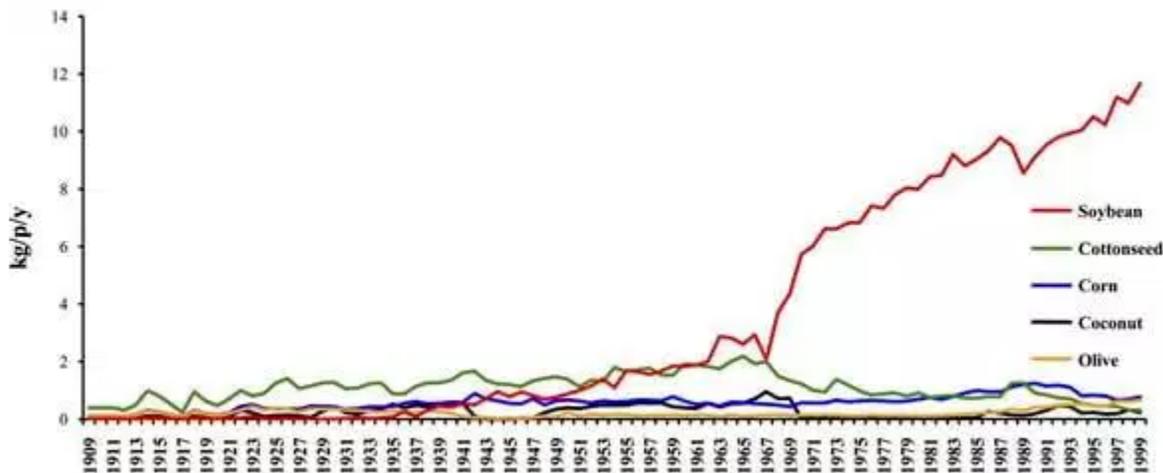


Omega-3-6-9 Fatty Acids: An Overview

Omega-3, omega-6 and omega-9 fatty acids are important dietary fats, and each has a number of health benefits, providing you achieve the right balance. At present, we over-consume omega-6, largely because of the ubiquity of (cheap) soybean oil in processed food. Levels of omega-6 stored in body fat have increased by more than 200% (tripled) in the past fifty years.

Omega-6 is considered inflammatory, whereas omega-3 is considered anti-inflammatory.



Omega-3 Fatty Acids

Omega-3 fatty acids, like omega-6 and omega-9 fatty acids, are essential polyunsaturated fats that your body can't make.

There are many types of omega-3 fats, which differ based on their chemical shape and size. Here are the three most common:

- Eicosapentaenoic acid (EPA): This 20-carbon fatty acid's main function is to produce chemicals called eicosanoids, which help reduce inflammation. EPA also helps reduce symptoms of depression.
- Docosahexaenoic acid (DHA): A 22-carbon fatty acid, DHA makes up about 8% of brain weight and is extremely important for normal brain development and function.
- Alpha-linolenic acid (ALA): This 18-carbon fatty acid can be converted into EPA and DHA, although the process is not very efficient. ALA is mainly used by the body for energy.

Omega-3 fats, besides being a crucial part of human cell membranes, have a number of other functions, including:

- Improving heart health: Omega-3 fatty acids can increase "good" HDL cholesterol. They can also reduce triglycerides, blood pressure and the formation of arterial plaques.
- Supporting mental health: Taking omega-3s can reduce symptoms of depression, schizophrenia and bipolar disorder. It can also reduce the risk of psychotic disorders for those who are at risk.

- Reducing weight and waist size: Omega-3 fats play an important role in weight management and can help reduce waist circumference.
- Decreasing liver fat: Consuming omega-3s in your diet can help decrease the amount of fat in your liver.
- Supporting infant brain development: Omega-3s are extremely important for brain development in babies.
- Fighting inflammation: Omega-3 fats are anti-inflammatory, meaning they can reduce the inflammation in your body that can contribute to a number of chronic diseases.
- Preventing dementia: People who eat more fish, which is high in omega-3 fats, tend to have a slower decline in brain function in old age. Omega-3s may also help improve memory in older people.
- Promoting bone health: People with higher omega-3 intake and blood levels tend to have better bone mineral density.
- Preventing asthma: Omega-3 intake can help reduce symptoms of asthma, especially in early life.

Unfortunately, the Western diet does not contain enough omega-3s. A deficiency may contribute to chronic diseases like obesity, diabetes and heart disease.

SUMMARY: Omega-3 fats are essential fats that you must get from your diet. They have important benefits for your heart, brain and metabolism.

What Are Omega-6 Fatty Acids?

As we've said, omega-6 fatty acids are essential polyunsaturated fats, primarily used for energy. The most common omega-6 fat is linoleic acid, which can be converted into longer omega-6 fats such as arachidonic acid (ARA). Like EPA, ARA is used to produce eicosanoids. However, the eicosanoids produced by ARA are more pro-inflammatory.

Pro-inflammatory eicosanoids are important chemicals in the immune system. However, when too many of them are produced, they can increase inflammation and inflammatory disease.

The modern Western diet contains far more omega-6 fatty acids than necessary – typically, a ratio between 10:1 and 50:1, when the recommended ratio of omega-6 to omega-3 fatty acids in the diet is 4:1 or less. Most people in the developed world should reduce their omega-6 intake.

Having said that, some omega-6 fatty acids have shown benefits in treating symptoms of chronic disease – e.g., rheumatoid arthritis. Taking GLA supplements in addition to a breast cancer drug was more effective at treating breast cancer than the drug alone.

