

Ahiflower Oil: A rich plant-based omega supporting brain health

Recently *Nutritional Outlook* published an article on powerful new ingredients for improving brain health. The article cites 2017 market research showing that the global brain health supplements marketplace will more than quadruple from \$2.4B in 2015 to \$11.6B in 2024. This is driven by an increasingly older demographic around the world made up of people who are increasingly aware that they can influence their cognitive wellness and brain functions positively, safely, and naturally by supplementing an active lifestyle and healthy diet. This group focusing on healthy aging is balanced by young millennials and Gen-Xers seeking various ways to improve focus, wakefulness, reaction time, and mental acuity from nootropics and other supplements that boost cognitive performance.

The article's first category of evidence-based ingredients for healthy brain function is omega fatty acids. This is because the brain's grey matter is composed of about 90% omega-3 DHA, the longest-chain omega-3 in a cascade that starts in the diet with omega-3 ALA. Beyond the brain, every cell in our bodies requires a balance of omega-3 and omega-6 fatty acids in order to function properly. Our bodies cannot make omega-3 ALA—it must come from dietary sources. This is why ALA is called an “essential” fatty acid.

If you are a vegetarian or vegan, you have probably heard that essential omega-3 ALA does not convert to longer-chain omega-3 fatty acids like EPA or DHA very efficiently. This leads to common recommendations to consume EPA/DHA rich fish, krill, or even algal sources. Yet there is also the fact that since most of our paleolithic ancestors did not dwell in locations where oily fish or krill sources (let alone today's biotech algal oils) existed, how was it possible for the human brain to develop over the eons so well in the absence of rich animal-based EPA/DHA sources? Indeed, how is it possible that much of the Indian sub-continent's vegan population does not show evidence of brain developmental issues?

The answer is that even plant-based omega-3 fatty acid sources (and the meat from animals that ate those plant-based sources) are readily metabolized to longer-chain omegas as and when needed to support a range of cognitive, neurotransmitter, and structural brain development functions. Our bodies are co-evolved to convert the basic plant-based omega fatty acids into more complex forms naturally.

Recently in 2019, new research published in the *American Journal of Clinical Nutrition* showed that when we supplement people with EPA or DHA and measure metabolic effects using carbon isotope ratios, there is a difference between ‘circulating’ EPA/DHA and ‘metabolized’ EPA/DHA coming from supplementation. This is the difference between what your body uses in tissues (like the brain) vs keeps circulating in the bloodstream. They found that supplemental EPA does not ‘retroconvert’ back to ALA, nor does DHA ‘retroconvert’ back to EPA. The researchers could not even determine that supplemental EPA converts to circulating DHA, only to metabolized DHA. Taken together, this research showed that for a normal healthy adult — ie not suffering from traumatic brain injury, or not still developing a brain *in utero* — consuming a rich and balanced source of ‘precursor’ omega-3 fatty acids will certainly provide the brain all it needs to

function healthfully. However, it also shows that focusing solely on EPA/DHA supplementation may not supply the body with meaningful levels of essential and precursor omega-3 fatty acids.

Ahiflower oil, offered uniquely in pure liquid oil from Bushfoods, provides the richest-available levels of essential omega-3 (ALA+SDA) and omega-6 (LA+GLA) fatty acids from a single non-GMO plant source. Published human clinical evidence has already shown that Ahiflower oil converts readily to circulating EPA up to 4x more efficiently than flaxseed oil. Human clinical data shows that Ahiflower oil's 'pro-EPA' equivalence is 85-100 mg/gram or about half that of fish oil. Plus Ahiflower oil has a similar anti-inflammatory GLA content to evening primrose oil. Fish, krill, and algal oils contain no significant GLA. The fact that Ahiflower oil readily converts to circulating EPA and the recent AJCN article proved that circulating EPA readily biosynthesizes to metabolized DHA means that Ahiflower oil truly provides for all one's daily omegas.

Interestingly, in a 2017 study published in the journal *Nutritional Neuroscience* researchers wanted to know which circulating omega-3 fatty acids were most strongly responsible for structural brain integrity in healthy seniors (age 65-75) and for higher performance in fluid intelligence — ie dynamic, real-time problem-solving. Somewhat unexpectedly, they found that circulating 'precursor' omega-3 fatty acids ALA and SDA drove highest outcomes, not EPA and DHA. This finding further supports the notion that providing the body a richer, more full-spectrum intake of plant-based omega-3 fatty acids (notably ALA and SDA) does matter for preventing normal age-related cognitive decline. This is likely because providing the plant-based omegas allows the body to more dynamically channel resources to support cellular membrane and organ functions as needed, rather than overly specializing on support functions related to EPA/DHA alone. Further research will elucidate the fascinating role that plant-based omega-3-6-9 sources like Ahiflower oil have to offer for brain and related mental wellness.