

The District has been in contact with representatives from various universities and testing facilities who are conducting tests to identify COVID-19 in wastewater. The District engaged Source Molecular to test wastewater samples for COVID-19.

The following is information about Source Molecular company:

We leverage nearly two decades of cutting-edge experience in science, technology, business, government and healthcare to deliver pathogenic solutions that save lives. Since 2002, we've partnered with companies and organizations including factories, watershed management groups, state and federal government agencies, universities and engineering firms that need smart, unbiased data to inform decision-making.

As the world's only accredited molecular forensics lab, Source Molecular provides industry-leading pathogen testing, mapping and forensics for water, soil, surfaces and air. Our work targets dangerous elements — from COVID-19 to pollution to superbugs — that threaten the health and economic strength of our communities. We partner with clients to identify, track and test microbial contamination and pathogens, as well as interpret the data and craft the remediation plans that lead to real-world solutions.

Headquartered in Miami, Florida, Source Molecular is ISO 17025 accredited. Our dedication to thorough research and smart implementation practices positions us to face the ever-changing challenges in our uncertain world.

To establish a baseline before the Monroe County checkpoint was removed, the District sent Source Molecular Lab samples on 5/23, 5/24, 5/25 and 5/28.

Plant staff is currently testing Saturday thru Thursday of each week to not exceed a 48-hour hold time when the lab is closed during the weekend. Two components are being tested N1 and N2. Some have expressed anomalies in only seeing one component in a sample.

CDC has issued additional guidance as such: there is no information to date that anyone has become sick with COVID-19 because of exposure to wastewater.

Standard practices associated with wastewater treatment plant operations should be sufficient to protect wastewater workers from the virus that causes COVID-19. These standard practices can include engineering and administrative controls, hygiene precautions, specific safe work practices, and personal protective equipment (PPE) normally required when handling untreated wastewater. No additional COVID-19-specific protections are recommended for workers involved in wastewater management, including those at wastewater treatment facilities.

## KLWTD COVID-19 Testing Information

Ritter, Malcolm. "Waste-watching: Sewage can help track pandemic virus trends." *abcNEWS*, 6 June 2020, <https://abcnews.go.com/Technology/wireStory/waste-watching-sewage-track-pandemic-virus-trends-71626657>. Accessed 7 July 2020.

In Utah, wastewater from communities near a Cache County meatpacking plant that discovered 287 infected workers indicated an outbreak several days before it was officially reported. In contrast, sewage from Summit County showed a decline after officials imposed anti-virus measures, including asking tourists to stay away from its popular Park City ski area.

The concept is straightforward. Studies indicate genetic material from the virus can be recovered from the stools of about half of patients with COVID-19, the disease caused by the virus. Wastewater analysis looks for that genetic material. Results over time are taken as indications of trends for infection in the community that produced the waste. That should even include people who would normally be overlooked because they don't get tested or may not know they're infected.

The approach can serve as an early warning because it can detect trends several days before results appear from community testing or people get sick enough to show up at a hospital, studies indicate. One Dutch study found a wastewater signal in a city six days before the community reported its first cases.

Sewage can be used as "a mirror of society," said Gertjan Medema, a microbiologist at the KWR Water Research Institute in the Netherlands. "Sewage is more than just a wastewater carrier, it's also an information carrier."

Sewage monitoring is "a very promising tool," said Vince Hill, chief of the waterborne disease prevention branch of the U.S. Centers for Disease Control and Prevention.

The CDC is now working to understand how useful it can be in the U.S. "There is a lot to learn," he said. "We're working on this with urgency."

The sewage data can also help gauge the effect of changes in measures to fight the virus spread.

