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What you need to know about potentially harmful Cyanobacteria and Drinking Water

First, you need to know that your drinking water meets all state and federal standards. If at any time there is an issue with your drinking water we will notify you as soon as possible.

Second, it is interesting to know that cyanobacteria – although they look like algae, bloom like algae, and occur naturally like algae – are not really algae at all!

Cyanobacteria produce cyanotoxins which can, if a cyanobacteria bloom is large enough, pose health risks to humans and animals. This fact sheet provides you with information about naturally occurring cyanobacteria and cyanotoxins, how our community can work together to reduce the conditions that contribute to large, long lasting blooms, and how we at Konocti County Water District are working to ensure your safety is never compromised due to cyanotoxins in drinking water.

This Fact Sheet is adapted from the US EPA Harmful Algal Blooms and Drinking Water Factsheet and the CDC NCEH Cyanobacteria Blooms FAQs

What are cyanobacteria? Cyanobacteria, formerly referred to as blue-green algae, are microscopic organisms found naturally in all types of water; fresh, brackish (combined salt and fresh water), and marine water. These organisms use sunlight to make their own food. Unfortunately, cyanobacteria can produce cyanotoxins which can be harmful to humans and animals.

What are cyanotoxins? Cyanobacteria are capable of producing toxins known as cyanotoxins.

How are cyanobacteria blooms formed? Cyanobacteria can multiply quickly in warm, nutrient-rich water (high in phosphorus and nitrogen), creating blooms that spread across the water's surface. The blooms are sometimes, but not always, visible. Blooms are most likely to form in warm, slow-moving waters that are rich in nutrients from sources such as fertilizer runoff or failing septic tanks.

Cyanobacteria blooms need nutrients to survive, so the more nutrients in the water the larger the bloom can grow. The blooms can form at any time, but most often form in late summer or early fall. However, the environmental conditions that cause cyanobacteria to produce cyanotoxins are not fully understood and can vary from year to year within the same waterbody.

What does a cyanobacteria bloom look like? You may or may not be able to see cyanobacteria blooms. They sometimes stay below the water's surface, and they sometimes float to the surface. Some cyanobacteria blooms can look like foam, scum, or mats, particularly when the wind blows them toward a shoreline. The blooms can be blue, bright green, brown, or red. Blooms sometimes look like paint floating on the water's surface. As cyanobacteria in a bloom die, the water may smell bad, similar to rotting plants. You cannot tell from looking at a cyanobacterial bloom if it is or is not producing harmful cyanotoxins.

Are some cyanobacteria blooms harmful? Yes! Harmful cyanobacteria blooms have the potential to affect people, animals, or the environment in two ways:

1. By blocking the sunlight that most organisms need to live. Cyanobacteria blooms steal the oxygen and nutrients other organisms need to live.

2. By producing toxins, called cyanotoxins. Cyanotoxins can make people, their pets, and other animals sick through contact, touching, and through ingestion, drinking untreated contaminated water.

Cyanobacteria blooms that harm people, animals, or the environment are called cyanobacterial harmful algal blooms (HABs). Additionally, cyanobacteria can create taste and odor problems in drinking water, such as an earthy and musty smell. However, there are many causes for taste and other problems and the presence of taste or odors does not indicate the presence of cyanotoxins.

How do people and animals come in contact with cyanobacteria or cyanotoxins? There are two primary ways in which people and animals can come in contact with cyanobacteria and cyanotoxins that are in the environment:

1. Through untreated drinking water that comes from a lake or reservoir that is experiencing a large cyanobacteria bloom. Your water utility will contact you immediately if there is ever a concern from contact with treated drinking water.

2. Through direct contact with water (e.g., wading, swimming, playing) where a cyanobacteria bloom is producing cyanotoxin.

How do I protect myself, my family, and my pets from cyanobacteria water contact risks? To protect yourself, your family and your pets from cyanobacteria blooms in the environment, do not allow direct skin to contact if you are concerned there might be a cyanobacteria bloom. Cyanotoxin poisoning occurs by ingesting the water, not through contact with water, but contact with water that has high concentrations of cyanotoxins can result in skin rashes and itching.

Here are some tips to help keep you, your family, friends and animal's safe:

- Don't swim, water ski, or boat in areas where the water is discolored or where you see foam, scum, or mats of algae on the water's surface.
- Do not allow children or pets to play in or drink scummy water.
- If you do swim in water that might contain harmful cyanobacteria, rinse off with fresh water as soon as possible afterward.
- Seek immediate medical attention if you or your children drink the water and show any of these symptoms of cyanotoxin poisoning: loss of energy, loss of appetite, vomiting, stumbling and falling, foaming at the mouth, diarrhea, convulsions, excessive drooling.
- Do not let your pets or livestock graze near, drink, or swim in water where you see cyanobacteria blooms, foam, or scum on the surface.
- If your animal gets in water with a bloom, immediately wash it off with clean water.
- Do not let animals drink the water or lick cyanobacteria off its fur.
- Call a veterinarian if your animal shows any of these symptoms of cyanobacteria poisoning: loss of energy, loss of appetite, vomiting, stumbling and falling, foaming at the mouth, diarrhea, convulsions, excessive drooling.

How is the drinking water utility protecting me, my family and our pets from the risk of cyanotoxins in our drinking water? Our drinking water treatment system at Konocti County Water District removes the risks to humans and pets from drinking water with cyanotoxins in all conditions except those that may occur during an extremely large and long duration cyanobacteria bloom. It is only the blooms that are very large and last a long time that create a risk from drinking the water, because under all other conditions our treatment processes, which are designed to meet all Federal and State Drinking Water health protection mandates, provide multiple layers of protection.

If conditions indicate a large or long-lasting cyanobacteria bloom is likely to occur, our agency will take the following additional actions as necessary:

- Implement additional monitoring and testing protocols
- Implement additional treatment processes
- If necessary, issue a Do Not Ingest the Water notice

Can I help? Yes! Reducing fertilizer runoff and keeping septic systems pumped so they don't overflow are two significant ways to reduce the amount of nutrients available for the cyanobacteria to eat.

To help reduce cyanobacteria from forming:

- 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.
- Spread the word! Share these best practices with friends, neighbors and colleagues.

MORE INFORMATION

For more information about cyanobacteria and cyanotoxins see: www.epa.gov/cyanoHabs.

For more information about potential health effects of exposure to cyanotoxins, see www.cdc.gov/habs

For more information on local conditions, see bvrancheria.com/clearlakecyanotoxins