The Value of Defense-Related Vision Research: Peer-Reviewed Vision Trauma Research Program in Defense Appropriations

What is the Vision Trauma Research Program (VTRP)?

The dedicated VTRP budget line in Defense appropriations funds extramural vision research into immediate battlefield needs that is not conducted by the Department of Veterans Affairs (VA), elsewhere within the Department of Defense (DOD, including the Joint DOD/VA Vision Center of Excellence, VCE), the National Eye Institute (NEI) within the National Institutes of Health (NIH), or by private foundations. Although former Secretary of Defense Robert Gates identified Restoration of Sight and Eye-Care as one of four top priorities for deployment-related health research funding [with Traumatic Brain Injury (TBI), Post Traumatic Stress Disorder (PTSD), and Prosthetics], DOD has not yet established adequate “core” funding to address all vision research gaps, so VTRP funding is necessary.

The VTRP addresses deployment-related DOD-identified vision research gaps (see inside page). It was established in Fiscal Year (FY) 2009 appropriations. Although the vision community has consistently requested $10 million in each funding cycle, annual appropriations have ranged from $3.25 million to $5 million. Vision, the sense most critical for optimal military performance in battlefield and support positions, is most vulnerable to acute and chronic injury. Research to effectively treat acute eye damage can have long term implications for an individual’s vision health, productivity and quality of life for the reminder of military service and into civilian life.

Traumatic eye injury from penetrating wounds and TBI-related visual disorders ranks second only to hearing loss as the most common injury among active military:

• Traumatic eye injuries have accounted for upwards of 16 percent of all injuries in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF)
• Male soldiers ages 20–24 account for 97 percent of visual injuries
• Eye-injured soldiers have only a 20 percent return-to-duty rate as compared to an 80 percent rate for other battle trauma injuries
• More than 58,000 enrolled OEF/OIF veterans have been diagnosed with eye conditions
• VA studies estimate that upwards of 75 percent of all TBI patients experience short- or long-term visual disorders, including double vision, sensitivity to light, inability to read print, and other cognitive impairments

How Much Have Military Eye Injuries and Blindness Cost the US?

In May 2012, Kevin Frick, Ph.D. (Johns Hopkins Bloomberg School of Public Health) released the results of a first-ever study of the costs associated with military eye injuries and blindness. The study, entitled Costs of Military Eye Injury, Vision Impairment, and Related Blindness and Vision Dysfunction Associated with Traumatic Brain Injury without Eye Injury, used only published data from 2000-2010 and widely accepted economic conventions to characterize the incidence numbers and concomitant costs associated with eye injuries, which range from superficial to one-eye or two-eye (bilateral) blindness, as well as visual dysfunction associated with TBI.

Based on the published data from 2000–2010, the total incident cost of eye injury each year has been $2.282 billion, yielding a total cost to the economy over this timeframe of $25.107 billion, which reflects:

• $634 million in first-year costs, which have already been spent
• $188 million present value of Department of Veterans Affairs (VA) benefits
• $24.286 billion in present value costs to the economy and society (Social Security benefits, lost wages, family care)

In announcing the results, Dr. Frick reiterated that this was the first-ever estimate of these costs. As a result, he used only published data so that costs would not be overstated. He acknowledged limitations to the study, especially related to the growing knowledge about the diagnosis and treatment of visual dysfunction from TBI. “As we learn more in that regard, the estimated costs would likely be greater,” he stated.

Kevin Frick, Ph.D. (Johns Hopkins Bloomberg School of Public Health) presents study results in May 2012 at the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO). The study was conducted under contract with NAEVR.

The Alliance for Eye and Vision Research’s (AEVR) Decade of Vision 2010-2020 Initiative developed this brochure to educate about the burden of military eye injuries and blindness and the concomitant value of dedicated federally funded research to save and restore vision. Founded in 1993, AEVR is a 501(c)3 non-profit educational foundation. Its affiliate, the National Alliance for Eye and Vision Research (NAEVR), is a 501(c)4 social welfare organization that advocates for federal funding for vision research. More information about defense-related vision research is available at www.eyeresearch.org.