

Orofacial Injuries Due to Trauma Following Motor Vehicle Collisions: Temporomandibular Disorders

Journal of the Canadian Dental Association
December 15, 2010; Vol. 76; a172

Joel B. Epstein, DMD; Gary D. Klasser, DMD; Dean A. Kolbinson, DMD; Sujay A. Mehta, DMD

KEY POINTS FROM THIS ARTICLE:

- 1) Temporomandibular disorders are “a collective term that embraces a number of clinical problems that involve the masticatory muscles, the TMJ [temporomandibular joint], and associated structures.”
- 2) Most literature strongly supports the association between motor vehicle collisions, temporomandibular disorders, facial pain and headache.
- 3) Whiplash trauma may cause temporomandibular disorders via two mechanisms:
 - A)) Direct orofacial trauma
 - B)) Indirect or [inertial] injury; [this occurs without direct contact to the jaw]
- 4) “TMDs have been clearly documented following an MVC involving direct orofacial trauma and in a subset of WAD patients where no direct orofacial trauma is recognized.”
- 5) Temporomandibular disorders may not be identified at the time of first assessment of the whiplash-injured patient, but may develop weeks or more after the collision. **[This delay in the development of temporomandibular symptoms following motor vehicle collisions is quite important].**
- 6) “TMDs may not necessarily be diagnosed during a first assessment, but may manifest weeks or months after an MVC.”
- 7) Temporomandibular disorders in whiplash-injured patients occur predominantly in women.
- 8) Temporomandibular disorders in whiplash-injured patients may be associated with regional or widespread pain. **[Important: some whiplash-injured patients, especially those with temporomandibular disorders, develop widespread pain syndrome].**
- 9) Temporomandibular disorders following motor vehicle collisions may respond poorly to independent therapy and may be best managed using multidisciplinary approaches.

- 10) Approximately 33% of those in a motor vehicle collision develop whiplash-associated disorders.
- 11) Whiplash-injured patients who also develop TMD have a measurably worse recovery prognosis than those who do not also develop TMD.
- 12) Temporomandibular disorders associated with whiplash injuries include:
- Jaw pain or dysfunction
 - Headache
 - Dizziness
 - Hearing disturbances
 - Neck pain and dysfunction
 - Reduced or painful jaw movement
- 13) Temporomandibular disorders often include TMJ sounds (clicking, crepitus) and catching or locking with opening or closing.
- 14) There is a "risk of delayed onset of temporomandibular disorders following a motor vehicle collision." Of whiplash-injured patients, approximately 4 times more patients have temporomandibular disorders at 1 year compared to the first evaluation following the collision.
- 15) "The potential delay in onset of TMDs following an MVC raises concerns about diagnosis, prognosis, management and medico-legal issues."
- 16) "Regional and widespread physical symptoms as well as psychological disturbances are common in motor vehicle collision patients."
- 17) Air bag deployment injuries include:
- TMJ injury
 - Maxillofacial fractures
 - Burns
 - Eyes injuries
 - Ear injuries
 - Cranial VII paresis
 - Neuropathic facial pain (Cranial V injury)
 - Basal skull fractures
 - Transection of the internal carotid artery
 - Atlanto-occipital dislocation
 - Spinal cord injuries
- 18) "Approximately 15–40% of patients with acute whiplash associated disorders develop chronic symptoms."
- 19) "TMDs in WAD are more common in females and can be associated with regional or widespread pain that may reflect central, systemic and psychological effects."