

What is poliomyelitis?

A viral infection most often recognized by the acute onset of flaccid paralysis. Poliovirus infection occurs in the GI track with spread to the regional nodes and in a minority of cases, to the nervous system.

Who gets poliomyelitis?

Prior to the widespread use of polio vaccine, poliomyelitis occurred worldwide. Polio was epidemic in the U.S. for the first half of the 20th century with over 20,000 cases of paralytic disease in 1952. The first inactivated poliovirus vaccine (IPV) was introduced in 1955, monovalent oral poliovirus vaccine (OPV) in 1961, trivalent in 1963, and enhanced inactivated poliovirus vaccine (eIPV) in 1987. After the introduction of vaccination, the reported number of cases of poliomyelitis in the U.S. dropped to <100 in 1965 and <10 cases in 1973. The last cases of indigenously-transmitted wild-type poliovirus in the U.S. were in 1979. The last case of wild-type polio disease in the Western Hemisphere was detected in Peru in 1991. The Western Hemisphere was declared free from indigenous wild-type poliovirus transmission in 1994.

Almost the entire world is now considered polio-free. Worldwide efforts to eradicate polio in countries where the disease is still endemic are underway. Strategies include: (1) achieving and maintaining high vaccination coverage among infants < 1 year old; (2) developing sensitive surveillance systems for AFP and a laboratory network; (3) conducting National Immunization Days; (4) and conducting "mopping-up" campaigns to directly target geographic areas known to be high risk for polio transmission. The number of countries where poliovirus continues to be isolated has decreased substantially, with Afghanistan, Nigeria, and Pakistan remaining the major areas of wild-type virus circulation. War and civil unrest has helped fuel outbreaks of Polio in Cameroon and Somalia.

How is the poliomyelitis spread?

The principal mode of transmission is person-to-person by the fecal-oral or oral-oral route, with the fecal-oral route predominating. Transmission via oral secretions, such as saliva, is possible and may account for some cases. In rare instances, the virus may be transmitted by contaminated sewage or water. Asymptomatic individuals, especially children, comprise a significant source of infections. No reliable evidence of spread by insects exists. No long-term carrier state is known. In temperate climates, poliovirus infections are most common in the summer and fall.

What are the symptoms?

Infection with poliovirus results in a spectrum of manifestations. The overwhelming majority of infections (95%) are clinically inapparent. Some 4 – 8% of infected individuals will experience non-specific viral symptoms, such as a low-grade fever, headache, sore throat, nausea, abdominal pain, constipation, diarrhea, and/or vomiting (abortive disease). Some 1–2% of infections will result in aseptic meningitis, involving stiffness of the back, neck and/or legs, at times with paresthesias, a few days after the minor illness has resolved. Less than 1% of infections will progress to acute flaccid paralysis (AFP) with loss of reflexes in the involved limbs, usually with fever present (paralytic poliomyelitis). Please note, today in the U.S., the most common cause of AFP is Guillain-Barré syndrome.

How soon do the symptoms appear?

Progression to paralytic poliomyelitis usually occurs within 2 – 4 days and rarely continues after the fever subsides.

How long can an infected person spread the virus?

The period of communicability is not precisely defined. It appears greatest 7-10 days before and after onset of clinical symptoms, when poliovirus is present in the throat and excreted in the highest quantities in the feces. Poliovirus can continue to be shed in the feces for 3 to 6 weeks. Poliovirus can be found in throat secretions as early as 36 hours and in the feces 72 hours after exposure to infection in both symptomatic and asymptomatic cases.

What are the criteria for significant exposure to poliomyelitis?

Identify individuals or groups who may have been exposed to the case. Also, attempt to identify the route of introduction of poliovirus into the community. To identify these groups, think in terms of “zones of exposure” and consider members of the following groups:

- Household members
- School/child care associates (students/attendees and staff)
- Staff and patients at medical facility where patient was cared for, especially if there was the potential for direct contact with feces or oral secretions
- Religious/social groups
- Sports teams and other extracurricular groups
- Bus mates
- Close friends
- Travelers from polio-endemic regions such as Afghanistan, Egypt, India, Niger, Nigeria, and Pakistan
- Any other persons who may have come in direct contact with the case’s feces or oral secretions

What are poliomyelitis isolation guidelines?

Place case on enteric precautions for six weeks after onset of symptoms or until poliovirus can no longer be recovered from feces (the number of negative specimens needed will be determined by the IDPH on a case-by-case basis).

Can a person get poliomyelitis again?

Adults who contract paralytic poliomyelitis during childhood may develop the post-polio syndrome 30 to 40 years later. Post-polio syndrome is characterized by slow onset of muscle pain and exacerbation of weakness.

What is the treatment for poliomyelitis?

None. Supportive treatment and attention during the acute illness to the complications of paralysis requires expert knowledge and equipment, especially for patients in need of respiratory assistance.

Is there a vaccine to prevent poliomyelitis?

Yes, there is a vaccine to protect against poliomyelitis. An all-IPV polio immunization schedule is now the recommended schedule. OPV is no longer recommended and is not available in the U.S. Four doses of IPV are usually needed to complete the primary series: doses are recommended at ages 2 months, 4 months, 6-18 months, and 4–6 years. At least 28 days are needed between doses, although a 6–8 week interval is preferred between doses 2 and 3 and a 6-month interval is preferred between doses 3 and 4. Only 3 doses are needed when the third dose is given on or after the fourth birthday. Polio vaccine is not routinely recommended for those ≥ 18 years unless there is potential for exposure.

Routine vaccination of persons ≥ 18 years old residing in the U.S. is not necessary. However, polio vaccination is indicated for the following groups:

- Laboratory workers who handle poliovirus;
- Healthcare workers caring for polio patients;
- Persons traveling to regions of the world where polio is endemic or epidemic.