Survey Of Circulating Retinol (Vitamin A) And Tocopheral (Vitamin E) Concentrations In Nesting Marine Turtles

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Although marine turtles are relatively well-studied endangered and threatened species, critical discontinuities exist in the literature regarding numerous significant blood values, especially those of free-ranging populations. Gaining a better understanding of marine turtle ecological physiology is an urgent priority, considering the impact such information could have on conservation management plans and population health assessments [Bolten and Bjorndal, 1992; Raphael et al., 1994; Lutz and Dunbar-Cooper, 1987]. Vitamins A (retinol) and E (∝-tocopherol) are fat-soluble organic compounds required for the survival of all higher animals. Turtles must obtain both of these nutrients through dietary intake, either directly from animal-based foods or through conversion of dietary carotenoids. Growth, differentiation and integrity of epithelial tissue, bone remodeling, reproduction and vision are all reliant on a supply of vitamin A [Sporn, 1984]. Vitamin E has been found to be essential for reproduction and is an integral constituent of cell membranes where it acts as an antioxidant and free radical scavenger [Mason, 1980]. The purpose of this study is to establish baseline blood values for vitamin A and vitamin E in nesting marine turtles and to determine if the stress of the nesting season can be related to a decline in these values as the season progresses. This research is also an attempt to provide a nutritional explanation for the 2 to 3 year interval between reproductive migrations.

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