

Understanding the Research around Supplementation and TBI symptom Mitigation

In contact sports, brain injury is an inevitable part of the game that practitioners continue to pursue remedies for. Research over the last decade has led to a better understanding of concussion pathology as well as the potential usefulness of over the counter supplements that can have a meaningful impact on athlete symptom severity and recovery.

Protocol:

Week 1: 10-20g/day Creatine, 9g/day of Omega-3, Vitamin D 5000iu /day

Week 2: 5g/day Creatine, 6g/day of Omega-3, Vitamin D 5000iu /day

Week 3-6: 5g/day Creatine, 3g/day of Omega-3, Vitamin D 5000iu /day

****If athletes are deficient in magnesium, they will fail to activate Vitamin D3 into the 25-OHD form of vitamin D which is required. In this case, a magnesium malate or magnesium threonate is the suggested form.

What you should know about Omega-3 Fatty Acids.

- In 2019, NCAA athletic programs were cleared to purchase Omega-3 due to the abundance of evidence supporting them for brain health in contact sports.
- In adolescent athletes, 2g of Omega-3 per day post concussion led to a 31% faster secession of symptoms and a 28% faster return to play progression.

[A Pilot Randomized Controlled Trial of Docosahexaenoic Acid for the Treatment of Sport-Related Concussion in Adolescents](#)

- 40 subjects (age 14-18) reporting to a large sports med clinic with 4 days of sport related concussion (SRC) used 2g/day of Omega 3 in 2 pills.
- Participants in the DHA group were symptom-free earlier than the PLACEBO group (11.0 vs 16.0 days, $P = .08$) and cleared to begin the Return to Sport progression (14.0 vs 19.5 days, $P = .12$) sooner.

[The More, the Better: High-Dose Omega-3 Fatty Acids Improve Behavioural and Molecular Outcomes in Preclinical Models in Mild Brain Injury](#)

- Results showed that preclinical doses of 10–370 mg/kg/day of n-3FA per day in rodents (equivalent to high clinical doses) resulted in improvements in neurological and cognitive performance (pooled effect sizes ranging between 1.52 and 3.55).
- Similarly, improvements in molecular and inflammatory markers were observed in treated rodents vs control (pooled effect sizes: 3.73–6.55).
- Overall, these findings highlight the potential for high-dose n-3FA following mTBI.

What you should know about Creatine

- TBI studies demonstrate that creatine supplementation can have neuroprotective effects in clinical cohorts (e.g., improve recovery, reduce headache, dizziness, fatigue, and improve cognition).
- In rodent models, chronic administration of creatine ameliorated the extent of brain damage by as much as 36% in mice and 50% in rats post TBI

[Potential for use of creatine supplementation following mild traumatic brain injury](#)

- Creatine supplementation shows some potential as a neuroprotective when administered prior to or after TBI.
- Consistent with creatine's cellular role, supplementation reduced neuronal damage, protected against the effects of cellular energy crisis and improved cognitive and somatic symptoms.

[Dietary supplement creatine protects against traumatic brain injury](#)

- Results demonstrate that chronic administration of creatine ameliorated the extent of cortical damage by as much as 36% in mice and 50% in rats.