

Could This Overlooked Fat Boost Your Pet's Immunity and Health?

It gets a bad rap, but it's actually FAR more helpful than harmful. It can help your pet's heart, brain, skin, kidneys and joints. And that's just for starters. You and your pet are sure to love the results of this 'miracle' substance.

Reviewed by [Dr. Becker](#)

STORY AT-A-GLANCE

- Dietary fats are a crucial component in dog and cat food and essential fatty acids, especially the omega-3s, play a significant role in pet health
- Facilitative fats are saturated fats and provide a number of very important benefits to pets; functional fats are typically essential fatty acids, i.e., omega-3 and omega-6 fats
- Research shows that omega-3s are helpful in treating many disorders in dogs and cats, including heart and kidney disease, inflammatory skin conditions, arthritis, and cognitive function
- Krill are a clean, sustainable food source, and there are many reasons why krill oil is the best source of DHA and EPA for cats and dogs

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While certain types of dietary fat in human diets have been linked to heart disease and stroke, fat is an absolutely essential component of species-appropriate nutrition for dogs and cats, who are designed to use and process dietary fat differently than the human body does.

Pets naturally have more good cholesterol (HDL) than bad (LDL). There's no need to worry that your furry family member might develop high blood cholesterol or thickening of the arteries from naturally occurring fat in the diet. Dietary fat contributes to your pet's health and well-being in many ways:

- It's a concentrated energy source
- It makes up part of the membrane of cells and helps transport nutrients and other substances across the cell membrane
- It produces metabolites that help control inflammation
- It contributes to the formation of certain hormones, such as estrogen, testosterone, and progesterone, as well as the formation of bile acids that aid in digestion and absorption of nutrients
- It acts as a mechanical barrier, insulating the body against heat loss, protecting internal organs, and preventing excess water loss

Good Fat, Bad Fat?

The concept of “good” and “bad” dietary fats is much more relevant to human health than it is to the health of cats and dogs, with a few exceptions. Heated fats create advanced lipoxidation end products (ALEs) that are toxic to all mammals, are why humans are encouraged to eat less ultraprocessed food and why pet parents should feed less ultraprocessed food (kibble) to animal companions.

Corn, safflower, and other high omega-6 vegetable oils are also pro-inflammatory for all mammals, and certain types of fat are associated with heart disease and stroke in people, however, this isn't the case for dogs and cats. Their bodies are designed to use and process dietary fat differently than yours. It's helpful to think of dietary fats in pet food as either facilitative or functional:

- **Facilitative fats** are saturated fats and are plentiful in the meat-based diets of dogs and cats. They provide a number of benefits, including improving the taste and texture of food, and converting to energy to fuel metabolic processes. They also supply high-calorie energy for physical movement, regulation of body temperature, growth, and reproduction, and assist in the digestion and absorption of fat-soluble vitamins. These fats are also stored in adipose tissue for future use as energy if needed.
- **Functional fats** are usually, but not always, essential fatty acids (EFAs). They're “essential” because dogs and cats can't produce them on their own and must obtain them from the food they eat. EFAs are the omega-6 and omega-3 fats. Pets need a balance of both for good health. Omega-3s, in particular, play a huge role in your pet's well-being and tend to be deficient in most mammals' diets.

Omega-3s: The Superstars of Functional Fats

Omega-3 fatty acids include the short-chain fatty acid alpha-linolenic acid (ALA) that come from plant sources, and long-chain fatty acids docosahexaenoic acid (DHA), and eicosapentaenoic acid (EPA) that primarily come from marine sources, which play a role in your pet's overall health in many ways, including:

