

# Improvement in Post-Concussion Symptoms in a 16-Year-Old Female Under Upper Cervical Chiropractic Care– A Case Report

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**Objective:** The purpose of this paper is to describe the recovery of a 16-year-old female patient with mild traumatic brain injury (mTBI) through correction of the atlas subluxation complex.

**ClinicalFeatures:** The patient is a 16-year-old female presenting with dizziness, headaches, neck pain, and brain fog following a fall off a horse. In the 3 months post-injury, she received treatment from an acupuncturist and vestibular therapist with no change in symptomatic outlook. She was also being managed by a neurologist who recommended vestibular rehabilitation and a brain MRI. Brain MRI showed periventricular white matter hyperintensities characteristic of an aging brain.

Prior to her visit, the patient was missing school 3 days/week and was unable to ride her horse for recreation or competition due to feeling off balance. She also reports the symptoms affecting her social life.

**Intervention:** The patient was evaluated through the NUCCA protocol and was found to have an Atlas Subluxation Complex. Post adjustment x-ray showed reduction in atlas laterality (50%) and atlas rotation (60%). The patient was seen 14 times in 6 weeks and required 6 adjustments.

The patient reported a 60% improvement in dizziness and concentration since beginning care. She also reported a 100% improvement in headaches and cervical pain. She also reported missing just 3 school days during the 6 weeks. The patient also began riding her horse again 3 weeks into care, and rode in a competition at 4 weeks.

**Discussion:** Chiropractors are amongst the most common health professionals seen after a traumatic head injury<sup>1</sup>. The literature supporting chiropractic's role in managing mTBI is limited concussion identification<sup>2</sup> and supporting return to play guidelines<sup>3</sup>. The role of subluxation correction and post-concussion syndrome is limited to 3 case reports<sup>4-6</sup>.

Flanagan proposed a biological rationale to explain the effects that upper cervical distortion from traumatic injury or congenital malformation may have on cerebral spinal venous insufficiency and chronic neurodegeneration<sup>7</sup>. A review of the literature has provided additional evidence showing mTBI may cause venous insufficiency<sup>8</sup>. It is this author's contention that head injury may serve as a model for the chronic neurodegenerative effects of the upper cervical subluxation.

**Conclusion:** This case demonstrates a situation in which correction of the atlas subluxation complex showed a proportional improvement in the patient's symptomatic outlook following a head injury. Research on the biological mechanisms related to Atlas Subluxation and mTBI are recommended, in addition to randomized clinically controlled trials.

## References:

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