

Genitourinary injuries challenge returning US servicemen

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Because battlefield medical care has improved throughout the Iraq and Afghanistan wars, many more U.S. servicemen have survived what could have been fatal injuries in the past. This has resulted in many more veterans returning with genitourinary (GU) injuries. In an article in *The Journal of Urology*, researchers from the U.S. military medical community have examined the extent and severity of GU injuries among nearly 1,400 U.S. service members (SMs) and emphasize the critical need for novel treatments to improve sexual, urinary, or reproductive function among those with severe genital injury.

"Deployment related GU trauma is a uniquely devastating injury that has become increasingly common during the recent wars in Iraq and Afghanistan," explained lead investigator Lieutenant Colonel Steven J. Hudak, MD, Urology Clinic, Department of Surgery, Brooke Army Medical Center, Fort Sam Houston, Texas. "GU injury related urinary, sexual, and reproductive dysfunction is likely to be highly disruptive during the challenging course of recovery after complex poly trauma, especially for young SMs. Continued investment and research in GU injury prevention, organ reconstruction and replacement, gamete preservation, and physical as well as psychological rehabilitation are greatly needed."

The Department of Defense Trauma Registry (DoDTR) collects data from the medical records of trauma patients deployed to support combat operations who are treated at U.S. military hospitals. Researchers reviewed the records of more than 29,000 SMs wounded during

Operation Iraqi Freedom (OIF, October 16, 2002 to December 15, 2011) and Operation Enduring Freedom (OEF, October 7, 2001 to December 28, 2014). Of these, 1,367 men survived after sustaining one or more GU injuries. These SMs became the subjects of the TOUGH (Trauma Outcomes and Urogenital Health) project, a U.S. Department of Defense funded study to describe the epidemiology and long-term outcomes of GU injury among SMs wounded in OIF and OEF.

The study provided three key findings.

- The external genitalia was the predominant GU region injured during OIF/OEF
- Severe testicular and/or penile injury occurred in a substantial proportion of the patients studied
- GU injuries were often part of a larger constellation of poly traumatic injuries, which frequently included lower extremity amputation(s), colorectal injury, and/or traumatic brain injury (TBI)

GU injuries have the unique potential to adversely alter the sexual and reproductive health of the injured SMs. "The impact of sexual and reproductive problems may be amplified for younger individuals who are still in the process of sexual identity development, who are unmarried, and/or who wish to father children," noted Dr. Hudak. For some men, paternity is no longer possible without the use of donor sperm, which is not a covered medical benefit for current or former U.S. SMs.

More than a third of patients studied sustained at least one severe GU injury (36.7%). Most (81.4%) were younger than 30 years old, junior enlisted SMs (59.6%) and members of the U.S. Army or U.S. Marine Corps (95.6%). Battle injuries predominated (88.6%) and the primary mechanism of injury was explosive (74.1%) resulting in penetrating

injuries (66.6%).

The majority of patients had at least one injury to the external genitalia (73.2%). The specific external GU organs injured were scrotum (55.6%), testes (33.0%), penis (31%), and/or urethra (9.1%). While only 12% of scrotal and 20% of penile injuries were severe, over 63% of testicular injuries were severe.

Common comorbid injuries included TBI (40.2%), pelvic fracture (25.0%), and colorectal injury (21.7%). When an SM had a severe GU injury, 31.1% also had colorectal trauma, as opposed to 16.3% of those with less severe GU injury. Lower extremity amputation occurred in more than a quarter of SMs with GU [injury](#) (28.7%).

More information: Judson C. Janak et al, Epidemiology of Genitourinary Injuries among Male U.S. Service Members Deployed to Iraq and Afghanistan: Early Findings from the Trauma Outcomes and Urogenital Health (TOUGH) Project, *The Journal of Urology* (2017). [DOI: 10.1016/j.juro.2016.08.005](https://doi.org/10.1016/j.juro.2016.08.005)

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