

## *FREQUENTLY ASKED QUESTIONS*

### **BLUE GREEN ALGAE (CYANOBACTERIA) AND MICROCYSTIN TOXIN**

**Q: What are blue green algae (cyanobacteria)?**

A: Blue green algae are a group of organisms that are among the oldest on the planet. They can live in freshwater, salt water, or in mixed “brackish” water. Most people know them as “pond scum.” These blue green algae can actually be many colors including green, red, orange, or brown. The appearance of blooms may also be described as fine grass clippings or small clumps. Blue green algae also have been found to share many characteristics of bacteria, which has led to them being known as “cyanobacteria.”

**Q: What causes these organisms to form “blooms”?**

A: Blue green algae, or cyanobacteria, can multiply quickly in lakes with high nutrient levels, particularly when the water is warm and the weather is calm. This population explosion causes “blooms” of blue-green algae that turn the water green, often with floating layers of scum. A blue green algae bloom can also lie below the surface of the water. Blooms can spontaneously disappear or move to different parts of a pond or lake.

**Q: What causes some blooms to be toxic?**

A: There are thousands of blue green algae species and many more are still being discovered. Most do not produce toxins that are harmful to people or animals. However, some types of blue green algae produce toxins within their cells which are released when the cells die off or are ruptured. It is not clear why blue green algae make these toxins.

**Q: Does all blue green algae release microcystin toxin?**

A: Blue-green algae do not always produce toxins. You cannot look at a bloom and tell if it is toxic.

**Q: How long can microcystin be present in the water?**

A: Microcystins may persist even after the collapse of algal blooms in the late summer and early fall. Colder temperatures and decreased light intensity results in decreased rates of microcystin breakdown.

**Q: Are there harmful algal blooms in Iowa?**

A: Yes. The Iowa Department of Natural Resources (DNR) has identified a type of cyanobacteria, called microcystin, in some fresh water lakes in Iowa. The Iowa DNR conducts beach water sampling during the summer months to identify microcystin toxin. They have a listing of swimming advisories on their Beach Monitoring website: <http://wqm.igsb.uiowa.edu/activities/beach/beach.htm>

**Q: Are there other types of toxins from harmful algal blooms?**

A: Yes, there are many other types of blue green algae toxins, including toxins that can affect the nervous system and the skin. However at this time, Iowa only tests for microcystin toxins.

**Q: What is Microcystin toxin?**

A: Microcystin is a toxin that is released by some species of blue-green algae, or cyanobacteria. Microcystin, a hepatotoxin, can affect the liver.

**Q: Can you get sick from microcystin toxin?**

A: People can get sick from microcystin toxin if they have direct contact with a blue green algae bloom, by either intentionally or accidentally swallowing water, by having direct skin contact (as when swimming, wading, or showering), or by breathing airborne droplets containing the toxins, such as during boating or waterskiing.

Pets and other animals that drink from the water's edge, where scum layers accumulate, can be exposed to deadly levels of microcystins. Pets can get sick if they have been swimming in water where algal blooms have been and ingest significant amounts of microcystins by licking themselves after leaving the water.

**Q: How is microcystin poisoning spread?**

A: Microcystin poisoning cannot be spread from one person to another, nor from an animal to a person.

**Q: What are the symptoms of microcystin poisoning?**

A: Microcystin poisoning can cause breathing problems, stomach upset, skin reactions, and even liver damage.

- Getting blue-green algae/microcystin on the skin may produce a rash, hives, or skin blisters (especially on the lips and under swimsuits).
- Swallowing water containing blue-green algae/microcystin may cause gastrointestinal symptoms such as stomach pain, nausea, vomiting, diarrhea, severe headaches, and fever.
- Inhaling water droplets containing blue-green algae/microcystin can cause runny eyes and nose, cough, and sore throat, chest pain, asthma-like symptoms, or allergic reactions.
- Exposure to large amount of microcystin can cause liver damage.

**Q: How soon do symptoms appear?**

A: Symptoms may take hours or days to show up in people or animals, but normally show up within one week after exposure.

**Q: What is the treatment for microcystin poisoning?**

A: There is no specific treatment, but supportive care can be given.

**Q: What can be done to prevent microcystin poisoning?**

A: Pregnant women and children should be especially careful not to get into water that has blue green algae blooms. In general, people should:

- Avoid swimming, wading, or playing in lake water that appears covered with scum or blue-green algae or recently had blue-green algae.
- Avoid drinking or swallowing recreational water from lakes, streams, and other surface waters.
- Do not play in, or use, areas that have warning signs or have otherwise been designated by the Iowa DNR to be at risk for blue-green algae/microcystin.

**Q: What precautions should people take if they are exposed to blue green algae?**

A: If you have gotten into, swallowed, or breathed in water where a blue green algae bloom has formed:

- Wash off with fresh water and soap after skin contact with algae
- Check with your doctor if you experience symptoms, and mention your exposure to possibly toxic blue green algae.
- Avoid drinking alcohol
- Do not use acetaminophen