

NORMAL SERUM VITAMIN E VALUES IN GIANT ANTEATERS (*Myrmecophaga tridactyla*)

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Abstract

Baseline serum α -tocopherol (α -toc) values in captive giant anteaters have not previously been defined. Cats and dogs are typical models for carnivore nutritional physiology and may prove useful for evaluating vitamin E (vit E) nutrition in zoo carnivores. The objective of this study was to determine serum α -toc as a measure of vit E status in captive anteaters, for comparison with reported norms.

Twenty-one blood samples were opportunistically collected from 16 individuals, and fresh or frozen serum was analyzed for α -toc using high-pressure liquid chromatography. Clinically normal animals averaged 2.58 ± 1.37 $\mu\text{g/ml}$. Three severely compromised animals had values of 0.29, 0.31, and 0.46 $\mu\text{g/ml}$. By comparison, serum vit E levels of free-ranging adult giant anteaters in apparent good health from Parque Nacional de Serra da Canastra (Brazil) were 1.0 $\mu\text{g/ml}$ (n=4), and 3.0 $\mu\text{g/ml}$ (n=1).¹ Normal values for dogs range from 2.7 to 12.4 $\mu\text{g/ml}$, and range from 3 to 11 $\mu\text{g/ml}$ for cats.² Thus, anteaters display values at, or below, the ranges that are considered to be normal for domestic carnivores. Oxidative stress, and/or dietary deficiencies have been shown to decrease circulating vit E concentrations.² Anteaters have been reported to have cardiomyopathies associated with taurine deficiency^{3,4} and this condition has been linked to low vit E status in other carnivores⁵. Thus, vit E deficiency should not be discounted as a possible contributor to cardiomyopathy in giant anteaters. Additional samples, and correlation of data with health status and diet evaluations from multiple animals/collections will further our understanding of vit E nutrition in giant anteaters.

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