

Literature Review of Florida Red Tide: Implications for Human Health Effects

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Abstract

Florida red tides are a natural phenomenon caused by dense aggregations of single cell or several species of unicellular organisms. Patches of discolored water, dead or dying fish, and respiratory irritants in the air often characterize these algal blooms. In humans, two distinct clinical entities, depending on the route of exposure, are associated with exposure to the Florida red tide toxins (particularly the brevetoxins). With the ingestion of brevetoxin-contaminated shellfish, neurotoxic shellfish poisoning (NSP) presents as a milder gastroenteritis with neurologic symptoms compared with other marine toxin diseases such as paralytic shellfish poisoning (PSP) or ciguatera fish poisoning. With the inhalation of the aerosolized red tide toxins (especially the brevetoxins) from the sea spray, respiratory irritation and possibly other health effects are reported in both humans and other mammals (Baden 1995, Fleming 1998a, Fleming 1998b, Fleming 1999a, Bossart 1998, Asai 1982, Eastaugh 1989, Pierce 1986, Music 1973, Temple 1995, Anderson 1994).

This paper reviews the literature on the known and possible human health effects of exposure to the Florida red tides and their toxins. The review includes discussion of the red tide organisms and their toxins, as well as the effects of these toxins on both wild and laboratory animals as they relate to possible human health effects and exposures. *Harmful Algae* 2004 3(2): 99-115.