



St. Joseph's Hospital and Medical Center

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NEWS RELEASE

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## Brain Injured Athletes May Benefit from Hypothermia Research

NFL players and other athletes who suffer serious or multiple concussions may benefit from ground-breaking research being conducted by scientists at Barrow Neurological Institute at St. Joseph's Hospital and Medical Center. The scientists are developing a surgical technique that involves hypothermia in specific regions of the brain.

Therapeutic hypothermia is a medical treatment that lowers a patient's temperature in order to help reduce the risk of injury to tissue. The endovascular intra-arterial cooling method being studied at Barrow rapidly preserves the injured portion of the brain and minimizes damage.

Results from the studies, which are being led by Barrow's director of Neurosurgery Research Mark Preul, MD, have been published in academic journals such as *Neurological Research*.

"The ability to cool a specific region of the brain allows us to protect the tissue and avoid risk of damage to other organs that can occur with whole body hypothermia," says Dr. Preul. "This work is targeted currently at severe injuries to the brain like massive strokes or trauma, but it also means we could be able to offer a less invasive and specific approach to saving brain tissue. We're working to develop ways to be more proactive about treating brain injuries like sports concussions that may have been under-treated in the past."

The filter-cooling unit technology works similar to renal dialysis, removing a volume of blood and replacing it with a cooled crystalloid solution through a catheter in the carotid artery. The rest of the brain and body maintain a normal temperature. The cooling process quickly lowers the metabolic rate of the tissue, protecting it from stress and further damage.

Results could be particularly welcome news for the NFL, which has been under fire from a House Judiciary Committee recently. The league also has been scrutinized in news reports for its medical treatment of former players who show signs of dementia and other types of mental decline.

"We're encouraged by our results in the lab, and believe it could translate into faster clinical response and improved outcomes for patients with brain injuries, including athletes, military personnel and trauma patients," says Dr. Preul.

—St. Joseph's—