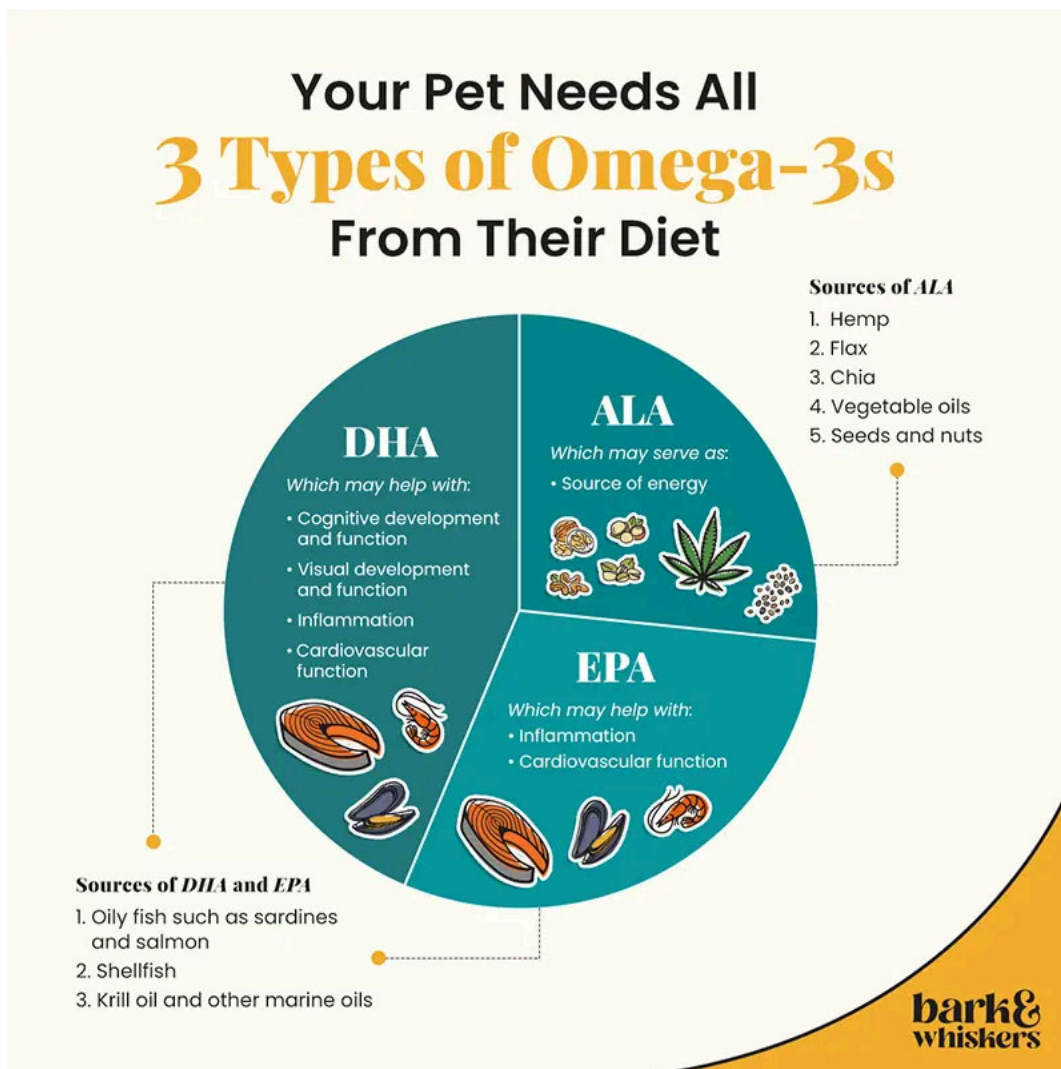
- Regulating blood-clotting activity
- Aiding proper development of the retina and visual cortex
- Alleviating the harmful effects of allergies and other conditions that result from an over-reactive immune system response
- Slowing the growth of common yeast infections
- Slowing the development and spread of certain types of cancer

Many pet parents aren't aware that it's primarily the long-chain fatty acids (DHA and EPA) that provide the most health benefits. The richest food source of DHA and EPA is oily fish (e.g., mackerel, salmon and sardines). Plant sources, such as nuts and seeds (including hemp, flax and chia) are rich in ALA, but your dog's or cat's body can't efficiently convert ALA to DHA and EPA. For this reason, it's important to supply all three types of omega-3s in their diet, and in appropriate amounts.

