

Evaluation of Carotenoid Assimilation in Leopard Geckos (*Eublepharis macularius*)

Ophélie Cojean, DVM, IPSAV (Zoological Medicine),
Stéphane Lair, DMV, DES, DVSc, Dipl ACZM,
Claire Vergneau-Grosset, DVM, IPSAV (Zoological Medicine), Dipl ACZM

Session #2012

Affiliation: From Clinique Vétérinaire Alliance, 8 Boulevard Godard, 33300 Bordeaux, France (Cojean), Faculté de médecine vétérinaire, Département de sciences cliniques, Université de Montréal, Canada and the Canadian Cooperative Wildlife Health Centre, Quebec, Canada (Lair), Université de Montréal, 3200 rue Sicotte, Saint-Hyacinthe, Quebec, J2S2M2, Canada Vergneau-Grosset).

Although leopard geckos (*Eublepharis macularius*) are commonly kept under human care, their vitamin requirements are largely unknown. Many invertebrate preys display a low concentration of vitamin A; thus gut-loading insects with vitamin A or carotenoids is a common practice. The objective of this prospective experimental study was to investigate whether leopard geckos can absorb and assimilate oral carotenoids.

Ten clinically healthy female leopard geckos were randomly divided in 2 groups with various supplementations: a group receiving vitamin A supplementation and a group receiving carotenoids. Insects were gut-loaded continuously with a supplement containing vitamin A or carotenoids, depending on the group. Oral supplementation with cod liver oil or carrot juice was administered weekly to each lizard from group vitamin A and group carotenoid respectively.

After 10 weeks of supplementation, surgical hepatic biopsies were obtained in 3 geckos of each group while the 2 remaining geckos were euthanatized to undergo complete necropsy. Hepatic retinol concentration was determined for each lizard ($n = 10$) by ultra performance liquid chromatography. Histopathology revealed hepatocellular vacuolization and vitellogenic follicles in 5 females. Epithelial squamous metaplasia was not observed in any of the geckos. Hepatic retinol concentration was significantly higher in the group carotenoid than in the group vitamin A ($P = 0.03$).

Contrary to the herbivorous green iguana (*Iguana iguana*), our results suggest that leopard geckos could absorb and assimilate oral carotenoids.

Acknowledgments: This project was funded by the Association of Reptilian and Amphibian Veterinarians 2015-2016 grant.