Health effects of breathing toxic algae in St. Lucie River is focus of Harbor Branch study

Tyler Treadway, Treasure Coast Newspapers  Published 3:17 p.m. ET Sept. 14, 2018 | Updated 3:22 p.m. ET Sept. 14, 2018

If you've been around blue-green algae blooms, chances are you've breathed in toxins.

Everyone tested so far in a study of people who live and work around algae blooms in the St. Lucie River had "detectable levels" of the toxin microcystin in their noses, said Adam Schaefer, a Harbor Branch Oceanographic Institute epidemiologist.

"Preliminary results suggest microcystin is definitely airborne," Schaefer said Friday as people were giving blood, urine and nasal swab samples at the Florida Sportsman magazine office in Stuart.

More: Magazine temporarily closes offices because of algae odor

About 70 people have taken part in three rounds of sampling.

The presence of the toxin in people's noses doesn't mean it's getting other places in their bodies and making them sick, Schaefer said. "That's why we do the blood and urine samples." Results from those tests are not yet available.

Although they all had varying levels of the toxins in their noses, not all the people tested had symptoms of exposure, such as a runny nose, watery eyes and trouble breathing.
Blood is taken from a person who has been exposed to blue-green algae blooms in the St. Lucie River at a Florida Atlantic University’s Harbor Branch Oceanographic Institute study on Friday, Sept. 14, 2018, at the Florida Sportsman magazine office in Stuart. Blood, urine and nasal swab samples have been collected from over 70 people to determine microcystin levels as part of long-term research funded by the institute and a crowd-funding program. (Photo: LEAH VOSS/TCPALM)

“That's one question we hope this study will answer,” Schaefer said: "What concentration and what length of exposure cause people to show symptoms?"

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A questionnaire filled out by test participants asks for the times, dates and places of their contact with the St. Lucie River and Indian River Lagoon.

That information will be matched with data on the toxicity of blue-green algae blooms on or near those dates and places.

Soon after Lake Okeechobee discharges began June 1, algae blooms started showing up in the St. Lucie River and, to a lesser extent, the Indian River Lagoon and Martin County ocean beaches.

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Residents suffering for past month

Sue Meekins, who lives near the Indian River Lagoon in Jensen Beach, has had a chronic headache, watery eyes, runny nose and scratchy throat "that's not so much painful as annoying" for about a month.

"They very well could be tied to the river," Meekins, 71, said Friday as she waited to be tested. "I'd like to know if they are."

Meekins said she hasn't gotten in the lagoon since spring, but she sometimes takes her 5-year-old grandson to the dock and the water fountain at Indian Riverside Park.

“We know microcystin can get in the air," Schaefer said, "but we don't know how far it can go and how potent it can be. It's one of the fundamental gaps in our knowledge about these toxins."
Little known about long-term effects

Schaefer hopes the study will "set the stage" for more research to determine long-term effects of exposure to toxic algae.

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Researchers at Ohio State University, for example, found people who live in areas with blue-green algae blooms are more likely to die from non-alcohol-related liver disease.

More: Ohio State University study links algae blooms, fatal liver disease

"But that study didn't look at individuals to see who was actually exposed to toxic algae and for how long," Schaefer said.

Becky Harris talks about Pandora, her 2-year-old female miniature Pomeranian dog, on Tuesday, Sept. 4, 2018, at her home along the St. Lucie River in Stuart. Pandora became sick after taking a bite out of a dead catfish on Sunday, Aug. 26, 2018, along the blue-green algae-tainted shore of their backyard. Eric Hasert/TCPalm Wochit

U.S. Sen. Bill Nelson and Florida Gov. Rick Scott have blame each other for the toxic blue-green algae blooms plaguing Florida. Ginny Beagan, TCPalm

Harbor Branch researchers will be able to look at subjects of this study in 10, 12 or more years to see if they suffer any long-term effects.
Some scientists believe another toxin found in blue-green algae, BMAA, could lead to neurological ailments 20 or more years after exposure.

**More:** Health risks of thousands of algae toxins unknown, marine biologist says

"This could be one piece of much larger research," Schaefer said, "if we can get the funding."

Researchers need donations for study

Harbor Branch's Center for Coastal and Human Health "scraped together as much money as possible when the blooms started happening this summer," Schaefer said.

Florida Atlantic University, Harbor Branch's parent institution, made the project part of its crowd-funding SpringBoard program. So far, seven donors have contributed $470 toward the $10,000 goal.

**More:** Contribute to the algae research project via FAU's SpringBoard

That's less than the $500 cost to analyze 20 nasal swabs.

The sampling in the Stuart area will continue as long as the blooms continue.

Peer-reviewed results of the study could be published within a year, Schaefer said.

"We're trying to move as fast as we can," he said, "but we want to provide accurate information because this issue is so important."