Omega-3

As a clinical cardiologist in Orlando, I often am asked about non-pharmacologic therapies for cardiac conditions. One supplement that is at the very top of the list is omega-3 fatty acids. Some of the common questions I get regarding these acids are listed below.

What are Omega-3 fatty acids?

Omega-3 fatty acids are a family of polyunsaturated fatty acids which share a similar chemical structure. There are three omega-3 fatty acids which are important in human nutrition: alpha linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). The human body cannot synthesize these acids de novo, but when in the body they can be made more complex and may perform a multitude of functions for our well being. ALA is actually a precursor to EPA and DHA. Once ALA is ingested it is converted to EPA and DHA which are more readily converted to more complicated polyunsaturated fatty acids. Our diet provides us these “essential” acids.

What do these acids actually do?

High Cholesterol

Depending on the source, omega-3 fatty acids are helpful in treating certain cholesterol issues. It is a very potent reducer of triglyceride levels by as much as 30%. It can also help increase your HDL or good cholesterol by 10%. The controversy lies more with the effects on LDL or bad cholesterol reduction. Many trials show no difference, while others show mild improvement or worsening of the numbers. Many feel the variation is probably due to the source, but as of yet no one cause has been singled out.

Heart Disease

This has the focus of intense research for the last twenty years, and although there are many articles written on this subject. There are two trials which are important to know: DART and GISSI- Prevention. These two trials showed a reduction in all cause mortality and sudden death from cardiac arrhythmias of 20% and 45% respectively. In fact, a meta-analysis of eleven trials suggests a reduction in overall mortality, cardiac myocardial infarction mortality and also sudden death. The benefit was both in primary prevention of myocardial infarction and in preventing future events in people with coronary disease. Having said all this, there are a few trials which attempt to cast into doubt the benefit. Both the AHA/ACC and European Heart Society, recommend omega-3 based on clinical trials such as the ones above.

Other Benefits

There are numerous other benefits suggested. In terms of cardiovascular events, there maybe a reduction of ischemic strokes. There also maybe a subtle reduction in blood pressure with omega-3 fatty acids. It is not enough to be used as a primary therapy, but it is worth noting. Other benefits stem from the omega-3 fatty acids ability to reduce inflammation. There is some improvement of osteoarthritis and rheumatic arthritis. There also maybe some cancer fighting properties in the fatty acids and may reduce the risk of colon, breast, and prostate cancer. Cognitive effects are also worth noting as mood swings, memory loss, and depression have been linked to a deficiency omega-3 fatty acids. There are also benefits in healing of burns and skin disorders such as photo dermatitis. There are also benefits for reduction in childhood and adult asthma. Macular degeneration may also be reduced.

What foods are rich in these omega-3 fatty acids?

Fish and fish oil are rich sources of omega-3 fatty acids, specifically EPA and DHA.

Fish such as salmon, mackerel, herring, halibut, chinook, and sardines are the best sources. Many people choose to take fish oil tablets to provide the omega-3 fatty acid instead of the fish for numerous reasons. In terms of other sources, ALA is found in seeds, oils, green leafy vegetables, nuts, and beans. ALA is converted into EPA and DHA in the body to a small extent and as a result does not provide the same robust amount of omega-3 fatty acid as the fish and fish oils. Common sources include flax seed oil, soybeans, walnuts, canola oil, and pumpkin seeds.

How much omega-3 fatty acids do I need?

As with all questions, there is usually not a simple answer. The AHA recommends the following:

Patient Population Recommendations

No documented heart disease Eat a variety of fish twice a week include foods rich with ALA

Documented history of CAD Consume 1 gram of EPA plus DHA daily, from fish and fish oil tablets

Needing to lower triglyceride Consume 2 to 4 grams EPA plus DHA daily in capsules after consultation with your doctor

Are there any adverse effects of omega-3 fatty acids?

When talking about ALA sources, such as beans, leafy vegetables, and oils, the side effects are minimal. When talking about adverse effects, the discussion switches to fish oil supplements which are a rich source of EPA and DHA. Most of time fish oil is well tolerated, but there are some side effects worth mentioning. These include fishy aftertaste, gastrointestinal disturbances (e.g. nausea, bloating, belching), prolonged bleeding time, mild elevations of blood sugar, elevations in LDL, and environmental contaminant exposure to certain fish species.

In conclusion, omega-3 is a good supplement worth considering as it has many benefits. It is recommended by the AHA and ACC and one I highly recommend.

By: Sanjeev K. Shroff, M.D.

Orlando Heart Center

Partner of Dr. Mark Steiner, [Cardiologist in Orlando](http://www.my-doctors-insights.com/Mark_Steiner_MD/marksteinermd_cardiologist_in_orlando.html)