



BLUE-GREEN ALGAE and ALGAL TOXINS

Background

Blue-green algae are microscopic organisms that are naturally present in lakes and streams. Some blue-green algae can produce algal toxins that could pose a health risk to people and animals when they are exposed to them in large enough quantities. This fact sheet answers questions about blue-green algae and algal toxins.

What are blue-green algae?

Blue-green algae, also known as cyanobacteria, are microscopic organisms that are naturally present in lakes and streams. They are usually present in low numbers. However, blue-green algae can grow quickly and become very abundant in warm, shallow, undisturbed surface waters that receive a lot of sunlight. When this occurs, they can form blooms that discolor the water or produce floating rafts or scums on the surface of the water. These blooms are primarily a concern during the summer months in Illinois.

Are blue-green algae or algal toxins harmful to my health?

Some blue-green algae produce algal toxins (e.g., microcystin, cylindrospermopsin, anatoxin, saxatoxin; the most common is microcystin) that could pose a health risk to people and animals when exposed to them in large enough quantities. Health effects could occur when surface scums or waters containing high levels of blue-green algae toxins are swallowed, come in contact with skin, or when airborne droplets containing toxins are inhaled while swimming, boating, waterskiing, tubing, bathing or showering.

Recreational contact such as swimming and household contact such as bathing or showering with water not visibly affected by a blue - green algae bloom is not expected to cause health effects.

How do I know if I am being exposed to blue-green algae?

People should suspect that blue-green algae are present in water that is visibly discolored or that has surface scums. Colors can include shades of green, blue-green, yellow, brown, or red. Water affected by blue-green algae blooms often is so strongly colored that it can develop a paint-like appearance (see photos below).

The presence of toxins from algae can only be verified through laboratory analysis. Unpleasant tastes or odors are not reliable indicators of blue-green algae toxins or other toxic substances, because the algae may or may not also produce chemicals that affect the taste or odor of drinking water. Similarly, the absence of unpleasant tastes and odors does not guarantee the absence of blue-green algal toxins.

Can you get sick from blue-green algal toxins?

People can get sick from blue-green algal toxins 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.

People should avoid contact with water that is discolored or has scum on the surface and restrict the access of their pets and livestock to this water. Pets can get sick if they have been swimming in water where algal blooms have been and ingest significant amounts of toxins by licking themselves after leaving the water.

Are children more vulnerable than adults to blue-green algal toxins?

Yes. Because of their comparatively low body weight, it takes fewer toxins to make children sick from exposure to blue green algae. In addition, children tend to have more sensitive skin than adults, so a skin rash or reaction is more likely. Children should always be supervised when swimming in any body of water.



Can I eat fish caught in water with high amounts of blue-green algae or algal toxins?

Toxins from algae can accumulate in the entrails (guts) of fish and occasionally in the muscle (filet) of fish. Levels in fish depend upon the severity of the bloom in the area where the fish are caught. In general, fish that are caught in areas of a waterbody where major blue-green algae blooms occur may be safe to eat, as long as the entrails of the fish are discarded. However, there is some uncertainty about the levels of algal toxins that can accumulate in filets, so anglers may want to wait until algal blooms are over before eating fish from waters where a bloom is occurring. Care should be taken that animals are not fed or allowed to eat the entrails of these fish.

How can I stop or reduce exposures to blue-green algae or algal toxins?

Never drink untreated surface water, whether or not algae blooms are present. Water from lakes, rivers, or streams may contain other bacteria, parasites or viruses, as well as algae toxins, that all could cause illness if consumed.

People should avoid contact with water that is discolored or has scum on the surface and restrict the access of their pets and livestock to this water. This includes swimming, water skiing, tubing, boating, etc. If contact does occur, wash with soap and water or rinse thoroughly with clean water to remove algae. This is especially important for pets (dogs) because they may lick the algae off their fur to clean themselves.

Seek medical attention if symptoms such as skin, eye or throat irritation, allergic reactions, or breathing difficulties occur while in contact with untreated surface water. These symptoms are unusual, but may occur in sensitive individuals due to exposure to low levels of blue-green algae.

For more information, you may contact:

Dr. Thomas Hornshaw
Toxicologist
Illinois EPA
217/785-0832
thomas.hornshaw@illinois.gov

Gregg Good or Teri Holland
Surface Water Section
Illinois EPA
217/782-3362
gregg.good@illinois.gov
teri.holland@illinois.gov

Barb Lieberoff
Community Relations
Illinois EPA
217/524-3038
barb.lieberoff@illinois.gov



Surface water affected by blue-green algae often is strongly colored such that it can develop a paint-like appearance.