

Two New York cats test positive for coronavirus. Here's what you need to know about the virus and animals.



A cat sits on a balcony in Jaen, Spain. Two pet cats in New York tested positive for the new coronavirus, U.S. officials said Wednesday. (Jose Manuel Pedrosa/EPA-EFE/Shutterstock)

By

Karin Brulliard

April 22, 2020 at 6:12 p.m. EDT

Two pet cats in New York have tested positive for the [coronavirus](#), which causes covid-19 in humans, the [U.S. Department of Agriculture](#) and the Centers for Disease Control and Prevention said Wednesday.

The cats live in different parts of the state, and both showed symptoms of mild respiratory illness and are expected to recover, the agencies said in a statement. One cat is owned by a person who tested positive for the coronavirus before the cat showed signs, but the other cat lives in a household where no members had confirmed cases of the virus. It is possible this cat was infected by a household member who was only mildly ill or asymptomatic, the statement said.

The cats' positive tests came a little more than two weeks after another New York cat, a Malayan tiger at the Bronx Zoo, became the first confirmed coronavirus case in a U.S.

animal. Three other tigers and three lions at the zoo also tested positive, [the zoo said Wednesday](#). The animal numbers pale in comparison with the more than 800,000 cases and 45,000 deaths among humans in this country, and public health officials emphasize that there is no evidence that animals can pass the virus to humans.

But the cases raise questions for pet owners and others who come in contact with animals. Here's what we know.

What animals can be infected with the virus that causes covid-19?

Outside the United States, a small number of pets have tested positive — two dogs and one cat in Hong Kong and a cat in Belgium. The dogs showed no signs of illness, while the cat was sickened, according to news reports. Nadia, the Bronx Zoo tiger, had a dry cough, as did most of the other tigers and lions at the zoo, whose cases were confirmed by fecal samples. All are “behaving normally, eating well, and their coughing is greatly reduced,” the zoo said Wednesday.

Other evidence also points to cats' susceptibility. A [preliminary study](#) of blood samples from 102 stray, shelter and pet cats in Wuhan, China, found that about 15 percent had been infected with the virus. A [laboratory experiment](#) in which scientists introduced the virus to animals found that cats and ferrets were highly susceptible, dogs much less so, and pigs, chickens and ducks not at all. In that study, cats showed signs of illness.

Even so, some scientists are far more concerned about the vulnerability of animals much more like us: primates. Whether an animal can be infected depends on a receptor on certain cells that the virus needs to be able to “unlock,” scientists say, and some species have better fits. A [study released this month](#), which has not been peer-reviewed, analyzed receptors in various species and found that the virus can “bind exceptionally well” to receptors in all apes and Asian and African monkeys, as well as one lemur, the sifaka, said Thomas Gillespie, a disease ecologist at Emory University. One such monkey, the rhesus macaque, also has been [infected experimentally](#).

In all of these cases, it is important to remember that the animals were either infected by humans or were assumed to have been, scientists say. The lab animals were loaded up with levels of virus that wouldn't reflect real-world transmission. The zoo cats were infected by an employee who was asymptomatic. The pets got it from their owners. In other words, what we're seeing is human-to-animal transmission.

Can those animals spread it to each other — or to us?

The CDC, the World Health Organization, the World Organization for Animal Health and other public health bodies and experts agree on this: There's no evidence that animals transmit the virus to humans or have played a role in its spread.

It might seem logical that if an animal can be infected with the coronavirus, it can pass it along. But scientists emphasize that there is a difference between infected and infectious.

“The virus may be able to infect tissues or cells in a host, say, the respiratory tract, but they're not able to complete the life cycle in terms of transmitting to a new host,” said Jonathan Runstadler, a virologist and professor at Tufts University's Cummings School of Veterinary Medicine. “Those are commonly referred to as dead-end infections.”

