BLUE GREEN ALGAE (HARMFUL ALGAL BLOOMS)

FACT SHEET

What are blue green algae?

Cyanobacteria, also known as blue-green algae, grow in any type of water and are photosynthetic (use sunlight to create food and support life). Cyanobacteria usually grow in slow moving fresh, brackish, or marine water, often stagnant. They usually are too small to be seen, but sometimes can form visible colonies, called an algal bloom. Cyanobacteria have been linked to human and animal illnesses around the world. Although there are 50 or so types of freshwater blue-green algae, the species most often related to poisoning are *Anabaena*, *Aphanizomenon* and *Microcystis* - sometimes referred to as Annie, Fannie, and Mike.

How do the blooms contaminate water?

Cyanobacterial blooms (a kind of algal bloom) occur when organisms that are normally present grow very quickly. Within a few days, a bloom of cyanobacteria can cause clear water to become cloudy. The water may look "painted green" or have "scum" over its surface.

The blooms usually float to the surface and can be many inches thick, especially near the shoreline. Cyanobacterial blooms can form in warm, slow-moving waters that are rich in nutrients such as fertilizer runoff or septic tank overflows. Blooms can occur at any time, but most often occur in late summer or early fall. They can occur in marine, estuarine, and fresh waters, but the blooms of greatest concern are the ones that occur in fresh water, such as drinking water reservoirs or recreational waters.

Why are they a problem?

Blue-green blooms can pose a human health concern. Although most blue-green blooms are not toxic, some blue-green algae produce nerve or liver toxins. Toxicity is hard to predict in part because a single species of algae can have toxic and non-toxic strains. Also a bloom that tests non-toxic one day can turn toxic the next day.

People may become ill after swimming or water skiing in lakes with toxic blue-green algae. Rarely, humans may experience stomach pains, vomiting, diarrhea, and skin rashes (dermatitis/swimmers itch). Nerve and liver damage have been observed following long-term exposure such as drinking water with toxic blooms. Pets and wildlife have died after exposure to toxic blue-green algae in some areas, but worldwide there are no confirmed deaths of humans from algal toxins.

What types of complications are caused by blue green algae?

Ingestion of concentrations high enough to cause serious poisoning is uncommon. Gastrointestinal effects following ingestion and dermatitis following contact are the most common effects. Pneumonia (uncommon), sore throat, fever, tiredness, runny nose, conjunctivitis, mild liver enzyme elevations, and electrolyte imbalance have been reported.

How long after exposure do symptoms appear?

Gastrointestinal effects may occur with 3-5 hours. Symptoms are generally mild; but can be severe and usually last 1-2 days. Adverse effects have resulted from soaking in or consumption of contaminated water, ingestion of fish from contaminated water, and recreation on waters which have cyanobacteria.

How can I tell if the water has blue green algae?

Signs that a cyanobacteria bloom is toxic may be large numbers of dead fish, waterfowl, or other animals within or around a body of water. Animals found dead may have algae around the mouth area or on the feet and legs, indicating possible ingestion of and contact with a toxic bloom.

How is it treated?

Treatment in humans has usually been for inflammation of the intestines (enteritis) or colon (dysentery). Your doctor may monitor your fluids and electrolytes and treat with intravenous or oral hydration if necessary. Antibiotics and respiratory stimulants have not been shown to be effective.

What if I have been exposed to blue green algae?

If you suspect you have come into contact with toxins, remove contaminated clothing and wash exposed areas thoroughly with soap and water. A physician may need to examine the area if irritation or pain persists after washing. Remove contact lenses and irrigate exposed eyes with large amounts of room temperature 0.9% saline or water for at least 15 minutes. If irritation, pain, swelling, excessive tearing, or sensitivity to light persists after 15 minutes of irrigation, contact your eye doctor for an examination.

What can be done to prevent these toxins from contaminating water?

The best way to avoid the problems associated with cyanobacterial blooms is to prevent blooms from forming. This can be done by reducing the input of nutrients, such as phosphates, into the water source or by mixing the water in a reservoir.

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

People not on public water supplies should not drink surface water, even if it is treated, during an algal bloom because in-home treatments such as boiling or disinfecting water with chlorine or ultraviolet (UV) or water filtration units do not protect people from blue-green algal toxins.

Where can I get more information?

- Utah Department of Environmental Quality 801-536-4400 or www.deq.utah.gov