

## Immunity, inflammation, and stress in a long-lived seabird facing a severe herpesvirus disease

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An organism's physiological equilibrium is critically reliant on its immune system, which provides protection against parasites and pathogens. There are, however, circumstances under which the immune system is disrupted, making organisms more susceptible to infections. For example, environmental stressors are well known to stimulate the release of corticosteroids, which may reduce immunocompetence. Herpesviruses are one of the most common infectious agents in wild animals. Some clinical studies have suggested that oxidative stress might be one additional physiological mechanism that promotes herpesvirus reactivation from latency. However, the relationship between oxidative stress and herpesvirus infection has never been addressed in wild animals, nor have the effects of herpesvirus outbreaks on the physiology and survival of wild animals been tested so far. The aims of this study are to provide the first data on oxidative stress, inflammation and immunocompetence in a wild animal and to discuss the potential of markers as predictors of the progress of the infection and survival perspectives. To this end, we took advantage of a population of Magnificent frigatebirds *Fregata magnificens*, a large tropical seabird breeding in French Guiana, which experiences annually severe herpesvirus outbreaks that cause up to 80-90% mortality of chicks.

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