

# WHAT DO YOU KNOW ABOUT OMEGA 3?

by John Appleton

As a 'Baby Boomer' keen to do everything that might keep the bones moving for as long as possible, a recent article in the NZ Herald caught my eye. Headed -"The good oil for baby boomers" it was an article about the importance of Omega 3 for "keeping heart and eye diseases at bay".



Many of us have heard the term Omega 3 used in connection with heart health but are not aware that this special 'fat' can confer many other benefits on us. So what is Omega 3? Omega 3 is the name given to a class of long chain fatty acids that are found in oily fish and some plants notably flax. They are often referred to as PUFAs (polyunsaturated fatty acids). We need to know about the difference between saturated fatty acids and polyunsaturated fatty acids – Imagine a chain of carbon atoms with hydrogen atoms attached to each of the carbons. That's a saturated fat (the carbon atoms are saturated with hydrogen atoms). Now imagine a chain of carbon atoms where there are hydrogen atoms missing. This is an unsaturated fat and the more hydrogen atoms there are missing the more unsaturated the fat becomes. It is termed polyunsaturated when several hydrogen atoms are missing. Omega 3 is so called because there are double 'links' (bonds) in the chain of carbon atoms with the first double 'link' being after the third carbon atom. Saturated fats (e.g. butter) are generally solid at room temperature and polyunsaturated fats (e.g. vegetable and fish oils) are liquid at room temperature. Saturated fats are much more stable than polyunsaturated fats which can easily become rancid (due to oxidation).

There are two Omega 3 fatty acid sources that we hear most about. There are the most widely spoken about forms from Oil Fish/Fish Oils known as EPA (Eicosapentaenoic Acid) and DHA (Docosahexaenoic acid). These are referred to as essential fatty acids (EFAs) because they are essential for us and we don't make them in our bodies. Fish don't make the Omega 3 fatty acids found in their oil either; they obtain it from the phytoplankton (plant based food) that is at the bottom of the food chain. For the above reasons we can see why cold water fish would have polyunsaturated oil in their bodies. They wouldn't want their oil to solidify in the icy waters in which they live

The other form of Omega 3 we hear about is from Flax Oil (small amounts are found in other oils including Canola) which is a less unsaturated Omega 3 known as Alpha Linolenic Acid. Many people ask the question - is the Omega 3 found in Flax Oil as good as the Omega 3 found in Fish Oil? The answer to this is quite complex. While plant sourced Omega 3 (Alpha Linolenic Acid) can be converted to EPA and DHA, the process requires a lot of enzymes and intermediate steps. The efficiency of this conversion varies from person to person and one requires significantly more of this plant sourced Omega 3 in order to achieve appropriate amounts of EPA and DHA. It is an inefficient process at best and we have to bear in mind that the primary objective when we consider taking Omega 3 is to get DHA and EPA into your body.

We also need to know about another essential fatty acid (EFA) known as Omega 6 (Alpha Linoleic Acid and while we don't hear a lot said about this, Omega 6 which is also a polyunsaturated (less unsaturated than Omega 3) fatty acid has the potential to help us and hurt us.

Omega 6 fatty acids found in many vegetable oils (e.g. soya - sunflower - safflower – corn) play an important role in intercellular health but if we have too much it can spell trouble. The problem is that Omega 3 and Omega 6 fatty acids have opposing functions. Omega 3 fatty acids have an anti-inflammatory function and Omega 6 fatty acids have an inflammatory function. Given that even the most conservative doctors are now acknowledging a well known fact that chronic degenerative diseases (heart disease - arthritis - dementia and even cancer) manifest as a result of chronic inflammation, we can see that we wouldn't want to promote inflammatory processes in our bodies. Many years ago our diet would have naturally given us an appropriate balance of Omega 6 to Omega 3 (1:1 or 2:1) but with the ill conceived drive to 'demonise' saturated fat in an attempt to lower cholesterol has seen us ingest large quantities of highly refined (and often rancid) polyunsaturated vegetable oils which we were told were heart healthy and thus good for us. Try to find a processed supermarket food which doesn't have vegetable oil as an ingredient.

This has put the ratio of Omega 6 to Omega 3 as high as 20:1 – and we now wonder why we are seeing so much chronic illness manifesting in ever younger people. In a report titled "inflammation the real cause of most diseases", American Neurosurgeon Dr Russell Blaylock says when talking about Vegetable Oils "These oils have been shown to dramatically increase inflammation throughout the body and accelerate heart disease". He says "millions have died and been crippled by cardiovascular and cerebrovascular disease because of this horribly bad advice". In another paper about Cancer, Dr Blaylock says "a review of 97 scientific studies demonstrated that the higher the intake of Omega 6 oils the more likely cancers were to grow quickly and spread". Hopefully we can all see now why Omega 3 is so important.

DHA and EPA found in Fish Oils have many positive health benefits. DHA is often referred to as 'Brain Food' DHA is the building block of human brain tissue and is particularly abundant in the grey matter of the brain and the retina. Low levels of DHA have recently been associated with depression, memory loss, dementia, and visual problems. DHA is particularly important for fetuses and infants; the DHA content of the infant's brain triples during the first three months of life. Optimal levels of DHA are therefore crucial for pregnant and lactating mothers. EPA promotes a healthy cardiovascular system. In combination these essential fatty acids have key roles when it comes to heart health, brain and nerve function, healthy vision, a functioning immune system and healthy joints. There are literally hundreds of studies attesting to the importance of DHA and EPA. Fish Oil has been referred to as Prozac from the sea. A Wellsford School Principal was so impressed after watching a BBC documentary on the benefits of Omega 3, he has been running a study in his school.

The next important question is: how should one increase their intake of Omega 3? At present Fish Oil is the most expedient way to do this and many New Zealanders are taking Fish Oil supplements. We are often told to increase our intake of oily fish but for many reasons this is impractical. There are though, a few catches that we need to be mindful of. Being a polyunsaturated oil, Fish Oil can easily become rancid/oxidized and thus could do more harm than good. Many of us can remember the foul taste of the Cod Liver Oil we were 'encouraged' to take when we were young.

This was because the oil was rancid. Fresh Fish doesn't taste fishy and quality Fish Oil doesn't taste fishy either. If it smells/tastes fishy there is oxidation.

We need to know that the oil we are taking is in prime condition and is free from Mercury and other heavy metals increasingly found in fish. Last year a TV3 programme featured a test of a number of encapsulated Fish Oil products and the results were less than impressive.

There are some very good brands out there, but unless they have used premium oils, the consumer is not aware of what they are taking if they can't taste it. Oils in encapsulated products are often exposed to air several times before they are encapsulated, thus increasing the potential for oxidation. People often tell me that when they burp there is a strong fishy smell/taste. Apart from a quality issue with the product, when we take Fish Oil we need to increase our intake of Vitamin E (to limit the oxidation of the Fish Oil we have ingested). Many good Fish Oils contain natural Vitamin E to protect the oil before and after it's consumed. I take a liquid Fish Oil from Norway. It's made with oils from small fish at the bottom of the food chain. It's then bottled at source immediately and the glass bottle is purged with nitrogen to remove any air. A natural lemon taste is added although this is really unnecessary because the oil tastes so fresh it could be used as salad oil. Potency is very important too. Often with cheaper encapsulated products one would have to take 6 of them to obtain an optimal dose. They don't end up being cheap after all. In one 5 ml teaspoon I obtain 800 mgs of EPA and 500 mgs of DHA. High quality, high potency Omega 3 is something we should all be looking into.

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