



HARMFUL ALGAL BLOOMS AND DRINKING WATER FACT SHEET AND FAQs

SUMMARY

Freshwater harmful algal blooms (HABs) are a growing concern in the United States and worldwide. Negative impacts from HABs on water quality, human and animal health and the economy can be significant. Some HABs can produce toxins that are harmful to humans and animals. These toxins can pose challenges to drinking water supplies. Given this risk, many drinking water systems are taking actions to manage cyanotoxins in drinking water and notify the public if toxin levels become a possible health concern. Reducing nutrient pollution, such as excess nitrogen and phosphorus, in drinking water sources is important for the long-term management of the risks HABs pose to public health and water quality.

BACKGROUND

Cyanobacteria, formerly referred to as blue-green algae, are found naturally in lakes, rivers, ponds and other surface waters. When certain conditions exist, such as in warm water containing an abundance of nutrients, they can rapidly form harmful algal blooms. Some HABs are capable of producing toxins, called cyanotoxins, which can pose health risks to humans and animals. The environmental conditions that cause HABs to produce cyanotoxins are not fully understood and can vary from year to year within the same waterbody. Some cyanotoxins occur in blooms that look like thick scum or paint-like substances on the surface of the water, while others occur in blooms that are not as easily visible.

HEALTH IMPACTS

Conventional water treatment (consisting of coagulation, sedimentation, filtration and chlorination) can generally remove cyanobacterial cells and low levels of toxins. However, water systems may face challenges providing drinking water during a severe bloom event, when there are high levels of cyanobacteria and cyanotoxins in drinking water sources. If cyanotoxins over the U.S. Environmental Protection Agency's (EPA) national 10-day Health Advisory level (see Table 1) occur in tap water, people are at risk of various adverse health effects including upset stomach, vomiting and diarrhea, as well as liver and kidney damage.

10-DAY HEALTH ADVISORIES	LEVEL
Microcystins	
Children pre-school age and younger (under 6 years old)	0.3 µg/L
School-age children (6 years and older)	1.6 µg/L
Cylindrospermopsin	
Children pre-school age and younger (under 6 years old)	0.7 µg/L
School-age children (6 years and older)	3.0 µg/L

Table 1. U.S. EPA's National 10-Day Health Advisories

HARMFUL ALGAL BLOOM FACT SHEET



MANAGING HEALTH RISKS

Given the health concerns that can occur from cyanotoxins in drinking water, many water systems are taking actions to manage and reduce the risks from cyanotoxin contamination in drinking water. These actions can include steps for cyanotoxin monitoring, adjusting treatment to address contamination before it reaches levels of concern, and notifying the public through a Drinking Water Advisory when toxin tap water levels are a possible public health concern.

Waterworks participated in a national finished water screening program in 2017-2018. During that period, we were unable to detect cyanotoxins above the US EPA method detection level in any samples of our drinking water.

Waterworks has also implemented a program to monitor for cyanotoxins in our reservoirs. Following US EPA guidance, we test our source water weekly during warmer months, when HABs are more likely to develop. Any time these test results indicate the presence of cyanotoxins above the US EPA's Health Advisory Level (HAL), we will begin testing our finished water, adjust our treatment process if necessary, and consider treatment measures in the reservoirs. In the unlikely event that test results are above the **lowest** HALs for ten consecutive days, Waterworks will issue a Drinking Water Advisory.



HEALTH ADVISORIES

The EPA has published national drinking water Health Advisories for the cyanotoxins microcystins and cylindrospermopsin (see Table 1). The Health Advisories provide the cyanotoxin levels in drinking water less than or equal to which adverse human health impacts are unlikely to occur when exposed to these levels over a 10-day time period.

The Health Advisories are lower for infants and young children under the age of six because they drink more water relative to their body weight as compared to adults and children six years and older.

To better protect public health, Waterworks has decided that in the unlikely event cyanotoxins are detected in the finished water at the HALs for infants and preschool children, we will issue a Drinking Water Advisory for **all** customers. We made this decision after consulting with the Virginia Department of Health. If Waterworks issues a Drinking Water Advisory for cyanotoxins, instructions for appropriate customer actions will be described in the advisory notification.

Health Advisories are developed to help states and water systems assess local situations and during emergency situations and spills. They are not a federally enforceable, regulatory limit. As new information becomes available, the EPA may develop updated advisories. For more information please see: <https://www.epa.gov/nutrient-policy-data/drinking-water-health-advisory-documents>.

Data for illnesses associated with exposure are being collected nationally at the Centers for Disease Control and Prevention (CDC). To report a cyanotoxin-associated illness for humans and animals, please contact your state or local health department.



FREQUENTLY ASKED QUESTIONS



WHAT ARE THE HEALTH EFFECTS FROM CYANOTOXINS?

Drinking water containing cyanotoxins at levels exceeding the U.S. Environmental Protection Agency's (EPA) national drinking water Health Advisories can put you at risk of various adverse health effects including upset stomach, vomiting and diarrhea as well as liver and kidney damage. Seek medical attention if you or your family members are experiencing illness.

Data for illnesses associated with exposure are being collected nationally at the Centers for Disease Control and Prevention (CDC). To report a cyanotoxin-associated illness for humans and animals, please contact your state or local health department.

WHAT HAPPENS IF CYANOTOXINS ARE SUSPECTED OR FOUND IN THE DRINKING WATER?

Waterworks will issue a drinking water advisory if cyanotoxins above the Health Advisory are found in your tap water. If a drinking water advisory is issued, follow the recommendations described in the advisory notification. If you are concerned about the potential occurrence of cyanotoxins in the drinking water please contact us at 757-926-1000 or wwcs@nnva.gov.

WHAT SHOULD I DO IF I CONSUME WATER WITH CYANOTOXINS?

If you or your family members have consumed water that may have contained cyanotoxins at levels above the national Health Advisories and you are experiencing cyanotoxin-related illnesses, contact your healthcare provider for medical attention.

Data for illnesses associated with exposure are being collected nationally at the CDC. To report a cyanotoxin-associated illness for humans and animals, please

contact your local health department.

CAN I BOIL MY WATER TO MAKE IT SAFE TO DRINK?

No! Boiling water will *not* remove cyanotoxins and may *increase* toxin levels.

IF A DRINKING WATER ADVISORY IS ISSUED, IS THE TAP WATER SAFE FOR OTHER USES OTHER THAN DRINKING?

Given the current scientific understanding, it is unlikely that showering, bathing, washing hands, doing laundry, etc. in tap water with cyanotoxin levels near or above the Health Advisory will be harmful to human health. However, infants and young children under the age of six should be supervised while bathing and during other tap water-related activities to prevent accidental ingestion of water. You may also accidentally consume water that is used to prepare or wash your food, make beverages or make ice.

If a drinking water advisory is issued, the EPA recommends using alternative water sources (such as bottled water) for these activities as well as using alternative water sources to make infant formula.

WHERE CAN I FIND MORE INFORMATION ABOUT HARMFUL ALGAL BLOOMS AND CYANOTOXINS?

For general information, please visit <http://www.epa.gov/cyanohabs> or contact Waterworks or the Virginia Department of Health.

For information about harmful algal bloom-associated illnesses, please visit <https://www.cdc.gov/habs>.