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CORONAVIRUS · Published May 27

# Coronavirus concentrations in sewage seen as leading indicator of COVID-19 outbreaks, study says

By [Chris Ciaccia](#) | Fox News



## Fox News Flash top headlines for May 27

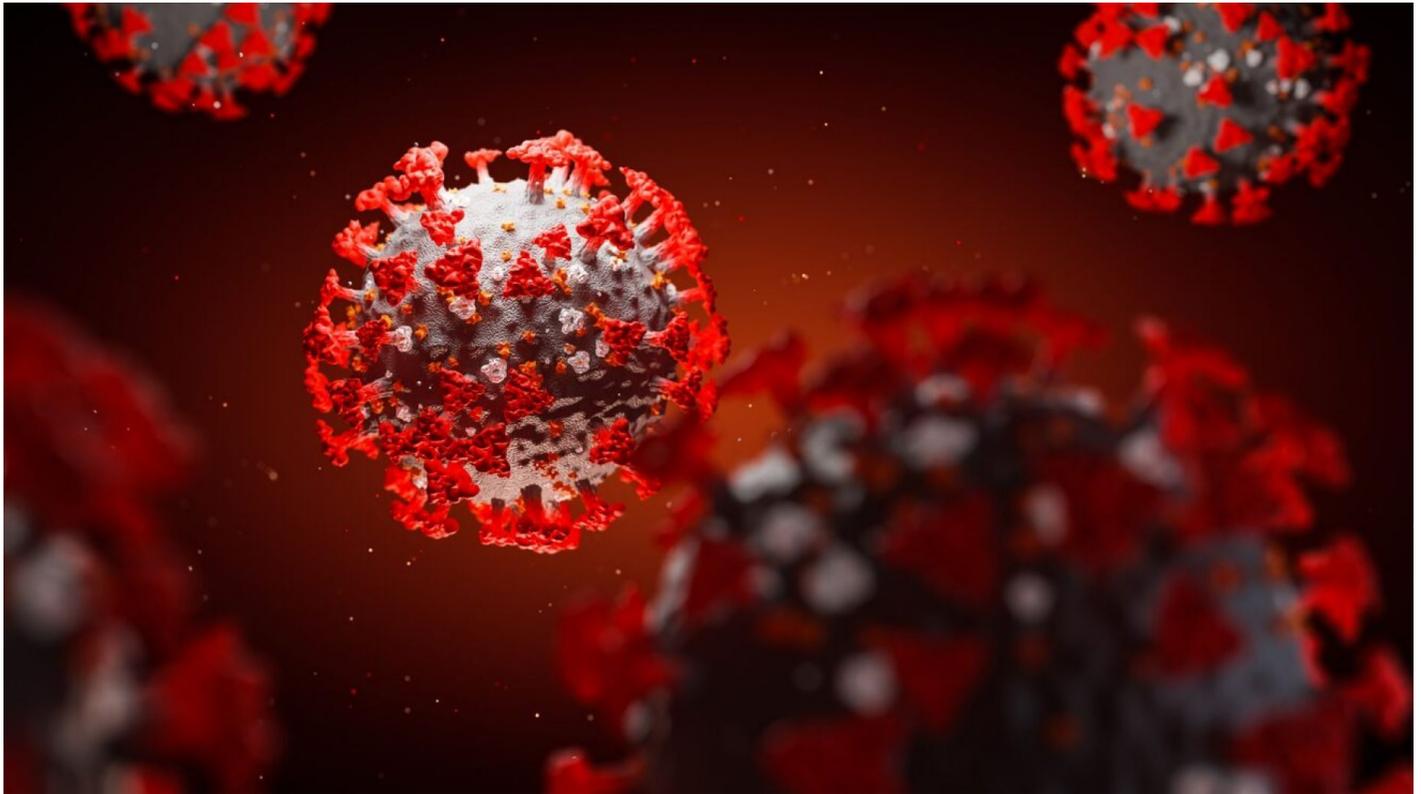
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The proof is usually in the pudding, but for [COVID-19](#), the proof might be in the poop.

A new [study](#) from researchers at Yale University has determined that genetic code found in sewage sludge could be a leading indicator of COVID-19 outbreaks, anticipating the presence of the virus by seven days and hospital admissions by three days.

The research, which has not yet been peer-reviewed, determined that concentrations of SARS-CoV-2 RNA in sewage sludge from a New Haven, Conn., wastewater treatment facility could be used to model the number of COVID-19 cases in the area.



