

The Concussion-Subluxation Complex

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In the Aug. 1, 2014 issue of *Dynamic Chiropractic*, I reviewed some of the literature demonstrating the role of the chiropractic adjustment in post-concussive care.¹ A year later, I presented a series of brief cases demonstrating patient improvement in reverse digit span – an outcome measure related to attention span – under chiropractic care.² This series included patients with and without concussion. In the process of preparing these articles, as well as organizing material for postgraduate courses, I naturally found myself reviewing much of the biomedical and chiropractic clinical literature relevant to concussion and the vertebral subluxation complex (as defined in Redwood, 1997).³ Let's try a few simple thought experiments and then discuss why a new classification term – the *concussion-subluxation complex* – may be warranted.

Two Thought Experiments

Try these two thought experiments (experiments conducted entirely within the confines of your own mind); I believe the results will speak for themselves.

- *Thought Experiment #1*: Imagine every possible injury that could cause a concussion. What percentage of these injuries left the vertebral column unharmed and unsubluxated?
- *Thought Experiment #2*: I invite you to examine the table. The clinical features of concussion are drawn from the [Zurich Statement](#) (McCrary, et al., 2012),⁴ the Centers for Disease Control and Prevention (CDC),⁵ Eckner, et al. (2011 and 2013),⁶⁻⁷ and Kontos, et al. (2013).⁸ I have left the column labeled "Vertebral Subluxation Complex" blank. Based on your personal clinical experience, and your understanding of the clinical literature and basic science, please fill in this column. How many times did you write "No"?

References

1. Masarsky CS. "Post-Concussion Patient Care: Relevance of the Chiropractic Adjustment." *Dynamic Chiropractic*, Aug. 1, 2014.
2. Masarsky CS. "Reverse Digit Span: A Useful Assessment Tool for Patients With and Without Concussion." *Dynamic Chiropractic*, Aug. 1, 2015.
3. Redwood D. *Contemporary Chiropractic*. New York: Churchill Livingstone, 1997: p. 333. Definition of vertebral subluxation complex: "Subluxation at one or more spinal levels resulting from mechanical, chemical, or emotional stressors, and resulting in functional and eventual pathologic changes in the constituent tissues of the involved motion segments. Functional and eventual pathologic changes may also occur in distant tissues influenced by the resultant neural disturbance."
4. McCrary P, Meeuwisse WH, Aubry M, et al. Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport, held in Zurich, November 2012. *Br J Sports Med*, 2013;47:250-258.
5. "Facts for Physicians About Mild Traumatic Brain Injury." Centers for Disease Control and Prevention.
6. Eckner JT, Kutcher JS, Richardson JK. Effect of concussion on clinically measured reaction time in nine NCAA Division I collegiate athletes: a preliminary study. *PM&R*, 2011;3:212-218.
7. Eckner JT, Kutcher JS, Broglio SP, Richardson JK. Effect of sport-related concussion on clinically measured simple reaction time. *Br J Sports Med*, 2014 Jan;48(2):112-18.
8. Kontos AP, Kotwal RS, Elbin RJ, et al. Residual effects of combat-related mild traumatic brain injury. *J Neurotrauma*, 2013;30(8):680-686.

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