J. Scott Weese, chief of infection control at the University of Guelph's Ontario Veterinary College, said he's “hopeful” that dogs are dead-end hosts because the virus doesn't appear to reproduce well in them. The jury is still out on cats, he said.

In the lab study, cats were able to infect each other, and [other research](#) suggests ferrets might be able to catch it from one another.

Given our close relationships with cats, wouldn't we know if they were a source of infection to us?

“Probably,” said Karen Terio, a big-cat specialist and wildlife pathologist at the University of Illinois at Urbana-Champaign’s veterinary school, where the first [tiger’s infection was initially confirmed](#). But, she noted, given the immense human toll, there has been little research on animal cases, and much remains to be “teased out.”

Idexx Laboratories, a veterinary diagnostic company, said this month that it had reviewed more than 5,000 samples from pet cats and dogs in 17 countries that were submitted by veterinarians for respiratory-related tests. It found zero cases of SARS-CoV-2, the scientific name for the coronavirus.

“With what’s gone on in New York, we’d be aware if there were lots of cats coming into veterinary hospitals or clinics with illness. That certainly doesn’t seem to be the case,” said Runstadler, whose lab has begun collecting samples from animals treated at Cummings for a research project on the new coronavirus in other species.

The caveat, he said, is that the virus doesn’t seem to greatly sicken cats and dogs, so more may be infected than we know about — just as is the case with asymptomatic humans.

“The lack of evidence doesn’t mean there’s absence of risk. It just means we haven’t been able to sort it out. We can just be more confident that people are the main drivers of this, and maybe there’s a small animal component,” Weese said. “Humans are a much greater risk to me than animals.”



woman walks her dog at the base of the Washington Monument on Wednesday. (Andrew Harnik/AP)

Can I take my dog for walks? If so, can I pet other people's dogs — or let people pet mine?

Definitely walk the dog — it needs the exercise, and you probably do, too. But abide by this rule, Weese says: Social distancing should be practiced at a household level, and your pets are members of the household.

That means they should be interacting only with members of your household. When walking, stay at least six feet away from other people and animals. That means no curious butt-sniffing or games of tag between dogs at the park, and no friendly pets from passersby. Cats should stay inside or supervised.

“If I wouldn't go out and shake someone's hand, why would I let them pet my dog's head?” Weese said. “We don't know what the risk is, but it's an easy step.”

This also goes the other way: Don't pet other people's animals. If for some reason you do, wash your hands well afterward.

So does that mean my dog's fur could carry the virus? Should I be cleaning its paws and coat with antibacterial wipes?

Researchers have found that the virus can survive for hours or days in air and, in laboratory settings, on some surfaces. Animal fur is not among the surfaces that have been tested.

“It's a fun question,” said Dylan H. Morris, a co-author of [a prominent study](#) that looked at various aerosols and surfaces, including cardboard and stainless steel, adding that he “wouldn't want to speculate which, if any, of our surfaces would be most comparable to fur.” His “very, very uncertain conjecture,” he added, is that “people would be probably more at risk from a sneezing owner than a contaminated pup.”

Again, that means refraining from allowing others to handle your pets. If, say, your dog is handled by a groomer — an essential service in some places — or your horse is touched by someone at a stable, make sure that person is not sick, Weese said.

As for post-walk Cloroxing? No experts we spoke to endorsed this. “The odds of there being viable virus on the ground where your dog steps and that being on its foot when it gets into the house are astronomically low,” Weese said.

If I'm sick, how should I deal with my pet?

If you've got the coronavirus or might have it, you should stay away from your pet if possible, experts say — no snuggling, kissing, bed-sharing. Ask someone else to feed it and care for it. This reduces the risk of the animal contracting the virus.

That said, people who have no one else to ask or who feel their pet's presence is very important for their own well-being can keep caring for it, Weese said. Based on what has been seen in animals so far, pets aren't likely to get terribly sick even if they are infected.

“If you must care for your pet or be around animals while you are sick, wash your hands before and after you interact with pets and wear a cloth face covering,” [the CDC advises](#).



