



Injury Briefing

A review of the latest studies from Dr. Michael D. Berry.

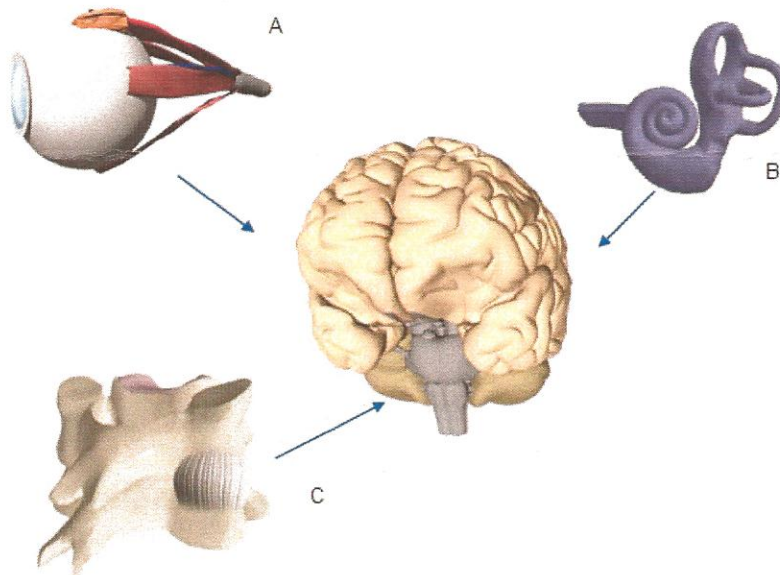
Dizziness Increases Risk of Chronic Whiplash

After pain symptoms, dizziness and unsteadiness are the most common symptoms experienced by whiplash patients. Seventy percent of patients with persistent whiplash symptoms report that they suffer from dizziness. A new review from the journal *Spine* suggests that dizziness may be linked to the development of chronic whiplash symptoms.

Although there are a range of etiologies, dizziness associated with auto injuries is likely a result of one of four major causes.

Injury to the cervical spine: The cervical spine plays a critical role in the body's ability to balance because of its connection to the postural control system (PCS). This system takes information from the eyes, inner ear, and proprioceptors in the neck to help the body maintain postural stability. In an auto collision, trauma to the neck can disrupt proprioceptors, causing dizziness.

Benign paroxysmal positional vertigo: Dizziness can also be a sign of benign paroxysmal positional vertigo, or BPPV. Otoliths inside the inner ear tell the brain where the head is positioned. In an auto collision, violent movement of the head can jar otoliths from their normal position, causing confusion of the PCS and dizziness. These patients feel their symptoms worsen when they



The Postural Control System (PCS) takes information from the eyes (A), the inner ear (B), and the proprioceptors in the neck (C) to maintain postural stability. Injury to the cervical spine or the brain stem during a whiplash collision can result in visual disturbances, vertigo, or nausea.

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move their head and neck in certain directions like lying down or rolling over in bed.

Vascular injury: Damaged blood vessels in the neck can disrupt the blood flow to the brain causing dizziness.

Brain injury: If the occupant obtained a head injury, mild traumatic brain injuries can cause confusion, dizziness, and memory loss.

For whiplash patients, dizziness is typically the result of trauma to the cervical spine and disruption of the proprioceptors. Treleaven outlined several key studies suggesting a link between dizziness and chronicity in whiplash patients:

- 80% of patients with normal eye movements had healed or were nearly recovered after the 8 month follow-up. This reinforces the link between the PCS and whiplash recovery.
- Early signs of dizziness were associated with pain levels six months after the initial whiplash injury.
- Early symptoms of dizziness were also associated with poor prognosis.

Dizziness, Anxiety, and Pain Symptoms

Dizziness also appears to be linked to anxiety and pain symptoms, both of which can contribute to chronicity. Treleaven argued that there is “a potential for a vicious cycle of cervical dizziness, pain, anxiety, altered sympathetic nervous system function.” Symptoms of high pain levels and dizziness may also act as combined predictors of poor prognosis. Additionally postural control deficits could exacerbate central pain centralization “via a number of mechanisms including altered somatosensory representation, altered joint mechanics, and decreased descending inhibition of pain.” Addressing dizziness and pain symptoms could allow patients to break the cycle of central sensitization.

While a number of factors lead to chronicity, early treatment of dizziness and postural deficits could help patients avoid developing chronic whiplash symptoms.

Treleaven J. Dizziness, unsteadiness, visual disturbances, and postural control: implications for the transition to chronic symptoms after a whiplash trauma. Spine 2011; 36(25S): S211-217.