

Dietary Fats

NUTRIENCE

No by-products. No fillers. No added glutes.
No bad anything.

Introduction

Dietary fats fall under the general heading or category of 'lipids'. Lipids are insoluble in water and they come in three different formats:

- simple
- compound, and
- derived

As a review, proteins are structured amino acids, while carbohydrates are differently arranged sugars, and now triglycerides are formed from three fatty acids and a glycerol molecule. This might seem complex, but this organic chemistry is by way of letting you know that there is more to fat than just calories.

Triglyceride, the most common dietary fat is a simple lipid.

Lecithin is a compound lipid. All compound fats have a non lipid molecule added in. Lecithin has an added protein molecule and is known as a lipoprotein. This feature allows it to help transport fat from the bloodstream and through cell walls, ultimately improving health and enhancing skin and coat performance.

Cholesterol is a derived lipid, as are fat soluble vitamins. All organic substances are formed from linked units of carbon molecules.

The three molecules of fatty acids associated with a triglyceride can vary appreciably. They vary in the length of their carbon chain and whether they are saturated, monounsaturated or polyunsaturated. We have all heard these terms before, but perhaps not fully appreciated the science involved.

In addition to chicken fat, Nutrience incorporates flaxseed which is a high quality source of Omega-3 and Omega-6.



How the various constituent parts are held together plays a significant role in the nutritional nature of the finished product. In the case of fatty acids, the bonding differences are more fundamental in nature and involve how the actual carbon atoms are bound to one another. The bonds between carbon atoms in a fatty acid may be what are described as single or double.

A saturated fatty acid has no double bonds, in a sense there is no more room.

A monounsaturated fatty acid has one double bond.

A polyunsaturated fatty acid has two or more double bonds.



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For some reason, fats with more double bonds tend to be healthier and don't clog the system as readily.

We are always looking for foods with higher levels of unsaturated fatty acids and tend to avoid saturated and trans fats. (Trans fats are human-altered fats where hydrogen units are added to the chemical composition to solidify liquid fat).

For general health, certain fatty acids are nutritionally very important. As there are certain essential amino acids that must be provided in a pet's diet, so too there are certain fatty acids that must also be included.

For dogs, these are linoleic and linolenic acids and for cats, these two along with arachidonic acid. These specific fatty acids are now termed 'essential fatty acids'.

With a deficiency of these nutrients, animals experience dry skin, poor coats and other health concerns. In fact, the fat content of your pet's diet is probably the single most important issue to providing that much desired luxurious and shiny coat.

Benefits of Dietary Fats

Looking for a fat that provides a high level of essential fatty acids and is lower in saturated fatty acids is ideal, especially since canines and felines have a greater dependence on fat nutrition than do people.

Fats provide the major stored source of energy for dogs and cats. While neither species has a dramatic ability to store glucose as glycogen, they have a tremendous ability to store excess energy as fat. This may reflect the reality that in the wild, there will be days when food just isn't available and they are forced to go without eating.

There are many other important contributions which fat makes to a complete diet. While less a concern for domestic pets, fat provides excellent insulation and heat regulation. Fats also play an integral role in nerve fiber formation and nerve transmission. Phospholipids transport fats in the bloodstream as well as forming an integral part of cell membranes and even cholesterol is necessary for bile salt formation. This is a very partial list, but to an extent it indicates the overall importance of fat to your pet's diet.

Finally, fat is a very important contributor to the palatability of your pet's food. This last role is often overlooked, but even the best formulated diets are of little value if your dog or cat won't eat them. This leads us to the concept of fat's involvement in diet formulations, as lowered fat levels often explains your pet's reluctance to eat these products. Obviously, if fat provides concentrated calories, weight management foods will have reduced fat levels and potentially reduced palatability.

Omega-3 and Omega-6 Fatty Acids

There are two organically distinct families of unsaturated fatty acids: Omega 3 and Omega 6. The classification simply refers to where in the overall structure of the fatty acid, the first double bond occurs - either between the 3rd or the 6th carbon unit. This apparently minor distinction does make for significant nutritional differences.



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Omega 3 fatty acids, sourced from marine fish, soya oil, or flaxseed, tend to be more involved with skin inflammation than skin formation. They can be useful for reducing pre-existing skin irritation, while omega 6 fatty acids are better at preventing the problem. Both forms of fatty acid work in synergy and a ratio of 5-10 : 1 Omega 6 to Omega 3, respectively is beneficial to overall health.

Omega 6 fatty acids, which are sourced from more conventional fats and oils, are involved primarily in the roles described in the previous section such as skin and coat, nerve function and many more.

The selection of a product with quality fat is a given. A product with added Omega 3 fatty acids should be considered when your pet has a pre-existing skin, itch or irritation.

Recent clinical studies have shown that a ratio of Omega-3 and Omega-6 between 1:5 and 1:10, respectively, reduces the production of plasma and neutrophils, the latter being inflammatory mediators in canine and feline skin. It also reduces possible skin irritation. The amounts of Omega 3 and 6 in this ideal range have produced a marked improvement in the luster of dog and cat coats.

It has also been shown that Omega-3 fatty acids prevent coronary heart disease, hypertension and mellitus, non-insulin-dependant diabetes, as well as renal disease, rheumatoid arthritis and ulcerative colitis in some patients.

Anticarcinogenic effects of flaxseed have been associated with reduced cancer mortality. Flaxseed (Omega-3) is a rich source of the lignans anti-cancer agents and may be effective in the prevention and treatment of cancer in animals.

Flaxseed is added to **Nutrience** Diet Adult Dog and Light Adult Cat. Vegetable oil and flaxseed are also added to the **Nutrience** Adult Dog Lamb & Rice Food; a diet primarily designed for dogs who suffer from allergies and skin and coat problems.

Selecting a formula with the correct amount of fat for your pet is somewhat important. The higher the fat percentage, the greater the dietary caloric content. When selecting a formula, your pet's exercise level should, of course, be taken into consideration.

Should a diet lower in fat content be necessary, it is even more important to optimise essential fatty acid input to avoid dry skin. Chicken fat provides high levels of essential fatty acids and will help avoid poor coat condition.

Of less scientific significance and more practical concern is the common sense issue of treats, table scraps and exercise. It is important to recognize that many single treats add almost as many calories to your pet's diet as a third of a cup of food, and that table scraps can often be on top of your pet's regular diet.



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Dietary Fat Sources

Chicken Fat

Fat obtained from chicken. It is an excellent energy source and one of the highest quality fats providing 20% to 30% of the essential fatty acids needed for healthy skin and a shiny coat. Chicken fat is used in all **Nutrience** formulas except for Adult Dog Lamb & Rice which uses canola oil for its dietary fat supplement.
