



Donald Weaver, MD, PhD
CEO
Mindful Scientific, Inc.

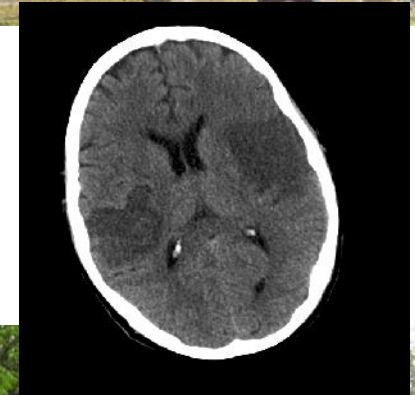




Donald F. Weaver, M.D., Ph.D.
Chief Medical Officer

Need for Improved Assessment of Consciousness

- Traumatic brain injury
 - **1.6 million – 3 million people** in the U.S. each year
 - Need to avoid the “second impact”?
 - Need to recognize “unrecognized” concussions
- Coma
 - Persistent vegetative state?



Sources: Langlois *et al*, Journal of Head Trauma Rehabilitation, Vol. 21(5), pp. 375-378, 2006; Max *et al*, Journal of Head Trauma Rehabilitation, 6: 76-91; Schnakers, C *et al*. Critical Care 11, P488, 2007.

Current Standard: Glasgow Coma Scale (GCS)

- Developed in 1974
- Relies entirely on behavioral indicators
 - *Therefore it relies on patient compliance*
- Misdiagnosis rates of up to **43%**¹
- Occupies a “privileged but unwarranted position in clinical and investigative contexts²”

A new solution is needed

¹ C. Schnakers, A. Vanhaudenhuyse, J. Giacino, M. Ventura, M. Boly, S. Majerus, G. Moonen, and S. Laureys, "Diagnostic accuracy of the vegetative and minimally conscious state: Clinical consensus versus standardized neurobehavioral assessment," BMC Neurology, vol. 9, no. 1, pp. 35+, July 2009.

² M. Segator, C. Way, "The Glasgow Coma Scale: Time for a change." Heart Lung, vol. 12, pp. 548-557, 1992

Our Solution: Halifax Consciousness Scanner (HCS)

**An EEG-based point-of-care technology
(patent pending, in-licensed to Mindful Scientific Inc.)**

- Measures independent indicators of neural processing using event-related potentials (ERPs):
 - *Sensation, Perception, Attention, Memory, Language*
- Non-invasive
- Very fast: reading within 5 minutes vs. hours using conventional ERP/EEG analysis methods

Our Vision: “The new vital sign” The Consciousness Score

What’s your blood pressure?

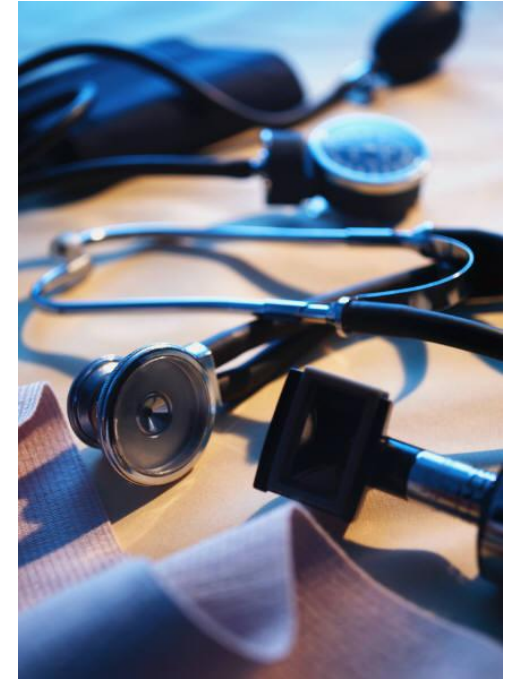
- 120/70

What’s your body temperature?

- 98.6 F° (37 C)

What’s your consciousness score?

