Poliomyelitis “Polio”

*Research provided by the Kansas Association of Local Health Departments*

**What is Polio?**

Poliomyelitis is a contagious disease that spreads through person to person contact and lives in intestines and the throat. It can be spread through contact with the fecal matter of an infected person or through droplets of an infected person, which is less common. An infected person can spread the virus immediately after infection and can live in the infected person’s feces for many weeks and contaminate food and water.

Polio can cause typical flu-like symptoms and most people will not have symptoms at all (72%). 1 out of 1000 people can have severe complication such as paralysis or meningitis. Paralysis is considered the most severe symptom of Polio, as it causes long lasting effects.

**History of Transmission**

Polio was first identified in hieroglyphics in ancient Egypt, suggesting that the disease was an issue from 1580 BC. However, the first known case of polio was found in Britain by Dr. Michael Underwood. By 1840s Germany, Dr. Jacob Von Heine discovers that the disease is contagious.

In the United States, polio has been a problem since 1894, with the first significant outbreak being documented in the United States. However, the most notable outbreak of polio in the United States occurred from 1949-1952, with most cases effecting children and causing paralysis. In 1952, over 21,269 individuals experienced Polio.

**Paralysis, Iron Lung, and Treatment**

For many children who experienced paralysis, the disease also affected their lungs and other organs. The infection would gradually stop the muscles of the lungs, causing asphyxiation. The “iron lung” sought to prevent this from happening. In addition, casts for legs and arms, along with hot baths were introduced for children to be able to walk again. Most of the children paralyzed by Polio were not able to recover.



**Vaccination**

By 1935, research had begun to create a polio vaccine that could be given to patients. The trials were poorly executed, and most vaccinated people fell ill with polio or experienced allergic reactions. However, by 1948, the early foundation of the March of Dimes funded a study for Dr. Jonas Salk to research polio and a vaccine. The program was suspended in 1955 due to suspected deaths. In 1959, researcher Albert Sabin worked with the Soviet Union to create an affordable oral polio vaccine. This vaccine triggered a faster immune response and was easier to administer than an injectable vaccine.

In 1963, the US surgeon general licensed the OPV in the United States. Most children received this vaccine in the United States through sugar cubes in schools. By the 1990s, the program had transitioned to a childhood injectable vaccination.

**Eradication Efforts, March of Dimes, and Rotary International**

By 1994, polio was fully eradicated in the United States and by 2002 in Europe. However, polio remains a problem for countries with high levels of unsanitary conditions. [Rotary International](https://rotary.org/en/our-causes/ending-polio) and the [March of Dimes](https://www.marchofdimes.org/giving/support-general.aspx?srcCode=GAQALODA2200CEBINGBXXXX&utm_source=bing&utm_medium=cpc&utm_campaign=alwayson&utm_content=brand&DonationTrackingParam1=digital_paid&DonationTrackingParam2=alwayson_bing&gclid=70c1fc2cea5d1850dd5f9dc21df21a1a&gclsrc=3p.ds&msclkid=70c1fc2cea5d1850dd5f9dc21df21a1a) continue eradication efforts through vaccination today, with only 33 cases reported in the world in 2018.

**What We Can Learn from Polio**

There is so much we can learn from the development of the polio vaccine. For example, we learn about the rigorous process that vaccines go through before getting approved for use and their continued testing for better results and less reactions. While most Americans are still receiving the polio vaccination, due to vaccine misinformation and availability, polio is still not fully eradicated and re-emerging in smaller countries. There is a possibility that polio could make a re-appearance in the United States – but only time will tell.

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