

**Doctor Salk and the Triumph  
of the Polio Vaccine**

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Senior Division

Individual Exhibit

Student-Composed Words: 491

Process Paper: 499

## Process Paper

I have always been interested in the field of medicine, specifically, different diseases and their causes. That is the area that I decided I wanted to research. I wanted to examine a topic that was not as far back as smallpox, but not as recent as Ebola. So, I chose the disease of polio; which was prevalent in the early to mid twentieth century. When I first chose polio as my topic, I had no idea that its influence on the culture was so powerful, or how the public viewed the disease. I immediately became hooked on finding out more on the tragic disease of polio.

When I first began researching the disease of polio, I primarily wanted to know about the disease itself. I read medical journals, textbooks, and reports. After I had a basic understanding of the disease, I started to dig deeper into the causes, effects, and prevention methods. With each source I used, I often still had questions that needed answered, so it would lead to another source. I tried to balance primary and secondary sources in my research; often reading firsthand accounts of those who had, and were affected by polio. As I was going from regionals to state, I interviewed three medical professionals that have experience in epidemiology and virology to get insight on both polio and other contagious diseases that influence life today. That is how I conducted my research.

I chose the category of an individual exhibit, because last year, when I competed as a junior, I did a group exhibit. This year, now in the senior division, I decided I still wanted the experience of participating in National History Day, so I found a teacher who would assist me in doing so. I really enjoyed doing an exhibit last year, mostly because it balanced being creative and being factual. That's how I decided to do an exhibit. I wanted to create an exhibit that did more than just state facts; I wanted to tell a story. I did this by trying to balance both visuals and

text. Sometimes things are said best from others, and not just my analysis. That is why I used both quotes from various people and sources to supplement my own words. To tell my words from others, I made the decision to bold the quotes to distinguish them from my own words.

At polio's peak, the disease affected tens of thousands of people each year in the United States alone. Many towns across the United States were terrorized by the disease. Entire families were affected by a tragic loss of a loved one from polio. Parents are not supposed to bury their children, but polio did not care. This horrible tragedy was ended by the triumphant Salk Polio Vaccine. This vaccine was a triumph of medicine. After its release, cases of polio dropped immediately. The vaccine was such a triumph that today only three countries in the world still have the tragic disease of polio.

## **Annotated Bibliography**

### **Primary Sources:**

**Cabinet Paper, CI-24 The Salk Vaccine. United States Presidential Records, 29 April 1955. Accessed 18 March 2019.**

In this cabinet paper from a meeting on the failed Cutter Laboratories vaccine, it discusses the incidence of the disease, and what is being done for the prevention of polio. In the beginning of this cabinet paper, the tragic Cutter vaccine trial is discussed. The failed vaccine resulted in many deaths and severe illness to those who received the vaccine. It was decided that there would be no charges against the laboratories and patrons. Then the cabinet discussed the incidence of the disease and the progress of the Salk vaccine. I used this cabinet paper to show how the government was getting involved in the polio epidemic.

**Charts and Graphs With Figures on Polio Cases in the United States. U.S. Department of Health, May 1955. Accessed 18 March 2019.**

Polio was a very widespread disease in the United States in the mid twentieth century. Certain government offices and patrons were tasked with tracking the disease. This was no easy task, but was necessary. These maps and graphs showed the degression of the disease after the release of the Salk polio vaccine. These graphs and maps were utilized to my project for they showed the direct results of the Salk polio vaccine.

**Evening Star. [volume] (Washington, D.C.), 11 June 1950. Chronicling America: Historic American Newspapers. Lib. of Congress.**

In the United States around the 1950s polio was every parent's worst nightmare. They would go into a panic during the warm months for they feared polio. Ways to prevent polio were posted everywhere. That is what is in this newspaper article. This article was written in the middle of one of the largest polio outbreaks in United States history. This is the reason I chose to use this newspaper article. With this article it gave an inside look of what it was like in that time period.

**Evening Star. [volume] (Washington, D.C.), 23 Sept. 1951. Chronicling America: Historic American Newspapers. Lib. of Congress.**

Throughout the height of the polio epidemics, people would often ask if there was a cure. That was the question that kept reappearing everywhere. So, in turn, there would be incomplete answers. This newspaper article is one of the incomplete answers. It tells of what the current situation was with the research of a vaccine. One of these updates would be posted about every two months or so. I chose to use this because it shows that human nature doesn't change. We always want the best for all, and at that time, all they wanted was a cure.

