On Guard Against Traumatic Brain Injuries

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Photo Credit: David Kamm, NSRDEC Photographer

Dr. Kristin Heaton, a neuropsychologist at the U.S. Army Research Institute of Environmental Medicine, is working with other USARIEM researchers to collect data from 3,000 National Guard Soldiers from eight states to provide a traumatic brain injury baseline.

NATICK, Mass. (May 6, 2013) -- They tend to be older, more experienced, and more likely to have families, but deployed members of the National Guard share something in common with their active-duty brothers and sisters -- the likelihood of suffering from traumatic brain injuries.

Like other U.S. service members, Guard members take the Automated Neuropsychological Assessment Metrics, or ANAM, test before deployments.

"It provides a baseline of sorts," said Dr. Kristin Heaton, a neuropsychologist at the U.S. Army Research Institute of Environmental Medicine at the Natick Soldier System Center. "Then if there's an incident in theater -- an injury or a blast exposure or something like that -- we can look for changes in these scores as markers of possible injury."

What's missing is a reference data set specific to the National Guard so that its members may be compared to their peers. Heaton and other USARIEM researchers aim to correct that by collecting data from a total of 3,000 Guard members from eight states, three different age groups, males and females, in combat support and combat arms units.

"We've been in active data collection now for a while," said Heaton, adding that the process will be complete in December. "We're aiming for a diverse geographic representation. Having a meaningful, representative data set like this could be really helpful for interpreting scores, both before and after injuries."

Why is it important to differentiate the National Guard from other service groups when it comes to traumatic brain injury, known as TBI?

"In many respects, they represent a different demographic of Soldier," Heaton said. "For example, they tend to be older, have families and children, and have dual careers. There is some evidence in the

literature that they may respond to deployments, both during and after, somewhat differently than their active-duty counterparts, all of which may impact not just the Soldier, but his or her family, as well."

Heaton said that in the past, most TBI research had been on active-duty service members. The National Guard recently has become more of a focus.

"Being able to better understand [National Guard service members'] unique situation and how deployments have affected them, both in the positive and perhaps not-so-positive ways, is an important area of research that really hasn't been well developed," Heaton explained.

Heaton said she hopes to publish a study containing the results soon after data collection ends. Her team will also provide the resulting data to the National Guard Bureau and the participating states directly.

"They've been extremely supportive, and I think they definitely understand the relevance of what we're doing and why," Heaton said. "We really do want to be able to get data into their hands that they can use and that would be meaningful and relevant to them, as quickly as we can."

Just what the data will show, Heaton can't accurately predict.

"They're going to perform probably very similar to the rest of the population," Heaton said. "But we do feel, given that they are a unique cohort within the military, the reference data would reflect their unique demographics."

Heaton pointed out that National Guard leadership has great interest in the health and welfare of their personnel.

"They're very focused on their Soldiers, not just when they have them on drill weekends, but also when they go back home and return to their civilian jobs and re-integrate to their home life situations," Heaton explained. "They're extremely interested and eager to know more and to have information that they can then use to help their Soldiers. They have been quite welcoming of this work."

This is the latest in an impressive number of TBI studies done by Heaton and other USARIEM researchers.

"Much of our work to date has been focused on developing and validating measures of cognitive performance as ways of assessing traumatic brain injury -- concussion, in particular," said Heaton, who added that the goal is "to provide more efficient, more effective and relatively fieldable tools for use by leadership, by medical command, to screen for concussion."

According to Heaton, TBI research is far ahead of where it stood several years ago. She said she wants to see that momentum continue.

"Traumatic brain injuries don't go away just because the war ends," Heaton said. "The effects of these injuries are going to remain with the Soldiers who have sustained them, and a good number of head injuries and concussions occur during training and during off-duty activities. So this is going to be an enduring problem."

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