Nadia, a Malayan tiger at the Bronx Zoo in New York, tested positive for the coronavirus. (Julie Larsen Maher/Wildlife Conservation Society/AP)

The tiger is not a pet. What does it mean that it got the virus?

The scene at the Bronx Zoo is “not ‘Tiger King,’ ” with keepers hugging big cats, said Terio, who is a veterinary adviser to the Association of Zoos and Aquariums. What’s more, she said, the cats “are not going on walkabouts in the city.”

In other words, Nadia the tiger was infected by a human at the zoo and not one who was coming into close contact with her. How it happened is being studied, but possibilities include contamination of the tiger’s food or bowls, Terio said.

“It just shows that this virus is transmissible from people to animals, and it doesn’t have to be close, prolonged, licking-your-face contact,” Weese said.

But big cats aren’t just big house kitties when it comes to viruses, Terio said. Wild lions and tigers have been stricken, sometimes fatally, by canine distemper virus. In lab experiments, domestic cats weren’t susceptible to it, she said.

So the coronavirus might also be different in big cats, she said, for reasons that remain unclear. For that reason, zoo employees have stepped up precautions around them, as well as around other susceptible species, such as primates, Terio said.

Should I get my pet tested for the virus?

Just because? No, and you probably won’t be able to, anyway. If your pet is showing signs of illness, you should consult your veterinarian, but know that such testing isn’t being done routinely. If the vet thinks your animal needs a test — because it was exposed to someone with covid-19, perhaps — the vet will then need to consult state animal

health officials. They might then consult federal officials. [It's a process](#), and one not taken lightly.

That's the case even though animal tests are performed at veterinary laboratories, about 20 of which are approved to do them, Terio said. The USDA said the tests on the two cats and any other animals do “not reduce the availability of tests for humans.”

Epidemiological research and surveillance is different. Runstadler's lab, for example, has samples from dogs, cats, potbellied pigs, a hedgehog, a hamster and “a couple horses,” he said. He and colleagues plan to test those and others they collect to better answer the many questions about how the virus moves between species.

“Even if transmission is occurring rarely from a human to a pet or even a human to an agricultural animal, we would like to be able to study some of those and understand from this natural infection what are the factors that might have made that more likely,” he said.



man walks dogs in Columbus Park in Boston on Tuesday. (Bill Sikes/AP)

But didn't this virus start in an animal?

Yes. The coronavirus is a zoonotic virus, which means it passes between other animals and humans. Infectious-diseases experts say it originated in another species, though not in its current form — it mutated along the way, and where it started and the path it took remain unknown. “The most likely reservoir” was a horseshoe bat, said Gillespie, the Emory disease ecologist, because it carries a virus that is 96 percent identical to SARS-CoV-2.

It probably went through an intermediate host, perhaps the endangered pangolin, though “there's nothing even close to a smoking gun,” he said. “It's likely we'll never get there.”

Could it hop from us to cause real problems in an animal population?

Maybe, though the main public health concern at the moment is human-to-human transmission.

“It originally came from bats, and maybe it went through another species, and now it’s in us,” Gillespie said. “It could go to other species that might also be able to harbor it.”

To thrive in another host, the virus would probably need to evolve, scientists say.

But this possibility is why Gillespie and other primate experts are [calling for extreme caution](#) around wild monkey and ape populations. In Africa and Asia, many of the susceptible species share space with humans.

“What we’re advocating when people are entering sites where these wild primates are really at risk, is that they do wear clean clothing, disinfected footwear, and go not closer than 10 meters [about 30 feet] to those animals. If they need to sneeze, they should sneeze into their elbow or into clothing and not onto leaves nearby,” he said. “We need to be really concerned about this as an impactor on endangered species.”

There’s no evidence that animals more common to American wilderness are at risk, and scientists say it’s not a major concern. But pandemic or no, you should always stay far away from wild animals.