

Physician Reference for Cyanobacterial Blooms



People can become ill from cyanobacteria or their toxins through ingestion, direct skin contact, or inhalation. There are no clinically available diagnostic tests for cyanotoxins or treatments for illnesses caused by cyanobacterial blooms, but you can help relieve patients' symptoms by providing supportive medical care.

Cyanobacterial Bloom Basics

Cyanobacteria (also called blue-green algae) can grow quickly, or bloom, when the water is warm, slow-moving, and full of nutrients. Cyanobacterial blooms are most commonly found in fresh water such as lakes, rivers, and streams. Blooms can discolor the water and look like foam, scum, mats, or paint on the surface. These blooms sometimes produce toxins (cyanotoxins) that can cause illness.

Common cyanotoxins include

- Microcystins
- Anatoxins
- Nodularins
- Cylindrospermopsin
- Saxitoxins
- Lyngbyatoxins

Exposure and Health Impacts

- People are most often exposed while swimming, boating, or doing other activities in or near water with a cyanobacterial bloom. People can also be exposed through contaminated tap water; seafood; dietary supplements; or, infrequently, dialysis.
- Symptoms and signs depend on how people were exposed, how long they were exposed, and the types of toxins they were exposed to (see the table on page two for more information on health effects).
- Pet illness may provide additional evidence that a patient could have an illness caused by a cyanobacterial bloom. Dogs and other animals might have more severe symptoms than people, including collapse and sudden death.

Tests and Treatments

- Medical care is supportive. There are no known antidotes to cyanotoxins or specific treatments for illnesses caused by cyanobacteria and their toxins.
- There are currently no clinically available diagnostic tests for cyanotoxins.



ICD-10-CM codes can be used in diagnosing and recording harmful algal and cyanobacterial bloom-related illnesses.

- T65.82 Toxic effect harmful algae & algae toxins
- Z77.121 Contact with and (suspected) exposure to harmful algae and algae toxins

Exposure to cyanobacteria and cyanotoxins and possible health effects*

POTENTIAL EXPOSURE ROUTE	COMMON CYANOTOXINS THAT CAN CAUSE ILLNESS	POSSIBLE SYMPTOMS AND SIGNS	INFORMATION SOURCE FOR POSSIBLE SYMPTOMS AND SIGNS
INGESTION <ul style="list-style-type: none"> Swallowing water contaminated with cyanobacteria or toxins Eating contaminated fish or dietary supplements 	Hepatotoxins and nephrotoxins <ul style="list-style-type: none"> Microcystins Nodularins 	<ul style="list-style-type: none"> Nausea, vomiting, diarrhea Bad taste in mouth Acute hepatitis, jaundice Blood in urine or dark urine Malaise, lethargy Headache, fever Loss of appetite 	<ul style="list-style-type: none"> Data from laboratory animal studies Extreme human exposure events, e.g., dialysis with contaminated water Animal exposures
	Neurotoxins <ul style="list-style-type: none"> Anatoxin Saxitoxins 	<ul style="list-style-type: none"> Progression of muscle twitches For saxitoxin: high doses may lead to progressive muscle paralysis 	
DIRECT CONTACT Skin contact with water that is contaminated with cyanobacteria or toxins	Dermal toxins	<ul style="list-style-type: none"> Allergic dermatitis (including rash, itching, and blisters) Conjunctivitis 	<ul style="list-style-type: none"> Data from human studies
INHALATION Inhaling aerosols contaminated with cyanobacteria or toxins	Microcystins, others	<ul style="list-style-type: none"> Upper respiratory irritation (wheezing, coughing, chest tightness, or shortness of breath) 	<ul style="list-style-type: none"> Anecdotal evidence from human exposures Data from human studies
DIALYSIS Dialysis water contaminated with microcystins	Hepatotoxins <ul style="list-style-type: none"> Microcystins 	<ul style="list-style-type: none"> Liver damage, liver failure, death 	<ul style="list-style-type: none"> Data from inadvertent human exposures

* Information about human health effects from exposure to cyanobacteria and cyanotoxins is primarily derived from a few epidemiology 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 are available at: <https://www.cdc.gov/habs/publications.html>.

Advise patients: You cannot tell if a bloom is toxic just by looking at it. When in doubt, it's best to stay out!

Reporting Illnesses

Call your local or state health department to report a cyanobacterial bloom or related health event.

Exposure Questions

Contact your local Poison Control Center at 1-800-222-1222 for questions about exposures to cyanobacterial blooms.

More Information

Visit www.cdc.gov/habs for more information about cyanobacterial blooms.