

epidemic: an outbreak of a disease affecting a large number of people

eradicated: got rid of

vaccine: an injection or oral medicine that produces immunity to a disease

immunity: the power of the body to resist infection

placebo: a substance that is given as a medicine even though it has no effect on a disease or infection

The March of Dimes—a charitable organization whose purpose was to fight polio—was founded in 1938 by President Franklin D. Roosevelt. Roosevelt's bout with polio left him unable to use his legs for the rest of his life.

Another scientist, Albert Sabin, developed a polio vaccine a few years after Salk. Sabin's vaccine was given by mouth, and it used a weakened live virus instead of a killed one. Today, it is the most common polio vaccine used around the world.

How did Jonas Salk change the lives of children around the world?

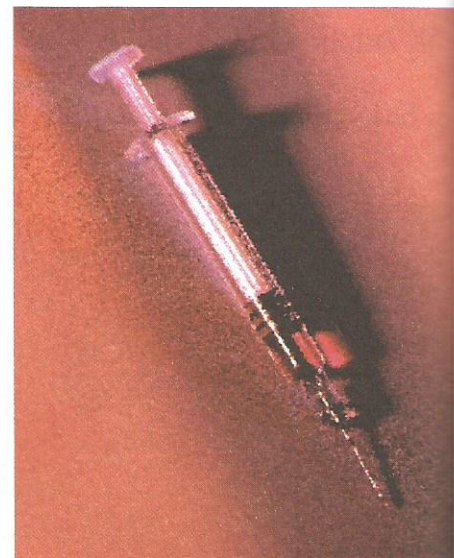
You may never have heard of a disease called *polio*, but there's no doubt your grandparents have. Just half a century ago, polio was an **epidemic**. Parents were afraid to let their children go to swimming pools, the beach, and movie theaters. Schools closed to prevent the spread of the disease. Today, polio has been **eradicated** in the United States.

Polio is a disease that affects the nervous system. The early symptoms can be confused with the flu. In most cases, a person can have polio without even knowing it because the body's immune system fights the disease effectively. Polio moves quickly, though, and when the body can't fight the infection, paralysis and even death can occur.

The first major outbreak of polio in the U.S. happened in 1916. Each following year, nearly 40,000 cases were reported. In the late 1940s, the physician and researcher Jonas Salk began to work on creating a **vaccine** to prevent polio. The common belief at the time was that a person had to be infected by a weak form of the virus in order for the body to build up **immunity** to it. Salk believed that the same effect could be achieved by using the dead virus. It wouldn't make people become ill, but it would produce immunity to the infection in their bodies.

The first large-scale test of the vaccine occurred in 1954. Just two years earlier, a record 58,000 cases of polio had been reported. Salk performed a study with 1.8 million children, who became known as the *Polio Pioneers*. He divided the children into three groups. The first group received the vaccine. The members of the second group were injected with a **placebo**, a substance that wasn't actually a medicine. The third group received neither the vaccine nor the placebo; they were just observed to see how many would contract the disease. The study was double-blind—neither the researchers nor the subjects knew who was receiving the real vaccine until after the data was collected.

Salk and his team of researchers were overjoyed at the results. Salk had been right: a vaccine made of the dead polio virus gave children immunity from the dangerous live virus. Within two years, the number of polio cases dropped nearly 90 percent. By the 1960s, polio had been eradicated in most of the world. Today, there is still no cure for the disease, so immunization remains very important for children everywhere.



Use the words in the box to complete the sentences below.

eradicated**epidemic****vaccine****immunity**

1. A polio _____ occurred in the United States during the 1950s.
2. A vaccine produces _____ to infection.
3. The purpose of a _____ is to prevent disease or infection.
4. Diseases that have been _____ in an area of the world no longer exist there.

Write your answers on the lines below.

5. Why did Salk divide the children in his study into three groups instead of giving the vaccine to all the children?

6. Why did the third group of children in Salk's study receive neither the placebo nor the vaccine?

7. Dr. Linh is performing a test on the effects of a new headache medicine she developed. She gives half her subjects the headache medicine and gives the other half a pill that looks the same but doesn't contain any active ingredients.

This is an example of using _____.

8. How were the viruses that Sabin used in his polio vaccine different from those used by Salk?

What's Next?

Patients given a placebo may feel better because they think they were medically treated. This is known as the *placebo effect*. Do some research to learn more about it. How did scientists figure out what was taking place? What is the purpose of using a placebo in a scientific study?