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## Feeding May Help Brain Injuries

By SHIRLEY S. WANG

Military personnel who suffer traumatic brain injury need to be fed adequately and immediately to reduce the severity of trauma and improve their chance of survival, according to a report by the Institute of Medicine, a finding that also has implications for people sustaining head injuries in other situations, such as sports and traffic accidents.



Food has been found to help traumatic brain injuries among military personnel in the field. Kelsey Hubbard talks to WSJ's Shirley Wang about the new nutritional recommendations from the Institute of Medicine.

The report, commissioned by the U.S. Defense Department and released Wednesday, recommends that in the first 24 hours after head trauma, patients need to receive at least 50% of their typical calorie intake, including a higher-than-normal amount of protein, in order to reduce inflammation and swelling of the brain and provide enough energy to help the brain repair itself.

The intensive nutrition regimen should be continued for at least two weeks, the report says.

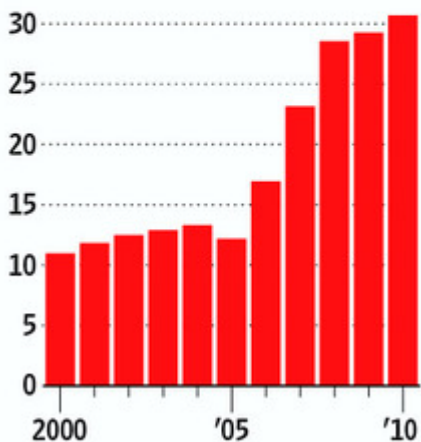
"The one major [conclusion] is a focus on getting protein and calories in as quickly as possible," said John Erdman, a nutrition researcher at the University of Illinois at Urbana-Champaign,

who headed the panel of independent experts that produced the report.

### Battle Scars

Traumatic brain injuries suffered by U.S. service members

35 thousand



Source: Defense Department

Traumatic brain injury, or TBI, among U.S. soldiers is a growing problem. The Defense Department says reported cases have tripled to more than 30,000 in the past decade, reflecting injuries from so-called improvised explosive devices, or IEDs, that troops frequently encounter in Afghanistan and

## Iraq.

Outside the military, brain injuries are even more prevalent. Some 52,000 people in the U.S. die each year from TBI, and about 1.5 million patients report to emergency rooms annually with head injuries. As many as 3.8 million people suffer such injuries playing sports each year, says the Brain Trauma Foundation, a research organization.

Traumatic brain injuries can range from "mild" concussions, where a confused state or loss of consciousness lasts less than 24 hours, to "severe" episodes, where memory loss lasts more than seven days or even involves piercing of the outer layers of brain tissue. There are few effective treatments, especially for severe cases.

Early feeding was found to mitigate the effects of head injuries and reduce mortality in critically ill people by between 25% and 50%, said Bruce Bistran, a committee member and chief of clinical nutrition at Harvard-affiliated Beth Israel Deaconess Medical Center in Boston.



Agence France-Presse/Getty Images

Soldiers from the 234th Infantry Division, based in Fort Riley, Kansas, fly to Afghanistan.

Even if carried out intravenously, providing necessary nutrition can be challenging in the battlefield or when multiple injuries are involved, because the focus tends to be on stabilizing patients and getting them to safety.

"While there's lip service paid [to adequate feeding], they're often not [getting it]," said Dr. Bistran.

Some experts also worry about over-feeding, because the sugar level in the brain needs to stay in a normal range and too many calories can lead to high blood sugar. But low blood sugar is also dangerous and could impede recovery, the committee found.

The Defense Department said it would evaluate the report and consider the panel's recommendations for conducting clinical research on the issue. "Coordination among DoD researchers and clinical-care experts could certainly develop clinical research protocols to determine if evidence for benefit can be identified," said Cynthia Smith, a Defense Department spokeswoman.

Nutrition has long been investigated as a possible treatment for TBI because the brain's metabolism is known to suffer disruption following injury, reducing the energy supply needed for many brain processes.



Getty Images

A medical team treats a U.S. soldier at a military base in Afghanistan, where U.S. troops have suffered a surge in traumatic brain injuries.

Questions remain, however, about how to provide the needed energy and what type of nutrients might be most helpful, said Fernando Gomez-Pinilla, a neurosurgeon at the University of California, Los Angeles who wasn't on the IOM panel.

The committee said its recommendation for immediate feeding was based on an extensive review of studies on nutrition, critical illness and brain trauma that together indicated that such an approach was critical to reducing the toll from such injuries.

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