



Cyanobacteria and health effects

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Why worry about Cyanobacteria?

Can produce toxins under the right circumstances!

- Most commonly found toxins are:
 - Microcystin
 - Anatoxin-a
 - Cylindrospermopsin



Several dogs died after drinking/swimming in VT lakes where blooms were present

Reports of GI illness, fever, cramping, skin rashes from humans exposed to cyanobacteria

Exposure to the cells can cause rashes and allergy-like reactions like runny noses or sore throats

In the past couple of years...

Huge toxic algae bloom sickens more than 100 in Utah amid heatwave

Bacteria has spread rapidly to cover almost all of Utah Lake, turning the water bright green with a pea soup texture and leaving scummy foam along the shore



Case Report




Recreational Exposure during Algal Bloom in Carrasco Beach, Uruguay: A Liver Failure Case Report

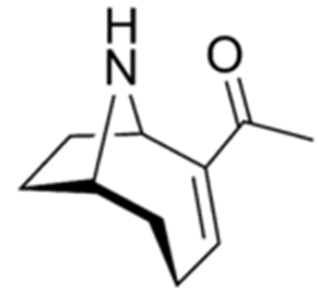
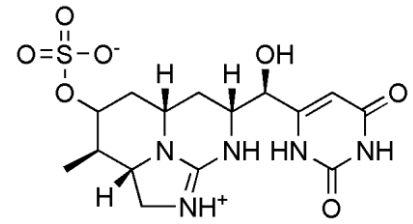
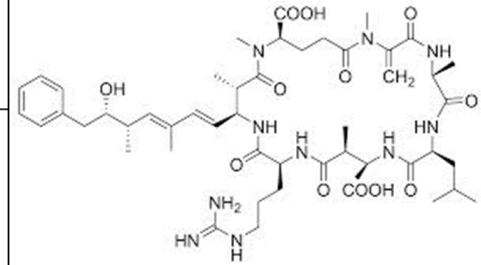
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theguardian.com

▲ Utah poison control has fielded hundreds of calls related to the bloom, including 130 involving people who have reported vomiting, diarrhea, headache and rashes. Photograph: Rick Egan/AP

Summary of Health Effects

Cyanotoxin	Primary Organ Affected	Health Effects	Most Common Cyanobacteria Producing Toxin
Microcystin-LR	Liver 	Abdominal pain Vomiting and diarrhea Liver inflammation and hemorrhage	<i>Microcystis</i> <i>Anabaena</i> <i>Planktothrix</i> <i>Anabaenopsis</i> <i>Aphanizomenon</i>
Cylindrospermopsin	Liver 	Acute pneumonia Acute dermatitis Kidney damage Potential tumor growth promotion	<i>Cylindrospermopsis</i> <i>Aphanizomenon</i> <i>Anabaena</i> <i>Lyngbya</i> <i>Raphidiopsis</i> <i>Umezakia</i>
Anatoxin-a group	Nervous System 	Tingling, burning, numbness, drowsiness, incoherent speech, salivation, respiratory paralysis leading to death	<i>Anabaena</i> <i>Planktothrix</i> <i>Aphanizomenon</i> <i>Cylindrospermopsis</i> <i>Oscillatoria</i>



In Vermont, most blooms are microcystin producing

Who is at Greatest Risk?



Untreated surface water should not be used as a drinking water source.

Highest risk:

Contact with or swallowing water with large amounts of cyanobacteria

Most vulnerable:

Small children
Pets



Health Department Guidance



When in doubt,
STAY OUT!

Area of research: Cyanobacteria and ALS

There are some known risk factors for ALS:

- 5-10% of cases are genetic
- smoking

Suspected contributors:

- head injuries (i.e. sports players),
- occupation (metal work, pesticides)

Current studies on cyanobacteria and ALS in New England: These are spatial clustering studies. These lack exposure assessments and do not account for other potential risk factors for ALS.

Research into the cause of ALS is important and should continue.

(More info on [USGS website](#))



Thank you!

Let's stay in touch.

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