

## PREVENTION OF THE SPREAD OF POLIOMYELITIS INFECTION, PATHOGENESIS AND STATISTICS ON THE WORLD

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**Annotation:** In this article you will get information about Polymyelitis, which currently has its place within infection diseases. through this article , you will be given the necessary information about what kind of infection Polymyelitis is in itself , its spread, transmission routes and Prevention. In 1988, the World Health Assembly adopted a resolution for the worldwide eradication of polio, marking the launch of the Global Polio Eradication Initiative (GPEI), spearheaded by national governments, WHO, Rotary International, the US Centers for Disease Control and Prevention (CDC) and UNICEF, and later joined by the Bill & Melinda Gates Foundation and Gavi, the Vaccine Alliance. Since then, the incidence of polio worldwide has been reduced by 99%, and the world stands on the threshold of eradicating a human disease globally for only the second time in history, after smallpox in 1980. Wild poliovirus cases have decreased by over 99% since 1988, from an estimated 350 000 cases in more than 125 endemic countries then, to 6 reported cases in 2021.

**Key words:** poliomyelitis, infection, blood , Gavi , GPEI .

Poliomyelitis (polio) is a highly infectious viral disease that largely affects children under 5 years of age. The virus is transmitted by person-to-person spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g. contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and cause paralysis.

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Wild poliovirus cases have decreased by over 99% since 1988, from an estimated 350 000 cases in more than 125 endemic countries to 6 reported cases in 2021. Of the 3 strains of wild poliovirus (type 1, type 2 and type 3), wild poliovirus type 2 was eradicated in 1999 and wild poliovirus type 3 was eradicated in 2020. As at 2022, endemic wild poliovirus type 1 remains in two countries: Pakistan and Afghanistan.

Polio is a highly infectious disease caused by a virus. It invades the nervous system and can cause total paralysis in a matter of hours. The virus is transmitted by person-to-person spread mainly through the faecal-oral route or, less frequently, by a common vehicle (for example, contaminated water or food) and multiplies in the intestine. Initial symptoms are fever, fatigue, headache, vomiting, stiffness of the neck and pain in the limbs. One in 200 infections leads to irreversible paralysis (usually in the legs). Among those paralysed, 5–10% die when their breathing muscles become immobilized.

Polio mainly affects children under 5 years of age. However, anyone of any age who is unvaccinated can contract the disease.

There is no cure for polio, it can only be prevented. Polio vaccine, given multiple times, can protect a child for life. There are two vaccines available: oral polio vaccine and inactivated polio vaccine. Both are effective and safe, and both are used in different combinations worldwide, depending on local epidemiological and programmatic circumstances, to ensure the best possible protection to populations can be provided.

The strategies for polio eradication work when they are fully implemented. This is clearly demonstrated by the successful eradication of the disease in most countries of the world.

The Polio Eradication Strategy 2022–2026 lays out the roadmap to securing a lasting and sustained world, free of all polioviruses, and transition and polio post-certification efforts are ongoing to assure that the infrastructure built up to eradicate polio will continue to benefit broader public health efforts, long after the disease is gone.

Key to success is ensuring the Strategy is fully implemented in all areas and is fully resourced. Failure to implement strategic approaches, however, leads to ongoing transmission of the virus. Endemic transmission of wild poliovirus is continuing in areas of Afghanistan and Pakistan. Failure to stop polio in these last remaining areas could result in global resurgence of the disease. That is why it is critical to ensure polio is eradicated completely, once and for all.

Poliovirus is highly infectious. The incubation period is usually 7–10 days but can range from 4–35 days. The virus enters the body through the mouth and multiplies in the intestine. It then invades the nervous system. Up to 90% of those infected experience no or mild symptoms and the disease usually goes unrecognized. In others, initial symptoms include fever, fatigue, headache, vomiting, stiffness in the neck, and pain in the limbs. These symptoms usually last for 2–10 days and most recovery is complete in almost all cases. However, in the remaining proportion of cases the virus causes paralysis, usually of the legs, which is most often permanent. Paralysis can occur as rapidly as within a few hours of infection. Of those paralysed, 5-10% die when their breathing muscles become immobilized.

The virus is shed by infected people (usually children) through faeces, where it can spread quickly, especially in areas with poor hygiene and sanitation systems.

Healthcare providers who suspect a patient has polio should hospitalize the patient right away, do a physical exam, take detailed medical history, including vaccination history and history of any recent travel, collect samples (stool, throat swab, blood, urine, and spinal fluid), and obtain a magnetic resonance imaging (MRI) to look at pictures of the spinal cord. Poliovirus is most likely to be detected in stool specimens.

Once polio is eradicated, the world can celebrate the delivery of a major global public good that will benefit all people equally, no matter where they live. Economic modelling has found that the eradication of polio would save at least US\$ 40–50 billion, mostly in low-income countries. Most importantly, success will mean that no child will ever again suffer the terrible effects of lifelong polio-paralysis.

