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Research Article

EPA and DHA Blood Levels and use in the Brain Structure and Function

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Abstract

Brain needs EPA and DHA constantly for function and maintenance of its structure .Omega 3 Index for every human is between 2 and 20 percent with an optimum of 8 to 11 percent . EPA and DHA are biomarkers for anomalies in the brain.

Keywords: Eicosapentaenoic Acid; Docosahexaenoic Acid; Omega 3 Index; Biomarker

Omega-3 Index

The omega 3 Index is a long-term parameter, correlates with EPA and DHA in other cells in the body thus far studied, [1] and therefore reflects an individual's EPA and DHA status.

Relevance of EPA and DHA to the brain

DHA is minimal in humans. DHA is preferred for build up of the brain during pregnancy and women can increase DHA synthesis estrogen-dependently by some 10 percent [2].

Brain perfusion

Brain functions not merely depend on structure and depend on the blood supply by the brain . The brain perfusion mainly depends on the EPA and some derivatives of DHA [3]. Higher the Omega-3 Index was found to be related to higher regional cerebral blood flow [4].

Inflammatory processes in the brain : it plays a protective role in the regional inflammatory processes like depression. Both EPA and DHA reduce the severity of inflammation [5].

Dietary Intake vs blood levels of EPA and DHA

In epidemiologic studies , food intake was assessed using a quiz or survey . After assessing dietary intake of specific foods e.g., salmon (an established source of EPA and DHA) salmon concentration of EPA and DHA is looked up in time-honored tables.

Examples are blood pressure , which is related to blood levels of EPA and DHA but not to their dietary intake.

Discussion

We discussed about the EPA and DHA and its role in brain perfusion and brain function and its maintenance.

Conclusion

EPA and DHA plays major role in the function and maintenance of structure of brain.

Bibliography

1. O Laccourreye and H Maisonneuve. "French scientific medical journals confronted by developments in medical writing and the transformation of the medical press". *European Annals of Otorhinolaryngology, Head and Neck Diseases* 136.6 (2019): 475-480.

2. Danielle Swanson., *et al*. "Omega-3 Fatty Acids EPA and DHA: Health Benefits Throughout Life". *Advances in Nutrition* 3.1 (2012): 1-7.

3. https://www.pileje.com/health-information/specific-role-dha-epa-type-omega-3-fatty-acids

4. Pradnya G Patted., *et al*. "Omega-3 fatty acids: a comprehensive scientific review of their sources, functions and health benefits". *Future Journal of Pharmaceutical Sciences* (2024).

5. https://www.webmd.com/vitamins/ai/ingredientmono-864/docosahexaenoic-acid-dha