

What are the Basic Nutritional Requirements of a Cat?

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Cats are obligate carnivorous species. They can only extract nutrients from animal products or animal-based products. A well-balanced diet is essential for a cat's growth, body condition, survival, and reproduction. Today, we will break down the vital components required in a cat diet.



Figure a

Following are the basic nutritional requirements of a cat

Protein

The only protein your cat needs is animal protein. High-quality animal protein adds to the body weight and growth of your cat. Low-quality protein can cause problems related to the kidneys and liver in your cat.

Protein is broken down into essential amino acids, which can only be supplied to your cat through a well-balanced diet. Amino acids are the building blocks of protein, which are vital for cellular

metabolism. Following are the 11 essential amino acids your cat needs in your diet

- Isoleucine
- Leucine
- Lysine
- Methionine
- Phenylalanine
- Taurine
- Arginine
- Histidine
- Threonine
- Tryptophan
- Valine

According to the Association of American Feed Control Officials (AAFCO), a well-balanced diet has 26% crude protein on a dry matter basis, and 30% required for reproduction.

Crude protein is the percentage of nitrogen in commercial food. You need to do a simple math calculation. Minus the percentage of moisture from 100, this will be your percentage of dry matter. Now divide the percentage of crude protein by the percentage of dry matter and multiply it by 100. This will be crude protein on a dry matter basis.

Fats

The next less important component of a balanced diet is the fats. You should know that the cat is only able to absorb good quality fat such as omega-3 and omega-6 fatty acids. Fats are vital for maintaining temperature, energy, insulation, absorbing vitamins A, D, E, K, and body condition. Crude fat is the type of fat extracted using ether as a solvent.

According to AAFCO, a balanced diet should have 9% crude fat on a dry matter basis. Giving more than that daily can cause various long-lasting diseases such as obesity, diabetes, and heart problems. Low-quality fat can cause free radical generation leading to organ damage because of chronic inflammation.

Carbohydrates

Although carbohydrates are considered the least important component of diet, but still provide a quick and cheap source of energy. Carbohydrates should be readily digestible after being treated. Grains can cause allergic reactions in the body, but they are treated to inactivate the antinutritional factors so they are fit for cat consumption.

According to AAFCO, 10% of carbohydrates are the daily requirement of your cat. Carbohydrates are vital for cellular metabolism, energy, and growth of the body.

Vitamins

Vitamins are essential for many cellular reactions in the body. There are two types of vitamins; fat-soluble vitamins (A, D, E, K), which are stored in the body and metabolized when needed. Another type is water-soluble vitamins (B, and C) which are excreted from the body, and are not stored.

Following are the fundamental vitamins required for healthy body functioning

- Vitamin A (Retinol) is required for healthy immune function, vision, and helps in destroying the free radicals in the body.
- Vitamin B1 (Thiamine) is required for growth, carbohydrate metabolism, and nerve transmission.
- Vitamin B2 (Riboflavin) is required for protein, carbohydrates, fat metabolism, and also for the healthy growth of skin and coat.
- Vitamin B3 (Niacin) is required for the processing of nutrients and healthy functioning of the brain, GIT, and skin.
- Vitamin B5 (Pantothenic acid) is required for processing of fats and amino acids.
- Vitamin B6 (Pyridoxine) is required to metabolize glucose, fatty acids, and carbohydrates as well as healthy functioning of the brain, skin, and red blood cells.
- Vitamin B7 (Biotin) is required for healthy growth of skin and nails.
- Vitamin B9 (Folic acid) is required for the synthesis of methionine and DNA in the cell.
- Vitamin B12 (Cobalamin) is required for healthy nerve conduction, kidney, and heart functioning.

- Vitamin C (Ascorbic acid) is a potent anti-radical agent that kills all the reactive species in the body and also strengthens the immune system as well as kidneys.
- Vitamin D (Calciferol) is required for the absorption of calcium and phosphorus in the body, which maintains bone density and cell membrane integrity.
- Vitamin E (Tocopherol) is required to boost immune function as well as brain function.
- Vitamin K (Phylloquinone) is required for blood clotting and reducing blood loss from the body.

Minerals

Various minerals are essential for the growth and development of the body. Following are the few essential minerals required in the body

- Calcium is required for healthy bones, muscular contractions, nerve conduction, and many other functions.
- Magnesium is required for the absorption of many nutrients from the intestine and plays a vital role in bone development and maintenance, enzyme functioning, and overall health of the body.
- Phosphorus is required for maintaining cell membrane integrity, bone density, and teeth health.
- Iron is required for oxygen transport and red blood cell functioning.
- Sodium is required for maintaining the osmolarity of the cells and healthy nerve conduction across the body. According to AAFCO, 0.2% sodium on a dry matter basis is required for a healthy body.
- Chloride is required for HCL production in the stomach and digesting protein. According to AAFCO, 0.3% chloride on a dry matter basis is required for healthy functioning of the body.

What is the feeding habit of a cat?

Cats usually take 12 to 20 meals a day if the food is dry. If you are offering wet food, then 3 meals is enough for a cat to finish the whole bowl.

According to AAFCO, Kittens, adults, pregnant, and lactating females have different nutrient requirements. Adults do not need milk in their diet. At 12 weeks of age, kittens are not fit to digest milk sugar (Lactose), so cats are lactose intolerant.

At 8 weeks of age, it is best to give 5 meals a day to your cat. By 6 months, you can reduce it to 2 meals a day because 75% of the adult body weight gained by then. At 8 to 10 months of age, you can shift from kitten to adult cat food.

Conclusion

In this blog, we covered the basic nutritional requirements of a cat along with the feeding habits of a cat, and how to feed your cat. This blog explains in detail how you should formulate the diet for your cat.