

Fight inflammatory diseases naturally with omega-3 fatty acids

Are you aware of why animals living in icy waters have body fat rich in omega-3 fatty acids? Or do you know why this fact is so vital to life in the Arctic Ocean? No, it has nothing to do with the fact that omega-3 fatty acids provide protection against the freezing cold for the body's internal organs. The real reason for this is the following: Due to their design and structure, omega-3 fatty acids stay fluid even at low temperatures. And because omega-3 fatty acids form an important element of cell membranes, these cells and cell membranes stay flexible even at very low temperatures.

It is also important for humans to have flexible cellular structures for healthy blood and endothelial cells. The preventative and therapeutic effects of omega-3 fatty acids are far-reaching, such as is explained in our upcoming Health Letter entitled "Omega-3 Fatty Acids for a Healthy Heart."

We often read in specialist publications that omega-3 fatty acids are an important ingredient in preventing inflammation occurring in our body. Omega-3 fatty acids are vital to naturally control inflammatory diseases, as we can see in the example of rheumatoid arthritis.



Rheumatoid arthritis is one of the most common inflammatory diseases of the joints. It mostly occurs insidiously and often goes unnoticed for a long time. It gradually progresses over many years and more and more joints become affected. Rheumatoid arthritis is characterised by persistent, often acute pain, due to the inflammation occurring in the joints. It is very important to try and contain the disease by natural means before the joints become too damaged to treat.

Omega-3 fatty acids and inflammation

Are there properties and specific mechanisms that allow omega-3 fatty acids to be considered so valuable in combating inflammation? This can be easily answered: By competing with other fatty acids, omega-3 fatty acids inhibit the formation of inflammatory mediators.

Inflammatory mediators are endogenous substances that have no apparent external cause, but initiate inflammatory reactions and become nurtured in our body. The causative substance for the formation of inflammatory mediators is arachidonic acid. It binds to cell membranes where it becomes "embedded." In case of an increased stimulation, arachidonic acid is released by enzymatic processes and converted to inflammatory mediators, which in turn can lead to intensified inflammation and more severe pain.

Arachidonic acid is a polyunsaturated fatty acid and is one of the omega-6 fatty acids. Our body can make (metabolise) omega-6 fatty acids, even in small amounts, from other fatty acids, however, most of it is taken in through food (dietary animal fats). Arachidonic acid is also needed by our body. The most important role of arachidonic acid for the human body is to synthesise vital tissue hormones. The greatest problem for those with rheumatoid arthritis is the fact that often too many foods high in animal fats are consumed – and this fact is becoming the rule rather than the exception.

A natural antagonist of the arachidonic acid is the omega-3 fatty acid EPA (eicosapentaenoic acid) which is found in high amounts in oily ocean fish. These long-chained fatty acids suppress the metabolic pathways of arachidonic acid and thus the inflammation and pain.



ceases. Arachidonic acid can be countered at cellular level in cell membranes by simple means: EPA, which is also a fatty acid that is embedded in cell membranes, binds to the same receptors in cell membranes and competes for the same enzymes as arachidonic acid. As a result, a higher intake of essential EPA means that arachidonic acid is suppressed and the resulting inflammation is inhibited and considerably lessened.

Studies clearly demonstrate the importance of omega-3 fatty acids in inflammatory diseases:

• **Fatty acids from fish: the anti-inflammatory potential of long-chain omega-3 fatty acids**

The typical diet of the western world has a high level of omega-6 fatty acids, as compared to omega-3 fatty acids. Research has shown that increasing the ratio of omega-3 to omega-6 fatty acids can reduce the incidence of many chronic and inflammatory diseases (see link below), for example inflammatory bowel disease and rheumatoid arthritis.

<http://www.ncbi.nlm.nih.gov/pubmed/20500789>

• **The role of polyunsaturated omega-3 fatty acids in the diets of patients suffering from rheumatic diseases**

The positive effects of polyunsaturated omega-3 fatty acids for the cardiovascular system have frequently been illustrated. In the last decade, there has been more interest in the role of such nutrients in reducing joint inflammation and in the improvement of clinical symptoms in patients with rheumatic diseases, especially rheumatoid arthritis. The anti-inflammatory properties inherent in these omega-3 fatty acids may well be offering a supplementary dietary addition to traditional medical therapies.

Based on a dietary therapy using omega-3 fatty acids for the treatment of rheumatoid arthritis, researchers found encouraging results for patients with other rheumatic diseases, like lupus erythematosus and ankylosing spondylitis.

<http://www.ncbi.nlm.nih.gov/pubmed/18651052>

• **The importance of lipids in dietary therapy for inflammatory diseases**

Over recent decades, scientific advances in the knowledge of anti-inflammatory properties of lipids have led to developments of new formulas for enteral (intestinal) and parenteral nutrition. This report shows the impact of lipids in enteral nutrition in various

inflammatory diseases, such as inflammatory bowel disease, atherosclerosis, pulmonary fibrosis, rheumatoid arthritis and others. To summarise, it is apparent that treatment outcomes are much more favourable on an enteral diet supplemented with beneficial polyunsaturated omega-3 fatty acids in the treatment of patients with inflammatory diseases. This includes a reduction of the dosage of anti-inflammatory drugs, which frequently cause unnecessary side effects.

<http://www.ncbi.nlm.nih.gov/pubmed/16771071>

Our tip for good health:

Cellular nutrients are vital for supporting health, most notably in the prevention of inflammatory diseases. They inhibit collagen-digesting enzymes, strengthen and help support damaged connective tissue, as well as inhibit free radicals. The consumption of fatty animal foods, rich in omega-6 fatty acids, should be restricted to avoid a high intake of arachidonic acid. A balanced omega-3-containing diet, particularly with EPA, is an important addition for the prevention of inflammation, or just to keep the disease under control.

If you call us, please tell us the name of the person who has provided you with this Health Letter (see box).

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