Novel Screening tool for early Alzheimer's Disease & Mild Traumatic Brain Injury (mTBI)

Routine early testing can lead to better treatment and improved quality of life.

PROBLEM

No effective tool to screen for mild cognitive impairment, early Alzheimer's disease and concussion / mTBI

- Best practice today is a paper based neuropsychological test given by a trained administrator – require 60-90 minutes in a quiet room
- As such tests are not typically administered and early presence of conditions go undetected

SOLUTION

The Novel Device

- **Immersive environment delivers more consistent and accurate neuropsychological test scores than currently possible**
- **Abbreviated neuro-psychological tests are as accurate as the longer paper-based tests and take only 7 minutes to complete**

DETECT/IMTech Technology

Software (DETECT)

- Test duration: ~7 minutes
- Measures: response time, processing speed, working memory, other cognitive domains
- Data are displayed and stored in a central database
- Algorithm provides results of screen

Hardware (IMTech)

- Noise and light attenuation
- Portable
- Durable/low power consumption
- Easy to use

Clinical Validation

- DETECT™ system shown to be immersive in a noisy environment. *J. Med. Eng. & Tech. (*2007) 31(3):161
- Feasible to perform on sideline/ locker room during athletic competition or other environments with significant distractions

Defensibility

- Barriers to market entry relate primarily to the intellectual property position.
- A utility patent was filed with the United States Patent and Trademark Office in February, 2005 and foreign equivalents filed in the EPO, Canadian and Australian patent offices in September 2006.
- Claims are based on the concept of an immersive environment for cognitive assessment. Issues related to prior art and freedom to operate have been extensively investigated

Competition

- Manual and computer-based cognitive scoring systems exist, but are expensive to administer and time consuming. None of the competitive systems have the potential for standardization that results from the DETECT™ immersive environment.
- Standardization permits comparison of same-individual test results across time. No competitors create an environment that is feasible for conducting sideline assessment of concussion

BUSINESS MODEL

- **A secure server and web application compiles test results, provides comparison to previous test and a normative database, as well as track use for billing information.**
- **Revenue from MCI testing is generated on a per-test basis. Medicare reimbursement averages $50.00 per test. A portion of this fee will be captured.**
- **Provides revenue stream for physician and company**
- **Revenue for mTBI is based on product sales and subscription for individual testing**
- **Another revenue stream will come from disposable inserts for clean use between patients**

ACHIEVEMENTS

- **Benefiting from 4 years of grant funding, technical feasibility of the system has been demonstrated.**
- **Initial clinical feasibility in patients with mild cognitive impairment has been demonstrated; a pivotal clinical study began March 2007.**
- **Prototype hardware is guiding new design of system for product launch.**
- **Product launch date planned for summer 2008**