



SECRETARY OF THE ARMY  
WASHINGTON  
NOV 16 2016

The Honorable Louise M. Slaughter  
U.S. House of Representatives  
Washington, DC 20515

Dear Representative Slaughter:

Secretary of Defense Ashton Carter asked me to respond on his behalf to your September 27, 2016 letter concerning Traumatic Brain Injury (TBI) and blast overpressure (BOP) exposure in military combat and training environments.

I want to assure you the Department of Defense (DoD) shares your concerns about the potential link between repeated exposure to BOP and neurological health effects. As you point out in your letter, guidelines limiting blast exposure based on known health risks (auditory and pulmonary) exist across DoD training environments. DoD uses these guidelines combined with the use of personal protective equipment (PPE) to further mitigate known health risks.

The DoD Blast Injury Research Program Coordinating Office convened five international state-of-the-science meetings on behalf of the DoD Executive Agent for Blast Injury Research, which brought together the world's experts to assess the state of knowledge on blast-related brain injuries. The meetings concluded that there is no evidence-based consensus threshold for safety or risk of neurological injury associated with BOP. It is therefore essential to capture data from a range of exposures. However, the detection threshold of the DoD's current blast gauges fails to measure low-level exposures. The overpressure detection limit is 2.5 psi, a sensitivity that does not detect the majority of blast exposures that occur in a training environment.

The DoD's current inventory of blast gauges does not provide consistent and reliable data in the training or combat environment. Consistent, reliable data is necessary to accurately correlate BOP exposures with physiologic injuries, and any conclusions drawn about relationships between brain injury and blast exposure at any level without such data cannot be substantiated. The current state of the scientific literature does not support wide based deployment of blast gauges, and in fact, this action could be deleterious to the Service member due to the concern that it may lead to false positive or negative reporting.

The DoD is taking definitive steps to address these issues. First, the DoD is testing new BOP monitoring devices with greater sensitivity, longer battery life, and wireless data transfer capability. If the gauges perform according to specification, they will be suitable for capturing low-level overpressure exposures seen in complex training environments. Second, the DoD is using its current inventory of blast gauges in controlled environments under research conditions to measure overpressure when it is known to exceed 2.5 psi. Data from training environments where trainees use specific weaponry (such as the Carl Gustaf) will be collected and compared to data from validated overpressure monitoring devices. Such correlations will allow the DoD to draw valid conclusions between exposure and injury.

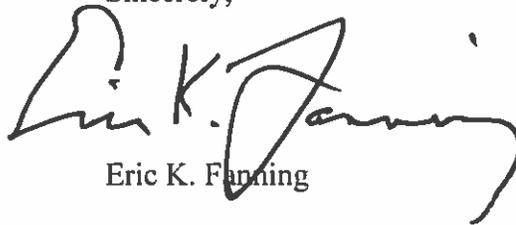
Related research efforts are aimed at understanding and correlating BOP exposures through multiple simultaneous modalities, such as video, sensors, biomarkers, operational, and clinical information, with anticipated recommendations for exposure risk and cumulative physiologic effect of BOP. The DoD continues to support multiple intramural and extramural research projects covering basic and applied research, specifically focused on understanding the underlying mechanisms of BOP, prevention of potential medical consequences, and development of PPE for BOP.

Parallel to research efforts, the DoD implemented strategic level policies and guidelines to address potential concussive exposures and events. In 2010, the DoD developed and implemented policy guidance for the management of concussions in the deployed environment; the 2010 Directive-Type Memorandum was incorporated and updated into DoDI 6490.11, signed in 2012. This policy requires Service members exposed to potentially concussive events (within 50 meters of a blast, involvement in a vehicle blast event, and exposure to more than one blast event) to be identified, medically evaluated, treated, and tracked. Since 2012, the DoD has required Service members to complete face-to-face interviews with a healthcare provider before and after operational deployments in order to provide more detail about possible TBI events, including blast-related events, during deployments.

The DoD remains committed to supporting evidence-based medical research on the potential health effects associated with BOP exposure. Such research can provide the information needed to guide the development of effective injury prevention and mitigation strategies. In addition, the DoD continues to advance strategic policies in order to ensure Service members are identified, tracked, and provided the treatment they deserve.

Thank you for your inquiry into this matter and for your continued support of our Service members and their Families.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric K. Fanning". The signature is stylized and cursive, with a large initial "E" and "F".

Eric K. Fanning