



# Mild Traumatic Brain Injury

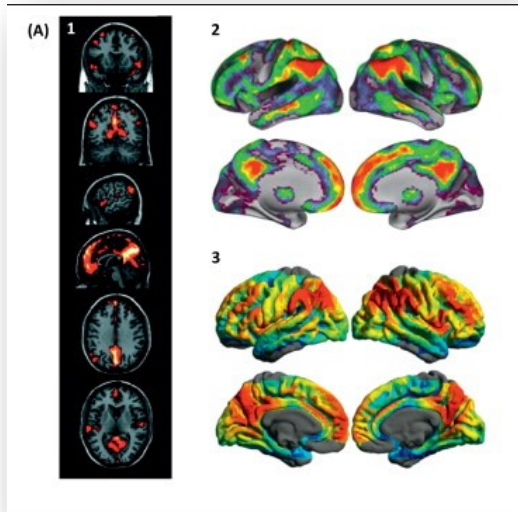
## What Is It? – Part Two

Mild traumatic brain injury is variable in its effect (s) upon the brain. Specific areas of the brain may be affected. Specific organs may be affected. Axons may be stretched, ionic channels may be disrupted affecting communications between areas. Ascertaining which of these processes are involved is difficult as behavioral and cognitive deficits and emotional dysregulation can be produced by one or several issues acting in tandem. It is not an easy task to determine which of these factors are at play.

# Mild Traumatic Brain Injury: What Is It?

Mild traumatic brain injury (MTBI) can have a variety of consequences from mild to devastating. Historically the brain was thought to be “hardwired” with each area of the brain responsible for certain functions. For example the occipital lobe of the brain’s involvement in visual perception. Damage to this area will cause issues with vision.

## Functional Modules of the Brain



Current research suggests MTBI is even more complex than this. Behaviors are organized as “hubs” or “functional modules”. A hub consists of the parts of the brain that work together to produce a thought, behavior or emotion. While there are numerous hubs seven have been extensively studied. These are the hubs for: addiction, anxiety, attention, default network, depression, pain, and schizophrenia.

The default network appears at rest when not engaged in a task and not ruminating about the past/present. (Thatcher, 2012, pg. 294). This network involves the cingulate gyrus, hippocampus, medial frontal lobes, temporal lobes, and parietal lobes. Injury to any one of these organs or damage to the axons running between these organs can disrupt the activity of the default network. This picture shows just a few parts of the default network illustrating the location of some of the organs and the distances between them.

