



Traumatic Brain Injury

VA researchers are conducting cutting-edge research aimed at improving care for Veterans with traumatic brain injury (TBI). VA research in this area focuses on gaining a better understanding of the brain changes that occur in TBI; refining screening and diagnostic tools; developing drugs to treat TBI, either long-term or immediately after an injury; helping Veterans with TBI reintegrate into the community; and identifying the best coping strategies for families.



Examples of VA Research Advances

Detecting mild TBI – VA scientists in San Diego are exploring whether newer brain-scanning technology can detect injuries missed with ordinary MRI or CT scans. They are using two methods together: magnetoencephalography, which captures the electromagnetic activity of brain cells as they give off signals to each other, and diffusion tensor imaging, which tracks water molecules as they move through the brain's white matter. The team plans to eventually add MR spectroscopy, which records chemical flow in the brain. The researchers' study will involve up to 150 Veterans and active-duty troops.

Blasts' effects on thinking skills – Researchers with the Tampa VA and Defense and Veterans Brain Injury Center conducted neuropsychological tests with patients who had suffered brain injuries—some from blasts and some from other causes. The results on cognitive tests did not differ sharply between the two groups, although those who had experienced blasts were more likely to report symptoms of PTSD. Researchers are increasingly exploring the effects on the brain of blasts versus other TBI causes.

New TBI centers – VA has funded two new centers focused on TBI. The Translational Research Center for TBI and Stress Disorders, led by Dr. Henry Lew in Boston, will use advanced brain-scan methods and wide-reaching exams to study how TBI and PTSD symptoms interact. The Neurons to Networks Center for Rehabilitation Research, led by Dr. Harvey Levin in Houston, will focus on improving diagnosis of Veterans with mild to moderate TBI. The center will also develop and evaluate treatments involving virtual reality and neurobiofeedback.

Facts About Traumatic Brain Injury

Traumatic brain injury (TBI) is estimated to affect some 20 percent of U.S. troops injured in Afghanistan or Iraq. The cause is usually an explosive. Most of the injuries are considered mild, but even these cases can involve serious long-term effects on areas such as thinking ability, memory, mood, and focus. Symptoms may also include headaches and other forms of chronic pain. Treatment typically includes a mix of cognitive, physical, speech, and occupational therapy, along with medication to control specific symptoms, such as headaches or anxiety. As of September 2008, there were more than 22,000 Veterans being compensated for TBI, of whom more than 5,800 were Veterans of the current wars.