The global effort to eradicate polio has been declared a Public Health Initiative of International Concern, under the International Health Regulations, and temporary recommendations by an



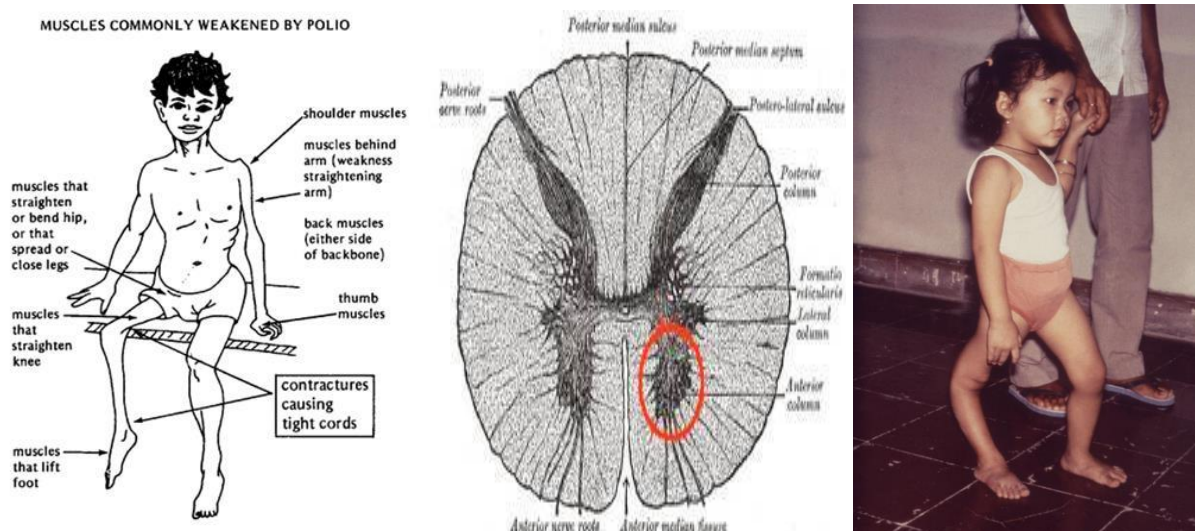
Emergency Committee under the International Health Regulations have been issued to countries affected by poliovirus transmission or are at high risk of re-emergence of the disease.

The polio effort continues to support broader public health efforts, including helping respond to natural disasters, humanitarian emergencies, droughts, earthquakes, outbreaks of other infectious diseases and supporting disease surveillance for broader public health initiatives. The GPEI continues to support response to the global COVID-19 pandemic, including helping with disease surveillance, laboratory capacity and vaccine introduction and roll-out.

There is no cure for polio; it can only be prevented by immunization. The polio vaccine, given multiple times, can protect a child for life. More than 20 million people are able to walk today who would otherwise have been paralysed, since 1988, when the Global Polio Eradication Initiative was launched. An estimated 1.5 million childhood deaths have been prevented through the systematic administration of vitamin A during polio immunization activities.

Treatments for polio focus on limiting and alleviating symptoms. Heat and physical therapy can be used to stimulate the muscles and antispasmodic drugs are used to relax the effected muscles. This can improve mobility but does not reverse permanent polio paralysis.

Vaccination is crucial in the fight against polio. Failure to implement strategic approaches leads to ongoing transmission of the virus. Endemic transmission of wild poliovirus is continuing to cause cases in border areas of Afghanistan and Pakistan. Failure to stop polio in these last remaining areas could result in as many as 200 000 new cases every year within 10 years, all over the world. That is why it is critical to ensure polio is eradicated completely, once and for all.



There is no cure for paralytic polio and no specific treatment.

Physical or occupational therapy can help with arm or leg weakness caused by polio and might improve long-term outcomes, especially if implemented early in the course of illness. Healthcare providers should consider consulting neurology and infectious disease experts to discuss possible treatments and recommend certain interventions on a case-by-case basis.

If you think you or someone in your family has symptoms of polio, please call your healthcare provider right away or go to an emergency room.

WHO, together with its GPEI partners, continues to support countries which remain affected by poliovirus or are at high risk of polio re-emergence in implementing eradication strategies, focusing in the first instance on immunization and disease surveillance. Since the GPEI was launched, the number of cases has fallen by over 99%.

In 1994, the WHO Region of the Americas was certified polio-free, followed by the WHO Western Pacific Region in 2000 and the WHO European Region in June 2002. On 27 March 2014, the WHO South-East Asia Region was certified polio-free, meaning that transmission of wild poliovirus has been interrupted in this bloc of 11 countries stretching from Indonesia to India. In 2020, Africa became the fifth region to be certified wild poliovirus-free.

Almost 20 million people are able to walk today who would otherwise have been paralysed. An estimated 1.5 million childhood deaths have been prevented through the systematic administration of vitamin A during polio immunization activities.

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