

Fatty Acids for Healthy Coats FAQs

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What are fatty acids?

Fatty acids are specific types of polyunsaturated fats. Two main classes of fatty acids important to the health of your dog are the omega-3s and the omega-6s. The classification is based on molecular characteristics.

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Which fatty acids do dogs need?

Animals can produce some of the fatty acids they need, but not all of them. Those fatty acids they cannot produce themselves, but must be obtained through their diet, are called 'essential' fatty acids. These 'essential' fatty acids vary between species. For example, the fatty acid, arachidonic acid, is essential for cats but not for dogs.

Certain diseases may result in a dog being unable to produce sufficient quantities of certain fatty acids. Deficiencies of fatty acids may also occur with the use of fat-restricted diets in overweight dogs. Fatty acids in foods are subject to degradation. Overcooking can destroy fatty acids. Improper storage or a suboptimal amount of antioxidants in some dry foods may result in rancidity and a subsequent deficiency in fatty acids.

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Which fatty acids are Omega-3s?

Omega-3 fatty acids include:

- Alpha-linolenic acid (ALA)

- Eicosapentaenoic acid (EPA)
- Docosahexaenoic acid (DHA)

EPA and DHA have anti-inflammatory properties. EPA is the workhorse of the Omega-3 fatty acids and is incorporated into the cell membrane.

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Which fatty acids are Omega-6s?

Omega-6 fatty acids include:

- Linolenic acid (LA)
- Gamma linolenic acid (GLA)
- Dihomo-gamma-linolenic acid (DGLA)
- Arachidonic acid (AA)

LA is important because it optimizes water permeability in the skin. AA, on the other hand, in increased amounts, is the troublemaker among the fatty acids.

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Where do fatty acids come from?

Fat may contain fatty acids but in extremely varying quantities. For example, beef fat will have a very low percentage of fatty acids; whereas, sunflower oil and fish oil will have much larger percentages.

Essential fatty acids are found in different quantities in many plants and cold-water fish. Marine oils are good sources of EPA and DHA. The other fatty acids are found in higher quantities in certain plants and grains. Sunflower oil and safflower oil are especially high in LA. Other good sources of fatty acids for dogs include [Premium Plus Omega-3 Gel Caps](#) or [Premium Plus® Omega-3 Soft Chewables](#) or you can view our entire [Nutritional Supplements](#) section for dogs.

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What is an appropriate ratio of Omega-6 to Omega-3 fatty acids in the diet?

Research is being performed to determine the optimal ratio of Omega-6 to Omega-3 fatty acids that should be consumed. Current recommendations are for ratios of 10:1 to 5:1 in the daily diet.

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How do fatty acids function in inflammation?

Both AA and EPA are found in cell membranes. When a cell is damaged, AA is released from the cell membrane and is altered by enzymes into substances that increase inflammation and itching. EPA is also released when a cell is damaged. It competes with AA for the same metabolic enzymes. The presence of EPA results in the production of less inflammatory substances. DHA has a similar effect. So DHA and EPA decrease the harmful effects of AA.

EPA, DHA, and DGLA decrease the harmful effects of AA.

DGLA also competes with AA for enzymes. In addition, DGLA causes the release of prostaglandin E1 (PGE), a substance which inhibits the release of AA from the cell membrane.

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What are the indications for using supplemental fatty acids?

Fatty acids affect a number of body systems and conditions including allergies and autoimmune conditions, arthritis, inflammatory diseases such as inflammatory bowel disease, dull and dry hair coats, yeast infections, atopy, eye disorders, heart disease and cancer cachexia, and plasma triglycerides and cholesterol levels.

Fatty acids are necessary for the normal function of many systems of the body and not all fatty acids have the same function. Because the different fatty acids have different effects, the choice of a fatty

acid supplement needs to be based on the specific condition we are trying to manage. Use the following chart and consult with your veterinarian to choose the right supplement for your pet.

The sources and uses of fatty acid supplements are shown below.

	Abbreviation	Essential for Cats	Essential for Dogs	Source	Indications for Use
OMEGA-3					Cancer, cardiac problems, inflammatory conditions, eye development
Alpha-Linolenic	ALA	✔	✔	Flaxseed, pumpkin seed, soybean oil	None
Eicosapentaenoic	EPA			Marine fish oil	Atopy, arthritis, autoimmune disease, retinoid therapy, seborrhea, decrease cholesterol
Docosahexaenoic	DHA			Marine fish oil	Atopy, retinoid therapy
OMEGA-6					
Linoleic	LA	✔	✔	Sunflower oil, safflower oil, soybean oil, corn oil, evening primrose oil	Dry skin, dull hair coat, seborrhea

Arachidonic	AA	✘			None - Can make inflammation worse
Gamma-Linolenic	GLA			Evening primrose oil, borage oil, black currant seed oil	Atopy, autoimmune disease, seborrhea, reduce development of atopy in neonates
Dihomo-gamma-Linolenic	DGLA				

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