**Greenbelt Cooperator. (Greenbelt, Md.), 19 Sept. 1941. Chronicling America: Historic American Newspapers. Lib. of Congress.**

During the early epidemics of polio, people thought it was caused by the fault of the parents. Many towns boasted that they were polio free, but then when the disease would hit, they would point fingers at the parents of the sick children. In this newspaper article, the town of Greenbelt, Maryland reports that it has its first polio case. For the rest of the article they both shame the family and the community. I used this article because it shows how little people knew about polio at the time

**Jacobson, Kerry. "Why I Am Sharing My Story as a Polio Survivor." Rotary Voices, 22 Oct. 2015.**

For many years after polio was triumphantly defeated in the U.S.; survivors still faced ridicule. This was because many of them were not able to walk on their own, or wore braces. They were seen as if they were still contagious. In this journal written by a polio survivor he writes of how his life changed so much even after the initial attack. This journal entry is useful to my project because it shows the aftermath of the terrible disease that so many people had to deal with their entire lives.

**Kehret, Peg. *Small Steps: the Year I Got Polio*. Kendall/Hunt, 2009.**

The famous children's author Peg Kehret was not always a great author. She, at one time, had polio. In her book: *Small Steps: The Year I Got Polio* she tells of her struggle with the disease. At one point she said that after having polio she was afraid that there was no chance of her becoming a writer due to the atrophy of her hand and arm muscles. I used this book because it shows that anyone can get polio. This book also shows what it was

like to go through the struggle of having polio.

**Remarks by Oveta Culp, Secretary of Health, Education and Welfare, Given at a Conference on the Salk Polio Vaccine, 22 April 1955. Accessed 18 March 2019.**

When the Salk polio vaccine was first released many people were concerned that there would not be enough supply to vaccinate all those who needed it. In this press conference by Oveta Culp the Secretary of Health at the time, she discusses the supply and demand of the vaccine. She goes through the status of the disease in different areas of the country before giving a plan of attack. This conference manuscript was used in my project to help address the concerns of the public that were present when the vaccine was first released.

**Report, Alternative Calculations of Total Costs and Federal Shares Concerning Polio Vaccinations. United States Presidential Records, 1955. Accessed 18 March 2019.**

A major concern of the government right after the Salk vaccine was released would be the cost of immunizing the country. This led to narrowing down who got the vaccine to just children that are from one to nineteen. In this report, the cost of immunizing the population is broken down into various series. I used this report in my project to show how triumphing over polio was just as much a safety problem as it was a financial problem.

**Roanoke Rapids Herald. [volume] (Roanoke Rapids, N.C.), 15 Aug. 1946. Chronicling America: Historic American Newspapers. Lib. of Congress.**

Before much research was done on the disease, the cause of it was unknown. When a child in a community would get polio; everyone would panic. This would cause the news to have to release a special statement saying what is being done to prevent further outbreaks. In this newspaper article it gives exactly that. It talks of what is being done within the household of the infected child to prevent the disease from being spread. This article was helpful to my project because it gave insight to how the community reacted to an infected child.

**Salk, Jonas E. Letter to J. L. Pruett. Salk Institute for Biological Studies, 16 May 1975, San Diego, California.**

Doctor Jonas Salk was a very influential person in the science community. He would always push for a non confrontational compromise to issues within the scientific community. In this letter he addresses a principal of a school for special needs. He talks of how society's views affect the school and others. I used this letter in my exhibit to

show how Dr. Salk did more than just create the polio vaccine.

**Salk, Jonas Edward. *Métaphores Biologiques, Man Unfolding*. Calmann-Lévy, 1975.**

Doctor Jonas Salk was the first person to create a successful polio vaccine. He also worked on multiple influenza vaccines. Dr. Salk was a pioneer for the world of biology. That is what his book is over. In the book it gives his perspective of the world from a biological standpoint. He also goes over what it was like to create vaccines that changed the world. This source was very helpful to my project because it shows what it is like to be a man who changed the world forever.

**Senate Bill S.2501 Authorizing Grants to the States to Assist in Providing Children and Expectant Mothers with Vaccination Against Poliomyelitis. United States Senate, 12 August 1955. Accessed 18 March 2019.**

In this Senate Bill, it addresses the vaccination distribution to expectant mothers and their children. This bill states that they will not segregate against race or religion in the distribution of the vaccine. This was important as this was a time of extreme anti semitism. Many were concerned that because of their race or religion they would not be able to receive the vaccine. I included this source in my project to show that polio was a concern of all people not just the upper classes of society.