Unfortunately, the short-chain plant-based omega-3 fatty acid ALA (typically in the form of flaxseed oil) is often included in commercial pet feed/food and marketed as a rich source of omega-3s, indirectly implying that it's an effective precursor of EPA and DHA. It isn't.

There are also many hempseed pet products being touted as rich sources of omega-3s. However, since the conversion of ALA into EPA and DHA is very low, hempseed is also not an adequate source of DHA or EPA for pets. Dogs and cats must consume EPA and DHA directly through dietary sources, including cold-water fatty fish.

Some pet product companies have started marketing microalgae and phytoplankton as an abundant source of DHA, the problem is they don't contain enough DHA to meet a pet's high requirements and fall grossly short on adequate EPA unless supplied in very large quantities.



Along with the benefits described above, multiple clinical studies show that omega-3s are helpful for five clinical conditions in particular: cardiovascular disorders, cognitive function and neurological health, inflammatory skin disease, kidney disease, and osteoarthritis.

Cardiovascular Disorders

In a 1998 study of dogs with dilated cardiomyopathy (DCM), omega-3 supplementation reduced production of inflammatory cytokines (interleukin-1 and prostaglandin-E2), and it also reduced muscle loss compared with a placebo.¹ The decreased production of inflammatory cytokines is also thought to improve appetites in animals with heart failure.

In a retrospective study of 108 dogs with DCM or chronic valvular disease, results showed improved survival rates with omega-3 fatty acid supplementation.² In addition to improved heart function (including reduced heart rate and blood pressure), omega-3 supplementation also reduced inflammation and improved the dogs' appetite and maintenance of lean body mass.

Cognitive Function and Neurological Health

A study published in 2012 in the Journal of the American Veterinary Medical Association suggests that feeding weaned puppies foods high in DHA improves several aspects of their development. The researchers found that diets rich in DHA and other nutrients known to support neurocognitive development improved cognitive, memory, psychomotor, immunologic, and retinal functions in growing dogs.³

The puppies fed diets containing the highest levels of DHA showed significantly better results in reversal learning tasks, visual contrast discrimination, and early psychomotor performance than puppies eating low to moderate amounts of DHA. Interestingly, those puppies also had significantly higher rabies antibody titers one and two weeks after vaccination, and an improved ability to see in low-light or dark conditions.

Inflammatory Skin Disorders

Back in 1994, a study of 16 dogs given omega-3 fatty acids that included high levels of EPA showed improvement in itchiness, self-trauma, coat character, and hair loss compared with administration of ALA alone.⁴ The dogs in the study had symptoms of idiopathic pruritus (unexplained itchy skin), confirmed atopy (inflamed skin due to allergies) and/or flea allergy.

Fast-forward 20 years to 2014, to a study out of Munich, Germany that evaluate a spot-on formulation of essential fatty acids and essential oils on 48 dogs with canine atopic dermatitis.⁵

The results of the study showed that individual improvements in lesion and itchiness scores were significantly higher for dogs that received the EFAs and essential oils vs. the control group, and more of those dogs also showed a 50% or greater improvement in itchiness.

Kidney Disease

In a study of dogs with experimentally induced chronic kidney disease (CKD), researchers demonstrated that supplementation with omega-6 fatty acids accelerates the decline of kidney function, while omega-3s do the opposite.⁶

A retrospective study of 146 cats with chronic kidney disease showed a survival time of 16 months for those on a diet supplemented with EPA, compared with 7 months for the control group. The cats receiving the highest amounts of dietary EPA had the longest survival times.⁷

Osteoarthritis

A study from the Netherlands published in 2012 in the Journal of Animal Physiology and Animal Nutrition suggests that cats with naturally occurring osteoarthritis (OA) show symptom improvement when their diets are supplemented with omega-3 fatty acids.⁸

Sixteen arthritic cats were involved in a 10-week study in which some received a fish oil supplement containing both EPA and DHA, while others received a corn oil supplement with no EPA or DHA. According to their owners, the cats receiving fish oil had less stiffness, higher activity levels, more stair climbing, higher jumping ability, and more interaction with family members than the cats who received corn oil.

