

## FAST FACTS

# Omega-3

## *Essential fatty acids*

### What

Omega-3s are essential fatty acids (EFAs), essential because your body can't produce them on its own. They play a critical role in many physiological processes, including inflammation regulation, cardiovascular health, and brain function. The two most important types of omega-3s are eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA), which can be found in fatty fish, or converted inefficiently from alpha-linolenic acid (ALA), found in plant-based sources of omega-3 like flaxseed.

### How they work

Cells can be likened to balloons, where the membrane, akin to the balloon's outer layer, holds the cell's structure together. In the human body, this membrane is composed of a double layer of fats (lipid bilayer). The inclusion of a variety of fats, particularly polyunsaturated fats, contributes to a more flexible membrane, facilitating efficient cellular communication and function. Omega-3 fatty acids, being long and flexible, are particularly well-suited to support this cellular flexibility.

This communication is especially critical in the brain, which is approximately 70% fat. Of that, about 40% is DHA, meaning around 30% of the brain's composition is made up of this essential omega-3 fatty acid.

Omega-3s are also known for their role in regulating inflammatory responses, supporting heart health, and reducing the risk of cognitive decline.

Maintaining a healthy balance between omega-3 and omega-6 fatty acids is crucial, as modern diets often skew heavily towards omega-6. Ideally, omega-3 levels should constitute around 10% of the fats in red blood cells, a reliable metric for assessing fatty acid balance.

Aim for a ratio around 4:1 or less of omega-6 to omega-3 fats to reduce inflammation and improve overall health.



### Food sources

Cold water fatty fish like salmon, sardines, and mackerel. Plant-based sources: flaxseeds, chia seeds, hemp, and walnuts. Note that conversion from plant based sources (ALA) into DHA are in the order of 1-10%, meaning you need to have 10-100 times as much as if you got the Omega 3 from fish.

### Pros

- Inflammation regulation
- Cardiovascular health
- Brain function
- Cellular integrity

### Considerations

- Omega-3 fatty acids easily oxidise, turning them into trans-fats, which having opposing effects on health, and should be avoided
- Quality of a supplement is paramount to ensure they are toxin free
- Omega-3 supplements may interact with blood thinners, blood pressure medications, contraceptives, and some other drugs
- Consult a healthcare provider before beginning supplementation, particularly if you have pre-existing health conditions or are taking any medications.