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## **Polio virus found in London sewage: should we be worried?**

Between February and May 2022, polio has been detected in sewage samples in North East London. Health officials believe this rare but infectious disease may be spreading among people who are unvaccinated, and they encourage everyone to check children's vaccination status, as well as their own.

### **Polio detected in London**

Poliovirus has been detected at the London Beckton Sewage Treatment Works, which serves approximately four million people in north and east London. This is the virus that causes [polio](#), a potentially life-threatening infectious disease.

Thanks to the polio vaccination programme, the UK has enjoyed polio-free status since 2003. However, according to the UK Health Security Agency (UKHSA) it is in fact 'normal' to discover small traces of the virus each year<sup>1</sup>.

So why is this latest incident sparking an urgent investigation from health officials? The UKHSA has confirmed that this is the first time they have found evidence of community transmission of vaccine-derived poliovirus.

### **The risks of vaccine-derived poliovirus**

Wild poliovirus – the original form of the virus – has been successfully eradicated by the polio vaccine. This contains a weakened form of poliovirus that triggers your immune system to build antibodies so that it can effectively fight the real thing. In the UK, this vaccine is given by an injection.

In a few countries, [vaccination](#) is given with oral drops whereby the weakened virus passes through your body and is excreted in faeces (poo). It is possible for this vaccine-derived polio to spread this way, although this risk is extremely low in countries with a high vaccine uptake, such as the UK.

Despite this low risk, health officials have found enough poliovirus in London sewage to suspect polio has been spreading between unvaccinated people. On very rare occasions, the vaccine-derived poliovirus has been known to mutate (evolve) into a dangerous form that behaves more like wild polio - capable of causing paralysis (the inability to move all or some of your body).

# Polio factsheet

## What is polio?

"Polio (or poliomyelitis) is a disabling infectious disease caused by the poliovirus. It most commonly affects children under 5 years of age and 1 in 200 infections lead to irreversible paralysis," says Navin Khosla, superintendent pharmacist at From Mars<sup>2</sup>.

## What are the symptoms of polio?

Around one quarter of people with polio will experience flu-like symptoms that usually last up to three weeks. These include:

- **Headache.**
- **Vomiting.**
- **Fatigue (extreme tiredness).**
- **Fever (high temperature).**
- Muscle pain.

In rare cases, the polio infection reaches the nervous system and leads to paralysis, usually in the legs. Sometimes, this disability subsides and the feeling and movement in the limbs slowly return. In other cases, this so-called paralytic polio is permanent.

## When can polio cause death?

Sadly, between 5% and 10% of people with paralytic polio will die<sup>3</sup>. This happens when the infection reaches the muscles involved in breathing, preventing them from working properly.

## How is polio spread?

"Polio can be transmitted through an infected person coughing or sneezing," says Khosla. "It can also be caught through eating or drinking food or water that's been in contact with the faeces (poo) of someone with the virus."

Polio is very infectious, but in 1988 the Global Polio Eradication Initiative (GPEI) was launched to tackle the endemic through vaccination. This has been very successful, reducing the number of cases by 99%. Between 2018 and 2022, polio cases were only reported in Afghanistan and Pakistan.

## When was the last case of polio in the UK?

The last case of wild polio in the UK was confirmed in 1984. In 2003, the UK was declared polio-free, and the oral polio vaccine was last used in 2004. Since then, immunisation has been offered via injection to all UK children.

## Do we need to worry about a polio epidemic?

The recent concern from health officials comes from finding several genetically linked viruses found in samples between February and May of this year. This suggests that the virus - now officially classified as vaccine-derived poliovirus type 2 (VDPV2) - has "spread between closely linked individuals in North East London and that they are now shedding the type 2 poliovirus strain in their faeces"<sup>1</sup>.

The current theory of the UKSHA is that someone who was vaccinated abroad with the oral vaccine - possibly in Nigeria, Pakistan, or Afghanistan - entered London earlier this year and has since passed the virus on to others in London who are unvaccinated.

However, Dr Vanessa Saliba, consultant epidemiologist at UKHSA, stresses that the "risk to the public overall is extremely low ... the majority of Londoners are fully protected against polio and won't need to take any further action"<sup>1</sup>.

## What's the latest advice?

Although no cases of polio have been reported so far, the UKHSA continues to try to find out the extent of the spread and has asked the NHS to report any suspected cases.

Is there anything you need to do or be aware of? Jane Clegg, chief nurse for the NHS in London, has the following advice:

- If you are a parent with a child under 5, check in their Redbook<sup>4</sup> if they are up to date with their polio vaccinations.
- The NHS will also be inviting children under 5 to get protected.
- Although it's more common to contract polio in childhood, adults are also vulnerable. If you're not fully vaccinated - or are unsure if you have had the vaccine - contact your GP to find out and book in.

Khosla has the following safety tips for London dwellers:

- As poliovirus is more commonly contracted through contact with faeces, it is important to ensure you wash your hands thoroughly after using the toilet, and after touching something that might have come into contact with faeces.
- Poliovirus can also be spread through the water droplets from coughing and sneezing. If you are worried about contracting the virus or have been experiencing flu-like symptoms, it would be advisory to [wear a face mask](#) when in public.
- If you believe you might have polio, we recommend that you isolate yourself and contact your GP or a health professional to discuss your symptoms and the steps you need to take to ensure the virus does not spread to other people.

Finally, it can be hard not to worry about the spread of infection, particularly following the [COVID-19 pandemic](#). However, it's important to remember that the UK has a high vaccine uptake and the risk of polio spreading far is very low. The vaccine has been extremely effective in almost eradicating polio from the planet and is the best way to protect you and your children.

## Further reading

1. [The UK Health Security Agency \(UKHSA\)](#).
  2. [From Mars](#).
  3. [World Health Organization \(WHO\) "Poliomyelitis"](#).
  4. [Your digital NHS Redbook](#).
- [Muscle pain](#).

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