

What is cryptosporidium? The pool parasite outbreak causing panic

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Credit: University of Michigan

Cryptosporidiosis, a diarrheal disease, is caused by the microscopic parasite *cryptosporidium*, or crypto, and it could be living in your public pool.

According to the CDC, crypto outbreaks are on the rise. The number of reported outbreaks has increased an average of 13 percent each year

from 2009 to 2017.

"Internationally, this is one of the more important pathogens to be on everyone's radar," says Joseph Eisenberg, Ph.D., M.P.H., chair of epidemiology at the U-M School of Public Health.

It only takes a few dozen eggs of the crypto parasite to become infected, and it is the leading cause of waterborne disease among humans in the United States. According to Vernon Carruthers, Ph.D., professor of microbiology and immunology at U-M Medical School, an infected person can produce millions of these microscopic eggs.

"The infection is passed on from exposure to the parasite's egg form," says Carruthers. "The parasite then generates inside the infected person and is expelled through feces, where the cycle begins again."

Crypto often enters the body by swallowing pool water. Infants in swimmer diapers are a major culprit in transferring the parasite.

Carruthers says to beware how tough these eggs are: "They can live for years if they don't get dried out, or if you're not in a climate that ever reaches freezing temperatures. Freezing cold can kill them. Chlorine can't."

Additionally, the parasite is so small it easily passes through filters that were originally designed to filter out larger [parasites](#) like Girardia, according to Eisenberg.

Breeding grounds

While the majority of cryptosporidiosis outbreaks are linked to [pools](#) (35 percent), 15 percent are linked to cattle exposure, according to the CDC.

It's recommended that with exposure to an animal's habitat, a person changes their clothes and takes a shower to remove any dirt or bacteria that could be on the skin.

Aside from pools and animals, childcare facilities account for 13 percent of outbreaks. Chlorine (or bleach) is the primary barrier to pathogen transmission.

In all outbreak categories, the illness disproportionately affects children aged 1 to 4 years. This could be because [young children](#) have limited toileting skills and are more likely to ingest [pool water](#) from kiddie pools, water playgrounds or other treated recreational water venues.

The CDC shares healthy swimming practices that parents can use to help keep their kids from spreading the crypto parasite, like:

- Don't let a child swim if they've been sick with diarrhea, or just recovering
- Take children for bathroom breaks and check diapers every hour
- Change diapers in a bathroom or diaper-changing area, not poolside

Important to note, unlike other conditions, it's difficult to prevent exposure to the crypto parasite. It's easier to teach others how to prevent its spreading, if they're potentially carrying the bug. This makes it all the more crucial to be aware of such an outbreak.

"The CDC recommendations are mostly focused on preventing spread," says Eisenberg. "Not swallowing water is difficult when a child is active in the water and continually submersing their head. A parent can be proactive by making sure the swimming facility is doing a good job in managing risks at the pool."

Symptoms and treatment

If you think you're already infected, signs to look for are bloating, cramping and runny diarrhea.

"Remember to stay hydrated," says Eisenberg. "Especially if it's a child experiencing having diarrhea. The loss of fluids can result in more serious illness, and getting fluids through an IV is something we can all try to avoid."

Typically, cryptosporidiosis will last two weeks, and the average [immune system](#) can fight the parasite on its own. However, cryptosporidiosis can present as other bacterial conditions, so it's important to seek treatment if symptoms last several days, allowing an anti-parasitic drug to be administered as soon as possible if needed.

Crypto can affect anyone, but some groups are susceptible to more severe illness. Those with weakened immune systems may experience even life-threatening illness, like people with HIV/AIDS, inherited diseases that affect the immune system, or patients who have cancer or are organ transplant recipients and had to reset their immune system.

"This illness can result in a persistent, untreatable situation for these high-risk groups," says Carruthers.

He adds that parasites, like crypto, are eukaryotic cells. This makes them more similar to humans than bacteria, which are prokaryotic cells. Crypto can be more difficult to treat with an anti-parasitic since it is a more complex composition.

Getting properly diagnosed and treated can prevent someone from passing the infection along, which is especially important if you're sharing a pool with someone with a weakened immune system.

Unlike other conditions, crypto can provoke the same severity of illness time after time.

"You don't build immunity to this," says Carruthers. "It's a strong bug and there aren't many treatment options for it, but I'm optimistic about future medical advances as the parasite is studied more closely."

Provided by University of Michigan

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