

Blue-Green Algae – Health Effects

What are blue-green algae?

Blue-green algae are a type of bacteria known as Cyanobacteria. Like plants, blue-green algae can capture energy from the sun via a process known as photosynthesis. Blue-green algae usually grow on the surface of water, which allows them to trap as much sunlight as possible. Low numbers of blue-green algae are a normal part of the ecosystem in most waterways, including lakes, rivers, creeks and wetlands.

What causes blue-green algal ‘blooms’?

'Bloom' is the term used to describe an accumulation of algal cells to a point where they discolour the water, form scums, produce unpleasant tastes and odours and reduce the water quality. Drought and increased temperature in summer may result in an increase in visible 'blooms' and surface scums on waterways. Conditions that can lead to a blue-green algal bloom include:

- Warm water temperatures
- High levels of sunlight
- Still or slow flowing water
- High nutrient levels in the water

Blue-green algae ‘toxins’

Some types of blue-green algae can produce toxins that may be harmful to humans and animals. The levels of toxins produced can vary throughout a blue-green algal bloom. Algal surface scums, which tend to settle along shorelines contain the highest numbers of blue-green algae. Contact with these blue-green algae surface scums poses the greatest risk of exposure to high levels of toxins.

How can I be exposed to blue-green algae toxins?

Exposure to harmful levels of blue-green algae toxins during an algal bloom can occur through:

- Direct contact of skin, eyes, mouth or nose with affected water during water-based recreational activities such as swimming, diving, water-skiing, windsurfing, canoeing, rowing or other boating activities.

- Breathing in fine water spray or droplets created when the surface of affected water is broken during water-based recreational activities.
- Accidental swallowing of affected water.
- Consumption of fish or other seafood from affected waterways.

What are the possible health effects of blue green algae toxins?

The possible health effects of blue green algae vary with the type of toxin and the route of exposure:

- Direct skin contact with blue green algae toxins can cause skin and eye allergic reactions or irritation.
- Accidental swallowing of affected water or consumption of food from affected water can cause symptoms of gastroenteritis, including nausea, vomiting, diarrhoea, fever and abdominal pain. In extreme cases, damage to liver cells and nerve cells can also occur.
- Breathing in fine water spray or droplets from affected water during recreational water activities can cause asthma or hay fever-like symptoms.

Can living, working or participating in recreational activities near a waterway during a blue-green algal bloom have harmful health effects?

There is limited research available on the possible health effects of exposure to airborne blue-green algae toxins. Based on the current evidence available, if you have no direct contact with affected water but you live or work near an affected waterway, it is very unlikely that you would be exposed to harmful levels of blue green algae toxins in the air.

Some types of blue-green algae release chemicals unrelated to toxins that can produce a strong odour during algal blooms. There is no evidence to suggest that the odour can cause toxic effects, however the odour is an annoyance that may impact on general well-being.

How can I avoid exposure to blue-green algae?

To avoid potential exposure to blue-green algae it is important to:

- Follow the advice of any information signs around affected waterways.
- Avoid any recreational activities that could involve contact with affected water.
- Do not eat fish or seafood from any waterway that has been affected by blue-green algae in the past 3 months.
- Do not let pets drink or swim in blue-green algae affected water.

- Closely monitor children and pets near affected waterways and keep them well away from the edge of the water.

What should I do if I think I have been exposed to blue-green algae toxins?

- If you have had skin contact with affected water, immediately remove any wet clothing and wash or rinse any body part that has been in contact with the affected water.
- If your pet has come into contact with affected water, wash them thoroughly with clean water and take them to see the vet as soon as possible if they become unwell.
- If you think you may have been exposed to blue-green algae toxins and are feeling unwell, seek urgent medical attention.
- If you have general concerns about possible exposure to blue green algae toxins, see your GP.

How are blue green algae monitored in ACT waterways?

ACT Health publishes the *ACT Guidelines for Recreational Water Quality*, which provide a framework for the management of recreational activity in ACT lakes and rivers. The ACT Government, Environment Protection Authority (EPA) and Transport Canberra and City Services (TCCS), is responsible for the management of Lake Ginninderra, Lake Tuggeranong, Molonglo Reach and the Murrumbidgee River Corridor. The EPA conducts testing for blue-green algae in these waterways.

The National Capital Authority (NCA) is responsible for the management of Lake Burley Griffin (LBG), including water quality monitoring for recreational use.

Where can I find more information about blue green algae?

For further information about recreational water quality in lakes, ponds and rivers, visit:

https://www.accesscanberra.act.gov.au/app/answers/detail/a_id/627/~recreational-water-quality-in-lakes%2C-ponds-and-rivers#!tabs-1

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