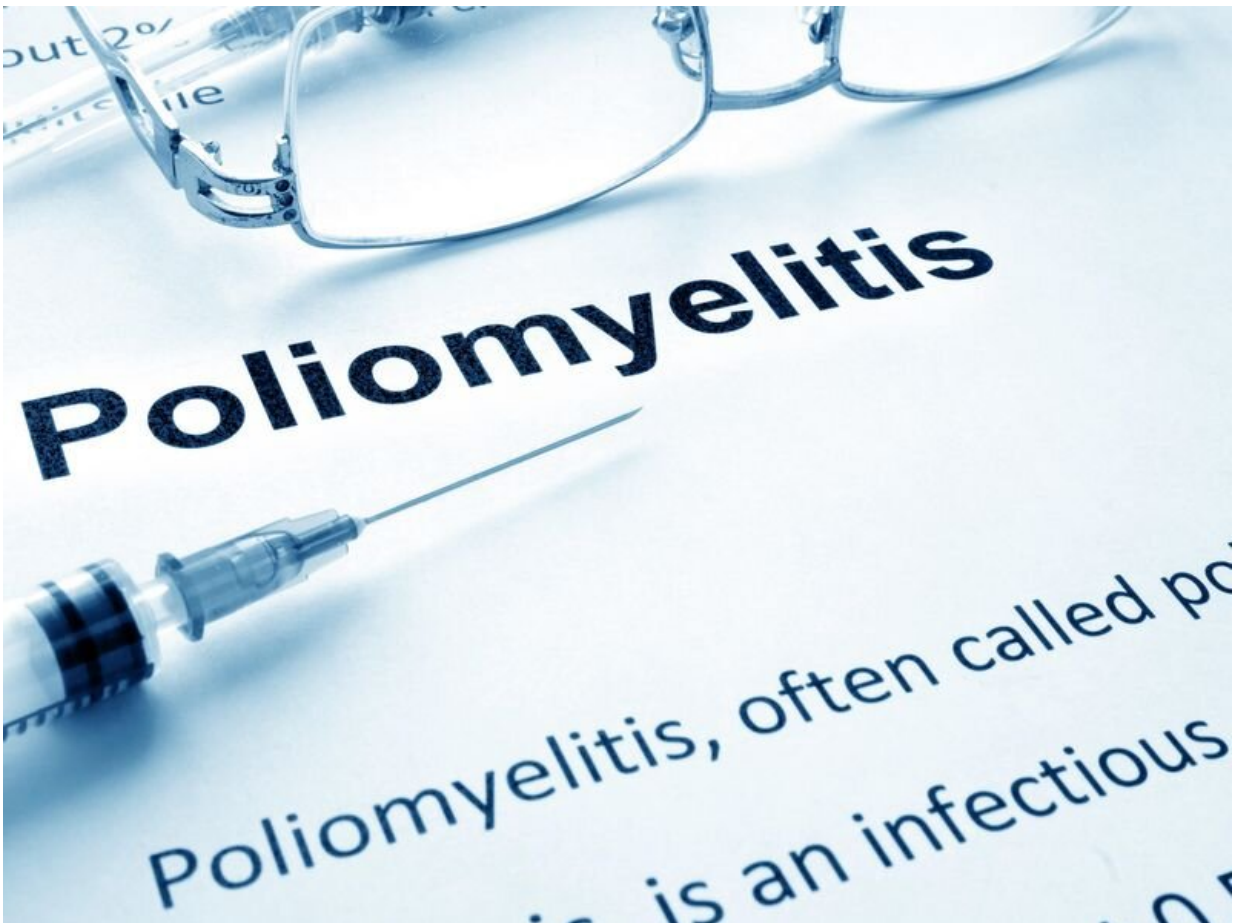


How worried should you be about new reports on polio?

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Poliovirus detected in New York City wastewater last week put public

health officials on high alert, as it indicates the potentially paralyzing virus is circulating widely in the area.

But infectious disease experts say there's no need for families of fully vaccinated children to panic.

"The inactivated [polio vaccine](#) is part of the standard childhood immunization schedule, so for most families, it really shouldn't be a concern," said Dr. Gail Shust, a pediatric infectious diseases specialist at NYU Langone Hassenfeld Children's Hospital in New York City. "It happens to be an extremely effective vaccine."

At this point, there's also no need to seek out a polio booster for a fully vaccinated child or adult, she added.

"For kids who've gone through the normal vaccination schedule in the United States, there is zero reason for them to get a booster," Shust said.

Instead, concern should be focused on communities with clusters of unvaccinated children and adults, because those are the people at risk for polio, experts say.

