Neurocognitive Function and Psychological Health

Neurocognitive Eye Tracking Reveals Persistent Impairments after mTBI

The Laboratory for Neurocognitive Research at USUHS has developed advanced eye tracking technology to quickly and accurately assess neurocognitive function. Advanced clinical tools such as these may enable the detection of blast-related changes in brain function. In a case-control study, the Bethesda Eye & Attention Measure (BEAM) was uniquely sensitive to chronic post-concussion impairments in comparison to conventional cognitive tests. A greater number of mTBIs was associated with rapidly increasing risk for BEAM saccadic impairment. Examination of age effects on BEAM performance also suggest that mTBI is associated with heightened risk for age-related cognitive decline. Continued R&D of the BEAM technology could be used to identify neurocognitive impairment and cumulative effects of blast-related neurotrauma in real-world clinical and operational environments. Additional research funded by USAMRMC Telemedicine and Advanced Technology (TATRC), is underway to cross-validate and extend these findings.