

Seminole County Water Atlas Learning Kit

Amoebas & Temperature *Handout*

Students learn about a disease-causing organism that likes warm water.

Water Atlas Curriculum Lesson 1

Instructions: Read the following articles from and complete the questions on the next 2 pages.

Post Warnings for Amoeba, Residents Urge

By Robert Perez | Sentinel Staff Writer | Posted August 2, 2002

OVIEDO — About 50 people, mostly Oviedo residents, packed City Hall on Thursday to learn more about a potentially deadly amoeba that lurks in most Florida waters.

Seminole County public-health officials explained how the amoeba, *Naegleria fowleri*, caused the death of an Oviedo boy last week and explained preventive measurements that swimmers can take.

One question, however, was raised over and over that could not be answered: Why didn't we know about this sooner?

"I've lived in Florida for 10 years, and I didn't know about it," said Ann Stahl, who lives on Long Lake in Oviedo. I certainly wouldn't let my children go in if I was aware of this. I never thought there was something in the water that could be fatal."

Outside City Hall, a large photo of Jacob Thomas Barrett was set up on an easel by his uncle, Thomas Barrett. Barrett attended the meeting to urge that warnings about the amoeba be posted at all local lakes, ponds, and rivers.

"We were told this happens once every 2.5 million hours of swimming," he said. "Let's post it so that it happens once every 5 million hours."

It would not be practical to post warnings on every freshwater body, said John Cochrane, Seminole County Health Department environmental manager. "What's more, public health officials don't have authority over private lakes," he said.

That didn't ease concerns for many in the crowd. Michael Contreras said he would tell his 18-year-old son to stop going out on Long Lake until water temperatures drop.

"I love my children too much," he said. "He can wait a few months to go out on the lake."

The amoeba exists in soil and sediment and becomes active in fresh-water bodies when temperatures reach at least 82 degrees," Cochrane said.

The amoeba gets into the body through the nose and travels to the brain. Cochrane suggested swimmers wear nose plugs, avoid stirring up sediment and avoid diving.

Name:

Date:

Page 1

Seminole County Water Atlas Learning Kit

Amoebas & Temperature *Handout*

Students learn about a disease-causing organism that likes warm water.

Water Atlas Curriculum Lesson 1

Deadly Amoeba Lurks in Florida Lakes

September 18, 2007 – By John Zarrella and Patrick Oppman, CNN Health

Something in the lakes around Orlando, Florida, has claimed the lives of three boys this summer.

“This thing is just there. It’s lurking like some deadly thing in the water which can take our children’s lives and we all have to be aware,” said Orange County Health Department Director Dr. Kevin Sherin.

The “thing” isn’t a fish or alligator. It is so small it cannot be seen with the naked eye. The killer that lives in the hot, fresh water is a single cell amoeba that once exposed to the human brain through the nasal passages is almost always fatal.

At first people exposed to the amoeba, *Naegleria fowleri*, suffer from flu-like symptoms. Very quickly, in from one to 14 days, the symptoms worsen, Sherin said. “There’s a downhill course. Folks lapse into a coma; there are abnormal movements of the eyes and a terrible cascade of events leading to the actual death of parts of the brain.”

Sherin said exposure to the amoeba can be detected by an MRI and it can be treated with antibiotics if caught early enough, but Sherin said he believes medical personnel are not in the habit of looking for the disease.

That is because the amoeba is very rare. The Centers for Disease Control in Atlanta, Georgia, has documented 24 cases in the United States since 1989.

Health officials do not know what caused three cases in Orlando in one summer. Theories range from warmer temperatures to a drought that has lowered lake levels. Sherin said officials considered closing access to the lakes, but concluded they did not have the authority. Even if public lakes had been closed, private lakes would have remained open.

So, at 15 parks and lakes around the city, warnings about the amoeba have been posted. The signs urge bathers to wear nose clips or stay out of water warmer than 80 degrees Fahrenheit, which can be a breeding ground for the amoeba.

The warnings provide little solace for Steve Sellars.

Health investigators said they believe Sellars’ 11-year old son, Will, was exposed to the amoeba during an August weekend spent learning to wakeboard on Orlando’s Lake Jessamine.

“You think it won’t happen to me, it won’t happen to my family.” Sellars said. “You’re wrong”

“[Will’s] symptoms were like a flu bug,” Sellars said, “We rushed him to the hospital and two days later he’s passed away. It’s like a nightmare.”

Name:

Date:

Page 2

Seminole County Water Atlas Learning Kit
Amoebas & Temperature *Handout*

Students learn about a disease-causing organism that likes warm water.

Water Atlas Curriculum Lesson 1

Questions:

1. What is the main idea of the article?

2. To avoid exposure to amoebas, what data should a citizen analyze to determine whether or not it is safe to swim in a particular lake?

3. If you were on the Oviedo City Board, what recommendations would you make?

4. It has been reported that exposure of the human brain to *Naegleria fowleri* is almost always fatal. Why?

5. It has been suggested that the rarity of attacks by the amoeba (*Naegleria fowleri*) has caused reluctance on the part of medical personnel to try and eradicate this pathogen. Do you agree with this statement? Why or why not?

Name:

Date:

Page 3



Seminole County Water Atlas Learning Kit
Amoebas & Temperature *Handout*

Students learn about a disease-causing organism that likes warm water.

Water Atlas Curriculum Lesson 1

6. How does temperature affect the survivability of *Naegleria fowleri* in water as well as in the human body?

Name:

Date:

Page 4