

HEALTH

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Cat poop parasites may pose public health hazard, study suggests

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Marcio Jose Sanchez / AP file

Feral cats like these found in Stockton, Calif., may be part of a growing public health problem caused by parasites in cat poop, a new study suggests.

Here's a sobering thought for every cat owner in charge of emptying the litter box: Felines deposit about 1.2 million metric tons of feces into the U.S. environment every year, a new study finds, and all that poop may pose an under-recognized public health hazard.

No one's saying to get rid of the kitties, but scientists who study an infectious parasite known as *Toxoplasma gondii* say they've found that the eggs of the bug are more widespread than believed, and that cat owners should take precautions when it comes to kids' sandboxes and backyard gardens.

That's even though there's evidence that fewer are becoming infected by the parasite and veterinarians say that responsible pet owners are actually at lower risk than others.

It's long been known that some cat feces harbor the parasite known as *T. gondii*, which can cause human illness. Pregnant women and people with compromised immune systems have been warned for decades to avoid cat box duty because the resulting infections can cause congenital problems and serious illness.

But a new analysis by Dr. E. Fuller Torrey and Dr. Robert H. Yolken, scientists at Johns Hopkins University Medical Center, finds that the parasite eggs, known as oocysts, may be more common than previously known – perhaps between three and 434 oocysts per square foot of soil, according to samples taken from places as diverse as California, China, Brazil, Panama and Poland.

In addition, it may take just a single oocyst to cause infection, an

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alarming thought when one estimate shows that the dirt under a gardener's fingernails could harbor 100 oocysts, reported Torrey, the lead author of the study in the journal Trends in Parasitology.

"It may be a much bigger problem than we realize," said Torrey, a psychiatrist who heads the Stanley Medical Research Institute in Chevy Chase, Md.

There have been outbreaks of toxoplasmosis in healthy people, not just pregnant or immune-compromised patients, he said. And **recent studies have suggested** -- although not proven -- that there may be a link between high levels of *T. gondii* antibodies and development of conditions including schizophrenia, bipolar disorder and obsessive compulsive disorder, or OCD.

"Some of us suspect that some of the important transmission may occur in childhood," Torrey told NBC News.

Cats acquire the parasite when they eat infected prey, such as mice or birds, and then shed the oocysts in their poop. Children may ingest oocysts present in sandboxes and backyard dirt, said Torrey, who wants better control of the cat population, including feral cats, and better covering and monitoring of kids' play areas.

"It should give you pause before you put your child in a public sandbox," he said.

Still, even Torrey's paper notes that there's little evidence that owning a cat actually increases risk of *T. gondii* infection. And he acknowledges that the incidence of human toxoplasmosis, as measured through antibody levels, has decreased steadily in the U.S. and Northern Europe during the past two decades. A 2007 study by the Centers for Disease Control and Prevention found that the prevalence of *T. gondii* antibodies in U.S.-born people ages 12 to 49 dropped from about 14.1 percent to 9 percent between 1999 and 2004.

That decline could be driven in part by increased freezing of meat, so fewer people are becoming infected with *T. gondii* tissue cysts from raw beef, for instance, he explained. The CDC says that toxoplasmosis caused by eating infected meat is a leading cause of deaths from foodborne illness in the U.S.

Overall, however, the CDC estimates that although 60 million men, women and children in the U.S. may be infected with the *T. gondii* parasite, very few have symptoms because the human immune system typically keeps illness at bay.

"This is not considered a big problem," Torrey admitted.

Indeed, responsible cat owners are likely at lower risk than others, said Kimberly May, a veterinarian and spokeswoman for the American Veterinary Medical Association. Those owners empty litter boxes frequently, wash their hands and keep kids away from cat feces, she said. The bigger risk for *T. gondii* comes from gardening without gloves or failing to follow those precautions.

"We are concerned that cats are being the scapegoats for this," she said.

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No question, the number of cats in U.S. homes is on the rise. Between 1989 and 2006, cat ownership increased about 50 percent, from 54.6 million to 81.7 million pets. During the same time, dog ownership rose by 38 percent, from 52.4 million to 72.1 million dogs. In 2012, 86.4 million cats were owned in the U.S, compared with 78.2 million dogs, according to statistics from the Humane Society of the United States.

The number of feral cats in the U.S. has been estimated at at least 25 million, but could be much higher, Torrey noted.

With about 1 percent of cats shedding oocysts at any given time, perhaps 55 million oocysts per day, it could be a more serious problem than is now recognized, Torrey contends. Oocysts can survive up to 18 months and perhaps longer, he noted.

"This should raise the public health concerns about the number of *T. gondii* oocysts being distributed in the environment, especially as we do not know the limits of oocyst viability or the true relationship between these oocysts and the human diseases with which they have recently been associated."

That's a view downplayed by infectious disease experts, including Dr. William Schaffner, chairman of the department of preventive medicine at Vanderbilt University in Nashville, Tenn.

He said that the recognized risks of toxoplasmosis infection are well known – and well communicated to the people who may be most affected, including pregnant women and people with compromised immune systems.

But the links between the infection and psychiatric disorders such as schizophrenia and bipolar disorder are tenuous, he said.

"The association has been discussed, but it has not been completely accepted by everyone," he said. "If people were convinced of that, we would have acted on it."

Still, Torrey said he worries about what future research will confirm and wants pet owners to be proactive now.

Cats are nice pets, said Torrey, who emphasized that his intent was not to anger feline fans. But when his young granddaughter wanted a kitten, he advised her mom to say no.

"I don't think that they are ideal pets for children," he said. "I don't think we know enough."

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