3D illustration of SARS-CoV-2 (iStock)

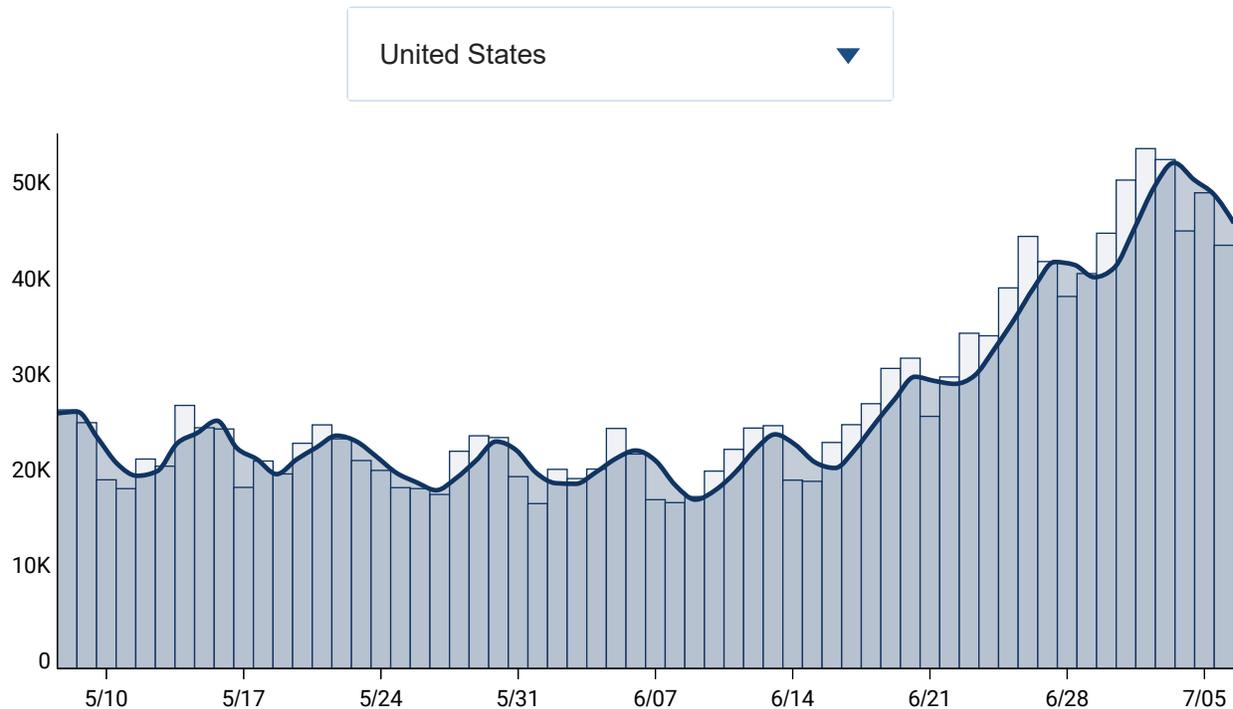
### **COVID-19 PATIENTS ARE NOT INFECTIOUS 11 DAYS AFTER GETTING SICK, STUDY SUGGESTS**

"We report a time course of SARS-CoV-2 RNA concentrations in primary sewage sludge during the Spring COVID-19 outbreak in a northeastern U.S. metropolitan area," the researchers wrote in the study's abstract. "SARS-CoV-2 RNA was detected in all environmental samples and, when adjusted for the time lag, the virus RNA concentrations were highly correlated with the COVID-19 epidemiological curve ( $R^2=0.99$ ) and local hospital admissions ( $R^2 =0.99$ ). SARS-CoV-2 RNA concentrations were a seven-day leading indicator ahead of compiled COVID-19 testing data and led local hospital admissions data by three days."

In an interview with the [Hartford Courant](#), Jordan Peccia, the study's lead researcher, said people can shed the virus prior to being symptomatic and be infectious.

## New Cases By Date

The graph below illustrates the number of cases of COVID-19 in the U.S. Use the dropdown to select specific states to see their number of cases day by day.



Show moving average

Source: The Johns Hopkins University Center for Systems Science and Engineering (JHU CSSE). Last Updated: July 5, 2020, 8:00:00 PM.

"Before you're symptomatic and after you're infected, you can certainly shed that virus and be infectious," Peccia told the news outlet. "As soon as you start shedding it, whether you feel it or not, we're gonna see it in the wastewater."

The implications of the study are that patients are not being tested until they show symptoms, a concern they could be spreading the disease known as COVID-19 whether they know it or not.