A Canadian study published around the same time indicates that omega-3s are equally beneficial for dogs with naturally occurring OA.⁹ The dogs were fed a diet containing high levels of omega-3 fatty acids from fish, and showed significant improvement in locomotor disability and performance of daily activities.

In another study, cats with degenerative joint disease (DJD) fed a diet high in EPA and DHA, plus green-lipped mussel extract and glucosamine chondroitin sulfate, showed improved measurements of mobility.¹⁰

The Recommended Source for Omega-3 Fatty Acids: Krill Oil

The best source of omega-3s for pets is sustainably sourced krill oil. If you're unfamiliar with krill, you may find the **Discover Wildlife krill guide** helpful. Aside from the fact that krill are a clean, highly sustainable food source, there are specific reasons why they're an optimal source of omega-3s for dogs and cats:

- Krill oil is very well-absorbed, so your pet only needs about a fifth the dose of regular fish oil to receive the same benefits
- Krill oil contains more EPA than fish oil — 240 mg/g in krill vs. 180 mg/g in fish oil
- Krill oil delivers its abundant EPA and DHA as phospholipids directly into your pet's cells
- Krill oil provides natural antioxidant protection including vitamins A and E, plus astaxanthin and canthaxanthin
- Krill doesn't accumulate heavy metals and can be sustainably sourced (only buy products that have been third party verified from organizations like the Marine Stewardship Council)

Not long ago, a company that produces krill oil for both humans and pets conducted a study to compare the effect of supplementation with flaxseed oil (a plant-based short-chain omega-3 source) with krill oil (a marine-based long-chain omega-3 source).

The study involved 20 adult Alaskan Huskies of both genders, ranging in age from 1 to 6 years. Half the dogs were supplemented daily with krill oil; the other half received flaxseed oil. Fatty acid and omega-3 index measurements of both groups were taken at the start of the study (at which time the 20 dogs possessed similar baseline levels of omega-3 index) and again at 3 weeks and 6 weeks.

At 3 weeks, the 10 Huskies consuming krill oil in their food had significantly higher omega-3 index levels compared to the baseline; the 10 dogs consuming flaxseed oil showed a significant decline compared to the baseline.

At 6 weeks, the omega-3 index levels remained significantly elevated in the krill oil-supplemented dogs, and the flaxseed oil-supplemented dogs' levels continued to decline from the 3-week mark.

Ultimately, the group that received krill oil increased their omega-3 index by 62% from the baseline and the flaxseed oil group's index decreased by 40%. This highlights the difference between plant-based omega-3s and omega-3s from ocean sources.

The dose of krill oil depends on several things. If you're using krill oil to complete a homemade diet, follow the recipe instructions on the amount to add. Pets consuming heat-treated pet foods will need to be supplemented with a higher dose than pets eating a fresh food diet, and animals with arthritis may also benefit from a higher dose. Talk to your proactive veterinarian about what dose would be appropriate for your pet.

Sources and References

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³ [Journal of the American Veterinary Medical Association, September 1, 2012, Vol. 214, No. 5, pp 583-594](#)

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⁵ [Veterinary Journal, January 2014, Vol. 199, Iss. 1, pp 39-43](#)

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⁸ [Journal of Animal Physiology and Animal Nutrition, August 11, 2012](#)

⁹ [Journal of Animal Physiology and Animal Nutrition, July 14, 2012](#)

¹⁰ [Journal of Veterinary Internal Medicine, May-June 2010, Vol. 24, No. 3, pp 487-495](#)