



US DEPARTMENT OF DEFENSE
BLAST INJURY RESEARCH PROGRAM
COORDINATING OFFICE

Pain Management and Rehabilitation after Amputation Investigation of Chronic Pain Following TBI

Sponsored by OAFSG and the Air Force Medical Support Agency, researchers from the 59th Medical Wing Scientist's Office, Lackland AFB successfully developed an experimental paradigm to support future studies of chronic pain in active duty Service Members, Veterans and civilians. This effort aimed to characterize the neural networks involved in posttraumatic pain using fMRI both in the resting state and during activation with a moderately painful stimulus. Based on a preliminary analysis of raw fMRI data, resting state and pain activation data were robust in individuals with chronic pain conditions. There was consistent to good activation in all of the regions of the pain network (i.e., primary and secondary somatosensory regions, insula, cingulate, primary motor regions, thalamus and cerebellum). Activation in participants with fibromyalgia was the most robust, followed by participants with chronic pain in TBI. Normal controls and those with migraine headaches had less robust activation patterns overall; the small study size limits the results to a general impression only. These findings indicate that this experimental paradigm can support future studies of chronic pain in active duty Service Members, Veterans and civilians. Future studies may contribute to an understanding of the changes in the brain that perpetuate pain in this population and other chronic pain conditions.