

Occupational Exposure Guidelines for Red Tide in Florida

Red tide presents potential hazards for breathing (inhalation), eating affected shellfish (ingestion), and skin contact (dermal). This guidance is for employers and employees whose jobs may require them to work near marine water affected by red tide. This can include, but is not limited to, beach clean-up crews, coast guard and other naval personnel, commercial fishers, ecotourism operators, lifeguards, water sampling staff, waterfront business employees, etc. When possible, preventative measures should be taken. However, individuals should consider if their circumstances allow for preventative measures and appropriate personal protective equipment (PPE) after speaking with their health care provider.

Red Tide (*Karenia brevis*)

What is red tide? Red tide is caused by varying amounts of a microscopic algae called *Karenia brevis* (*K. brevis*). The presence of red tide may not always be visible. However, at high cell counts, red tide may discolor the water to appear as red, green, or brown.¹ Red tide may result in unpleasant odors and associated health risks. It is important to note that other states have different types of red tide beyond *K. brevis* that may have different associated health risks.

Where and when is red tide common? Red tide is found almost exclusively within the Gulf of America,² but occasionally migrates to the U.S. East Coast.¹ Red tide can occur throughout the year, but blooms typically begin in the late summer or early fall. Red tide may persist for as little as a few days or multiple months, but its location can change regularly due to winds, waves, tides, and currents.¹

What health concerns are associated with red tide? Red tide can produce toxins called brevetoxins. When exposed to brevetoxins, various health effects may occur. During occupational activities, the primary routes of exposure are inhalation and skin contact. Common symptoms associated with inhaling brevetoxins are respiratory irritation, runny nose, and sore throat. Individuals with preexisting respiratory issues, such as asthma, are at higher risk of these symptoms. Contact with the skin can potentially lead to skin irritation, especially for those with sensitive skin. While ingestion of brevetoxins is not as common for occupational activities, when ingested, the most common symptoms are gastrointestinal distress (vomiting and/or diarrhea), headache, tingling, and numbness. Symptoms from ingesting brevetoxins are more commonly caused by consuming recreationally caught shellfish that are affected by red tide.

How to prevent exposure to red tide: Some best practices to prevent exposure to brevetoxins when red tide may be present are to avoid unnecessary contact with water affected by red tide, avoid inhaling spray and being near the water at times of inshore winds, be aware of shellfish harvesting area closures, rinse skin after contact with water, and wash hands before eating and drinking (avoid hand-to-mouth contact). PPE that can be used to help protect against brevetoxins include respirators, waterproof gloves, eye protection, and waders. Check with your health care provider before using PPE. It is also recommended for occupations that sample and monitor red tide to use sampling equipment that helps limit direct contact with water containing red tide, such as sampling poles and Secchi disks.

What other risks may be present? Red tide may be associated with fish kills and other wildlife mortality events. Clean-up efforts increase the risk of skin exposure to brevetoxins and other hazards. Other hazards that are found in the waters are, but not limited to, some marine life and other bacteria.

¹ [MyFWC.com/research/redtide/media/rack-card/](https://myfwc.com/research/redtide/media/rack-card/)

² [FLSenate.gov/PublishedContent/Offices/2024-2026/President/Documents/GOA_Signed_Into_Law.pdf](https://flsenate.gov/PublishedContent/Offices/2024-2026/President/Documents/GOA_Signed_Into_Law.pdf)



Table 1

	Inhalation	Ingestion	Skin Contact
Common Toxins and Irritants	Brevetoxin		Some marine life
Toxin Type	Neurotoxin		
Possible Symptoms and Signs	- Respiratory irritation (wheezing, coughing, and shortness of breath) - Runny nose - Sore throat	- Vomiting - Diarrhea - Headache - Tingling - Numbness	- Possible skin irritation or itchy skin - Rashes (anecdotal) - Eye irritation
Prevention	- Avoid inhaling water spray. - Avoid close proximity to the water at times of inshore winds (note wind speed/direction). - Do any prep work outside of affected areas, including a building with filtered air conditioning.	- Avoid swimming in water where red tide could be present. - Be aware of shellfish harvesting area closures. - Wash hands before eating and drinking; avoid hand-to-mouth contact. - Use equipment that doesn't rely on in-water exposure. - Avoid conditions that can contribute to accidental immersion.	- Avoid contact with water where red tide could be present. - Avoid contact with red tide associated fish kills and other dead marine life. - Use equipment that doesn't rely on in-water exposure.
PPE	Respiratory protection, such as a respirator	Diving protection: dry suit, full face mask, breathing from a tank, or skin covering as necessary	- Waterproof gloves - Eye protection - Waders or boots
Occupational Category	- Near water - On-water - In-water	In-water	- On-water - In-water
Treatment Options	- Leave the area - Go to an air-conditioned area - Rescue inhaler for asthmatic individuals	- Talk to your health care provider - Seek symptom relief treatment options	- Rinse exposed areas with soap and water - Rinse equipment with water

Table 1. Report symptoms from exposure to red tide or any aquatic toxin to a Florida Poison Control Center. Call 800-222-1222 to speak to a poison specialist immediately.

Refer to the *Resource Guide for Public Health Response to Harmful Algal Blooms in Florida* for additional information [MyFWC.com/research/redtide/research/scientific-products/tr14/](https://myfwc.com/research/redtide/research/scientific-products/tr14/)



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