

# Polio

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## 1 Oral polio vaccine is used internationally, but not in Canada since 1996

Oral polio vaccine viruses are shed in stool for weeks and are transmissible. When circulating among underimmunized populations, the virus can mutate and revert to a form that causes paralysis in underimmunized or immunocompromised people. Communities with low vaccine coverage are at risk of outbreaks. Inactivated polio vaccine is used in Canada and cannot cause disease.

## 2 Polio virus could be circulating in Canada

A 2022 report from New York State of vaccine-derived polio in an adult who was unvaccinated and immunocompetent documented the second community transmission of poliovirus known in the United States since 1979.<sup>1</sup> Several positive wastewater samples were detected from the state. The same virus strain was recently detected in wastewater in the United Kingdom.<sup>2</sup>

## 3 Underimmunized people (< 4 doses of a polio vaccine) are at risk of poliovirus infection

Poliovirus is an enterovirus that spreads through the fecal–oral route. People can shed poliovirus asymptotically for weeks. The incubation period is 3–6 days, with paralysis onset in 7–21 days.<sup>3</sup> Children 5 years of age and younger are at highest risk of infection. Poliovirus is highly infectious, with seroconversion rates of 90%–100% among household contacts.<sup>4</sup>

## 4 Clinical presentation of poliovirus infection ranges from subclinical to paralysis and death<sup>4</sup>

Most poliovirus infections (75%) are asymptomatic. Nonspecific symptoms occur in 24% of people.<sup>3</sup> One in 200 people develop paralytic polio, and two-thirds of these patients have permanent weakness. Of patients with paralysis, 5%–15% die due to paralysis of respiratory muscles.<sup>5</sup> Patients first present with gastrointestinal illness, followed in 1–3 weeks by rapid weakness and then flaccid paralysis, often asymmetric and mainly affecting proximal muscles.

## 5 Polio should be considered in all patients with acute flaccid paralysis

Stool should be sent for enterovirus polymerase chain reaction and enterovirus molecular serotyping. Polio is a notifiable disease in Canada and globally. Notify immediately if there is clinical suspicion, even without laboratory confirmation.

## References

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