

A healthy heart with omega-3 fatty acids

Nowadays, omega-3 fatty acids are on everyone's lips – and this is indicated in the very truest sense of the word: More and more studies are showing just how important omega-3 fatty acids are for health and, furthermore, the food industry has recently discovered these important substances, too. Almost everyone has encountered the term "omega-3" before, either on the packaging of margarine and fish fingers on supermarket shelves or as fish oil capsules found in health shops and chemists. Fish oil is particularly well-known as being beneficial in the prevention of heart disease. However, what exactly are omega-3 fatty acids and why should they be so vital for heart health? In this Health Letter, we are going to look at this in more detail.

Omega-3 fatty acids are polyunsaturated or "essential" fatty acids. They must be taken in with food as part of a healthy diet, as the body is unable to produce them for itself. They occur in both foods of animal origin and foods of plant origin. Alpha-linolenic acid (ALA) is a fatty acid of vegetable origin and mostly found in flax oil, linseed, olive oil, rapeseed oil, soya oil and walnut oil. However, ALA is not nearly as effective as eicosapentaenoic (EPA) and docosahexaenoic acid (DHA). The sources of these biologically far more active omega-3 fatty acids are mainly oil-rich, cold-water fish, such as salmon, herring, mackerel or tuna. The fish feed on ALA found in special microalgae in the sea and use these to make, or metabolise, EPA and DHA. The human body is fundamentally able to metabolise its own omega-3 fatty acids from vegetable sources. However, the longer-chain and more active omega-3 fatty acids EPA and DHA can only be metabolised in very small quantities. As a result, consuming fish effectively enables the body to ingest a larger amount of EPA and DHA.

The efficacy of omega-3 fatty acids in the prevention and treatment of various disorders is demonstrated by countless studies. Factors that have been studied in detail are, for instance, the influence on symptoms such as inflammation, allergies, Alzheimer's disease, ADHD, etc.

Using omega-3 fatty acids in the treatment of heart disease has been investigated best. Decades ago, it was found that the Inuit people living in Arctic regions suffered fewer heart attacks than Central Europeans, despite

having a high-fat diet. It was claimed that the main reason for this was their traditional diet of oily fish. As a result, researchers began to intensively study the effects of omega-3 fatty acids as a valid treatment of heart diseases in the 1970s. Meanwhile, there are several thousands of studies showing the positive effects of omega-3 fatty acids on the cardiovascular system. Here are some of the key findings:

Omega-3 fatty acids – protection for heart, blood vessels and the circulatory system

The benefits of omega-3 fatty acids on the heart and circulatory system are varied. For instance, research has shown that patients given nutritional supplements with omega-3 fatty acids (DHA and EPA) suffered fewer heart attacks than patients in the control group. Japanese researchers also found similar results, proving that there was a link between a high intake of fish and a low risk of heart disease and heart attack. According to study results, an intake of more than 20 grams per day of fish reduces the risk of non-fatal heart attacks quite significantly.



In addition to early detection or 'secondary prevention' of heart attack, omega-3 fatty acids are essential for the prevention of coronary heart disease (CHD). Omega-3 fatty acids are able to lower raised triacylglycerol levels,

which have been found to be a risk for thrombosis or arteriosclerosis – and thus can lead to the development of coronary heart disease. According to an American study, a daily intake of 3 to 4 grams of DHA and EPA may reduce triacylglycerol levels by 20 to 50 percent. Omega-3 fatty acids also lower raised cholesterol levels in the blood, such that they increase the amount of "good" HDL (high density lipoprotein) cholesterol to the proportion of "bad" cholesterol (LDL, low density lipoprotein) by transporting bad cholesterol to the liver for processing and disposal.



Another risk factor for arteriosclerosis is high blood pressure. Omega-3 fatty acids are said to have antihypertensive properties. For instance, they expand smaller arteries and reduce the effects of some hormones that increase blood pressure. Also, omega-3 fatty acids improve blood circulation by making red blood cells more flexible and/or expanding blood vessels. This is considered an important factor for the prevention of heart disease as disturbed blood flow can cause vascular occlusion (a blockage) of the heart. Furthermore, omega-3 fatty acids are essential for protection against arrhythmia.

Studies prove health benefits of omega-3 fatty acids

The studies below are representative of the numerous surveys which demonstrate the proven health benefits of omega-3 in cardiovascular disease. They can be viewed at the following links:

- Dairy products fortified with omega-3 fatty acids benefit heart health:

<http://www.nutraingredients.com/Research/Omega-3-fortified-dairy-effective-for-heart-health-Study>

- Increased fish intake reduces risk of coronary heart disease amongst middle-aged persons:

<http://www.ncbi.nlm.nih.gov/pubmed/16401768>

- Meals rich in omega-3 may have benefits for blood vessel health:

<http://www.nutraingredients.com/Research/Omega-3-rich-meals-have-blood-vessel-benefits-Study>

- Higher intake of EPA and DHA reduces incidence of fatal heart disease in women:

<http://www.ncbi.nlm.nih.gov/pubmed/11939867>

It quickly becomes evident that omega-3 fatty acids are very important in the prevention and treatment of heart disease. American and European heart specialists recommend a minimum of 2 fish meals per week, and/or a regular supplementation with omega-3-fatty acids (fish oil capsules). Along with a diet rich in vitamins and minerals, this is the best way of ensuring that you maintain a healthy heart.

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