

## **Corticosterone, oxidative status, and inflammation markers as tools to predict the progress of a herpesvirus disease in frigatebird nestlings**

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The immune system provides protection against parasites and pathogens. There are, however, circumstances under which the immune system is disrupted, making organisms more susceptible to infections. Herpesviruses are one of the most common infectious viral agents in domestic and wild animals, but little is known about the effects of viral outbreaks on the physiology and survival of wild animals, and studies assessing the role of oxidative stress as promoter of the viral activity are lacking in wild animals. Here, we have assessed for the first time in a wild vertebrate (i) whether individuals with either low levels of oxidative damage or high levels of antioxidant protection are less susceptible to develop symptoms; (ii) the association between inflammation, oxidative damage, cort and nestling's survival; and (iii) the patho-physiological consequences of herpesvirus infection on corticosterone, and inflammation. To address our questions, we took advantage of a unique population of Magnificent frigatebirds whose nestlings have experienced severe disease likely due to an herpesvirus outbreaks. Our work demonstrates that oxidative markers and inflammation are associated with the occurrence of clinical signs and with nestling's mortality, and how the inflammation marker haptoglobin was associated with nestling's probability of survival.

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