

Know Your Omega-3s

It is often said that Americans consume too much fat, but in the U.S. and other parts of the world, many people don't eat enough good fat. Consuming polyunsaturated fatty acids, specifically omega-3 fatty acids, is important for good health.

Today, more and more food products claim to be a good source of omega-3s, but not all omega-3s are created equal. There are three major omega-3 fatty acids and each one plays a distinct role in the body.

The Distinct Benefits of Omega-3s

	DHA	EPA	ALA
Cognitive Development and Function	YES	NO	NO
Visual Development and Function	YES	NO	NO
Cardiovascular Function	YES	YES	NO
Inflammation	YES	YES	NO
Mental Illness	More Research is Needed	More Research is Needed	More Research is Needed

Yes = There is a direct role
No = There is no known direct role

Docosahexaenoic Acid (DHA)

What is it? DHA is the most abundant long chain omega-3 fatty acid in the brain and the retina of the eye. It is an important structural component of the nerve cells in the brain and a key component of the heart.

What does it do? DHA is critical for optimal brain development and function. Numerous studies have shown that DHA, a natural component of breast milk, is important for mental and visual development in infants. DHA is now found in more than 75 percent of U.S. infant formulas.

Low levels of DHA in a person's diet or blood have been associated with increased risk for dementia and/or Alzheimer's disease, while high dietary intake of DHA has been associated with a reduced risk for Alzheimer's disease, dementia and age-related macular degeneration, a major cause of blindness. Additional clinical research will help evaluate the impact of dietary DHA on these conditions.

DHA also supports cardiovascular health by reducing triglycerides, and positively changing LDL "bad" cholesterol particle size, which has been associated with reduced risk of cardiovascular disease. DHA may also play an important role in reducing chronic inflammation.

Where is it found? DHA can be obtained from certain marine algae, fatty fish, such as tuna, salmon and mackerel, and organ meats. DHA from algae is available in certain fortified foods and as a dietary supplement. It is Generally Recognized As Safe (GRAS) in the U.S. and is the only DHA accepted by the Food and Drug Administration for use in U.S. infant formula. **DHA from algae is the only vegetarian source that supplies preformed DHA.**

The body can also make DHA from shorter chain omega-3 precursors such as ALA (alpha-linolenic acid); however, several research papers have reported that this conversion process is

slow and inefficient. The most reliable way to ensure that the body gets DHA is to consume preformed DHA in your diet.

Eicosapentaenoic Acid (EPA)

What is it? EPA is another long-chain omega-3 fatty acid important for human health. However, unlike DHA, EPA is not stored in significant levels in the brain or retina, and is not considered a significant structural part of the body.

What does it do? EPA, like DHA, plays a role in cardiovascular health by reducing triglycerides. Additionally, EPA may reduce blood clot formation. EPA is also known to help reduce chronic inflammation by modifying the immune response. While there are no data suggesting that EPA plays a role in brain development and function in normal, healthy individuals, some studies have found that EPA may play a positive role in certain mental diseases.

Where is it found? EPA, along with DHA, is found in fatty fish, such as tuna, salmon and mackerel. DHA can also be converted by the body into EPA.

Alpha-Linolenic Acid (ALA)

What is it? ALA is a shorter-chain omega-3 fatty acid that serves as a source of energy and as a precursor for long-chain omega-3 fatty acids. Researchers used to believe that a significant amount of ALA could be converted to EPA and DHA, but we now know that very little ALA is converted to EPA and even less is converted to DHA (between 0 and 4 percent).

What does it do? The known roles of ALA are to serve as a source of energy for the body and as a building block for the longer chain omega-3 fatty acids DHA and EPA, although new research indicates that ALA may not be converted efficiently to these important fatty acids. There are no known independent benefits of ALA on brain or retinal development or function and there are insufficient data to support a direct role of ALA in reducing risk of cardiovascular disease.

Where is it found? Sources of ALA include flaxseeds, walnuts, soybeans and soybean oil.