imaging to help classify severity of head injury

ABBOTT PARK, Ill., March 9, 2016 /PRNewswire/ -- According to the Centers for Disease Control and Prevention (CDC), every year, there are an estimated 2.2 million emergency department visits for traumatic brain injuries (TBI).[1] For people with head injuries, quick evaluation and treatment are critical.

That's why researchers at Hennepin County Medical Center (Minneapolis, Minn.) and the University of Minnesota are launching an innovative, comprehensive study in collaboration with Abbott (NYSE: ABT) to better identify the range of brain injuries among patients. Using multiple evaluation tools, including eye tracking, blood-based biomarkers, imaging and cognitive measures, scientists hope to develop a new standard approach to help classify brain injuries, including concussions, and provide the information needed to guide doctors' treatment decisions.

"We know that there are different types of brain damage that can occur after trauma, whether it's a mild concussion or a severe injury," said neurosurgeon Uzma Samadani, M.D., Ph.D., Rockswold Kaplan Endowed Chair for TBI Research at Hennepin County Medical Center (HCMC), associate professor at the University of Minnesota and one of the lead investigators of the study. "Our goal with this study is to combine multiple assessment techniques to quickly assess the severity of brain injuries and enable clinicians to provide appropriate treatments."

USING VARIOUS TOOLS TO ASSESS HEAD INJURY

Dr. Samadani's prior work suggests that eye tracking may detect injury in the brain, which is not always visible in imaging such as a CT scan. In the study, researchers will use eye tracking, which involves a high-frequency camera to map the positions of the pupils as a person watches a video or TV.

"Data have shown a connection between brain injury and abnormal eye movements," said Dr. Samadani. "With new high-resolution cameras, we can detect subtle differences in movement much more easily and objectively than in the past."

The study will also employ blood-based biomarker evaluations, as research suggests that certain biomarkers could indicate brain injury. Beth McQuiston, M.D., medical director, Diagnostics, Abbott and co-sponsor of the study says, "When someone experiences a head injury like a concussion, specific protein biomarkers will be found in the blood. If the protein levels are higher than normal, that may show a brain injury has occurred and serve as a warning bell that further evaluation is needed."

Abbott researchers are working on a test designed to detect the specific proteins in the blood associated with brain injury and help evaluate potential concussions. The test, which is currently in development, would be analyzed on Abbott's i-STAT – a handheld, portable device that is used to perform a broad range of blood tests right at a person's side.

Lastly, the Minnesota Spinal Cord Injury and Traumatic Brain Injury Research Grant Program will fund MRI imaging to be used in the study to look for finer structural issues that may not be visible in CT scans. Imaging studies will include MRI scans not typically performed on trauma patients and may help identify tiny areas of bleeding or other damage to the brain.

"Imaging tells us what the brain looks like, eye tracking tells us how well it's working and blood-based biomarkers can tell us the nature of the damage," said Thomas Bergman, M.D., study co-investigator and Chief of Neurosurgery at HCMC. "When we put all of this information together, we will have a better understanding about brain injury that will help us treat patients now and in the future."

ADDITIONAL STUDY DETAILS

Researchers plan to screen 9,000 trauma patients and enroll at least 1,000 of them as part of the study. Patients could range from children to elderly adults, as well as people who are conscious to those in coma. Enrolled patients will be followed for up to one year, making the research the largest single-center, prospective study of TBI in the country.

Additional co-investigators on the study include: Dr. James Miner, Chief of Emergency Department at HCMC; Dr. Fred Apple, HCMC Laboratory Director; Dr. Chad Richardson, Chief of Trauma Surgery at HCMC; HCMC neurosurgeons Dr. Gaylan Rockswold and Dr. Walter Galicich; Dr. Dave Gilbertson, Co-Director of the Chronic Disease Research Group at the Minneapolis Medical Research Foundation and Dr. Sarah Rockswold, Director of the Brain Injury Center at HCMC.

About Hennepin County Medical Center

Hennepin County Medical Center (HCMC) is a 484-bed comprehensive academic medical center and public teaching hospital located in downtown Minneapolis. It was one of the first hospitals in the country to be verified as a Level I Trauma Center and continues to be a leader in providing trauma care – assessing more than 22,000 trauma patients each year. As Minnesota's first Level I Adult and Pediatric Trauma Center, HCMC admits and treats more traumatic brain injuries than any other hospital in Minnesota. To learn more, visit www.hcmc.org/braininjury.

About the University of Minnesota Medical School

The University of Minnesota Medical School, with its two campuses in the Twin Cities and Duluth, is a leading educator of the next generation of physicians. Our graduates and the school's 3,800 faculty physicians and scientists advance patient care, discover biomedical research breakthroughs with more than \$180 million in sponsored research annually, and enhance health through world-class patient care for the state of Minnesota and beyond. Visit www.med.umn.edu to learn more.

About Abbott

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[1] "Injury Prevention & Control: Traumatic Brain Injury & Concussion." Centers for Disease Control and Prevention. 22 January 2016. Website: http://www.cdc.gov/traumaticbraininjury/get_the_facts.html Accessed: 24 February 2016.

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