Dr. Salk Defeats Polio

By Michael A. Signal

Jonas Salk was born a healthy child in 1914. He was a bit scrawny, but he had all his fingers and toes. He didn't develop any serious illnesses when he was young. Jonas was the kind of child parents wished for. When he started school, it was easy to see that Jonas was very bright. He would go on to study medicine and become one of the most important medical researchers in history.

An Epidemic

In the early 20th century, it wasn't uncommon to see children in the United States strapped into bulky metal leg braces, walking with crutches, or balancing on legs that seemed to bend in the wrong directions. Children still develop medical conditions that may affect their bones, muscles, and nerves. But they don't develop the disease called polio.

In 1916, just two years after Jonas Salk was born, his hometown of New York City experienced one of the worst American **epidemics** of the 20th century. Over 9,000 people caught polio, and over one-fourth of the infected people died from the disease. The most dangerous form of the virus would affect the spinal cord. Damage to the spinal cord can lead to muscle weakness, paralysis, trouble breathing, and death. In 1916, polio killed over 2,300 people in New York City alone! Polio did affect adults, but it primarily attacked children. It was a risky time to be two years old.

Children who survived the disease were often left partially paralyzed or severely weakened. Sometimes the disease would cause their legs or feet to become deformed. During the polio epidemic of 1916, New York parents were horrified that their children might get the disease. Jonas Salk's parents were probably just as nervous as any other parent, wondering if their child might be the next polio victim. But Jonas was lucky. He wasn't a victim of the polio outbreak. The world was lucky too.

A Special Vaccine

Jonas Salk completed medical school, but he decided not to work as a doctor. Instead, Dr. Salk became a medical researcher. He studied viruses. Viruses could be especially dangerous because they are very hard to kill. Salk knew the key to stopping a virus was protecting people before they got infected. Since Salk was a virus expert, he knew that other

scientists had developed vaccines to protect people from being infected with other diseases.

What is a vaccine?

A vaccine is actually a form of a virus that is introduced into a person's body. The human body is very good at fighting diseases. It can even kill viruses if it knows how. A vaccine is a very weak or dead form of a virus. When the vaccine enters a person's body, the immune system can make antibodies specifically designed to fight that virus. Because the virus is very weak or dead, it shouldn't make the person sick.

Dr. Salk knew that a vaccine was the best weapon against polio. He spent years developing the vaccine, but there were many things that made his work difficult. One problem was the many different types of the polio virus. Salk had to develop a vaccine that would give the body defenses against every **strain** of polio. He also actually had to grow the virus. This was difficult and dangerous work.

Dr. Salk began studying the polio virus in 1947. It took five years, but he had developed a usable vaccine. In 1954, he injected the vaccine into volunteers, which included himself and his family! It seemed to work. Salk began to test the vaccine on school children. Parents were thrilled that there would be a medicine that could prevent their children from ever getting polio.

A Deadly Setback

A vaccine is designed to prevent a disease. But since it is made from the actual virus that causes that disease, there is the slight chance a vaccine could actually make people sick. In 1954, people started to get sick after they had taken Salk's polio vaccine. Lots of people got sick, and nearly a dozen people died. The miracle vaccine seemed to be becoming a killer! But soon, it was discovered that the problem was not in the vaccine itself, but in one batch that was improperly prepared. The production problems were fixed and the vaccine went on to be given to millions.

No More Polio

Thanks to Dr. Jonas Salk, vaccines have **eradicated** polio in the United States and most other parts of the world. There are still some places in the world where polio vaccines are not easily available, but those places are becoming fewer and fewer. Dr. Salk has undoubtedly saved millions of lives.

Glossary

Epidemic *(n)*	a disease that affects a large group of people at the same time
Strain *(n)*	a different type or variation of a disease
Eradicate (v)	to destroy completely