DHA (Docosahexaenoic acid) in the Management of Concussion

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Concussion or Traumatic Brain Injury, has become a high profile health condition in recent years, especially since the discovery that trauma to the head can lead to permanent degenerative changes in the brain leading to chronic traumatic encephalopathy.

Symptoms of advancing chronic encephalopathy include: memory loss, social instability, erratic behavior, and poor judgment, progressing to dementia, slowing of muscular movements and other neurological problems. It is also linked to some suicides.

Medical researchers are investigating various treatments for concussion, but there are only a few promising leads, thus far.

One of the key findings in recent years is that supplementation with high-dose fish oil, has been shown to be helpful in a few preliminary studies and in several remarkable individual cases, whereby concussion patients who were in coma due to the severity of their head injury, demonstrated almost a miraculous recovery after fish oil administration. Another patient, in a coma due to a near drowning incident, who also had extensive brain damage, also made a remarkable recovery once fish oil was administered.

How Does Fish Oil Help?

It's been known for a long time that the omega-3 fats in fish oil (EPA and DHA) can be converted directly or indirectly into anti-inflammatory hormones in the brain known as eicosanoids. Thus, EPA and DHA from fish oil, have been shown to reduce brain inflammation caused by traumatic brain injury in various experimental studies. However, in addition to this, DHA has also shown some other unique and special

properties that help protect brain cells from traumatic injury and helps brain cells repair themselves once damaged by traumatic brain injury, and reconnect with other healthy brain cells in the vicinity. A thing we call synaptogenesis. All of this results in improved brain cell repair after injury.

A more technical explanation of how this all works is explained in the research paper itself, which you can access from the link I provided in the text below.

As for the recommended dosage,

For concussions and milder cases of Traumatic Brain Injury when patients are able to swallow on their own, a protocol with fish oil capsules or liquid equivalent has been used extensively, as published by the nonprofit charity Brain Health Education and Research Institute (http://www.brainhealtheducation.org/resources/brain-injury-protocol) , which is 5000 mg of concentrated fish oil in triglyceride form providing approximately 3000 mg of omega-3 fat (EPA and DHA) is consumed 3 times a day for a minimum of 1 week before decreasing to twice a day and eventually once a day.

Anecdotally, this tapering provides a more immediate benefit improving mood, calmness, headaches, and cognitive function and the large doses in the beginning act more as a loading dose to overcome the relative deficit of omega-3 fats found in most people.

My advice, is that if you suffer a concussion, or have any lingering symptoms from a previous concussion (i.e. headaches, dizziness, imbalance, memory loss), you may wish to implement this protocol under the supervision of a trained health care professional

Reference:

1. Lewis MD. Concussions, traumatic brain injury, and the innovative use of omega-3s. Journal of the American College of Nutrition. 2016. 35;5:469-475
http://www.tandfonline.com/doi/full/10.1080/07315724.2016.1150796