

Omega-3 Fats & Canine Nutrition.

The quantity and type of fat **in our and our pet's diet** has been a subject of discussion and **debate** for many years. We all now know that too much is a bad thing, and that unsaturated fat is generally than saturated. Recent interest has focused on the **role of Omega-3 and Omega-6 oils in the diet.**

Both of these fats are **polyunsaturated** and so are liquid oils at normal room temperature. In general it is easy to obtain sufficient **Omega-6 oils**, with these being abundant in vegetable oils, such as sunflower, soya and rape. However it is far **harder to obtain sufficient Omega-3's** which are mainly found in **marine animals, such as fish and algae.**

Fats are broken down by a sequence of enzymes until, after several steps, they end up as a group of substances called eicosanoids. These substances have **similar properties to hormones in that they can stimulate reactions in the body**, such as inflammation. Generally, Omega-6 fats are **metabolised into a group of eicosanoids** that cause inflammation whilst **omega-3 fats produce a group that reduce inflammation.** The key point is that both metabolic pathways utilise the same group of enzymes and so, if the diet is particularly high in one the enzymes will work preferentially on this pathway, and so the other pathway become almost inactive. It is therefore **essential that the ratio between the two groups of fats is at an optimum**, whereby both pathways are working to produce a balance of eicosanoid groups. With the Omega-6 fats being more easily available the tendency, in western diets, is to have **too much Omega-6 oils and too little Omega-3.**

The **primary source of Omega-3 fats are marine animals.** There is however a source of Omega-3 that is found in some plant seeds e.g. linseed. The problem with these is that this fat (ALA) appears towards the top of the metabolic chain, and so has to pass through several steps, one of which is very slow, before it becomes the biologically useful eicosanoid. However the two **main Omega-3 fats that are found in fish oil, DHA and EPA**, appear much further down the chain meaning their journey to become eicosanoids is relatively short. The

implications of this are that a small quantity of fish oils in the diet is much more effective than a large quantity of vegetable-based ALA.

So why is the control of inflammation of such importance? Whilst inflammation is not always a bad thing, in that it is required to help fight disease, heal wounds, and control body temperature, there are also many unwanted consequences of inflammation. For example, inflamed heart and blood vessels can increase blood pressure and the risk of stroke, inflammation of the airways can produce asthma-like symptoms, and inflammation of the skin can cause itchiness, flaking and psoriasis and inflammation of the joints can cause stiffness and reduced mobility. The inflammation reducing properties of Omega-3 oils can significantly help **reduce** these unwanted side effects.

Recent research has also shown that **Omega-3 fats are involved in brain and eye development**, and so are essential components of puppy diets and milk replacers.

One other property of other fats found in fish oil is to stimulate the **production of sebum from hair follicles** in the skin, which coat the hairs to give a shiny, glossy appearance.

It is becoming increasingly clear that **Omega-3 oils are implicated in improved cardiac health, coat health, skin health and joint mobility** and that the DPA and EPA oils found in fish oil are overwhelmingly the most effective means of obtaining these benefits.

FEED FISH ... AND SEE THE DIFFERENCE!