Ocular Bioimpedance: Seeing the Brain through the Eyes

**AWARD AMOUNT:** $1.48M

**THE TEAM**

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**THE PROBLEM**

The challenges of caring for TBI patients are further heightened by the austere and resource-constrained combat environment. Delays in diagnosing the severity of TBI can result in an increase in TBI-related death and disability.

- No practical solutions for the battlefield
- Current techniques need specialists
- Techniques are invasive
- No continuous readings

**THE SOLUTION**

This non-invasive tool uses ocular bioimpedance and ultrasound to assess cerebrovascular autoregulation and intracranial pressure to help inform TBI diagnosis and treatment.

- Technology is non-invasive
- Does not require an experienced operator
- Compact in size for easy portability
- Can be used through all echelons of care

**THE TECHNOLOGY**

New tool uses the eye as a window to the brain to help monitor and treat traumatic brain injury (TBI).

Ocular bioimpedance (small electrical currents applied to the eye) tracks changes in cerebral blood flow to predict cerebrovascular autoregulation impairments, while ultrasound images of the eye using automated image analysis enable a non-invasive estimation of intracranial pressure.