

Nutritional Supplements in Eyecare: Understanding the Science – Part 2 – Vitreous, Visual and Cognitive Function, & Synergies among Nutrients

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One-hour CE

Category: Treatment & Management of Ocular Disease (TD)

Course Description

We are amidst an evolution in our understanding of the impact nutrition can have on the eye and the brain. This course will provide attendees with a rigorous overview of the most recent scientific findings regarding effects of nutrition on vision, cognition, and resolution of conditions such as vitreous floaters. Effective clinical implementation of nutritional supplementation protocols, including how to discuss nutrition with patients, will also be discussed.

Course Content

- A. Macular carotenoids and Omega 3s are essential nutrients for human health, our bodies don't make them, we must consume them.
 - i. The average American does not consume enough of either group of these nutrients to make an appreciable difference in visual / cognitive health and performance
 - ii. Locations
 - 1. In addition to circulating in blood, carotenoids are known to deposit in critical organs, such as eyes, brain and heart, as well as skin
 - 2. Omega 3s also deposit in eyes, brain and heart, and are found in every cell in the human body

- B. EPA and DHA - Omega-3 essential fatty acids: polyunsaturated fatty acids
 - i. Define
 - ii. DHA Functions to Support
 - 1. Eye Health
 - 2. Brain Health
 - 3. Development
 - 4. Memory
 - 5. Cell Wall Fluidity
 - iii. EPA Functions to Support
 - 1. Heart Health
 - 2. Joint Health

3. Healthy Mood
4. Immune Health
5. Reduces Cellular Stress

C. Macular Carotenoids: Lutein Zeaxanthin, Meso-Zeaxanthin,

- i. Define
- ii. Functions
 1. Powerful antioxidants
 2. Blue light filters and have been
 3. Demonstrate ability to improve visual function in healthy and AMD patients

D. Benefits of Omega 3s and Carotenoids

- i. Research - Cognitive function associated with levels of macular pigment
- ii. Research – Healthy Patients
 - a. Visual Performance: Contrast Sensitivity, Visual processing speed improved with Carotenoids
 - b. Cognition: Memory - Carotenoids, Lutein + DHA
- iii. Research - Patients with Disease
 - a. AMD – Carotenoids
 - b. Dry Eye – Omega 3s
 - c. Cognitive Decline: Alzheimer's, Early Cognitive Decline – Carotenoids + Omegas
- iv. Found to function synergistically to improve health and function of local tissues
 - a. Biological: macular carotenoids protect DHA from oxidation in neural / cardiovascular tissues
 - b. Functional: The antioxidant and anti-inflammatory activity of LMZ in neural membranes significantly speeds function by breaking the oxidation / inflammation cycle and DHA promotes very fast, clean signaling as a result

E. Targeted Nutrition for Vitreous Degeneration

- i. Introduction
 - a. Structure and Function of Vitreous
 - b. Vitreous Degeneration: review pathophysiology and structural changes that are involved in this process
- ii. Floaters
 - a. A result of vitreous degeneration and
 - b. impact on patient quality of life and visual function.
 - c. Management of floaters and current interventions
- iii. The vitreous – not a closed system
 - a. Nutrients transported via active & passive transport
 - b. Specific nutrients identified within the vitreous
 1. Antioxidants & antiglycation functions
- iv. Floater Intervention Study (FLIES)
 - a. Summary of study design, methods and results of FLIES Study

- b. Clinical Implications of FLIES Study
- c. Recommendation of clinically tested nutrition intervention for vitreous floater patients to support their quality of life and visual function.
- d. Recommendation to include contrast sensitivity test into the battery for managing vitreous floater patients.