

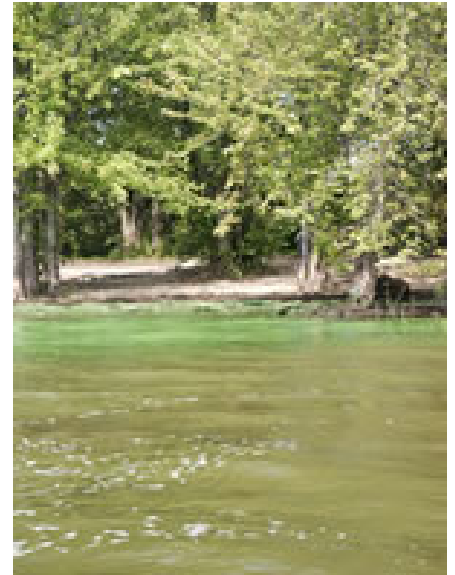
Blue-Green Algae Bloom

(Modified from: http://healthvermont.gov/enviro/bg_algae/bgalgae.aspx)

Cyanobacteria, also referred to as blue-green algae, are a common and natural component of the microscopic plants (plankton) in many lakes. Some types of blue-green algae produce natural toxins or poisons. When these algae die and break down, toxins can be released into the water.

There are no documented cases of human illness related to blue-green algae in Connecticut lakes; however caution around the algae is urged, especially for pet owners. If animals ingest the toxin, they can be quickly paralyzed and die. Signs of poisoning include weakness, staggering, difficulty breathing, convulsions and death. (At Lake Champlain during the summers of 1999 and 2000 the death of two dogs was attributed to blue-green algae poisoning, after drinking large amounts of contaminated water directly from the lake.)

Blue-green algae can become very abundant in some sections of lakes once the water warms up in mid-summer. Under calm conditions, blue-green algae can accumulate in thick layers at the surface or along the shoreline. These accumulations are frequently referred to as “blooms” or “scums.”



While blue-green algae toxins can be detected at many locations in the lake, the highest concentrations of toxins are usually found in blooms and shoreline scums. These dense accumulations pose the greatest potential health risks. Watch for dense accumulations of algae and avoid these areas.

Blooms generally have the following properties:

- Water may appear cloudy and look like thick pea soup.
- Blooms are generally green or blue-green in color, although they can be brown or purple.
- A thick mat or foam may form when a bloom washes onto shore.

Weather influences where blue-green algae will accumulate in a given location. During extended periods of calm and sunny days, blooms can accumulate at the surface in any location. Wind and waves may cause them to form along shorelines or in protected areas. Shifts in wind direction can move a bloom from one location to another. Periods of cool rainy weather can often lead to the disappearance of a bloom.

Public Health Concerns about Cyanobacteria

Cyanobacteria and Toxin Production

Some types of cyanobacteria will naturally produce compounds in their cells that can be toxic to humans and other animals. Not all cyanobacteria produce toxins. Types that are known to produce toxins may not produce them under all conditions. Assessing the potential risk from a cyanobacterial bloom to humans and animals can be difficult.

Toxins produced by multiplying cyanobacteria generally stay inside the cells, but some toxins may leak out into the surrounding water, particularly if the bloom has been growing over a long period of time.

When a toxin producing bloom dies and breaks up, toxins will be released into the surrounding water. This is generally the time of highest concern for public health because the lack of a visual cue (i.e., water appears clear) to avoid the water is not present.

Health Concerns

Some exposures to cyanobacteria scums and toxins have caused health effects in people and animals. These effects have been confirmed by laboratory tests.

Illnesses that may be Caused by Cyanobacterial Toxins

Depending on the type, amount and route of exposures different types of health effects can be caused by cyanobacterial toxins.

- People may get rashes or other skin irritations from coming into contact with blooms. Usually these skin irritations are not associated with toxins, but rather other non-toxic compounds produced by blooms: lipopolysaccharides (LPSs)
- Inhalation of water droplets that have toxins in them may cause allergic-like reactions, runny noses, or sore throats.
- Swallowing water that has high levels of cyanobacterial toxins in it can cause:
 - Sharp, severe stomach problems like diarrhea and vomiting.
 - Liver or kidney damage which may take hours or days to show up in people or animals. Symptoms can include abdominal pain, diarrhea, and vomiting.
 - Numb lips, tingling fingers and toes, or dizziness

Additional Causes for Concern

Children are at higher risk than adults for illness from because of their smaller size and body weight and can get a relatively larger dose of toxin. They are also the most likely people to be playing in thick blooms near the shoreline.

Cyanobacteria toxins have no known antidotes.