

Nutrition for Dogs and Cats

Ensuring that pets get the right nutrients in the correct quantity and an appropriate amount of water contributes to their overall health, well being and longevity. Dietary requirements vary based on the animal's size, activity, stress level, medical condition, environment, age and physical shape. An indoor-only pet, for example, may require less of one type of nutrient than one that goes outside or lives exclusively out-of-doors. A working dog will need more fuel than one leading a more sedentary life. And a cat will need more of certain amino acids and vitamins than a dog. There are other important nutritional differences between dogs and cats, and food should not be used interchangeably for one or the other.

Nutrients and What They Do

Nutrients are the parts of food used by the body to perform vital functions. As noted, the nutritional needs of dogs and cats differ and minimum daily requirements for both species have been established by the Association of American Feed Control Officials. Foods that meet AAFCO standards will say so on the label. Food that is not nutritionally sound can result in health problems for the dog or cat, depending on which nutrient is lacking or fed in too great a quantity.

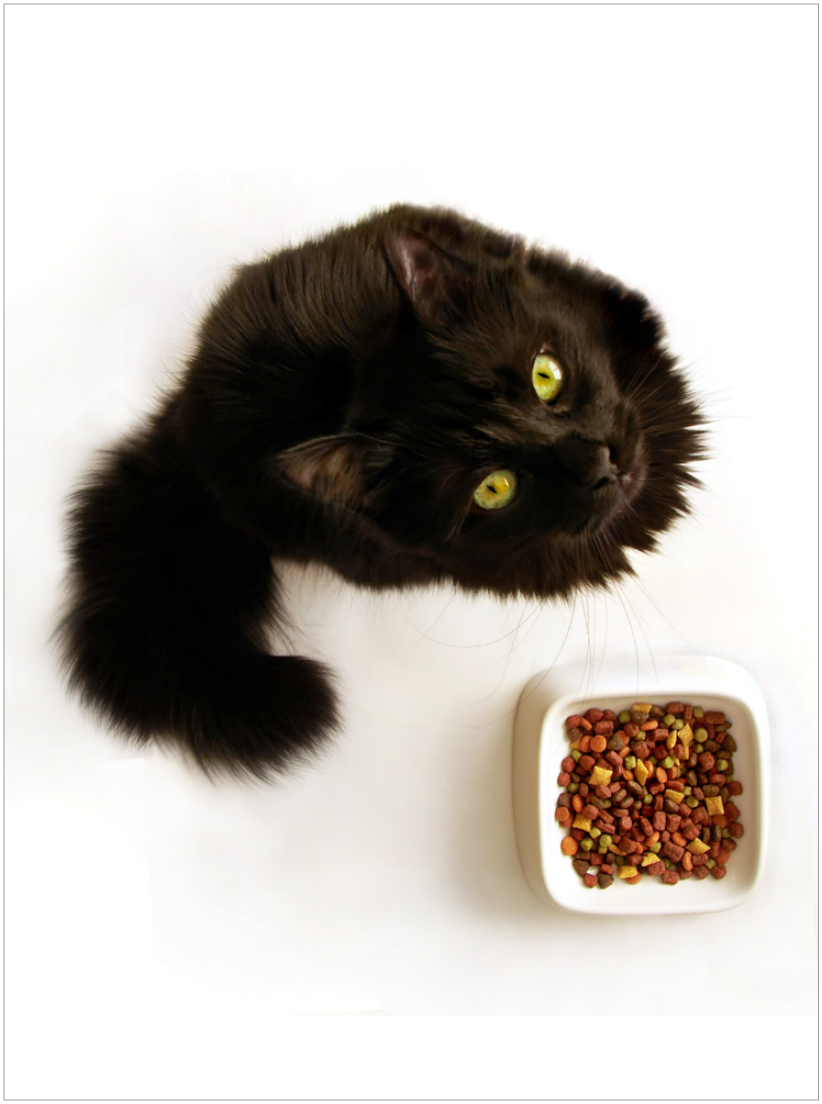
Proteins. Proteins are the major component of a pet's hair, muscles and cell membranes. Protein provides a pet with the amino acids to build cells and tissue. Protein is an energy source, and proteins are important in the makeup of antibodies, hormones and blood. Complex proteins called enzymes cause chemical reactions to occur in the body. Unlike dogs, which obtain most of their energy from carbohydrates and fats, cats meet most of their energy needs by consuming protein and cannot subsist on a vegetarian diet.

The building blocks of proteins consist of 23 amino acids. Dogs and cats can synthesize some amino acids if there is adequate nitrogen in the blood stream. These are called non-essential amino acids. Other amino acids must be obtained directly from an animal's diet; these are called essential amino acids. What constitutes essential vs. non-essential amino acids varies between dogs and cats.

Vitamins. Vitamins are nitrogen-based chemicals that are essential for life. Both cats and dogs need vitamins to sustain good health. Vitamins help control physiological functions and regulate chemical reactions in the body. Vitamins that are stored by the body in fatty tissue and the liver are called fat-soluble vitamins (A, D, E, and K).

