Calcium & Phosphorus Requirements for Cats

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Calcium and phosphorous are essential minerals in the body. The daily requirements vary depending upon the age and status of the cat or dog. Phosphorous and calcium deficiency and excess can occur and the ratio of calcium to phosphorous (Ca:P) is important.

Calcium

Of all the minerals, calcium is required in the greatest amount. Calcium is essential in the body for many functions including bone formation, blood coagulation, muscle contraction, and nerve impulse transmission. The calcium content of food ingredients varies widely. Bones, dairy products, and leguminous plants contain large amounts of calcium, whereas most cereal grains, meat, and organ tissues contain small amounts.

Phosphorous

Phosphorous is the other dietary mineral required in a relatively high amount in the diet. Phosphorous is required at levels slightly less than calcium. Meat or organ meats are high in phosphorous but relatively low in calcium. Phosphorous deficiency is a significant problem in herbivores and is probably the most common mineral nutrition deficiency present in animals worldwide. However, phosphorous deficiency occurs very infrequently in cats and dogs. In fact, excessive dietary phosphorous which accelerates the progression of renal failure is much more common.

Calcium:phosphorous ratio

Many foods that are low in calcium are high in phosphorous, and in addition, many foods that are high in calcium are equally high in phosphorous. Therefore, providing the correct calcium to phosphorous ratio in the diet can be difficult unless the proper minerals are added. It is very important that calcium and phosphorous be fed at the correct ratio of around 1.2 parts of calcium for each 1 part of phosphorous (1.2:1).

Calcium and phosphorous requirements of cats and dogs

Growth Stage	% Calcium in the Diet*	% Phosphorous in the Diet*
Peak growth and lactation	1.0-1.8	0.8-1.6
Half grown and last trimester of pregnancy	0.8-1.5	0.6-1.2
Adult non-reproducing	0.5-0.9	0.4-0.8

* on a dry matter basis

Calcium deficiency

Calcium deficiency was once a more common disease. It resulted primarily from animals fed diets high in meat and organ meats, which are high in phosphorous and low in calcium. If these animals were not adequately supplemented with calcium they would develop skeletal abnormalities often referred to as rickets. The bone could become soft or very thin and brittle. Fortunately, one of the benefits of commercially prepared and balanced diets, is that except for low calcium levels during pregnancy and lactation, (eclampsia) calcium deficiency rarely occurs any more and switching to a balanced diet can usually correct this problem. Feeding adequate calcium without the correct amount of phosphorous can prevent adequate uptake and utilization of the calcium, thus the calcium:phosphorous ratio is very important.

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Calcium excess

Feeding high calcium diets with excess calcium is often blamed for contributing to bone problems in young, rapidly growing dogs. There have not been any studies to demonstrate a similar problem in cats.

Summary

Calcium and phosphorous work together in the body to maintain the growth and structure of the skeletal system. Deficiencies or excesses of both can create skeletal problems especially in young puppies. It is very important that the calcium and

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phosphorous be fed in the correct ratio. Problems with calcium and phosphorous rarely occur anymore due to the easily available commercial pet foods that are properly balanced.

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