

Fats: Nutritional Requirements & Obesity

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Fat is looked upon negatively in many health conscious circles, but is actually a very important nutritional requirement in animal diets. Since most of us are concerned with reducing our amount of fat intake, we fail to realize the important role that fat plays in the diet. This article will discuss the requirements and benefits of fat, as well as the problem with too much fat in the diet resulting in obesity.

Fat facts

Fats are concentrated forms of energy. Per unit of weight, they contain approximately two-and-one-fourth times the energy as an equivalent weight of protein or carbohydrates. Since fats are abundantly available in both plants and animals, they are an economical source of productive energy and fatty acids. Fats can also be synthesized in the body from fatty acids in the diet, from carbohydrates, and from metabolites of protein. Fats serve many functions. They supply energy, contribute to palatability, influence the texture of foods, and carry fat soluble vitamins. The type and quantity of fats in the diet are extremely important since they can influence appetite and food intake, the ability to perform muscular work, haircoat condition, and the type of fat deposited in the body.

Sources of fat

Many common fats and oils can be utilized effectively by dogs and cats. Some common forms of fats used commercially are lard, tallow, poultry fat, cottonseed oil, and hydrogenated vegetable oils. Highly unsaturated fats such as fish oil may produce a relative dietary Vitamin E deficiency if fed in high concentrations. Hydrogenated coconut oil is poorly digested and can lead to hepatic lipidosis in cats. Neither of these oils are commonly used in commercial diets. The fats that are found in commercial dog foods are around 90% digestible and just slightly less in cat foods.

Essential fatty acids

[Essential fatty acids](#) are the fatty acids present in fats that are required by the body. The three most important are linoleic, alpha-linolenic, and arachidonic. In dogs, arachidonic acid can be synthesized from linoleic acid. Cats, however, cannot synthesize arachidonic and need it in their diet along with linoleic acid and alpha-linolenic. Essential fatty acids should constitute at least 2% of the daily caloric intake to prevent deficiencies. The percentage of linoleic acid varies greatly depending on the fat source.

Fat/Oil	Linoleic Acid	Arachidonic Acid
Safflower Oil	72.7%	-
Corn Oil	55.4%	-
Poultry Fat	22.3%	1%
Tallow	4.3%	0.2%
Fish Oil	2.7%	25%

Fat requirements

The requirements for fat in the diet are very different from what is actually fed or present in most commercial foods. Because it is a good source of calories and increases palatability, most foods contain more than required. Some weight-reducing or homemade diets can be deficient especially in linoleic acid. Another problem is that foods are often stored in high heat and humidity, which hastens rancidity and the breakdown of fatty acids. The minimum daily required linoleic acid for all species is 1% of the diet.

Species and Growth Stage	Minimum Required Fat	Recommended Fat
Puppy	8%	17%

Adult Dog	5%	9-15%
Performance Dog	8%	20%
Racing Sled Dog	-	50%
Lactating Dog	8%	17%

Fat deficiencies and excesses

An essential fatty acid deficiency may result in impaired reproductive efficiency. In addition, a deficiency of essential fatty acids can impair wound healing, cause a dry dull coat and scaly skin, and cause an increase in skin infection and pyoderma. Puppies and kittens that are not fed adequate amounts of fat can have developmental problems and growth deformities.

The most prevalent problem related to fat is over consumption and obesity. It is estimated that up to half of all pets in the United States suffer from obesity. The problems with obesity are many and are covered in our [Weight Loss Control](#) section. Feeding a special diet low in fat and high in fiber is commonly done to help with weight loss. One of the problems with these diets is that very often the animals will have a dull coat and dry skin as a result of the reduced fatty acids. One solution to this is to feed a concentrated fatty acid supplement that is low in calories compared to the essential and beneficial fatty acids that it provides.

Another problem with acutely overfeeding fat can be pancreatitis, a severe and sometimes life-threatening disease often associated with feeding fatty table scraps. Fat malabsorption and resultant diarrhea due to decreased pancreatic enzymes is a problem in some dogs. Additives such as Pancreazyme and Viokase are used to replace the missing enzymes. Feeding a well balanced diet suited for the growth stage of your pet is the best way to prevent fat related problems.