PURINA Institute

Advancing Science for Pet Health

HOT TOPIC

In focus

Minerals are one of six nutrient groups in pet food that dogs and cats need for optimal health. Learn more about the minerals that contribute to healthy body function.

The Purina Institute provides the scientific facts to support your nutritional conversations.

let's takeback the conversation.

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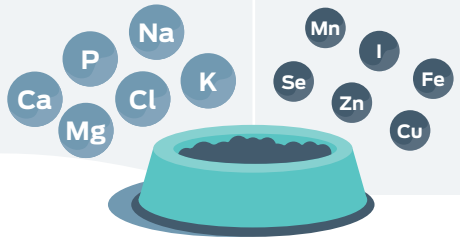
The six nutrient categories pets need are: water, fats, proteins, carbohydrates, vitamins, and minerals. Although minerals only comprise about 4% of a dog's or cat's total body weight, these nutrients are essential to sustain life and maintain health.[1]

Minerals are grouped into macrominerals and microminerals based on the amounts needed for healthy body function.

Classification of Minerals

Macrominerals	Microminerals (trace elements)

■ Found in greater amounts compared to microminerals in the body
■ Needed in greater amounts in the diet
  ■ Calcium
  ■ Phosphorus
  ■ Magnesium
  ■ Sodium
  ■ Potassium
  ■ Chloride
	■ Found in very small amounts in the body
	■ Needed in smaller amounts in the diet
	  ■ Iron
	  ■ Copper
	  ■ Zinc
	  ■ Manganese
	  ■ Iodine
	  ■ Selenium



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How do minerals contribute to pet health?

Although minerals do not provide energy, they have a multitude of important functions in the body.[1]

Some crucial roles minerals play in pet health

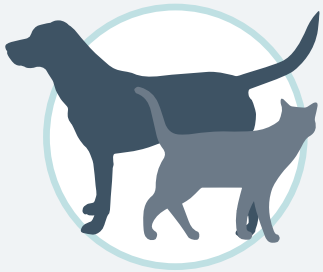
Selenium:
Antioxidant functions that prevent cell and tissue damage

Sodium, Potassium & Chloride:
Cell integrity
Electrolyte and cellular fluid balance
Nerve and muscle function

Iodine:
Major component of thyroid hormones, important for growth & development

Manganese:
Nutrient metabolism
Nervous system function
Normal bone development

Calcium:
Skeletal formation
Muscle contraction
Nerve impulse transmission
Blood coagulation



Copper:
Helps absorb dietary iron
Red blood cell formation and activity
Hair coat pigmentation
Normal bone development

Phosphorus:
Normal tooth & bone formation
Metabolic processes

Zinc:
Component of many enzymes for cell function, protein synthesis & immune health

Iron:
Major component of heme, the oxygen-carrying protein in blood

Magnesium:
Nerve impulse transmission
Muscle contraction, especially cardiac
Metabolic processes

Are mineral supplements good for my pet?

Although mineral deficiencies can lead to health risks, too much of any particular mineral can also cause problems because they often work together to maintain balance for optimal body functions. For example:

- Excess calcium or phosphorus can cause skeletal development problems–especially in growing animals.[2]
- Excess copper can interfere with iron absorption.[3]

Studies have shown that home-prepared diets,when not formulated properly, may risk the health status of dogs and cats through nutritional imbalances – most often found to be improper amounts and ratios of minerals.[4]

Good quality commercial pet foods are formulated to ensure that essential minerals are present in the correct amounts and ratios, and are able to be adequately absorbed during digestion in dogs or cats.

Are minerals always listed on the pet food label?

If minerals are added separately into pet foods, they will be listed on the label based on the amount added. Other minerals will be provided from the natural ingredients, and will not be on the ingredients list but will be present in adequate amounts in complete and balanced diets.

What are chelated minerals?

Chelated minerals are bound to amino acids or protein, which makes them easier for the body to absorb. Chelated minerals appear on pet food labels as a “proteinate” or “chelate” (e.g., zinc proteinate).[1]

What is “ash” on the pet food label?

The total mineral content in a food—including calcium, phosphorus, and all other minerals—is referred to as the “ash” content (also called ‘inorganic matter’). It is called ash because laboratory analyses of food to determine its mineral content requires incinerating food samples at very high temperatures. The ash is the incombustible part of the food that is left: minerals.[1]

References

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