

# Polio

## Traveler Summary

### Key Points

- Polio is a viral disease of the nervous system (occurring in Afghanistan and Pakistan) caused by wild polioviruses acquired mainly through the consumption of fecally contaminated food or water. Vaccine-derived poliovirus infections are occasionally acquired in developing countries where oral poliovirus vaccine has been used.
- Risk is very low for travelers going to affected countries, regardless of vaccination status.
- Symptoms include fever, sore throat, and gastrointestinal (GI) upset. Headache, neck, back, and leg stiffness may also occur.
- Consequences of infection include permanent limb or respiratory muscle paralysis and death.
- Prevention includes observing standard food and beverage precautions and hand hygiene.
- Inactivated (killed) polio vaccine (IPV) is routinely given at ages 2, 4, and 6-18 months and then at age 4-6 years. Completely unvaccinated, inadequately vaccinated, and at-risk adults may need an entire series and every effort should be made to complete the series. However, even a single dose is beneficial.
- Vaccine side effects are most commonly injection-site reactions such as pain and redness.
- A single, one-time adult booster dose is recommended for travelers going to risk areas, even if they have had the complete childhood series.

### Introduction

Polio, a highly infectious viral disease that affects the nervous and muscular systems, is acquired through consumption of fecally contaminated food or water. Humans are the only known reservoir of the poliovirus. Polioviruses may be wild or vaccine-derived (circulating in developing countries where oral, live poliovirus vaccine has been used). Most infections have no symptoms or are mild; complete recovery seldom occurs in persons who develop muscular and nervous system complications. No drugs or treatments that cure polio are available.

### Risk Areas

Wild polio has been eradicated from most countries but still occurs (although rates are decreasing) in Afghanistan and Pakistan. A small number of other countries periodically report circulation of vaccine-derived polioviruses, which may also cause polio disease.

### Transmission

Poliovirus is mainly transmitted through the consumption of fecally contaminated food or water (especially in areas of poor sanitation and suboptimal hygiene) or less commonly, via the oral-to-oral route from saliva or throat secretions of infected persons. Oral-to-oral transmission may be more common in areas where the standards of sanitation are high. Transmission occurs throughout the year in the tropics but peaks in the summer in temperate climates.

### Risk Factors

Risk is low for travelers, and even completely unvaccinated travelers going to a country where polio is still circulating have almost no risk of acquiring clinical polio. Children are most commonly affected in endemic countries.

### Symptoms

Symptoms most commonly appear 3 to 21 days following exposure, with mild cases causing fever, sore throat, GI disturbances, or influenza-like symptoms, with recovery within a week. More serious cases result in headache and stiffness of neck, back, legs, throat, and chest muscles.

### Consequences of Infection

Polio can result in difficulty swallowing and breathing, muscular disability, permanent limb paralysis (especially in the legs), or fatal respiratory paralysis. Death occurs in about 2% to 75% of symptomatic cases.

## Need for Medical Assistance

Unvaccinated or inadequately vaccinated travelers who develop symptoms of polio during travel to or return from countries where polio still occurs should seek urgent medical attention.

## Prevention

### Nonvaccine

Observe food and beverage precautions and hand hygiene (frequent, thorough handwashing), especially after using the bathroom, changing diapers, and before preparing or eating food. See *Food and Beverage Precautions*.

### Vaccine

An inactivated (killed) polio vaccine (IPV) is available in the US and is given routinely as a childhood vaccination and to certain at-risk travelers. Combination vaccines are also available. Live oral polio vaccine (OPV) is no longer available in the US (although it is still used in some developing countries).

### Side Effects

The most common vaccine side effects are local injection-site reactions (pain, redness, and swelling).

Persons with underlying medical conditions or who have concerns about the vaccine should speak to their health care provider before vaccine administration.

### Timing

IPV is given as follows:

- Routine, regardless of travel, for children younger than 18 years: 3 doses, at ages 2, 4, 6-18 months; a fourth dose at school entry or at age 4-6 years.
- Previously unvaccinated or incompletely vaccinated adults 18 years or older traveling to risk countries: 3 doses at 0, 1-2, and 6-12 months after the second dose. If earlier protection is needed for travel: 3 doses at 0, 1, and 2 months. Efforts should be made to complete the series prior to travel, but even a single dose is beneficial.
- Persons younger than 18 years who are traveling to risk countries and received their last childhood dose 10 or more years previously: single-dose booster.
- Adults traveling to risk countries, Hajj/Umra pilgrims from a risk country who have a completed childhood vaccination but no history of an adult booster, or those needing to meet a destination-country entry/exit requirement: single-dose booster.
- Residents of or long-stay (> 4 weeks) visitors of polio-affected countries, who are onward travelers to other countries; if they have not received 1 additional dose of polio vaccine between 4 weeks and 1 year prior to departure from the affected country (regardless of primary series completion): single-dose booster.

Revaccination with an IPV primary series may be needed for children who had been vaccinated with some OPV vaccines outside the US.

## Special Considerations

Vaccination is required for:

- Hajj and Umra pilgrims traveling to Saudi Arabia (regardless of age and vaccination status) coming from countries on a defined list of suspected polio-endemic countries and countries at high risk for reimportation of polio.
- Travelers going to certain polio-free countries that have an entry requirement for travelers (residents or long-stay visitors) coming from countries on a defined list of polio-affected countries.