



WHAT IS RED TIDE?

Algae are vitally important to marine ecosystems, and most species of algae are not harmful. However, under certain environmental conditions, microscopic marine algae called *Karenia brevis* (*K. brevis*) grow quickly, creating blooms that can make the ocean appear red or brown. People often call the blooms “red tide.”

HOW DO RED TIDES AFFECT HUMAN HEALTH?

K. brevis produces powerful toxins called brevetoxins, which have killed millions of fish and other marine organisms. Red tides have damaged the fishing industry, shoreline quality, and local economies in states such as Texas and Florida. In addition to killing fish, brevetoxins can become concentrated in the tissues of shellfish that feed on *K. brevis*. People who eat these shellfish may suffer from neurotoxic shellfish poisoning, a food poisoning that can cause severe gastrointestinal and neurologic symptoms, such as tingling fingers or toes.

The human health effects associated with eating brevetoxin-tainted shellfish are well documented. However, scientists know little about how other types of environmental exposures to brevetoxin—such as breathing the air near red tides or swimming in red tides—may affect humans. Anecdotal evidence suggests that people who swim among brevetoxins or inhale brevetoxins dispersed in the air may experience irritation of the eyes, nose, and throat, as well as coughing, wheezing, and shortness of breath. Additional evidence suggests that people with existing respiratory illness (such as asthma) may experience these symptoms more severely.

WHAT IS CDC DOING TO ADDRESS THESE CONCERNS?

CDC is working with investigators from local, state, and federal health agencies to assess the respiratory effects of:

- **Recreational exposure** to red tide toxins dispersed in the air. For example, in 2003, CDC completed and reported a pilot study of two separate red tide events in Florida.
- **Occupational exposure** to red tide toxins dispersed in the air. For example, CDC has collected respiratory-function data from Florida lifeguards who worked during a red tide event. Currently, CDC is comparing data taken before and after the lifeguards’ work shifts.

For more information, please contact:

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