Medical Xpress

Study discovers why females fare better than males after traumatic injury

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A study published in the September 2010 issue of *SHOCK* by Dr. Ed W. Childs and colleagues at Scott & White Healthcare looks at how female versus male rats fared after suffering a trauma and subsequent hemorrhagic shock who were given Estradiol (estrogen). In the study, the Estradiol prevented vascular permeability following hemorrhagic shock.

"We've always known that females fare better than males after traumatic injury, but we never knew why, now we know a potential mechanism," said Ed W. Childs, M.D., professor of surgery at the Texas A&M Health Science Center College of Medicine, and vice chairman of research in the department of surgery at Scott & White Healthcare. "This study proved that estrogen receptors on the mitochondria of our cells actually help protect these cells on females after injury. But, if you block those estrogen receptors, they perform like those of a male."

Examples of shock can include: car accident, falls that may include a severe trauma, and any injury that causes bleeding. Shock (level IV) is defined as 40% blood volume loss and a systolic blood pressure under 90.

Scott & White is the only designated Level I Trauma Center between Dallas and Austin, Texas. In order to maintain a Level I Trauma designation, performing clinical and bench research is a requirement.

"Getting our study published in such a prestigious national journal as SHOCK shows our long-standing commitment to providing patients in

need of Level I trauma care in Central Texas with the latest cutting-edge medical research and care," said Dr. Childs.

Level 1 Trauma programs provide the highest level of specialty care available and meet stringent national standards of performance. Access to a trauma center is strongly associated with improving a critically-injured patient's chance of survival.

The *SHOCK* is a journal on Injury, Inflammation and Sepsis: Laboratory and Clinical Approaches. More information can be found at www.shockjournal.org .

Dr. Childs specializes in the treatment of hemorrhagic shock, trauma prevention, and general surgery.

More information: For access to the full study in PubMed: 17beta-estradiol mediated protection against vascular leak after hemorrhagic shock: role of estrogen receptors and apoptotic signaling.
Childs, EW, Tharakan B, Hunter FA, Smythe WR
Shock. 2010 Sep; 34(3):229-35.
PMID: 20160663 [PubMed - in process]

Provided by Scott & White Healthcare