

# Omega-3 Fatty Acids Overview

## Why We Need Them

Omega-3 fatty acids are essential polyunsaturated fats that the body cannot produce on its own. They are critical for reducing inflammation, supporting heart and brain health, and maintaining cellular integrity. The two most bioactive forms are EPA and DHA.

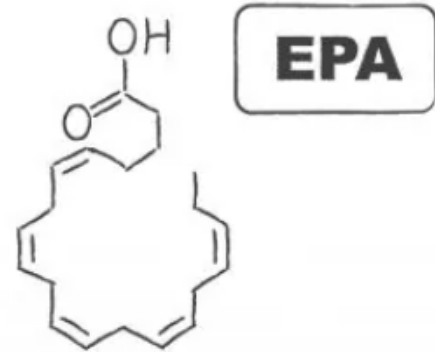
## Functions in the Body-

### EPA (Eicosapentaenoic Acid)

- Reduces systemic inflammation
- Supports cardiovascular health
- Improves mood and emotional balance
- Helps regulate hormones and reduce PMS symptoms

### DHA (Docosahexaenoic Acid)

- Supports brain development and cognitive function
- Promotes eye and vision health
- Enhances memory, focus, and mental clarity
- Essential during pregnancy for fetal brain growth



Eicosapentaenoic Acid (EPA) (20:5, n-3)

## Daily Recommended Intake (RDI):

General: 250–500 mg/day (combined EPA + DHA)

Pregnancy/Lactation: ≥200 mg/day DHA

Heart Health: Up to 1,000 mg/day EPA

Upper Limit (UL): No official limit, but >3,000 mg/day should be monitored due to blood-thinning effects.

## Benefits of Supplementation

- Reduces inflammation and joint pain
- Lowers blood triglycerides and blood pressure
- Supports healthy mood and cognitive performance
- Enhances brain and visual development in infants
- Promotes skin hydration and elasticity

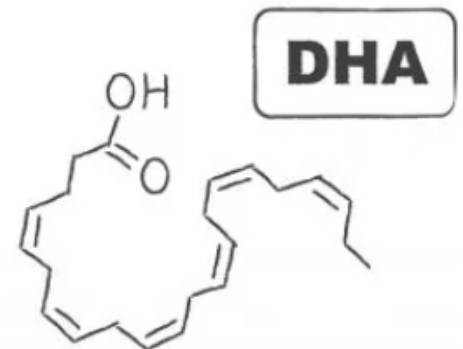
## Most Bioavailable Form

Triglyceride (rTG) form: Most natural and well-absorbed

Phospholipid form (Krill oil): Easily absorbed, especially by the brain

Ethyl Ester (EE): Common in fish oil, less bioavailable

Algal Oil: Vegan-friendly source of DHA (and some EPA)



Docosahexaenoic Acid (DHA) (22:6, n-3)

## Best Food Sources

Animal-based: Salmon, sardines, mackerel, anchovies, cod liver oil

Plant-based: Flaxseeds, chia seeds, walnuts (ALA – less efficient conversion)

Vegan: Algal oil (direct DHA & EPA)

## When & How to Take It

1. Best taken with a meal that contains fat to enhance absorption.
2. Morning or midday dosing is ideal, especially if taken for mood or focus.
3. Avoid taking on an empty stomach to reduce the risk of fishy burps or GI upset.
4. Combine with other fat-soluble nutrients like Vitamin D or E for synergistic benefit.

## Conclusion

Omega-3 fatty acids are vital for heart, brain, joint, and immune health. EPA reduces inflammation and supports cardiovascular function, while DHA fuels brain development and cognitive performance. Since dietary intake is often insufficient, high-quality fish oil or algal oil supplementation can optimize overall wellness.