

# DHAid™ - omega-3 DHA from a vegetarian source

Ulla Freitas  
Lonza Ltd, Switzerland

## What is DHAid™?

DHAid™ is a pure vegetarian source of omega-3 docosahexaenoic acid (DHA). It is produced from microalgae in a controlled process in fermentation vessels. Due to its renewable sources DHAid™ is environmentally friendly. DHAid™ is allergen free and is free of potential contaminants that are discussed for seafood.

## Why is DHA so important?

DHA in the body is mainly derived from intake of fish and seafood. It is well-known, however, that the dietary DHA intake with a typical Western diet is well below the recommended values.

Nature has foreseen a pathway to produce DHA from ALA in the human body. During this process ALA is enzymatically converted to EPA and further to DHA. However, it has become clear that the dietary intake of the precursor ALA cannot make up for the low dietary intake of DHA. Various human supplementation studies have addressed the question of the bioconversion process and have concluded that conversion of ALA to EPA is limited and conversion to DHA is extremely low. Aging, illness and stress contribute to this limited conversion process as well as the excessive intake of omega-6 rich oils due to the competition for the same enzymes.

In respect of this background the uptake of DHA from the diet might be critical for maintaining adequate membrane DHA concentrations. Therefore, Health Organisations throughout the world have made specific recommendations to increase DHA levels.

In a study including more than 100 healthy vegetarians, 8 weeks of LonzaDHA supplementation was found to significantly increase both their DHA and EPA plasma levels compared with placebo.

## Benefits from DHAid™

### Pregnancy

Under the present dietary conditions, maternal intake of omega-3 fatty acids is insufficient to keep up with the increased demand during pregnancy. Most national and international authorities therefore recommend increasing DHA intake during pregnancy and lactation to at least 200 mg/day.

Prenatal and early postnatal positive DHA status is thought to have important consequences on the growth and function of the baby's central nervous system (CNS) and, consequently, on neurological and cognitive development of the child.

### Brain Health

DHA is a major structural and functional building block of the brain – about 30% of the structural lipids of the grey matter are DHA. Hence it is not surprising that DHA deficiency in early life has been associated with a variety of learning and cognitive disorders.

### Eye Health

The importance of DHA in retinal function is reflected by the high concentration of DHA especially in the retinal photoreceptor. There it is involved in the intercellular signalling pathway that transforms light signals to neuronal activity.



DHAid™ is a purely vegetarian  
Omega-3 DHA and a trademark  
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Several human studies support the importance of adequate maternal DHA consumption during pregnancy for the maturation of the visual system of infants. In addition diets high in omega-3 fatty acids and especially DHA may act in a protective role against age-associated pathology to the vascular and neural retina in the elderly.

### Heart Health

Various scientific studies clearly demonstrate that a high intake of omega-3 fatty acids, especially DHA, correlates with heart health. Interestingly, the dietary precursor essential fatty acid of EPA and DHA, alpha-linolenic acid (ALA), has not consistently been found to have beneficial effects on cardiovascular health.

### DHAid™ Production

Using naturally occurring microalgae, Lonza's innovative technology allows DHA oils to be produced with superior quality. During the unique production process in fermentation vessels, microalgae are grown in large volumes and accumulate significant quantities of DHA. Then, DHAid™ is extracted from the dried microalgae and refined in processes that are very similar to those used in the production of conventional vegetable oils.

## Quality & Safety of DHAid™

### DHAid™ Quality at a glance

- Accordance with HACCP and GMP standards for food products
- Production ISO 9001 certified
- Production based on renewable resources
- Full traceability
- Free of any materials of animal origin
- Free of any genetically modified organisms (GMOs)
- Allergen free
- Vegetarian source of DHA
- High natural concentration of DHA
- Clean taste

### DHAid™ Safety at a glance

- Self-affirmed GRAS
- Approved according to Novel Food in EU, Australia and New Zealand
- Free of any potential contaminants that are discussed for seafood
- Multi-step fermentation process of DHAid™ uses a non-toxic and non-pathogenic marine protist, *Ulkenia* sp.
- Extensive human, animal and in vitro Tox studies confirm the safety of DHAid™ from microalgae

For more information please visit [www.lonza.com](http://www.lonza.com) or [www.aboutdha.com](http://www.aboutdha.com).