SUMMARY: Omega-6 fats are essential fats that are an important source of energy for the body. However, the Western diet contains too many.

What Are Omega-9 Fatty Acids?

Omega-9 fatty acids are monounsaturated. Oleic acid is the most common omega-9 fatty acid and the most common monounsaturated fatty acid in the diet. Omega-9 not only can be produced by the body,

but are the most abundant fats in most cells in the body.

Substituting foods rich in omega-9 fatty acids instead of other types of fat may have a number of beneficial health effects, such as reducing plasma triglycerides and VLDL cholesterol in patients with diabetes and generating less inflammation and better insulin sensitivity.

SUMMARY: Omega-9 fats are non-essential fats, since they can be produced by the body. Diets that replace some saturated fats with omega-9 fats may have benefits for metabolic health.

Which Foods Contain These Fats?

You can easily obtain omega-3, -6 and -9 fatty acids from your diet and it is critical to get the right balance. - 4:1 omega-6 to omega-3 (even less is desirable).

Foods High in Omega-3s

The best source of the key omega-3s, EPA and DHA, is oily fish, and secondarily other marine sources, such as algal oils. ALA, on the other hand, is mainly obtained from nuts and seeds, which are also high in omega-6. Pastured eggs are preferable in terms of controlling omega balance.

According to the Food and Nutrition Board of the US Institute of Medicine, the adequate intake of omega-3s per day is 1.6 grams for men and 1.1 grams for women, for adults 19 years and over.

Here are some examples of omega-3 rich foods with the amounts and types of omega-3s per serving :

- Salmon: 4.0 grams EPA and DHA
- Mackerel: 3.0 grams EPA and DHA
- Sardines: 2.2 grams EPA and DHA
- Anchovies: 1.0 grams EPA and DHA
- Chia seeds: 4.9 grams ALA
- Walnuts: 2.5 grams ALA
- Flaxseeds: 2.3 grams ALA

Foods High in Omega-6

Omega-6 fats are found refined vegetable oils, nuts and seeds.

According to the Food and Nutrition Board of the US Institute of Medicine, the adequate intake of omega-6s per day is 17 grams for men and 12 grams for women, for adults from 19–50 years old (43).

Here are the amounts of omega-6s per 100 grams (3.5 oz) of some common foods:

- Soybean oil: 50 grams
- Corn oil: 49 grams
- Mayonnaise: 39 grams
- Walnuts: 37 grams
- Sunflower seeds: 34 grams
- Almonds: 12 grams
- Cashew nuts: 8 grams

Foods High in Omega-9

Omega-9 fats are also common in vegetable and seed oils, nuts, and seeds.

There are no intake recommendations for omega-9s, since they can be made by the body (i.e., are nonessential).

Here are the amounts of omega-9s per 100 grams (3.5 oz) of some common foods:

- Olive oil: 83 grams
- Cashew nut oil: 73 grams
- Almond oil: 70 grams
- Avocado oil: 60 grams
- Peanut oil: 47 grams
- Almonds: 30 grams
- Cashews: 24 grams
- Walnuts: 9 grams

SUMMARY:The best sources of omega-3s are oily fish, whereas omega-6s and omega-9s are found in plant oils, nuts and seeds.

Omega Supplements

Combined omega-3-6-9 supplements usually provide each of these fatty acids in suitable proportions, such as 2:1:1 for omega-3:6:9, and can help increase your intake of omega-3 fat. They help to balance omega-3, -6 and -9 fatty acids, but it is better to do so by (1) eating at least two portions of oily fish per week and using olive oil for cooking and in salad dressing, and (2) limiting your consumption of other vegetable oils and fried foods that have been cooked in refined vegetable oils.

If you do not get enough omega-3s in your diet, it is best to take an omega-3 supplement alone rather than a combined omega-3-6-9 supplement.

SUMMARY:Combined omega-3-6-9 supplements provide optimal ratios of fatty acids, but likely provide no additional benefits compared to omega-3 supplements.

How to Choose an Omega 3-6-9 Supplement

Much like other oils, polyunsaturated fatty acids are easily oxidized when exposed to heat and light.

Therefore, if you're buying an omega-3-6-9 supplement, choose one that is cold pressed. This means the oil has been extracted with limited heat, minimizing the oxidization that can damage the fatty acid molecules.

To ensure you are taking a supplement that isn't oxidized, choose one that contains an antioxidant such as vitamin E.

Additionally, select a supplement with the highest omega-3 content — ideally more than 0.3 grams per serving.

Furthermore, since EPA and DHA have more health benefits than ALA, choose a supplement that uses fish oil or algal oil, rather than flaxseed oil.

SUMMARY:Choose an omega-3 supplement instead of a combined omega-3-6-9

supplement. If you're buying a combined supplement, choose one with a high concentration of EPA and DHA.

The Bottom Line

Although combined omega-3-6-9 supplements have become very popular, they generally provide no additional benefit over taking omega-3 alone.

Omega Fatty Acids: Sources

Cod liver oil	Borage oil (GLA)	Avocados
Flax seed & flax seed oil	Coconut oil	Olives
Fish oil	Evening primrose oil (GLA)	Olive oil
Wild seafood	Grapeseed oil	Nuts (raw) – except peanuts
Walnuts	Macadamia nut oil	
Broccoli & cauliflower	Egg yolks	
Spices (basil, oregano, cloves, marjoram)	Animal meats	
Omega-3	Omega-6	Omega-9