

Conceptual overview of the Traumatic Brain Injury (TBI) diagnostic for field use being developed by IOS.

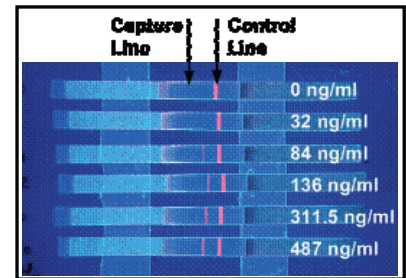
The IOS traumatic brain injury (TBI) detection device is being developed to provide field medical personnel with a rapid, straight forward, and virtually noninvasive means of determining whether head trauma has resulted in potentially debilitating or life-threatening condition. From a single drop of blood on a test strip placed into a handheld reader, the IOS TBI Diagnosis technique can detect the body's own "signal chemicals" that are released when brain tissue is endangered.



Prototype Reader



Test Strip & Cassette



Test Strips for TBI

Problem

- Traumatic brain injuries account for 25% of all war-related injuries and are a leading cause of mortality upon evacuation to a definitive care setting.
- TBI from closed head injuries is difficult to detect and can cause a broad range of physical, cognitive, emotional, and social problems for the injured veteran.

Payoff

- Safety/force protection.
- This tool will be extremely valuable for combat medics treating patients with suspected brain injuries.
- The early diagnosis could prevent complications from these injuries and allow for a faster prognosis and recovery.
- Virtually all First responders and front-line medical personnel are potential users, including, Army Combat Casualty Care, Air force and Navy or Emergency medical technicians and hospital emergency rooms.

CAPABILITIES

- Multiple biomarkers measured to improve diagnostic sensitivity and specificity
- Easy-to-use format for field applications and rapid results (~5 minutes)
- Results can be related to Glasgow Coma Scale and Glasgow Outcome Scale
- Based on lateral flow immunoassay technology and well-suited for commercial production
- Basic technology substantially equivalent to FDA approved diabetes test kits
- Clinical studies conducted so far provide very encouraging results