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## War Concussions Linked to Stress

By [BENEDICT CAREY](#)

About one in six combat troops returning from Iraq have suffered at least one [concussion](#) in the war, injuries that, while fleeting, could heighten their risk of developing [post-traumatic stress disorder](#), researchers are reporting.

The study, given early release on Wednesday by The [New England Journal of Medicine](#), is the military's first large-scale attempt to gauge the effect of mild head injuries — concussions, many of them from roadside blasts — which some experts worry may be causing a host of unrecognized neurological deficits.

The new report finds that soldiers who had concussions were more likely than those with other injuries to report a variety of symptoms in their first months back home, including headaches, poor sleep and balance problems. But they were also at higher risk for the [stress](#) disorder, known as PTSD, and that accounted for most of the difference in complaints, the researchers concluded. Symptoms of the disorder include [irritability](#), sleep problems and flashbacks.

Experts cautioned that the study was not designed to detect subtle changes in mental performance, like slips in concentration or short-term [memory](#), that might have developed in the wake of a concussion and might be unrelated to stress reactions. Many returning veterans are still struggling with those problems, which can linger for months after a severe concussion.

The findings are in line with previous research linking concussions to post-traumatic stress disorder after frightening events like car accidents; concussions from athletic collisions rarely lead to the disorder.

“This study is a very good first step, and an important one, but like any first step it should lead us to ask further questions about these injuries,” said Brian Levine, a neuropsychologist at the Rotman Research Institute and the University of Toronto, who was not involved in the study.

Now that the prevalence is known, Dr. Levine said, the next step should be to assess troops' cognitive functioning early on and track it over time, before and after combat.

“These injuries should not be underestimated,” he said. “You can't work, you can't do anything, at least initially, and the symptoms can linger for weeks to months.”

In the study, military [psychiatrists](#) had 2,525 soldiers from two Army infantry brigades fill out questionnaires asking about missed work days and dozens of physical and emotional difficulties, as well as symptoms of PTSD. The soldiers had been back home for three to four months.

The questionnaires also asked about concussions and their severity. A concussion is an injury from a blow or shock to the head that causes temporary confusion or loss of consciousness, without any visible brain damage. The investigators found that 384 of the soldiers, or 15 percent, reported at least one concussion. One-third of them blacked out during the injury and two-thirds did not.

The severity of the concussion was related to the risk of the stress disorder, the survey showed. Nearly 44 percent of the soldiers who blacked out qualified for the diagnosis — about three times the rate found in soldiers with other injuries.

Among soldiers who did not black out, the rate of PTSD was 27 percent, significantly higher than the 16 percent rate among veterans with other kinds of injuries.

“There’s a lot we don’t know about these injuries, but we do know that context is important,” said the lead author, Dr. Charles W. Hoge, director of the division of [psychiatry](#) and neuroscience at the Walter Reed Army Institute of Research. “Being in combat you’re going to be in a physiologically heightened state already; now imagine a blast that knocks you unconscious — an extremely close call on your own life, and maybe your buddy went down. So you’ve got the trauma and maybe the effect of the concussion is to make it worse.”

In an editorial that accompanied the study, Richard A. Bryant, a psychologist at the University of New South Wales in Australia, stressed that “soldiers should not be led to believe that they have a [brain injury](#) that will result in permanent damage.”

On the contrary, he and other experts say, the link to post-traumatic stress suggests that mild brain injuries have a significant psychological component, which can improve with treatment.

Paul Rieckhoff, executive director of the Iraq and Afghanistan Veterans of America, said the study — and interest in brain trauma by doctors and military officials — was long overdue.

“The I.E.D. is the signature weapon of the war, and traumatic brain injury is the signature injury, but the system is not ramped up to handle it, and there are a lot of misdiagnoses, and nondiagnoses,” Mr. Rieckhoff said. “At the end of the day, you hope that this report will serve as a warning, that we need to learn more about these injuries and quickly.”

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