**Frequently Asked Questions About Cyanobacterial Blooms/Cyanotoxins/HABs and Drinking Water**

###### What are cyanobacteria?

Cyanobacteria, also called blue-green algae, are microscopic organisms found naturally in all types of water. They live in fresh, brackish (a combination of salt and fresh water), and salt water. These organisms use sunlight to make their own food. In warm, nutrient-rich (high in phosphorus and nitrogen) waters, cyanobacteria can multiply quickly, creating blooms that spread across the water’s surface.

###### How are cyanobacterial blooms formed?

Cyanobacterial blooms form when cyanobacteria start to multiply very quickly. Blooms can form in warm, slow-moving waters that are rich in nutrients from sources such as fertilizer runoff or septic tank overflows. Cyanobacterial blooms generally need an abundance of nutrients to grow. The blooms can form at any time, but most often form in late summer or early fall.

###### What does a cyanobacterial bloom look like?

You may or may not be able to see cyanobacterial blooms. Cyanobacteria can be found below the water’s surface and other times they can float to the surface. Some cyanobacterial blooms can look like foam, scum or mats, particularly when the wind blows them toward a shoreline. Cyanobacterial blooms in freshwater systems are mostly blue-green (or green) in color. Blooms can look like paint floating on the water’s surface. As cyanobacteria in a bloom die, the water may smell bad, similar to rotting plants. A cyanobacterial bloom can be toxic, however, you cannot tell if a bloom is producing toxins by looking at it.

###### Why are some cyanobacterial blooms harmful?

Cyanobacterial blooms may affect people, animals, or the environment in the following ways:

* Cyanobacteria in the blooms may produce toxins called cyanotoxins. They can make people, their pets and other animals sick. Unfortunately, there are no remedies to counteract the effects.
* The blooms can block or reduce the sunlight that other organisms need to live.
* They use up nutrients that other organisms need to live.
* They use up the oxygen in the water as they die down.

###### How can people and animals come in contact with cyanobacteria and cyanotoxins in the environment?

People and animals can come in contact with cyanobacteria and cyanotoxins that are in the environment by:

* Ingestion of cyanotoxin-contaminated water and food.
* Swimming or performing other recreational activities in or on waters that have cyanobacterial blooms and/or cyanotoxins.
* Being on land in the vicinity of a bloom where the wind may blow toxin overland.

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###### How do cyanotoxins affect drinking water quality?

Cyanobacterial blooms that create cyanotoxins can occur in source waters (e.g., lakes or rivers) that are used to supply drinking water. Winds and water currents can transport these blooms near drinking water intakes at water treatment plants. If cyanotoxins are not removed during drinking water treatment, people can be exposed to cyanotoxins through their tap water. Cyanobacteria may produce taste and odor compounds that could cause problems in drinking water.

###### What are the health effects in humans and animals from exposure to cyanotoxins?

If cyanotoxins occur in tap water over a 10-day time period at levels above the national drinking water Health Advisories, people are at risk of various adverse health effects including upset stomach, vomiting and diarrhea as well as liver and kidney damage.

Exposure to cyanobacterial blooms in recreational water (e.g., lakes) has reportedly lead to allergic reactions, including hay fever-like symptoms; skin rashes; and pulmonary and gastrointestinal distress (diarrhea, vomiting, and stomach pain). Animals that swim in contaminated recreational water can be at risk for serious health effects or even death.

###### Are sensitive populations or infants fed by nursing mothers at risk?

Populations such as nursing mothers and pregnant women, those with pre-existing liver conditions, those receiving dialysis treatment, the elderly, and other sensitive populations may be at risk of experiencing adverse health effects of cyanotoxins at lower levels.

###### Are there filters I can use to remove cyanotoxins from my tap water?

Third-party organizations are currently developing certification standards for in-home devices and are evaluating how reliably they can remove cyanotoxins from drinking water. The NSF International has certified some filters in their ability to reduce microcystin to below the national Health Advisory levels. More information about these treatment units and the contaminants they can remove can be found at: [**http://www.nsf.org/**](http://www.nsf.org/Certified/DWTU/)[**Certified/DWTU/**](http://www.nsf.org/Certified/DWTU/).

###### How do I protect myself, my family, and animals from cyanotoxins?

To protect yourself, your family, and animals from cyanotoxins:

* If a drinking water advisory is issued for cyantoxins, follow the recommendations described in the advisory notification. If you are concerned about the potential occurrence of cyanotoxins in drinking water please contact your public water system.
* Report any “musty” smell or taste in your drinking water to your local water utility or your local health department.
* Do not let family members or animals swim in a water body with an ongoing bloom.
* Check to see if your state provides routine analysis of recreational waters.

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###### How are people or animals that have been exposed to cyanobacterial blooms/cyanotoxins treated?

* If you, family members or your animal comes in contact with a cyanobacterial bloom, wash yourself and your pet thoroughly with fresh water.
* If you are concerned about your health, the health of a family member, or the health of your animal, contact your health care provider, a Poison Center, a veterinarian or [your local health department].
* Call a veterinarian if your animal shows any of the following symptoms of cyanobacteria poisoning: loss of appetite, loss of energy, vomiting, stumbling and falling, foaming at the mouth, diarrhea, convulsions, excessive drooling, tremors and seizures, or any other unexplained sickness after being in contact with water. Tell your veterinarian that your animal has been in water that may have a cyanobacterial bloom.

###### How can I help reduce cyanobacterial blooms from forming?

Reducing nutrient pollution, such as excess nitrogen and phosphorus, is essential to reducing the formation of cyanobacterial blooms. Excess nutrients may originate from agricultural, industrial, and urban sources as well as from atmospheric deposition. Things you can do to reduce nutrients in your local waterways include:

* Use only the recommended amounts of fertilizers on your yard and gardens to reduce the amount that runs off into the environment.
* Properly maintain your household septic system.
* Maintain a buffer of natural vegetation around ponds and lakes to filter incoming water.
	+ Stop fertilizing within 20 feet of the pond.
	+ Plant natural vegetation around ponds and lakes to filter incoming water.
* Do not add fertilizers when the ground is frozen.
* Do not apply fertilizer immediately before or during rain and snow.

###### Is there testing for cyanotoxins in water?

There is no national requirement for monitoring cyanotoxins, but some states may have monitoring requirements. There are currently several methods available to test for cyanotoxins. These range from products that can be used by a properly trained utility operator or water resource manager to highly complex methods that require sophisticated equipment and highly trained laboratory technicians.

For more information on cyanobacterial blooms and cyanotoxins, please visit [www.cdc.gov/habs](http://www.cdc.gov/habs), <http://www.epa.gov/cyanohabs>, and [https://www.epa.gov/ground-water-and-drinking-water/](https://www.epa.gov/ground-water-and-drinking-water/cyanotoxins-drinking-water) [cyanotoxins-drinking-water](https://www.epa.gov/ground-water-and-drinking-water/cyanotoxins-drinking-water).