When a victim of a traffic accident is evaluated, it is imperative to take into consideration the entire body including the central nervous system. Brain function following a motor vehicle accident can be altered in what is called a TBI (traumatic brain injury), MTBI (mild traumatic brain injury) or concussion. In order for these to occur, however, there has to be shearing of the axons in the brain which are the long connecting arms of the neurons. When these get “overstretched,” there is impairment to how information is processed. Clinically, this may be outlined as loss of short-term memory, headache and balance problems, to name a few. One of the ways that these can be objectified along with a 3.0T MRI of the brain is a special neurologic test called an SEP (somatosensory evoked potential).

In a study published in 2006 in the Canadian Journal of Neuroscience, the authors stated, "We sought to determine whether the mechanical forces of whiplash injury or concussion alter normal processing of middle-latency SEPs" (Zumsteg, Wennberg, Gütling, & Hess, 2006, p. 379). They discovered, "The SEP findings of our prospective study provide objective evidence that whiplash and concussion involve reversible pathophysiological changes affecting the same brain areas, providing support for the hypothesis that the overlapping clinical symptomatology post whiplash and concussion may reflect a similar underlying mechanism of rotational mild traumatic brain injury" (Zumsteg et al., 2006, p. 384).

Although many of the traumatic brain injuries resulting from whiplash injury resolve, it is important to monitor the patient for long-term chronicity. The authors demonstrated that a portion of the studied population did continue on with long-term symptoms. It is, therefore, critical to have trauma patients tested early when appropriate. They concluded, "At the very least, however, the ability to record an objective physiological marker common to whiplash and concussion may form the basis for future investigations into the mechanisms underlying mild traumatic brain injury" (Zumsteg et al., 2006, p. 384-385).

Dr. Guetter screens all patients for brain injuries following trauma. If you’d like more information on this topic, please call Dr. Guetter at 502-272-4700

Reference: