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Omega 3 Fatty Acids and Arthritis

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Your Life Your Health

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Recently, I was traveling and decided not to take my supplement regimen with me. This decision had consequences. For the past few years, I have had increasing stiffness in my hands with one finger which “locks” on me. The morning stiffness is moderately severe and is very uncomfortable, if not painful.

Several years ago, I started taking Omega 3 Fish oil. I noticed an improvement in my stiffness almost immediately. When I measured the ratio of EPA (one of the Omega 3 Fatty acids) and arachidonic acid (one of the Omega 6 fatty acids which promotes inflammation in the body), I found that I was not taking enough fish oil and increased the dose. With the increased dose, the EPA/AA ratio became normal and my morning stiffness completely disappeared.

In health science, we call the above an anecdotal support of the benefit of omega 3 fish oil in the treatment of the stiffness and pain of arthritis. It is anecdotal because there could be many other factors which influenced the improvement. In order to know for certain that it was the fish oil, it would be necessary to do a double-blind study. In such a study you have two populations with essentially the same disease and level of symptoms. One group would get fish oil and the other would not, but neither group would know what they were getting.

Now, back to my trip. After three days of not being on fish oil, I began to experience stiffness. After five days, my symptoms were back to the level of several years ago, the finger was “locking” on me again and I was eager to get back on Omega 3 fish oil. But, what about science?

The arthritis problem

A recent nationwide Center for Disease Control (CDC) survey showed that about 70 million Americans suffer from arthritis. Most people think arthritis is just part of getting older. The CDC survey showed that arthritis does indeed strike 3 in 5 people age 65 and older, but it also hits more than 2 in 5 people age 45-64, and nearly 1 in 5 people age 18-44. Moreover, 300,000 U.S. children suffer from arthritis.

There are more than 100 different forms of arthritis. The disease can cause pain, swelling and limited movement in joints and connective tissue throughout the body, including the skin and organs. Arthritis pain is usually chronic, meaning that it can last for a lifetime. Specific causes of most forms of arthritis are not yet known.

Scientific Studies

At least 13 published randomized, controlled clinical trials have reported significant benefits of fish oil supplementation in rheumatoid arthritis patients. Researchers at the University of Newcastle gave additional support to these earlier findings. Their 15-week study involved 50 patients who had been diagnosed with rheumatoid arthritis. The patients were all consuming a diet which contained less than 10 grams/day of omega-6 fatty acids. These fats are known to promote inflammation.

In the Newcastle study, there were no significant changes after 4 or 8 weeks, but at the 15-week evaluation major improvements were noted in the group receiving fish oil. Particularly impressive were the improvements in the duration of morning stiffness and the overall assessment of disease activity by both patients and physicians. Significant improvements were noted in 6 of the 9 evaluation parameters in the fish oil group; no improvements were noted in the control group.

In an accompanying editorial, Drs. Cleland and James of the Royal Adelaide Hospital emphasized the importance of maintaining a low intake of omega-6 fatty acids in order to keep the ratio of omega-6 to omega-3 as low as possible. They conclude that dietary fish oil supplements should now be regarded as part of standard therapy for rheumatoid arthritis. (Volker, Dianne, et al. Efficacy of fish oil concentrate in the treatment of rheumatoid arthritis. *Journal of Rheumatology*, Vol. 27, October 2000, pp. 2343-46)

Other scientific journal articles which documented this same benefit are:

- van der Tempel, H., *Annals of the Rheumatic Diseases*, Vol. 49, Feb 1990, pp. 76-80. **Conclusion:** Fish oil supplementation alleviates rheumatoid arthritis symptoms.
- Kremer, J.M., *Annals of Internal Medicine*, Vol. 106, April 1987, pp. 497-503. **Conclusion:** Fish oil supplementation relieves fatigue in rheumatoid arthritis patients.
- Cleland, L.G., *Journal of Rheumatology*, Vol. 15, October 1988, pp. 1471-75. **Conclusion:** Fish oil supplementation reduced joint tenderness and improved grip strength in rheumatoid arthritis patients.
- Belch, J.J., *Annals of the Rheumatic Diseases*, Vol. 47, February 1988, pp. 96-104. **Conclusion:** Some arthritis patients are able to reduce their NSAID use by supplementing with fish oils.
- Kremer, J.M., *Lancet*, No. 8422, January 26, 1985, pp. 184-87. **Conclusion:** Fish oil supplementation reduced joint tenderness and morning stiffness in rheumatoid arthritis patients.

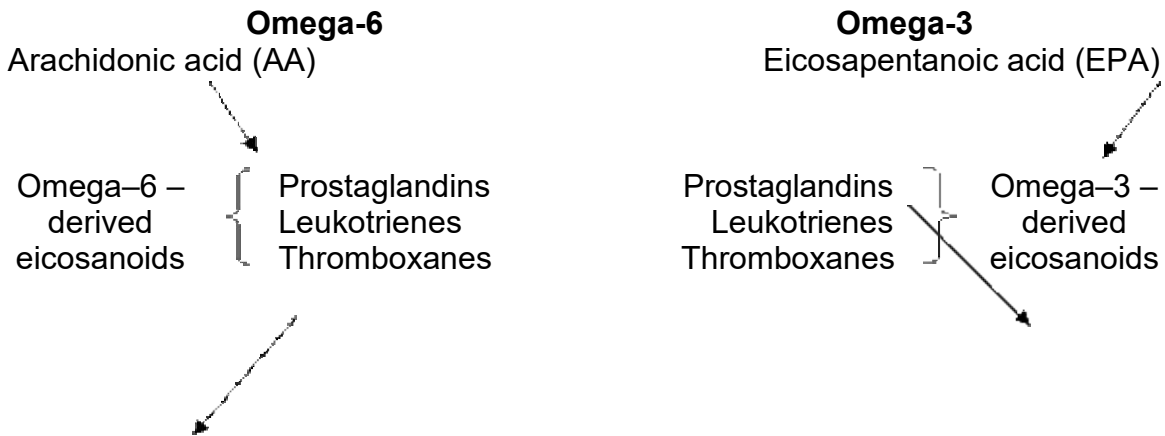
All polyunsaturated fatty acids are not equal

There is considerable evidence now that rheumatoid arthritis is caused by oxidative stress and involves an excessive production of pro-inflammatory compounds (eicosanoids). Research has shown that supplementation with fish oils (EPA and DHA) can markedly reduce production of these inflammatory compounds, and results in a significant reduction in morning stiffness and the number of painful joints in rheumatoid arthritis patients.

On the other hand, Omega-6 polyunsaturated fatty acids have been found to exacerbate rheumatoid arthritis symptoms. The source of omega-6 fatty acids is more often vegetable and seed oils, such as sunflower and safflower oil, which are very common in our diet. Fish oils have also been found useful in the management of systemic lupus erythematosus.

The Omega-6-Omega-3 Balancing Act

Omega-6 fatty acids produce strongly inflammatory or "reactive" eicosanoids while omega-3 fatty acids produce less inflammatory or even anti-inflammatory eicosanoids. The following cascade describes the effects on the body of Omega 6 and Omega 3 fatty acids.



Clinical implications

Increased Risk	Sudden cardiac death	Decreased risk
Increased Risk	Coronary artery disease	Decreased risk
Increased	Platelet aggregation	Decreased
More	Vasoconstriction	Less
Higher	Blood pressure	Lower
Higher	Triglycerides	Lower
Worse	Rheumatoid arthritis pain	Improved

More	Inflammation	Less
More	Major depression	Less
Less	Mood elevation	More
Less	Mood stabilization	More

Ideally, omega-6 fatty acids work in tandem with the omega-3s

When in balance, eicosanoid derivatives of the omega-3 fatty acids keep the omega-6-derived eicosanoids in check. For example, pro-inflammatory eicosanoids (prostaglandins) derived from omega-6 fatty acids enable the immune system to fight serious infection and also set the stage for labor and delivery at the end of pregnancy. Omega-3 fatty acids prevent these processes from spinning out of control. Women deficient in omega-3 fatty acids, for instance, have, on average, shorter pregnancies, presumably because the overabundance of omega-6-derived prostaglandins promotes earlier labor and delivery.

Pharmaceutical Grade Fish Oil

All fish oils are not alike. If you take fish oil for omega-3 supplementation be sure that it is “pharmaceutical grade.” Pharmaceutical grade fish oil is much more concentrated so you obtain much more benefits from a given dosage and toxins such as PCB's, dioxin, mercury and oxidized lipids have been removed. Typical health food grade fish oils are not pharmaceutical grade. The only way to be sure is to ask to see a third party laboratory analysis of the finished product. It should contain at least 60% long chain omega-3 fatty acids (EPA + DHA), less than 45 ppb (parts per billion) PCB's and less than 1 ppt (parts per thousand) dioxin.

Who Should Take Omega 3 Fish Oil?

Everyone! My children, grandchildren, wife, parents and, as many patients as I can influence, take Omega 3 fish oil. So should you! Are there any cautions to take fish oil? The major one is that if you are taking any kind of a blood thinner, you should speak to your healthcare provider before starting fish oil. This does not mean that you cannot or should not take the fish oil; it only means that the does may need to be altered.

There are numerous benefits to fish oil. You can get some of them by eating salmon, mackerel, sardines and other cold water fish, but none of us eats enough fish. Supplementing your diet with pharmaceutical grade omega 3 fish oil is important. It can help your memory, your pain, your heart and your health. You should start today.

Remember, it is your life and it is your health.