**Supplemental Report to the President by the Secretary of Health, Education and Welfare on the Distribution of the Polio Vaccine. United States Presidential Records, 13 July 1955. Accessed 18 March 2019.**

In this report for The President by the Secretary of Health, Education, and Welfare, it addresses the safety and availability of the Salk polio vaccine. A major concern of the government was the safety of the vaccine. This is after a failed vaccine trial that left many hospitalized and dead. The report shows that there are no major safety issues with the vaccine. This report was helpful to my project because it showed how much emphasis was put on the safety of the vaccine.

**Tabor City Tribune. (Tabor City, N.C.), 15 Aug. 1956. Chronicling America: Historic American Newspapers. Lib. of Congress.**

When the polio vaccine first came about many people were skeptical. In this newspaper article it has frequently asked questions about the vaccine with answers from a doctor. A majority of people would mainly ask one thing: is it effective. The answer would always be: yes! I used this newspaper because it shows how the population reacted when the vaccine was first released for public use. Also, many of these questions are still floating about in today's society. More and more people are moving away from vaccines, and this newspaper shows that sometimes people just need their questions answered.

**White House Press Release with Text of Citations by President Dwight D. Eisenhower to Dr. Jonas E. Salk and the National Foundation for Infantile Paralysis. The White House, 22 April 1955. Accessed 18 March 2019.**

Doctor Jonas Salk was hailed a hero of medicine after he created and released the polio vaccine. So much so that President Eisenhower gave him a personal citation for his success. That is what this document is. This citation is also for the work put in by the National Foundation for Infantile Paralysis also known as the March of Dimes. I used this document to show how much of an influencer Doctor Salk was in that time period.

## **Primary Source Pictures:**

**Adams, Anthony. Global Eradication of Wild Poliovirus Type 2 Declared. Global Polio Eradication Initiative, 20 September 2015. Accessed 28 Dec 2018.**

In 2015 the world had a major triumph over polio; one of the three strains of the disease had been eradicated. This was thanks to the efforts of many volunteers and doctors going to hard to reach areas to deliver the vaccine. This photo was used in my project because it shows not a tragedy, but a triumph over the disease of polio.

**Fight Polio. Photography. Britannica ImageQuest, Encyclopædia Britannica, 25 May 2016. Accessed 28 Dec 2018.**

Every year the March of Dimes would hold fundraising events to raise awareness about polio. To do this they would put up posters all around cities of children who were affected by polio. These children were known as poster kids. I used this poster because it is a poster that people would see during the polio outbreaks.

**Hidden History of Polio Vaccine. Photograph. Tom Valentine. Published 2010. Accessed 30 January 2019.**

The day that the Salk Polio Vaccine was released was a day to go down in history. It was everywhere. In this photo it shows a newspaper headline from the day the vaccine was released. This headline was one of many that were on newspapers all across the world. This photo is useful to my project because it shows the impact of the vaccine almost immediately after its release.

**Jonas Edward Salk. (1914-1995). American microbiologist. Salk in his laboratory where he developed the polio vaccine. Photograph, 7 October 1954. Photograph. Britannica ImageQuest, Encyclopædia Britannica, 31 Aug 2017. Accessed 17 September 2018.**

Doctor Jonas Salk was the man who triumphed over polio. In a little under four years he created a vaccine to prevent polio. There was a lot that went into creating this vaccine. That is what this picture is depicting. In his lab, Salk is recording results of tests. This picture is useful to my project because it shows the process of creating the vaccine.

**“March of Dimes” Photograph. Absolute Astronomy. Published 2011. Accessed 30 January 2019.**

Ever since the March of Dimes was created they would be found helping with the effort to eradicate polio. They put up posters, billboards, and ads to get people to be vaccinated. In this photo it shows an officer in front of a billboard that says stamp out polio. I used this photo because it shows one of the ways the March of Dimes was trying to help with the eradication of polio.

**Polio Eradication Campaign. Photograph. Britannica ImageQuest, Encyclopædia Britannica, 2 Mar 2017. Accessed 30 Jan 2019.**

Right after the polio vaccine was released for the public everyone wanted it. This great demand caused health care workers to set up large vaccination events. That is what this photograph is showing. Many many people lined up to get their vaccine from a health clinic. This photo was used in my project to show how badly people wanted the vaccine. They would wait hours in lines to get it.

