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Opinion

## **Editorial: Toxic algae: The airborne health threat we know too little about**

**By The Palm Beach Post Editorial Board**

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Editorial: Growing research points to a health danger that not many realize: the toxins in blue-green algae can disperse into the air, travel for miles and lodge in people's lungs. How dangerous is this? We need to find out fast.

Everyone knows that blue-green algae and red tide, such as bloomed to excess in the St. Lucie River estuary and the Gulf waters off Florida's west coast last summer, are stinky and unpleasant and bad for swimming, fishing and tourism.

But they're also bad for health. As the advocacy group Clean Okeechobee Waters Foundation warns, blue-green algae produce toxins known as microcystins; these have been linked to non-alcoholic liver diseases, cirrhosis and liver cancer. Red tide creates brevetoxin, which causes human respiratory problems. Both types of algal blooms produce saxitoxins that cause acute paralysis.

One especially toxic compound from blue-green algae, known as BMAA, has been linked in some studies to ALS, Alzheimer's and possibly Parkinson's diseases.

What's more alarming, researchers are finding that these toxins aren't just lurking in the water. The green slime on blue-green algae (which really isn't an algae, but cyanobacteria) leaves behind a dried crust that goes drifting into the air.

Air samples taken from December to January detected the toxins from blue-green algae *more than three miles away* from the Caloosahatchee River, which was heavily infested with algal blooms last year, and at least a mile from any retention

ponds, according to NOAA's National Centers for Coastal Ocean Science, which helped sponsor the studies.

The levels were low, and more research is needed to figure out how serious a threat to human health this may be. "Right now, it doesn't appear to be at a high enough level to be a concern, but we're not 100 percent sure," lead scientist Mike Parsons, of Florida Gulf Coast University, told the Fort Myers News-Press in March.

What is certain, however, is that the crisis of harmful algal blooms concerns more than aquatic communities and their businesses. This is about the potential spread of extremely harmful, invisible poisons miles inland. The impacts might be much broader than most of us have suspected.

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These preliminary findings add urgency to the mission of the blue-green algae task force that was appointed by Gov. Ron DeSantis in April, one of several forward-thinking environmental moves by the new governor. A hopeful sign is that Parsons, a marine biologist, is on the six-member panel.

The formation of this task force is a far preferable to the official denial on the subject that we saw as recently as last summer. In August 2018, a Florida Health Department spokesperson misleadingly said: "The toxin for blue-green algae does not have an aerosol component," the Fort Myers News-Press reported.

Wrong. University of Michigan researchers, studying harmful algal blooms of blue-green algae in Lake Erie, determined last year that "these blooms can release material into the atmosphere" -- in tiny aerosol particles about 100 times smaller than a human hair, small enough to be carried hundreds, even thousands, of miles by air. Particles this size can penetrate deeply into people's lungs.

And yet we don't know how dangerous the airborne particles are; microcystin may be in the air all the time, and humans may "have adjusted to low levels of the toxins," Parsons recently told the Treasure Coast Newspapers.

We have to find out: how much exposure to the toxins will hurt your health?

Complicating the question is this, from University of Miami neurologist Walter Bradley: “These illnesses, the liver disease, the neurological diseases, have got a very long incubation period, and therefore these things are a chronic exposure problem, and those chronic exposures can go on for years and years.”

It's clear that we need much more research into the nature of the toxins and their airborne concentrations. And public health officials should start methodically monitoring the health of people living within several miles of the blooms.

For everyone's sake, lawmakers and regulators must crack down on what's causing these huge blooms of harmful algae to begin with: the leaking septic tanks, faulty city and county wastewater systems and fertilized lawns and farm fields that are sending too much nitrogen and phosphorous into Florida's waterways.

We should all be grateful to the researchers who have established that the toxins from blue-green algae can take to the air. Now we need to move quickly to find out how dangerous this is.