

## THE FIVE SUPPLEMENTS EVERY DOG NEEDS, PART TWO

# Fish Oil... It's Not Snake Oil

By Douglas Knueven, D.V.M.

Photos by Clean Run

**F**ish oil is number two on my list of supplements that every dog needs, running a close second to a good, natural multivitamin/mineral supplement. I have seen almost miraculous responses when fish oil is added to the diet of health-challenged pets. To date, over 2,000 scientific studies tout the many benefits of this supplement and more studies are being published every year. The importance of fish oil for dogs will become obvious as we explore the chemistry and biology of fats.

Fat, grease, and oils are made of fatty acids just as meat is made of mostly proteins. Fatty acids are categorized by their chemical structure, which dictates their effects on the body. Broadly speaking, all fatty acids are either saturated or unsaturated to various degrees. The saturation of the oil has to do with the number of hydrogen atoms attached to the main molecule. The more hydrogen atoms, the more saturation there is.

Essential fatty acids (EFAs) are unsaturated fatty acids that the body needs for health but cannot make on its own. EFAs must be obtained in foods. The body needs EFAs to make and repair cell membranes. EFAs are involved with producing energy from food substances and moving that energy throughout the body. They govern growth, vitality, mental state, oxygen transfer, hemoglobin (iron-containing respiratory pigment in red blood cells) production, and control the movement of nutrients through cell membranes. In short, EFAs play a part in almost every function of the body.

Omega-6s and Omega-3s are two types of EFAs. Omega-6 fatty acids are naturally found in grains, other plants, and animal-based fat sources such as poultry fat. The normal canine diet is rich in these oils.

Sources of Omega-3s include fish oils and flaxseed oil. The most important Omega-3 fatty acids for dogs are docosahexaenoic acid (DHA) and eicosaenoic acid (EPA). Unlike humans, dogs

lack the enzymes necessary to obtain DHA and EPA from flaxseed oil so fish oil is the preferred supplement for obtaining Omega-3 fatty acids. Omega-3 fatty acids are sorely lacking in the vast majority of commercial pet foods.

As will be demonstrated below, a balance of Omega-6 to Omega-3 fatty acids is vital to health. Although the exact healthy ratio has not been conclusively determined, researchers believe that a five-to-one Omega-6 to Omega-3 ratio is optimal. Alarming, many commercial pet foods may contain ratios of up to and above 50-to-1! This dietary imbalance is leading to many chronic health disturbances for our canine friends.

### Fish Oil and Inflammation

The bodies of animals (people included) are set up with competing mechanisms that in the normal, healthy state keep the body in balance. These systems of homeostasis can be thought of as teeter-totters weighted equally on each side. The idea is that as the stresses of life shift the body chemistry, a gentle counterbalance can bring the organism back to normal.

One such teeter-totter system involves inflammation. There are, within the body, complicated chemical pathways that lead to inflammation (pro-inflammatory) and there are counterbalancing pathways that suppress inflammation (anti-inflammatory). In the healthy dog these mechanisms work together in harmony providing inflammation when needed (such as when trauma requires the cleanup of destroyed tissue) and then turning the process off (as needed when the cleanup is complete).

EFAs play a key role in both the pro-inflammatory and anti-inflammatory pathways. Basically, the Omega-6 fatty acids weight the teeter-totter toward inflammation while the Omega-3s are anti-inflammatory. *Now* the significance of the dietary imbalance of Omega-6 to Omega-3 fatty acids becomes apparent.



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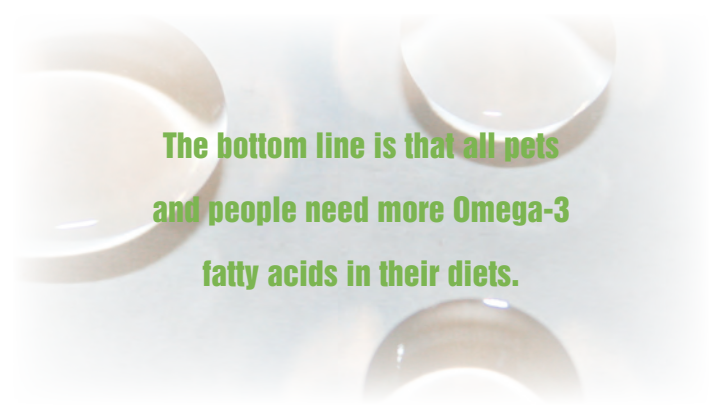
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- Lactic acid build-up

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The typical, commercial dog food promotes inflammation throughout the body of the dog. Research indicates two specific areas of importance of the pro-inflammatory effects of pet foods.

The first area is the skin. The skin is the largest organ of the body and in dogs it is the usual place where allergies manifest. Allergies are simply a manifestation of inflammation and are promoted by an inflammatory system that is out of balance. From my clinical experience I can see that our pets are plagued with allergies these days. There is no doubt that this problem is diet related. Recent research has shown that 45% of dogs with inhalant allergies had a good to excellent response to simply changing the diet to one with an Omega-6 to Omega-3 ratio of five-to-one.

The second area of the body influenced by the dietary imbalance of EFAs is the joints. Many of our dogs suffer from arthritis and this problem seems to be affecting younger and younger canines. Arthritis is merely an inflammation of the joints. This condition can be predisposed by many factors such as conformation—as is the case with hip dysplasia, or trauma. But, research indicates that the lack of dietary Omega-3 fatty acids plays a role as well. Studies have shown that adding fish oil to the diet can reduce the stiffness, pain, and inflammation associated with this debilitating disease. Considering what we know about the pro-inflammatory effects of our unbalanced pet foods, it follows that supplementing with fish oil can prevent or reduce the development of arthritis in the first place.



