

Harmful algal blooms

Clinician diagnostic resources

Exposure and clinical information

Ingestion—of contaminated water, fish, or dietary supplements

Skin contact—with water or algal mats

Inhalation—of contaminated aerosols

Dialysis—with contaminated water

Hepatotoxins and nephrotoxins (microcystins and nodularins)

- Likely signs include nausea, vomiting, diarrhea, bad taste in mouth, acute hepatitis, jaundice, blood in urine or dark urine, malaise, lethargy, headache, fever, or loss of appetite
- Differential diagnosis includes other hepatotoxin poisoning, or other microbial infections/toxins

Neurotoxins (anatoxin and saxitoxins)

- Likely signs include progression of muscle twitches; high doses of saxitoxins may lead to progressive muscle paralysis
- Differential diagnosis includes pesticide poisoning or other toxin poisoning

Dermal toxins

- Likely signs include allergic dermatitis (including rash, itching, and blisters) or conjunctivitis
- Differential diagnosis includes other dermal allergens, non-allergic urticaria, photosensitivity reactions

Microcystins, others

- Likely signs include upper respiratory irritation (wheezing, coughing, chest tightness, or shortness of breath)
- Differential diagnosis includes other airborne allergens, upper respiratory infection, flu

Microcystins

- Likely signs include liver damage, liver failure, death
- Differential diagnosis includes chronic kidney disease, systemic lupus, erythematosus

Information about human health effects from exposure to cyanotoxins is primarily derived from a few epidemiological studies of recreational exposures, studies with laboratory animals, reports of extreme human exposure events, such as the use of toxin-contaminated dialysis water, and from animal (e.g., cattle and pet dog) exposures. The long-term health effects of cyanobacterial blooms are being studied but remain unclear. References from the CDC including publications, data, and statistics are available [here](#).

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Harmful algal blooms (HABs) are commonly found in fresh water. People can become ill from HABs through direct skin contact with or ingestion or inhalation of cyanotoxins and cyanobacteria. There are no clinically available diagnostic tests for cyanotoxins or treatments for illnesses caused by HABs, but you can help relieve patient's symptoms by providing supportive medical care.



Tests and treatments

- Currently, there are no clinically available diagnostic tests for cyanotoxins.
- Medical care is supportive, as there are no known antidotes to cyanotoxins or specific treatments for illnesses caused by cyanobacteria and their toxins.
- **Ingestion of contaminated water or seafood:** The patient should avoid contaminated water or seafood to stop the exposure.
 - Replenish fluids and electrolytes, if needed.
 - If the patient arrives within 1-2 hours after a toxic ingestion, consider using activated charcoal, assuming no contraindications.
 - Provide other supportive and symptom-directed care as needed.
- **Inhalation of aerosolized toxins:** Move the patient to a fresh, non-contaminated environment to stop the exposure. Treat respiratory symptoms accordingly.
- **Skin contact with contaminated water:** Remove contaminated clothing and jewelry and wash the affected area with soap and water for 10-15 minutes. Antihistamines and steroids may be used.
- **Eye exposure to contaminated water:** Remove contact lenses. Irrigate the eyes with normal saline for at least 15 minutes. Refer the patient to an ophthalmologist if eye symptoms persist after copious irrigation.



For more information
about HABs visit
www.cdc.gov/habs

This information is presented by the Utah Department of Health and Human Services (DHHS). If you have any questions or concerns please contact DHHS Office of Communicable Diseases at (801) 538-6191.



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