



## **POLIOMYELITIS (POLIO)**

### **ABOUT THIS DISEASE**

Poliomyelitis, or polio, is a crippling and potentially deadly infectious disease caused by the poliovirus. Polio is caused by three serotypes (strains or types) of poliovirus – types 1, 2, and 3. Polio can cause lifelong paralysis (can't move parts of the body) and can also cause death, usually by paralyzing the muscles used for breathing.

Polio used to be very common in the United States. It paralyzed and killed thousands of people every year before polio vaccine was introduced in 1955. Polio has been eliminated in the United States, but it still occurs in other parts of the world.

### **SIGNS AND SYMPTOMS**

Most children who get infected with poliovirus (about 72 out of 100) will not have any symptoms.

About 1 out of 4 people with poliovirus infection will have flu-like symptoms that may include:

- Sore throat
- Fever
- Tiredness
- Nausea
- Headache
- Stomach pain

These symptoms usually last 2 to 5 days and then go away on their own.

A smaller proportion of people with poliovirus infection will develop other more serious symptoms that affect the brain and spinal cord:

- Paresthesia (feeling of pins and needles in the legs)
- Meningitis (infection of the covering of the spinal cord and/or brain); occurs in about 1 to 5 out of 100 people with poliovirus infection, depending on virus type.
- Paralysis or weakness in the arms, legs, or both; occurs in about 1 out of 200 people to 1 in 2,000 people with poliovirus infection. This paralysis or weakness can last a lifetime.

Paralysis is the most severe symptom associated with polio because it can lead to permanent disability and death. About 2 – 10% of people who have paralysis from poliovirus infection die, because the virus affects the muscles that help them breathe.

Even children who seem to fully recover can develop new muscle pain, weakness, or paralysis as adults, 15 to 40 years later. This is called post-polio syndrome.

### **TRANSMISSION**

Poliovirus only infects humans. It is very contagious and spreads through person-to-person contact. The virus lives in an infected person's throat and intestines. It enters the body through the mouth and spreads through contact with the stool of an infected person and, less commonly, through droplets from a sneeze or cough. Persons can also get infected if they put objects (like toys) into their mouth that are contaminated with stool or droplets.

An infected person may spread the virus to others immediately before and for about 1 to 2 weeks after symptoms appear. Polio virus can live in an infected person's stool for many weeks. People with polio can contaminate food and water when they touch it with unwashed hands.

Infected persons without symptoms can still pass the poliovirus to others and make them sick.

## **DIAGNOSIS**

Polio is diagnosed by laboratory testing (detecting poliovirus in the stool, or less commonly, from the throat).

## **TREATMENT**

There is no specific treatment for polio. Care of patients with polio consists of ensuring adequate intake of fluids and bed rest. Patients with serious symptoms may need treatment specific to their problem.

## **IMMUNITY**

Poliovirus infection results in lifelong immunity specific to the infecting serotype (1, 2, or 3). Immunity to one serotype does not produce significant immunity to the other serotypes.

## **RISK IN HAWAII**

The U.S. has been polio-free for more than 30 years, but the disease still occurs in other parts of the world. A person with poliomyelitis traveling from another country could bring polio to Hawaii.

Summary of Reported Cases of Notifiable Diseases:

<http://health.hawaii.gov/docd/resources/reports/summary-of-reported-cases-of-notifiable-diseases/>

## **PREVENTION**

The best way to protect against polio is to get the polio vaccine, also called inactivated poliovirus vaccine (IPV).

All children should receive four doses of IPV at the following ages: 2 months, 4 months, 6 through 18 months, and 4 through 6 years.

Children who will be traveling to [a country where the risk of getting polio is greater](#) should complete the polio vaccine series before leaving for their trip.

Most adults do not need polio vaccine because they were already vaccinated as children and their risk of exposure to poliovirus in the U.S. is very small. But some adults are at higher risk and should consider polio vaccination:

- Travelers to [a country where the risk of getting polio is greater](#)
- Persons who work in a laboratory and handle specimens that might contain polioviruses
- Healthcare workers treating patients who could have polio or have close contact with a person who could be infected with poliovirus

The number of doses of IPV needed by adults in these high-risk groups depends on the number of doses they have had in the past.

Two doses of inactivated polio vaccine (IPV) are 90% effective or more against polio; three doses are 99% - 100% effective.

It is not known how long people who received IPV will be immune to polio, but they are most likely protected for many years after a complete series of IPV.

#### **ADDITIONAL RESOURCES**

- CDC Website: <https://www.cdc.gov/polio/about/index.html>
- Vaccine Information Statement:
  - Polio Vaccine: <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/ipv.pdf>

#### **INFORMATION FOR CLINICIANS**

- CDC Website: <https://www.cdc.gov/vaccines/vpd/polio/hcp/index.html>