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### **Fish Oil and Cancer**

Cancer is the leading cause of death in older cats and dogs. One of the most important areas of research involving the fatty acids found in fish oil (DHA and EPA) is how their supplementation can aid with cancer. According to recent research, adding fish oil to the diet increases the survival time of cancer patients by 30% to 50%. It also causes longer periods of remission for cancer patients undergoing chemotherapy, and it counteracts the metabolic changes that cancer can cause, such as the characteristic wasting. The study concludes that “The Omega-3 fatty acids found in fish oil are probably the most important nutrients to consider for dogs with cancer.”

A closer look at cancer shows that pets produce cancer cells every day. The reason all our pets do not die of cancer is because those with a healthy immune system eliminate the abnormal

cells before they get out of control. It makes sense that we should do all we can to balance the scales in favor of eradicating the cancer cells. Providing fish oil in the diets of healthy pets can help to achieve this goal.

## Fish Oil and Cognitive Function

In part one of this article I summarized a study showing that supplementing with fish oil in the diets of pregnant females and their offspring doubled the learning ability of those puppies. This is no doubt because 5% of the brain is made of DHA. If we do not provide the building materials, then the body cannot construct a normally functioning brain.

Research in people, which I think translates to pets, also shows that high dietary intake of fish oil can help with depression and Alzheimer's disease, and can reduce the risk of strokes caused by blood clots. Omega-3s have even been shown to improve schizophrenia and attention deficit/hyperactivity disorders so it may not be too late for your neurotic Border Collie.

## Other Health Benefits

There seems to be no end to the research-proven benefits of Omega-3 EFAs. Obese people tend to achieve better control over their blood glucose and cholesterol levels. Diabetics benefit by lowering their triglyceride levels and raising their HDL (good cholesterol) levels. Those suffering from asthma and inflammatory bowel disease profit as well. The bottom line is that all pets and people need more Omega-3 fatty acids in their diets.

## Conclusion

Because of the recent research on EFAs, some pet food companies are supplementing certain select diets with fish oil. This is a step in the right direction. The effectiveness of this new development is questionable though because due to their chemical structure, EFAs are inherently unstable and reactive. This means that they easily oxidize (go rancid).

In fact, EFAs are rendered useless by exposure to heat, light, and air. So, even if there are plenty of EFAs in the food to begin with, and it withstands processing and sitting around on the store shelf, as soon as you open the bag and expose the food to air, the EFAs begin to deactivate. For this reason, I prefer that my patients be supplemented with fish oil that can be properly stored and applied to the food, fresh with each meal.



A Balanced  
Multivitamin/Mineral

Fish Oil

Digestive Enzymes

Glucosamine/  
Chondroitin

Probiotics

It is important to carefully research any fish oil supplement to see how it is harvested, packaged, preserved, and tested. To maintain the integrity of the EFAs the oil must be processed with as little exposure to heat, air, and light as possible. Also, because fish can be a source of mercury and other toxins, it is imperative that the fish used come from unpolluted waters and that testing is done on the oil to ensure purity.

My fish oil supplement of choice is Grizzly Salmon Oil. This supplement meets the above requirements and has stood the test of time, helping many patients at my office regain health. I am sure there are other fish oil supplements that are good as well and your local veterinarian may have a preference for another brand.

I do have one caution regarding cod liver oil. Although this form of fish oil is a rich source of the same Omega-3 EFAs as found in fish oil, it also can contain high levels of vitamin D, depending on the brand. Vitamin D is provided adequately in commercial pet foods and it is possible to create toxicity by over-supplementing this nutrient. For this reason, I prefer to stick with other fish oils.

The dose of Grizzly Salmon Oil is marked on the bottle. This is good for the average pet but I will sometimes call for up to twice that dose for cancer patients. For those supplementing with fish oil capsules, I would recommend giving one capsule per 20 pounds for normal supplementation and one per 10 pounds for pets with cancer.

There are two rare problems associated with supplementing fish oil, especially at the higher doses. If your pet is prone to pancreatitis (a disease that causes the pancreas to over-respond to dietary fat), then adding fish oil to the diet could aggravate the condition. The other problem that occasionally happens is that the extra oils in the diet can cause diarrhea. To minimize these problems, if your pet has a tendency toward GI troubles, then it is best to start at a low dose and gradually work your dog up to the desired level.

Now my list of the five supplements every dog needs is complete. Remember to supplement the diet on a daily basis with a natural multivitamin/mineral such as Canine Whole Body Support, fish oil, digestive enzymes such as Prozyme, and glucosamine/chondroitin such as Glycoflex. Periodically rebalance your dog's GI tract with a good probiotic such as Acetylator. A small, regular investment in your dog's nutrition will be rewarded with years of health and excellent performance. 🐾

*Dr. Doug Knueven received his veterinary degree from Ohio State University in 1987 and practices in Beaver, Pennsylvania. Certified in veterinary acupuncture, animal chiropractic, and veterinary Chinese herbology, Dr. Knueven offers workshops on various aspects of holistic pet care and authored the book Stand by Me, A Holistic Handbook for Animals, Their People and the Lives They Share Together.*



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