Evaluating the Clinical Effects of Short Duration Ultraviolet B Radiation Exposure in Leopard Geckos (*Eublepharis macularius*)

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Ultraviolet B radiation (UVB) is required in many vertebrates to stimulate the photobiochemical synthesis of vitamin D. Vitamin D plays many important roles in the body, including assisting in the absorption of calcium at the level of the intestine. Deficiencies in vitamin D can lead to the development of nutritional disease (e.g., metabolic bone disease). Leopard geckos are naturally nocturnal and crepuscular, so it is not known whether they benefit from UVB radiation. The purpose of this study was to measure 25-hydroxyvitamin D concentrations in leopard geckos exposed to short duration (two hours) UVB light. Exposure to light occurred for one hour in the morning and one hour at night to mimic dawn and dusk, respectively. Twelve adult leopard geckos were used for this study. Blood samples were collected from the cranial vena cava to establish baseline 25-hydroxyvitamin D concentrations. The geckos were anesthetized with isoflurane for venipuncture. All sampling was done between 4-6 pm. Once the baseline samples were collected, the animals were divided into two groups (group 1: UVB radiation; group 2: no UVB). The animals provided UVB radiation were exposed to full spectrum UVB, while animals in the control group received non-UVB producing light. There was a significant difference (F=9.7, p=0.012) in 25-hydroxyvitamin D concentrations between the leopard geckos exposed to UVB and not exposed to UVB. The results of this study show that short duration exposure to UVB light can lead to increased circulating 25-hydroxyvitamin D concentrations in leopard geckos.