The researchers collected sewage samples from the East Shore Water Pollution Abatement Facility in New Haven, from March 19 to May 1. They then compared the concentration of the virus' RNA and compared that data to COVID-19 cases and hospitalizations in the surrounding area to come up with their findings.

"I think it's pretty self-evident that if you can see what's going on earlier, that's better," Peccia added.

Peccia acknowledged that although the sewage sludge data is "a unique piece of information," it only tells part of the story. He added it could be useful for government officials and lawmakers in noting when to make reopening decisions.

"It could be helpful ... because these are tough decisions to make," Peccia explained. "If you look at other states, it is not a stretch to imagine that the curve could go back up."

Connecticut has been one of the most affected states in the country, with 40,873 confirmed COVID-19 cases, resulting in 3,742 deaths.

Like many states across the country, Connecticut continues to expand its partial reopening. In recent days, Gov. Ned Lamont said the state will allow hair salons to reopen with restrictions. Lamont is targeting a Phase II reopening by June 20.

The Yale study follows similar research conducted in Massachusetts in April.

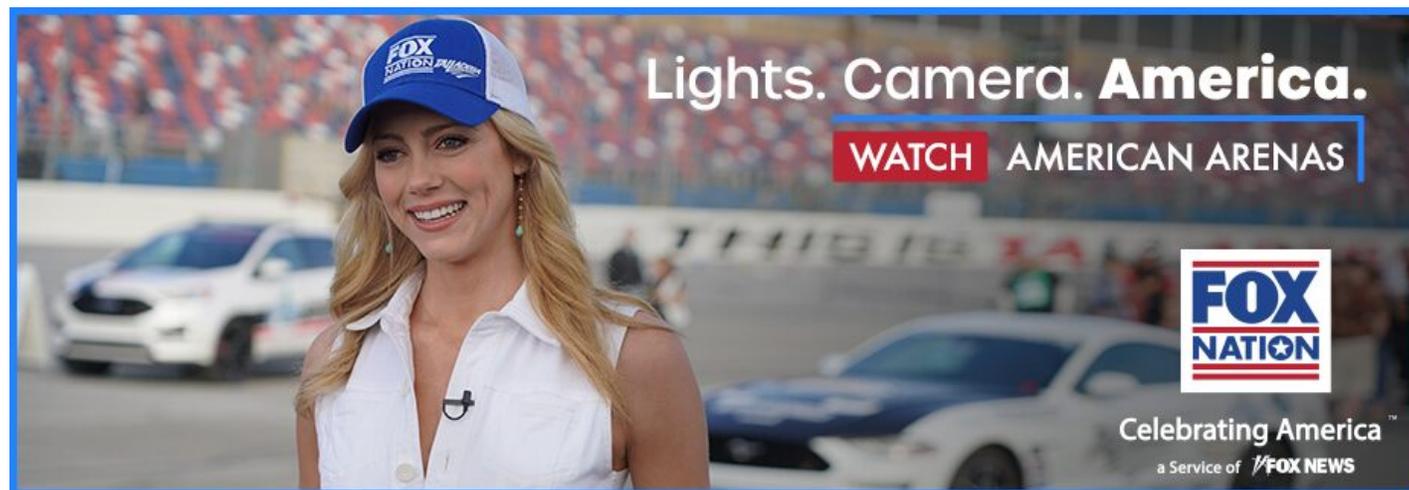
The research, conducted by biotech company Biobot Analytics, found "significantly higher than expected" traces of coronavirus [discovered](#) in Massachusetts wastewater, suggesting at the time there may have been more people who were going undiagnosed than previously believed.

### [CLICK HERE FOR COMPLETE CORONAVIRUS COVERAGE](#)

As of Wednesday morning, more than 5.61 million coronavirus cases have been diagnosed worldwide, more than 1.68 million of which are in the U.S., the most impacted country on the planet.

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# Waste-watching: Sewage can help track pandemic virus trends

*Research is indicating that sewage can help reveal trends in pandemic virus outbreaks, and health officials are taking note*

By **MALCOLM RITTER** AP Science Writer

July 6, 2020, 10:30 AM 5 min read



 In this undated photo provided by Biobot in June 2020 technicians take a sewage sample. Across the U.S. and in Europe, researchers and health officials say they can track the course of a community outbreak by studying the waste flushed from its bathrooms. And that can provide a valuable addition to public health tools, they say. (Biobot via AP)

The Associated Press

**NEW YORK --** One county in Utah beat back a spike of pandemic virus infections in the spring, and another saw its rate jump. Both trends showed up in their sewage.

