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In herpetoculture, there is debate as to whether ultraviolet-B, UVB, lighting is required for providing adequate welfare for snakes in human care. Many believe this supplemental lighting is unnecessary and is not utilized by the snakes, stating that snakes survive and breed in its absence. Previous studies using pythons and corn snakes have demonstrated that offering UVB lighting appears to have a significant effect on their physiology. These studies focused on the increase of 25-hydroxyvitamin D3 concentrations in the blood after UVB exposure. In the present study, false water cobras, *Hydrodynastes gigas*, were chosen because they are active, diurnal snakes and are therefore more likely to seek out UVB in the wild in comparison with other fossorial snakes. The level of UVB that will be provided is based on the tropical climate of the range for *H. gigas*. Twelve hatchling *H. gigas* will be divided into two groups with Arcadia T5 14% UVB lights provided for one group and LED lights provided for the other. The behavior of the snakes will be monitored through video recording to determine the effects of UVB lighting on basking behavior and total time exposed to the UVB lighting. To identify physiological effects, radiographs will be taken to determine any change in bone density. This study aims to find if offering UVB lighting promotes basking behavior and affects bone density in *H. gigas*. The results of this study can be used to further increase welfare standards for snakes in captivity.