Wearable Technology Reports Mild Traumatic Brain Injuries in Real Time

By: Eric Luster

Mild Traumatic Brain Injuries cost the military more than a billion dollars per year. [1] With 20 percent of U.S. forces in Iraq and Afghanistan experiencing head injuries during deployment, there is a need for technology that alerts supervising officers and trainers in real time when a mild TBI occurs. [2] Since warfighters often experience delayed symptoms, sometimes not manifesting until years after the injury, the ability to detect mild TBIs as they happen would be immensely beneficial. [3] Researchers developed the Hiji Band Tactical, which could be a useful tool for the military with real time diagnostic and reporting technologies aimed to monitor and report mild TBI, TBI and post traumatic amnesia.

The Hiji Band Tactical is a wireless communications accelerometer-transducer array, worn as a soft headband. It is able to detect and log concussive events with audible, visual and mobile warnings, providing valuable insight on injuries. The military grade Hiji Band Tactical incorporates four miniature 3D accelerometers and transducers. This advanced configuration with two on each side, one near the front and the other one near the back, provides a direct advantage by allowing for data triangulation and spatial identification.

Since the brain floats in fluid and the spinal nerve band stem offsets to the rear, twisting can be more detrimental than displacement in the skull. The Hiji Band Tactical transducers can measure translational accelerations in the 0-200g range. This allows for rotational acceleration processing in the 0-20,000 rad/sec² range.

Rendering of the Hiji Band Tactical. (Photo courtesy of Hiji Band/Released)

For more information on Hiji Band Tactical:
Website: http://www.hijiband.com/

References:

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