Yes, sewage. Across the U.S. and in Europe, researchers and health officials say they can track the course of a community outbreak of the new coronavirus by studying the waste flushed from its bathrooms. And that can provide a valuable addition to public health tools, they say.

In Utah, wastewater from communities near a Cache County meatpacking plant that discovered 287 infected workers indicated an outbreak several days before it was officially

reported. In contrast, sewage from Summit County showed a decline after officials imposed anti-virus measures, including asking tourists to stay away from its popular Park City ski area.

The monitoring in April and May was part of a demonstration project, and the results helped persuade state officials to authorize a bigger monitoring effort that will include wastewater from 75% of Utah's residents, said Erica Gaddis, director of the state's Division of Water Quality.

Utah is far from alone in embracing that approach. When the Massachusetts company Biobot said on social media this spring that it would test wastewater for free, "it just kind of exploded," said CEO Marian Martus.

The company took on 400 wastewater plants in 42 states, representing waste from about 10% of the U.S. population, she said. The company now charges for its service, Martus said, and still has hundreds of customers that regularly send in samples of about a half-cup (150 milliliters).

The British, Italian and Dutch governments have also announced monitoring programs, with all wastewater treatment plants in the Netherlands to participate. "We can detect the virus anonymously, quickly and on a large scale," said Dutch health minister Hugo de Jonge.

The concept is straightforward. Studies indicate genetic material from the virus can be recovered from the stools of about half of patients with COVID-19, the disease caused by the virus. Wastewater analysis looks for that genetic material. Results over time are taken as indications of trends for infection in the community that produced the waste. That should even include people who would normally be overlooked because they don't get tested or may not know they're infected.

The approach can serve as an early warning because it can detect trends several days before results appear from community testing or people get sick enough to show up at a hospital, studies indicate. One Dutch study found a wastewater signal in a city six days before the community reported its first cases.

Sewage can be used as “a mirror of society,” said Gertjan Medema, a microbiologist at the KWR Water Research Institute in the Netherlands. “Sewage is more than just a wastewater carrier, it’s also an information carrier.”

Sewage monitoring is “a very promising tool,” said Vince Hill, chief of the waterborne disease prevention branch of the U.S. Centers for Disease Control and Prevention.

The CDC is now working to understand how useful it can be in the U.S. “There is a lot to learn,” he said. “We’re working on this with urgency.”

Wastewater surveillance has long been used to look for outbreaks of the polio virus. With the new application to the pandemic virus, scientists are working to refine their techniques as economies reopen and researchers warn of a possible surge of disease this fall.

They don’t yet have a reliable way to use wastewater to pin down just how many infected people a community has. Biobot provides estimates but its calculation method is still being studied and the estimates should not be taken as hard numbers, Martus said.

Researchers in the field are still working at “making sure we’ve got the science right,” said Peter Grevatt, CEO of The Water Research Foundation, which promotes studies of water and wastewater to ensure water quality and service.

Among the unknowns experts cite: How does the viral shedding in stools vary by different stages of infection? How can lab results produced by different testing methods be compared? And how are samples affected by the characteristics of different sewage systems, such as the degree of dilution and the time waste spends in transit before being sampled?

Still, Matt Meyer, county executive for New Castle County in Delaware, said his community is putting reports from Biobot to work.

In addition to county-wide data from a central treatment plant, the county uses readings from its 11 sewage pumping stations that serve more localized areas. “That gives us a view of where the hot spots are and ... where the hot spots are developing if the numbers are going up,” he said. So that helps officials decide where to put mobile stations for testing people.

The sewage data can also help gauge the effect of changes in measures to fight the virus spread, Meyer added.

Although he has no idea when a so-called “second wave” with surging infections may appear across the country, Meyer said, “We’re working like it’s going to happen any day now.”

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Kathy Young in New York and Aleksandar Furtula in Nieuwegein, the Netherlands, contributed to this report.

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Follow Malcolm Ritter on Twitter: @MalcolmRitter

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