Vitamins that are used up by the body daily, with any excess excreted, are the water-soluble vitamins (B and C). Water-soluble vitamins can be destroyed by heat, light, oxidation, moisture or rancidity and should be replenished daily by feeding fresh portions in a balanced diet. Dogs and cats have minimum daily requirements of vitamins although the needs of each are different. Processed food or food which has been stored too long will lose its vitamin effectiveness.

Minerals. Minerals are found in commercial and natural diets, and they help maintain a pet's electrolyte and fluid balance, tissue structure, formation of teeth and cells and growth of bones. Mineral requirements are interrelated so that an excessive amount of one may adversely affect the other. Calcium, for example, works with phosphorous, so that too much of one may result in too little of the other.



Fats. Dietary fat is a good source of energy for dogs and cats and helps them absorb the fat-soluble vitamins A, D, E, and K. Fat also makes pet food taste better and provides essential fatty acids. Inadequate fat in a pet's diet can result in poor growth, poor performance, scaly skin and greasy or flaky hair coat, weight loss, increased susceptibility to infection and impaired healing of wounds. Pets unable to metabolize fats properly may develop fatty liver disease.

Like proteins, the fatty acids present in fat are either essential or non-essential. An animal's body is able to manufacture nonessential fatty acids and therefore is not required in the animal's diet. On the other hand, pet food must supply essential fatty acids. Pet food that is complete and balanced has the required amount of fats and fatty acids, although new studies hint that more essential fatty acids might be beneficial and aid certain medical conditions. A veterinarian may recommend adding fatty acid supplements to a pet's diet to improve skin condition.

Carbohydrates. Along with protein and fat, carbohydrates are one of the three nutrients in the diet that supply calories (energy) to a pet's body. This nutrient group is made up of sugars and starches, which are used for energy production, and cellulose (fiber) that adds important bulk to animal diets. Complex carbohydrates are broken down in the digestive tract into simple sugars, such as glucose, that are easily digested and used by the body for energy.

In pet foods, the value of carbohydrates is a hotly debated topic. Some nutritionists maintain that since the natural diets of dogs and cats is mainly protein that carbohydrates are unnecessary—and even dangerous—to these pets. Despite this debate, most commercial pet foods contain significant amounts of carbohydrates. While the wild ancestors of today's dogs and cats did exist on high-protein, low-carbohydrate diets, both dogs and cats do have the physiological capability of turning dietary carbohydrates into usable energy. Because carbohydrates are a more economical and available energy source, they are commonly used in today's commercial pet diets. Basically, these commercial pet foods supply a pet's protein requirements with meat and the energy requirements with carbohydrates.

Cereal grains, such as corn, oats, wheat, rice and barley, are primary sources of dietary carbohydrates. These grains are necessary to the production of pelletted or extruded foods, as they add form and structure to the kibble that makes up these products. When added as cooked product, these grains are easily digestible by household pets. Raw cereal grains, on the other hand, cannot be digested.



In addition to supplying energy, carbohydrate content can add fiber to a pet's diet, which aids in digestion. Fiber is the portion of carbohydrate in a diet that is difficult for the pet's digestive system to break down and use. It is found in the cell walls of plants and is included in modern pet foods to normalize the rate that food passes through the intestine. Fiber helps alleviate constipation by absorbing water and adding bulk to the intestinal contents, which stimulates passing stools. High fiber diets help in weight reduction programs by reducing caloric intake and increasing the feeling of satisfaction after eating. Excessive intake of carbohydrates can result in obesity and too much fiber may cause increased or loose stools and flatulence.

Pet food that is complete and balanced will have adequate amounts of carbohydrates and fiber. Veterinarians may prescribe high fiber food for pets with health conditions such as constipation, diabetes, or obesity.

Water. Although not technically a nutrient, water is essential for life. Dogs and cats may be able to survive for days, perhaps weeks without food, but the absence of water can cause death very quickly. How much water a pet needs varies with the pet's activity, the type of food the pet eats, the environmental temperature, and the pet's health. Animals with certain medical conditions require more water than healthy pets. Animals outside in warm weather will consume more water than those in an air-conditioned house will. At normal environmental temperatures, cats and dogs lose water via the lungs, skin, urine, milk (through lactation) and feces. At higher temperatures, additional water loss may occur through saliva. Not consuming adequate water can result in low blood pressure, heat stroke, heart or pancreas damage, renal failure or even death.

A pet's water can come from a bowl or from the food he eats. Animals eating dry food need more water than those eating canned food do. Water should be replaced daily and the bowl rinsed to eliminate sediment or slime that may make a pet less likely to drink.

The following article is an excerpt from the Nutrition chapter of PSI's Certificate Program. PSI's Certificate Program is designed to provide the knowledge necessary for a PSI member to excel in pet care, health and nutrition, business and office procedures, and added services for pet-sitting businesses.

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