

Omega-3 fatty acids – Health from the Sea

For years, omega-3 fatty acids have been an integral part of nutrition and health research. Numerous studies have proven their effectiveness in preventing and treating a variety of different diseases. These facts alone demonstrate the special importance of essential omega-3 fatty acids and allow one to place them on the same level as other essential micronutrients, such as vitamins and minerals. The main source of omega-3 fatty acids is sea fish, which should therefore be a regular part of a conscious and healthy diet.

For several years now, omega-3 fatty acids have been catching the attention of scientists who found out that, despite a fat-rich diet, the Inuit people living in the arctic regions of Central and North-East Canada and in Greenland have fewer cardiovascular diseases and very few heart-attacks compared to the people living in Central Europe. The Inuit's traditional fish-based nutrition has been identified as the main reason for this. Beyond this, there is also evidence that these components of sea fish are of particular value to the overall healthy functioning of our body.

Some voices, however, try to challenge the undoubtedly positive effects of omega-3 fatty acids and confuse the health-conscious consumer. This is reason enough, therefore, for us to explore these compounds in more detail, and to then have a closer look at the health potential of these essential fatty acids in future Health Letters.

Basic knowledge omega-3 fatty acids

Omega-3 fatty acids are polyunsaturated fatty acids that cannot be produced by the body itself, but that are nevertheless vital to life. They are therefore also described as essential fatty acids. Omega-3 fatty acids can be found in foods of animal origin as well as of plant origin. The so-called alpha-Linolenic acid (ALA) can particularly be found in linseed oil, rapeseed oil, soya oil or walnut oil. It is, however, not nearly as effective as omega-3 fatty acids of animal origin. Fat-rich fish contain the biologically more active omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

Marine animals ingest alpha-Linolenic acid with the phytoplankton and form eicosapentaenoic and docosahexaenoic acid from it. In principle, the human body is also able to form the longer-chain and more active EPA and DHA from omega-3 fatty acids of vegetable origin. However, this is only possible to a small degree- thus necessitating a frequent consumption of fish in order to obtain larger amounts of EPA and DHA.

The omega-3 fatty acid content of cold-water fish like salmon, anchovy, sardine, herring, mackerel or tuna is particularly high.



The health potential of omega-3 fatty acids: an overview

From the earliest stages of life, omega-3 fatty acids are of essential importance to normal human development. Because of the great growth-related demand that the fetus has for omega-3 fatty acids, a sufficient supply of these nutrients is very important during pregnancy. In early infancy, omega-3 fatty acids are important for the healthy development of the central nervous system and, therefore, for optimum cerebral and visual functions. Moreover, in addition to their value as essential nutritional components - for instance, as part of cell membranes and basic substances for hormone-like regulators - we benefit from the preventive and therapeutic properties of omega-3 fatty acids in later life as well.

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Let's have a look at the potential of these important nutritional factors in terms of their preventative and supportive therapeutic roles in common health problems – which, as we shall see, provides further proof of the importance of optimally supplying them to our body's cells.

According to numerous research works, omega-3 fatty acids are highly effective in the treatment of cardiovascular diseases. Amongst other things, this is due to their influence on lipid metabolism, blood pressure and the reduction of the platelet aggregation (aggregation of blood platelets). Omega-3 fatty acids can do a lot more, however. For example, their effects on diseases such as inflammation, allergies, Alzheimers and ADHD have been studied thoroughly.

Studies confirm therapeutic benefit in heart diseases

In three comprehensive examinations, studies with a total of 32 000 participants were analyzed. These examinations proved that patients who received a nutritional supplement in the form of omega-3 fatty acids (DHA and EPA) had between 19 and 45 percent less heart attacks than persons from the control groups.

From a therapeutic viewpoint, therefore, it is advisable to consume more oily fish or fish oil supplements. In the case of existing heart disease, it is recommended to consume 1 gram of omega-3 fatty acids per day.

Patients with hypertriglyceridemia can lower their levels of triacylglycerides – an important risk factor for arteriosclerosis – by 20 to 50 percent if they take in 3 to 4 grams DHA and EPA daily.

(<http://www.ncbi.nlm.nih.gov/pubmed/18316000>)

Japanese scientists who observed a connection between a high intake of fish and a low risk of heart disease and heart attacks reported similar results. If 20 grams of fish are consumed per day, the risk of non-deadly heart attacks can be reduced significantly.

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

The supply situation of omega-3 fatty acids

Despite all the benefits we receive from a good diet with plenty sea fish, there are still a few decisive questions that need to be answered: Do we receive a sufficient supply of omega-3 fatty acids? Are we able to roughly fulfil our body's requirements for these nutrients?

There is alarming information on these issues. In Central European regions, for example, many people are undersupplied with omega-3 fatty acids. Only a few people eat the recommended two fish meals per week, containing sufficient amounts of omega-3 fatty acids.

You can obtain further information on the health potential of omega-3 fatty acids and recommendations on their daily intake in our upcoming Health Letters.

For more information please contact: