

Whiplash Reconsidered and Long-Term Residuals

It's a new year and time to get back to my review of the scientific literature. In this newsletter I will summarize two recent publications on Whiplash. The first study from the journal **Frontiers in Neurology** ([Front Neurol. 2022; 13: 821097](https://doi.org/10.3389/fnol.2022.821097)) examines a novel explanation for the etiology of Whiplash symptoms. The second study was published in **The Journal Of Back And Musculoskeletal Rehabilitation** ([J Back Musculoskelet Rehabil. 2022 Jun 17. doi: 10.3233/BMR-220002](https://doi.org/10.3233/BMR-220002)) and reports on a long-term follow-up of patients that sustained a Whiplash trauma. For the record, I am using the all-inclusive lay term “Whiplash” instead of the more appropriate terms such as Whiplash Associated Disorder (WAD) or Cervical Acceleration/Deceleration injury (CAD).

Let us start with the first study titled “**The Whiplash Disease Reconsidered**”. The authors offer an alternative explanation for why people involved in Whiplash trauma have significant short- and long-term symptoms despite an otherwise typical “minor” trauma and the lack of demonstrable acute connective tissue injury. The explanation they offer can get somewhat complicated so I will try to make this understandable for those not familiar with the neurology. They suggest that the whiplash symptoms are the result of a central nervous system trauma rather than just the sprains and strains of the connective tissues. They define it as a central neuromotor dysfunction which results in abnormal muscle activation patterns and lack of coordination between the adjacent muscle groups. They support this explanation with concordant EMG findings and have termed the pathology as “cervical spinal dyssynergia”.

Let's get a little more detailed on how this occurs. The physical and emotional impact from the trauma causes acute symptoms that trigger neuromodulation (alteration) of the central pain receptors (nociceptors) in the spinal cord and brain. The altered centralized perception of pain lowers the pain threshold and results in peripheral hypersensitivity and hyperalgesia. The concept of central sensitization is not a new one and has been in the scientific literature for decades. The same is true of the concept of denervation supersensitivity. Even studies that identify the existence of connective tissue injury from Whiplash acknowledge that the pain persists long after the connective tissue have healed.

The authors point out that this happens in the absence of MRI findings and that the delay in onset of symptoms is common. They also site research that treatments directed towards treating the damaged connective tissues are not effective in many cases. Some of the research in their publication demonstrates a rate of chronicity as high as 40% at 2 years post trauma.

My takeaway: After nearly 4 decades in practice, my experience is that people involved in a whiplash trauma often do have physical exam and diagnostic findings suggestive of connective tissue damage. That alone would explain the chronicity. Taking into consideration the concepts of central sensitization, the resulting lowered pain thresholds and altered neuromotor function, it's no wonder that there is a poor prognosis for many whiplash victims.

The second study, titled “**Five to ten-year prognosis of whiplash injury-related chronic neck pain: A brief report**” ties in nicely with poor prognosis from the earlier paper. Unfortunately, I only had access to the abstract so I could not gather too much detail on the study parameters. In this study, 38 Whiplash victims were monitored over a 10-year period. The researchers recorded data including the presence and degree of neck pain, current pain medication, physical modality or injection procedures, and difficulty performing daily life activities or occupational duties. At 5 years 89.5% continued to have neck pain. 68.4% of patients were receiving at least one of the following pain-management treatments: oral pain medications, physical modality, and injection procedures. 73.7% of patients encountered difficulty performing daily life activities and occupational duties. The authors concluded that victims of whiplash with neck pain have a poor prognosis. The abstract did not contain the 10-year follow up data.

These two studies provide a well-rounded explanation of why injuries may not be fully appreciated by conventional methods and why as many as 40% of whiplash victims go on to have long term sequelae. At the Shaw Chiropractic offices our chiropractic physicians are prepared to treat and document your clients' injuries. Just as important, we are prepared to educate a jury with trial testimony should your client's case go to trial.