A young man in Rockland County, N.Y.—about 45 minutes northwest of the Bronx—was diagnosed in late July with the first case of paralytic polio identified in the United States in nearly a decade.

Subsequently, poliovirus was detected in the sewage of both Rockland County and neighboring Orange County, indicating community transmission of the virus.

Polio can lead to permanent paralysis of the arms and legs. It also can be fatal if paralysis occurs in muscles used to breathe or swallow.

About 1 in 25 people infected with poliovirus will get viral meningitis, and about 1 in 200 become paralyzed.

"A lot of people who get infected with poliovirus, they're asymptomatic," Shust said. "It's entirely possible there are other cases that haven't been diagnosed and there are more people infected than we're aware of."

Children should receive at least three doses of polio vaccine by 18 months of age, with a fourth dose delivered between ages 4 and 6, according to the U.S. Centers for Disease Control and Prevention.

New York state health officials said they are particularly concerned by neighborhoods where fewer than 70% of children between 6 months and 5 years of age have received at least three doses of polio vaccine.

About 86% of New York City kids have gotten all three doses, but in Rockland County the rate is just over 60%, and in Orange County the rate is just under 59%, state health officials said.

Statewide, nearly 79% of children have received three doses by their second birthday, officials said.

Poliovirus also has been identified in London's wastewater, and health officials in the United Kingdom have decided to offer polio vaccine boosters to children.

"They're starting to do that in London. We haven't said that that's necessary," said Dr. William Schaffner, medical director of the Bethesda, Md.-based National Foundation for Infectious Diseases.

"The only time we've given boosters in the past is when someone who was vaccinated as a child then decided to travel to some developing

country where there was a lot of polio, and we said, OK, to be on the safe side, to be prudent, we'll give you a booster before you go," Schaffner said. "It wasn't really thought to be necessary, but it was a prudent, extra, easy, safe thing to do."

Poliovirus lives in the [intestinal tract](#) and can be transmitted through stool, so wastewater surveillance is a logical way to track it, said Vincent Racaniello, a professor of microbiology and immunology at Columbia University in New York City.

"These viruses have probably been in the sewage for years," he said. "We've just never looked for them, and now we started to look because of this case. And I would say the more we look, we're going to find it all over the U.S., especially in major cities."

These strains of poliovirus likely entered the United States from people in other countries who have had the oral polio vaccine, Racaniello and Schaffner said.

The oral vaccine was the first developed and the easiest to administer, so it is still used as part of the World Health Organization's polio eradication efforts around the globe, the experts said. But, Racaniello said, it's an infectious vaccine, meaning it contains a weakened version of the virus itself.

"It reproduces in your intestines, and you shed it—that's the virus in the sewage," he said. "That virus gets around very easily, and it can cause polio even though it's a vaccine virus. After it passes through the human gut, it can reacquire the ability to cause polio."

The United States stopped using the oral vaccine in 2000, after the U.S. Preventive Services Task Force decided that the risk of even a few incidental cases of polio was too great, Schaffner said.

"Each year we had about 4 million births and we had somewhere between six and 10 cases of vaccine-associated poliomyelitis," he said.

"We were giving a very small number of children and adults paralysis by using the oral vaccine."

The U.S. now exclusively uses a four-dose inactivated polio vaccine.

"The virus is killed. There's no possibility it can multiply. It cannot mutate. It cannot cause paralysis," Schaffner said. "But as an inactivated viral vaccine, it has to be given by needle and syringe, which is more cumbersome and considerably more expensive, and of course, added to the number of inoculations little children were getting, which didn't make moms too happy."

Schaffner said it's "notable" that vaccine-related poliovirus is circulating in the United States.

"We wouldn't have expected it to be widely disseminated, so we're just finding there's even more intercontinental transmission of these oral polio vaccine viruses than we thought," Schaffner said.

"If you had asked me before this case, I would have said that unless somebody has just gone abroad or had a visitor from abroad, you wouldn't find it here because we're not using [the oral vaccine] in the United States," Schaffner added. "But we may be a smaller global community even than I thought."

The only true protection is vaccination, and Racaniello hopes that wastewater surveillance data will help persuade the vaccine-hesitant to go ahead and get their jabs.

"Maybe they thought there was no [poliovirus](#) in the U.S., right? And so they say I don't need to get vaccinated," Racaniello said. "And so now we

can show them that there is. In fact, I think we should do more surveillance of [wastewater](#) and show people, look, it's in every major metropolitan city. You better get vaccinated."

More information: The U.S. Centers for Disease Control and Prevention has more about [polio](#).

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