**Nutritional Support for Cervical Myelopathy? By Dr. David Seaman**

While cervical myelopathy is not a common clinical encounter, it is the most common cause of spinal-cord dysfunction in people over 55 years of age.1 The natural history is one of a progressive nature that may lead to the need for surgical decompression. However, the clinical course is variable and requires a case-by-case approach. Myelopathy caused by disc herniation is more common in middle-aged individuals, while senior citizens typically present with spondylotic myelopathy.

Symptoms of [cervical myelopathy](http://www.dynamicchiropractic.com/mpacms/dc/article.php?id=53051) can vary substantially from patient to patient. Some patients may have atypical trunk or lower extremity pain, while others will predominately express low-extremity incoordination and a wide-based gait. Upper-extremity weakness and incoordination may also be present. Paresthesias may be felt in the upper and or lower extremity. Neck flexion is the classic position that leads to electric shock sensations. Hyperreflexia and the extensor toe sign are also characteristic. The American Academy of Family Physicians has an excellent review article available online.1

The suggestion that nutrition may impact the expression of myelopathy may at first seem unreasonable, as myelopathy is described as a mechanically compressive condition, which is true. However, we need to also embrace that human mechanics is really about biomechanics, which includes biochemistry. For example, concerning joint motion, a movement is initiated first by biochemical nerve impulses that lead to biochemically-driven muscle contraction leading to joint movement, which is also associated with changes in muscular, articular and bone biochemistry.

DCs are often guilty of forgetting that biochemistry is part of biomechanics. Even the emerging field of mechanotransduction is often misperceived to be about mechanics, when in fact, the field is actually about how mechanical forces are transduced or transformed into biochemistry;2 without the biochemistry, there would be no communication among cells. This same issue must be considered in the context of cervical myelopathy.

A rat model of spondylotic myelopathy was recently utilized to compare outcomes of two diets: a sugar and fat dietary pattern, referred to as the Western diet, and a standard diet supplemented with curcumin from turmeric and docosahexaenoic acid (DHA), which is an [omega-3](http://www.dynamicchiropractic.com/mpacms/dc/article.php?id=53432) fatty acid found in fish and fish oil supplements.3 The respective diets were instituted after surgery and the rats were allowed to eat ad libitum for six weeks, after which they were euthanized.

At the end of the study period, the curcumin-DHA rats had significantly better gait function compared to those eating sugar and fat. Spinal-cord analysis revealed that the curcumin-DHA-supplemented rats had less lipid peroxidation and thus, less spinal-cord inflammation compared to the sugar- and fat-fed rats. Brain-derived neurotrophic factor (BDNF) also was less in the sugar- and fat-fed rats. In contrast, BDNF levels in the curcumin-DHA rats was slightly greater than controls. Normal BDNF levels are very important for axonal regeneration, promoting neuronal survival, regulating synapse formation and stabilization, increasing dendritic complexity, and enhancing synaptic efficacy.3

Most readers are well-aware that fish oil and botanicals, such as ginger, turmeric and boswellia, have anti-inflammatory functions. These beneficial effects appear to occur throughout the body, not just the nervous system.5-6 Vitamin D also provides us with nervous-system and body-wide benefits.7

The message to embrace here is not that curcumin and fish oil offer a cure for cervical myelopathy or nerve injury. Rather, the message is that we should all adhere to anti-inflammatory nutritional habits before and after injury, which gives us the best chance for a positive clinical response. All of us should consider (and we should recommend to our patients) eating an anti-inflammatory diet and routinely supplementing with fish oil, anti-inflammatory botanicals and vitamin D.

*References*

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