

WHIPLASH ASSOCIATED DISORDERS (WAD) AND MECHANISMS FOR POOR OUTCOME

A “quick review” of the Recent Literature by Ron Lewert, D.C.

This e-newsletter focusses on Whiplash Associated Disorders and functional losses pertaining to long-term outcome. There is a growing body of evidence pointing towards chronicity and the reduced ability to conduct pain-free routine activities of daily living (ADL's) following rear impact trauma.

The following materials are intended to provide factual, updated perspectives concerning long-term outcome following WAD. The materials are provided in

- 1. Multivariate analysis of ultrasound-recorded dorsal strain sequences: investigation of dynamic neck extensions in women with chronic WAD. Scientific Reports. Peoison, Anneli et al. Aug 2016.** Rear impact trauma induces morphological muscle changes, altered muscle behavior, decreased endurance of neck support muscle groups (multifidus and semispinalis capitis), abnormal intersegmental motion and posture control result in chronic neck pain. Cervical facet capsular injuries are compounded by multifidus muscle tears and therefore are responsible for chronic nociceptive signaling to produce pain during routine activities involving neck motion. Specific rehabilitative exercises that target strengthening of deep neck muscle groups is suggested in prevention of chronic pain during activities involving neck extension ROM's and static posture. The direct anatomical relation between cervical spine and shoulder muscle attachments correlates with post-WAD neck / shoulder pain and reduced endurance with shoulder-arm movements.
- 2. General practitioners knowledge and management of whiplash associated disorders and post-traumatic stress disorder: implications for patient care. BMC Family Practice. Brijnath, Bianca et al. July 2016.** The study reveals adequate knowledge of trauma associated with RTC (road traffic collision) related injuries including WAD and PTSD. However GP's knowledge of management of post whiplash PTSD was dependent on his / her familiarity with management of PTSD in general. The study indicated a need for additional training in detection of early signs of PTSD following whiplash. There were additional knowledge gaps for GP's pertaining to imaging indicators for WAD as well as indicators for referral for psychological counseling for post-traumatic stress disorder.
- 3. Altered regional cerebral blood flow in chronic whiplash associated disorders. EBioMedicine. David Vallez Garcia et al. May 2016.** Whiplash trauma has an estimated annual cost of \$29 billion in the U.S., affecting @ 300 per 100,000 people per year in North America. While in many cases, symptoms resolve within a few weeks or months, approximately half of the subjects develop chronic symptoms; neck pain and headache as the most frequent symptoms, followed by interscapular pain and temporomandibular pain, paresthesias in the arms and hands, dizziness, as well as visual and psychological disturbances. Although WAD includes regional neck symptoms, the common presence of psychological manifestations suggests the involvement of altered central nervous system processing. There is evidence of altered rCBF (regional cerebral blood flow) in regions of the brain involved in affective, motivational and cognitive processing of pain. Additionally, clinically important relations between rCBF alterations and pain intensity, pain perception, pain-related disability, anxiety and depression were revealed. This study emphasizes to both scientists and clinicians, the knowledge that brain alterations possibly play a role in the persistent complaints of patients with chronic WAD.

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