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**WHAT CAUSES A LACK OF MINERALS IN THE CAT'S DIET**

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Minerals are very important for a cat's full life. Lack of them can lead to severe health problems. Like vitamins, minerals are also essential to all mammals. Minerals contribute to enzyme formation, pH balance, nutrient utilization, and oxygen transportation. Elemental minerals are generally taken from the earth or water; chelated minerals are those that are bound with other organic substances, often making them easier for the body to absorb. According to Steve Doerr, there are a few minerals that are essential to our cat's health. These include iron, calcium, magnesium, potassium, sodium, and chloride.

The Feline Nutrition Expert Subcommittee (FNES) retained the recommended concentrations set by the 1990 FNES for all other minerals in the Cat Food Nutrient Profiles. Association of American Feed Control Officials (AAFCO) cat food nutrient profiles based on dry matter. Iron is found in liver, lean meats, fish, whole grains, and legumes. Most commercial cat foods contain a highly available form of supplemental iron to help meet dietary requirements. Iron deficiency caused by illnesses and parasites can make your cat very weak, leading to anemia. Daily Recommended Allowance – 80 (Growth & Reproduction Minimum), 80 mg/kg (Adult Maintenance Minimum). Because of very poor bioavailability, iron from carbonate or oxide sources that are added to the diet should not be considered in determining the minimum nutrient concentration.

Calcium helps to produce milk female cats give to their kittens. A diet rich in calcium is good for your cat's overall health and is present in dairy products, eggs, bones, and leguminous plants. Calcium is an essential mineral that helps the body with many functions; including: bone growth and formation, blood coagulation, muscle contraction, nerve impulse transmission, and eclampsia; or, low calcium levels during pregnancy and lactation. 99 % of dietary calcium is used in the structure of bones and teeth, so the most common disease associated with calcium deficiency is rickets – a condition where the bones become soft and fragile. Feeding a quality diet with adequate levels of calcium can help reduce any chances of calcium deficiencies. Daily Recommended Allowance – 1,0 (Growth & Reproduction Minimum), 0,6 % (Adult Maintenance Minimum).

Magnesium keeps your cat overall health well-balanced. Magnesium helps your cat absorb and use certain vitamins and minerals throughout their bodies. This powerful mineral is also necessary for bone growth, enzyme functions, and the production of protein. "Magnesium is found in raw wheat germ, whole grains, soybeans, milk, and fish," Doerr said. "The magnesium content of cat food depends on the ingredients, but the mineral is usually not added in supplemental form. That's because Magnesium deficiency is quite rare. Symptoms of deficiency include muscle tremors and weakness. Daily Recommended Allowance – 0,08 (Growth & Reproduction Minimum), 0,04 %

(Adult Maintenance Minimum). If the mean urine pH of cats fed ad libitum is not below 6.4, the risk of struvite urolithiasis increases as the magnesium content of the diet increases.

Sodium aids in the transfer of nutrients to cells and the removal of waste products. The Association of American Feed Control Officials, also known as AAFCO, recommends dry cat foods contain at minimum 0.2 percent sodium to support normal growth and development. Cat foods high in sodium may cause temporarily increased thirst and water consumption, however, the extra sodium is excreted in cat urine. Daily Recommended Allowance – 0,2 (Growth & Reproduction Minimum), 0,2 % (Adult Maintenance Minimum).

Chloride helps maintain the proper alkali balance in your cat's body. Chloride is also necessary for the production of hydrochloric acid (HCl) in the stomach that helps digest protein. Daily Recommended Allowance – 0,3 (Growth & Reproduction Minimum), 0,3 % (Adult Maintenance Minimum).

Copper– its deficiency can lead to reduced weight gain; longer time to conceive. The recommended copper concentration in canned products for growth and reproduction was increased from 5.0 to 8.4 mg/kg DM to match the 2006 NRC RA for gestation and lactation. Because of very poor bioavailability, copper from oxide sources that are added to the diet should not be considered in determining the minimum nutrient concentration.

Zinc– its deficiency can lead to skin lesions; growth retardation; testicular atrophy. Daily Recommended Allowance – 75 (Growth & Reproduction Minimum), 75 mg/kg (Adult Maintenance Minimum).

Iodine– its deficiency can lead to enlargement of thyroid glands (signs of excessive tearing, salivation, and nasal discharge; dandruff) . Daily Recommended Allowance – 1,8 (Growth & Reproduction Minimum), 0,6 mg/kg (Adult Maintenance Minimum).