Boy, 9, Dies of Rare Amoeba Infection After Swimming in a Lake. What Else is in Lake Water?

By Lylah M. Alphonse, Senior Editor, Yahoo! Shine

Jack Ariola Erenberg, 9, died of a rare brain infection caused by a microscopic amoeba. When you're lounging at a local beach or swimming in a freshwater lake, you're hoping to beat the heat, not worrying about getting sick. But parasites and microbes can lurk in the sediment and, when the heat is high and the water levels low, the risk of infection skyrockets. Last week, 9-year-old Jack Ariola Erenberg was swimming in the warm waters of Lily Lake near his home in Stillwater, Minnesota. **Days later** he was dead, his brain ravaged by primary amoebic meningoencephalitis, an infection caused by a microscopic amoeba.

"It was just a fluke. You can't keep kids off a beach; what the hell are you supposed to do?" his father, Jim Ariola, told the Pioneer Press. "He loved going swimming. He was a great brother, great son."

Primary amoebic meningoencephalitis, or PAM, is extremely rare -- only 123 cases have been recorded in the United States since 1962, according to the U.S. Centers for Disease Control and Prevention. But the parasite that causes it, **Naegleria fowleri,** is quite common. It's usually found in the soil and in freshwater lakes in the Southern part of the United States during the summer (it can also survive in inadequately chlorinated swimming pools or dirty tap water, according to the CDC's website), and **can infect the brain when someone gets water up the nose.**

"Infections usually occur when it is hot for prolonged periods of time, which results in higher water temperatures and lower water levels," the CDC site warns. Symptoms (stiff neck, confusion, loss of balance, seizures, and hallucinations) usually start to show anywhere from one to seven days after infection. The infection, which is not contagious, usually kills in two to 12 days; out of the 123 cases recorded by the CDC, only one person has survived.

"The risk of infection from Naegleria in Minnesota is very low," Richard Danila, the assistant state epidemiologist, said in a statement. "We do not want to discourage people from swimming. Rather, simply avoid swimming, diving or other activities in obviously

stagnant water while temperatures are high and water levels are low."

In Jack's case, the infection took over quickly. He went swimming "early to middle" of last week, his father told the Pioneer Press. By Friday, he was incoherent, "seeing things, just upset stomach, real bad headaches," his father said. "He didn't know who was around him."

By Saturday, Jack wouldn't wake up. "They put him on a ventilator, had a machine monitoring his brain," his dad said. "His brain just started shutting down."

The 9-year-old died on Tuesday, when he was taken off life support. He would have started fourth grade in Stillwater this fall. Wednesday would have been his first day at hockey camp, something he had been looking forward to all summer, his father said.

"Love your kids, you know?" Ariola, told KMSP-TV in Minneapolis-St. Paul. "Whether they don't want the hugs and kisses or not, just do it anyway because you just don't know and it could really be your last time."

Two years ago, 7-year-old Annie Bahneman of Stillwater died of a Naegleria fowleri infection, also after swimming at Lily Lake. Officials say that they are "99 percent sure" that Jack was infected with the same parasite, and have opted to close the lake to swimmers for now.

"It looks like the same cause," Danila told the Pioneer Press.

"We don't know if they acquired it from Lily Lake, but out of an abundance of caution, we thought it should be closed," Danila said. "It's the most likely source."

Lakes can't be treated to eliminate bacteria or other parasites, but heat-loving microbes like Naegleria fowleri go dormant when the water temperature drops below 80 degrees.

Freshwater lakes and streams have an entire ecosystem that can't be seen with the naked eye. In addition to amoebas, there are bacteria, viruses, and other single-celled organisms, the Water Encyclopedia points out, and some of them can cause less-serious medical issues, from urinary tract infections to allergic reactions.

"Microbes are natural and vital members of all aquatic communities, and are the foundation of lake and stream ecology-without them the natural water worlds would not be possible," the encyclopedia explains. "Certain microbes, however, when present in excessive numbers, pose a threat to human health." People can develop bacterial infections if lake water gets into an open cut, pollutants and toxins can cause skin problems, and accidentally ingesting lake water can lead to all sorts of gastrointestinal issues, depending on what's in the water.

To reduce your chances of infection, the CDC recommends:

- Avoiding water-related activities in warm, freshwater areas during hot months when the water levels are low.
- Keeping your head above water, or using nose clips when diving or swimming
- Avoiding digging or stirring up sediment while playing in shallow water