



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Risk Assessment and Surveillance

Predictors of Neurocognitive Syndromes in Combat Veterans

Researchers from USUHS's CNRM, NIH, and WRNMMC, with sponsorship from USUHS, conducted a prospective cohort study to identify Service Members at risk for developing disabling neurocognitive syndromes upon return from deployment. Service Members were evaluated at baseline and again at three, six, and 12 months after return from deployment to assess for new-onset PTSD, depression, or PCS. Analysis identified four baseline measurements that were associated with the development of PTSD or PCS in the year after returning from deployment: right superior longitudinal fasciculus tract volume on MRI; resting state connectivity between the right amygdala and left superior temporal gyrus (BA41/42) on fMRI; and single nucleotide polymorphisms in the genes coding myelin basic protein and brain derived neurotrophic factor. This study suggests that genetic markers and functional neuroimaging may help to identify Service Members at risk for developing disabling neurocognitive syndromes in the ensuing year. Further work is needed to define the value of these and other predictors, and to develop a risk stratification model that could enable targeted, timely intervention to prevent progression of symptoms.