- HCS reading of 15 / 15



Potential Markets for HCS

- **Sports**

- “Baseline” pre-season evaluation
- Return-to-play decisions



- **Hospitals**

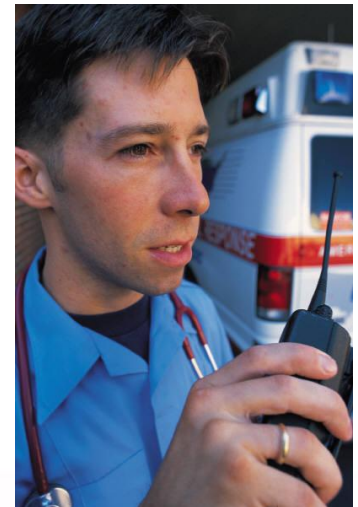
- Long-term monitoring of patients with coma
- Chronic measurement done by caregivers for patients (e.g., Alzheimer's)

- **Military**

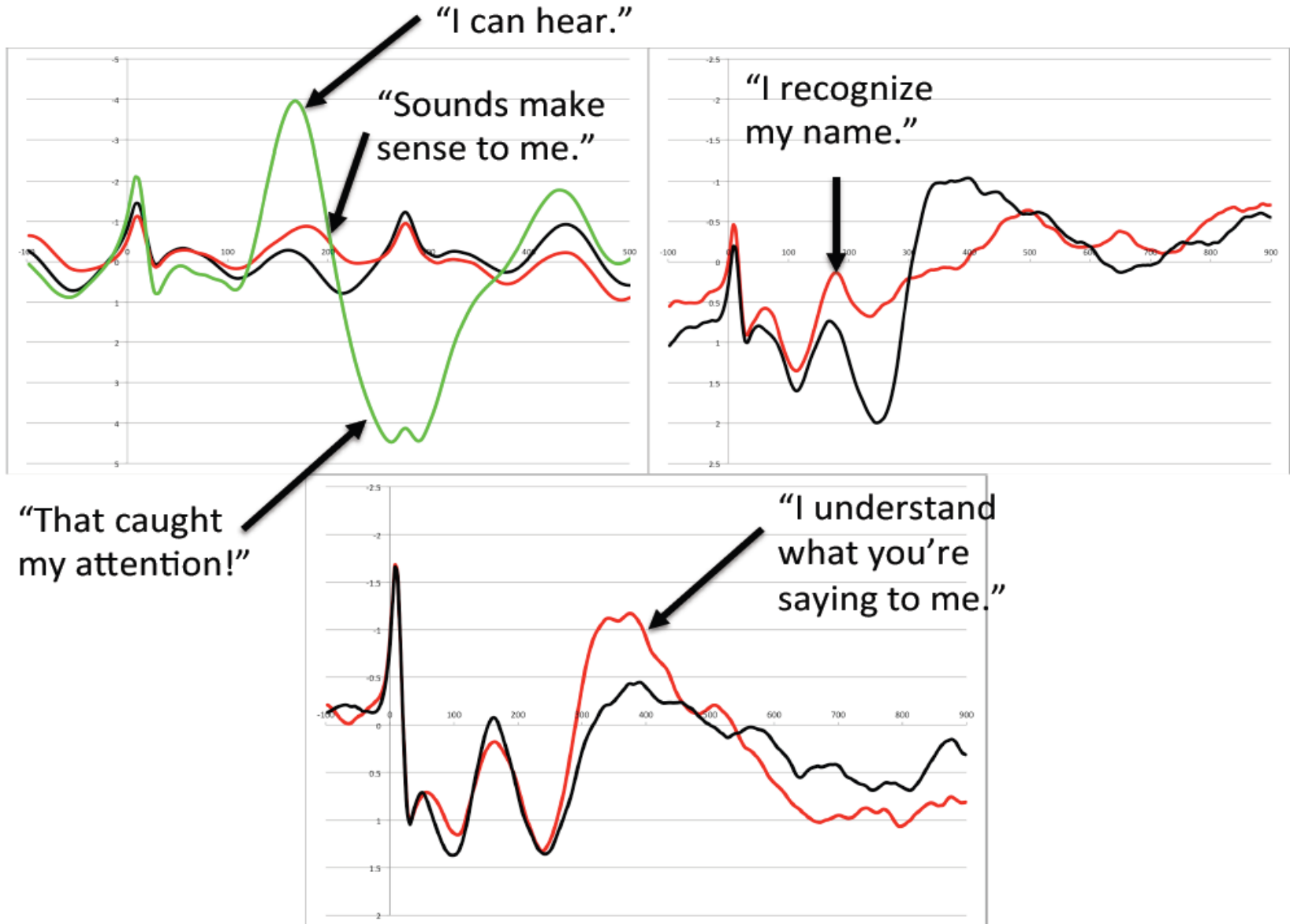
- Forward operating theater evaluation of TBI

- **Public Places** where duty of care is expected

- Airports, ambulances, arenas, doctor's offices
- Size of market: compare to the AED (>1M units)



HCS in Normal Subjects (N>100)



HCS: Recent Progress

Currently collecting data in mild TBI / concussion at Canadian sites

- University / amateur sports
- Professional sports

Portable EEG w/ HCS targeted for 510(k) and Health Canada submissions: 2Q 2012

