

Jonas Salk at the National Press Club, April 12, 1965



Jonas Salk, May 1962. A.F.P. – D.P.A. Photos.
National Press Club Archives

On the tenth anniversary of the licensing of the polio vaccine he developed, Dr. Jonas E. Salk (1914-1995) visited Washington to accept a joint congressional resolution that hailed the vaccine as “one of the most significant medical achievements of our time.” At the White House, President Johnson offered Salk his congratulations. The day also marked the twentieth anniversary of the death of former President Franklin D. Roosevelt, who, having suffered from paralytic polio since 1921, had established the foundation that funded Salk’s efforts. Following his meetings with Congress and the President, Salk gave a talk and answered reporters’ questions at a National Press Club luncheon.

In the title of its lead editorial ten years earlier celebrating the successful testing of the new vaccine, the *New York Times* proclaimed the “Dawn of a New Medical Day.” Testing of the vaccine, like the funding for its development, had engaged the participation of millions of ordinary American citizens. Through March of Dimes campaigns, hundreds of thousands of volunteers went door-to-door raising \$41 million in 1952 alone from average donations of 27 cents. The tests involved 1.8 million school children, 200,000 volunteers, 64,000 teachers, and 60,000 physicians, nurses, and health officials, making it the largest clinical trial in history. Interpreting the jubilant

reaction to news that the vaccine had been proven safe and effective, the *Times* commented, “Gone are the old helplessness, the fear of an invisible enemy, the frustration of physicians.”

Poliomyelitis, also known as infantile paralysis, is an extremely contagious viral infection caused by any of three types of poliovirus. The vast majority of those who acquire the infection are not harmed by the virus and become naturally immunized as they react to it. When the virus enters a person’s central nervous system, however, and destroys muscle-activating nerve cells, permanent paralysis can result. Poliovirus attacks on motor neurons in the brain stem can lead to death. During the first half of the twentieth century, summer epidemics periodically paralyzed and killed thousands of people. Most victims were children in industrialized countries who had not developed immunity as infants due to hygienic reforms that kept the virus from them at an age when maternal antibodies residing in their bodies would have induced immunity. The 1916 epidemic, resulting in 27,000 cases of paralysis with 6,000 deaths, caused widespread panic.

In 1935, two competing polio vaccines, one based on a noninfectious “killed” virus that had been inactivated, the other on a living, though weakened, virus, proved successful in tests on monkeys. Yet twelve children inoculated in test trials developed paralysis and six died. Testing was judged to have been initiated too hastily, and vaccine trials on humans were halted. As a result of the failure, President Roosevelt, who had lent his name to fund-raising “Birthday Balls” held in his honor, organized the National Foundation for Infantile Paralysis in 1938 to fund basic research into the nature of the disease. Led by Roosevelt’s former law partner, Basil O’Connor, the foundation provided long-term grants that allowed researchers time to develop a base for future advancements and gave supplementary grants to research institutions to insure their financial stability as research continued. Medical historian Saul Benison has written, “the National Foundation not only gave extraordinary impetus to the development of virus research, it created a revolution in the process of philanthropic giving as well” with its innovative “March of Dimes” campaign that relied on small donations of ordinary Americans.

Salk’s interest in viruses began in medical school. During World War II, he worked with the U.S. Army Influenza Commission on killed virus vaccines to prevent an influenza epidemic. After breakthroughs by other researchers suggested the possibility that a killed poliovirus vaccine could produce antibodies in humans that would destroy virus infectivity, Salk, with National Foundation backing, set out to perfect a killed vaccine, which he considered safer than a live virus vaccine. Many in the research community, however, questioned the effectiveness of a killed vaccine and contended that its development could inhibit research into the development of a safe live vaccine that promised longer-lasting immunity. Meanwhile, cases of polio were increasing dramatically. A summer epidemic in 1952 produced more than 57,000 reported cases. After Salk conducted successful, but limited tests of his killed vaccine that year, a special Vaccine Advisory Committee convened by the National Foundation recommended moving forward with large-scale trials of the killed vaccine.

Salk was lionized in the media after the trials proved the vaccine effective, but within two weeks of licensing, 59 children developed paralysis and five died due to difficulties of one commercial manufacturer in deactivating the virus and insufficient safety testing by the National Institutes of Health. Although some investigators advocated halting the vaccinations, improved production techniques and inspection procedures were quickly implemented and the program continued. In the 1960s, an oral live virus vaccine developed by Albert Sabin replaced the Salk polio injection as the predominant form of protection in the United States. As the global eradication of polio neared realization at the end of the century, the US Advisory Committee for Immunization Practices recommended a change back to a killed virus vaccine, as studies determined that a few cases of polio had developed due to the live vaccine. In 2016, the Center for Disease Control and Prevention (CDC) reported, “Polio incidence has dropped more than 99 percent since the launch of global polio eradication efforts in 1988.” In that year, the Global Polio Eradication Initiative was instituted by CDC, UNICEF, the World Health Organization, Rotary International, and national governments, with support from the Bill & Melinda Gates Foundation.

In his Press Club talk, Salk characterized as “easy” the problems he and others surmounted to protect the public from polio. He devoted most of his talk to challenges he deemed more difficult—cancer, immunologic disorders, organ transplant intolerance, aging, and even sociological problems. Salk advocated a holistic approach he later termed “biophilosophy” based on a deep understanding of evolutionary biological structures and functions. To foster this approach, Salk, with the backing of the National Foundation, established the Salk Institute for Biological Studies in La Jolla, California, to pursue, as he told an interviewer, “the basic questions in biology which ultimately may have a bearing on the problem of disease, on questions of health, and on the broader and more philosophical question of what man can become.”

While his Institute in some ways replicated the basic research approach pioneered a generation earlier by the National Foundation, Salk in addition tried to foster a unique environment—“an experiment in the sociology of science,” he termed it—where contact between renowned scientists and humanities scholars from diverse fields might stimulate innovative research not encouraged in traditional laboratories. “I wanted to create a crucible for creativity,” he explained. “I wanted to bring out the best of the best.” The Salk Institute has become a leading force in the fields of molecular biology, genetics, and neuroscience, though Salk’s cross-fertilization institutional model was discarded long ago. Salk continued to conduct immunization research, focusing on cancer, multiple sclerosis, AIDS, and improving the polio vaccine, until his death in 1995.

*-- Alan Gevinson, Special Assistant to the Chief,
National Audio-Visual Conservation Center, Library of Congress*

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