



## WHAT ARE CYANOBACTERIA?

Cyanobacteria are among the world's most ancient inhabitants. They are single-celled organisms that live in fresh, brackish, and marine water, and use sunlight to make their own food. In warm, nutrient-rich environments, microscopic cyanobacteria can grow quickly, creating blooms that spread across the water's surface and may become visible. Because of the color, texture, and location of these blooms, the common name for cyanobacteria is blue-green algae.

Scientists have credited cyanobacteria with providing nitrogen fertilizer for rice and beans, but cyanobacterial blooms are not always helpful. When these blooms become harmful to the environment, animals, and humans, scientists call them cyanobacterial harmful algal blooms (CyanoHABs). Freshwater CyanoHABs can deplete the oxygen and block the sunlight that other organisms need to live. They also can produce powerful toxins that affect the brain and liver of animals and humans. Because of these concerns, the U.S. Environmental Protection Agency (EPA) has added cyanobacteria to its Drinking Water Contaminant Candidate List. This list identifies organisms and toxins that EPA believes are priorities for investigation.

## HOW DO CYANOBACTERIA AFFECT HUMAN HEALTH?

Anecdotal evidence and data from laboratory animal research suggest that cyanobacterial toxins can cause a range of human health effects, yet few studies have explored the links between CyanoHABs and human health. Humans can be exposed to cyanobacterial toxins by drinking untreated water that contains the toxins, swimming in water that contains high concentrations of cyanobacterial cells, or breathing air that contains cyanobacterial cells or toxins (while watering a lawn with contaminated water, for example).

Adverse health effects associated with exposure to high concentrations of cyanobacterial toxins include stomach and intestinal illness; trouble breathing; allergic responses; skin irritation; liver damage; and neurotoxic reactions, such as tingling fingers and toes. Scientists are exploring the health effects associated with long-term exposure to low levels of cyanobacterial toxins.

## WHAT IS CDC DOING TO ADDRESS THESE CONCERNS?

CDC is working to understand and prevent the adverse human health effects associated with CyanoHABs by:

- Providing technical and financial assistance to state health and environmental agencies (currently in Florida and Vermont), to evaluate whether standard water-treatment practices successfully remove cyanobacterial toxins from drinking-water sources.
- Evaluating the public health impact of cyanobacterial toxins in public drinking water.

## HOW CAN I PROTECT MYSELF FROM CYANOBACTERIAL TOXINS?

Avoid contact with large blooms of blue-green algae. Do not allow children or pets to play in or drink scummy water. Do not water-ski over blooms of blue-green algae. Do not use scummy water for cleaning or irrigation. If you accidentally come in contact with a bloom of blue-green algae, wash yourself thoroughly.

### *For more information, please contact:*

CDC/National Center for Environmental Health

Division of Environmental Hazards and Health Effects

Phone: 1-800-CDC-INFO; E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov); Web site: <http://www.cdc.gov/hab/cyanobacteria/>.