**Polio Outbreak. Photograph. Steve Gilly. 1950. Accessed 30 January 2019.**

During the height of the polio tragedy many towns would get mass outbreaks causing them to have to go into quarantine. They would place signs outside of the town warning of a polio outbreak. That is what this photo is depicting. This was useful to my project because it shows what someone in the height of polio would see.

**Polio Research. Photography. Britannica ImageQuest, Encyclopædia Britannica, 25 May 2016. Accessed 28 Dec 2018.**

In order to get a vaccine released for the public; it must first go through trials first. In the trials of the polio vaccine thousands of children were tested. That is what this photo is showing. A child getting the trial polio vaccine. I used this photo in my project because it helps show the behind the scenes of the research for a vaccine.

**Polio Vaccine. Photography. Britannica ImageQuest, Encyclopædia Britannica, 25 May 2016. Accessed 28 Dec 2018.**

For a scientist and team to get a vaccine released for the public; it must first go through many trials and reviews first. When the polio vaccine was trialed thousands of young children were injected with the trial vaccine. That is exactly what this photo is showing; a child getting the trial polio vaccine to see if it is in fact successful. I used this photo in my project because it helps show the behind the scenes of the research for a vaccine, and the process of solving the tragedy of polio..

**Polio Ward. Photograph. Britannica ImageQuest, Encyclopædia Britannica, 31 Aug 2017.**

During the polio epidemics of the twentieth century hospitals and care centers would be flooded with polio patients. The saving grace of many polio victims was a machine called the iron lung. That is what this picture is depicting; a hospital ward of polio stricken children in iron lungs. This photograph was helpful to my project because it shows the plight of those affected by polio.

**The American Microbiologist Jonas Edward Salk. Photography. Britannica ImageQuest, Encyclopædia Britannica, 25 May 2016. Accessed 21 Sep 2018.**

Doctor Jonas Salk will forever be known as the man who helped end the tragedy of polio. He was just a young scientist at the time. He went through many trials and errors to find a vaccine that showed a positive result. This photo is useful to my project because it shows him at work in his lab trying to end the tragic disease of polio

**You Can Help Too. Photograph. Falter, John, NMAH Polio. 1952. Accessed 30 January 2019.**

The March of Dimes is an organization that helped raise funding for victims of polio. People were asked to give a dime; hence the name. They would put up posters of children who were affected by polio to pull on the heartstrings of everyone who saw them. In this poster it has a child with leg braces being helped by her sister. This photo was used to show how desperate people were to try and get funding after polio.

**Young girl, victim of the Polio epidemic, at School, Israel. 1950. Photograph. Leni Sonnenfeld (Beth Hatefutsoth Photo Archive, Sonnenfeld collection). Accessed 30 January 2019.**

For those who were affected by polio it may follow them the rest of their lives. Many had to use crutches, leg braces, or even be bound to a wheelchair. In this photo it shows a girl in leg braces at school in the 1950s. The kids who had to use leg braces or crutches were often taunted by others because of it. I used this photo because it shows the aftermath of the tragic polio disease.

## **Secondary Sources:**

**Bandyopadhyay, Ananda S, et al. "Polio vaccination: past, present and future." *Future Microbiology*, May 2015, p. 791+. Health Reference Center Academic, Accessed 14 Oct. 2018.**

In this article it goes over the history of the polio vaccine. It shows how it was before it was released, immediately after its release, and what it looks like today. The article goes over how the public viewed the vaccine as well as how government officials viewed the vaccine. This article was very useful to my project because it shows how the vaccine was viewed by a multitude of people.

**Beaubien, Jason. "Wiping Out Polio: How The U.S. Snuffed Out A Killer." NPR, 15 Oct. 2012. Accessed 21 August 2018.**

Polio in the United States was a very feared and dangerous disease. In this article it looks back on the years that polio was most prevalent. It also mainly focuses on the months of the years that the disease was most rampant. This article gave an inside look of what it was like to be alive during the polio tragedy for the ones of us that are far too young to have lived through it. That is why I used this article in my research.

**Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases. Poliomyelitis*. Atkinson, W., Wolfe, S., Hamborsky, J., McIntyre, L., eds. 13th ed. Washington DC: Public Health Foundation, 2015. Accessed 08/26/2018.**

The Centers for Disease Control and Prevention (CDC) has been the leader of trying to end many common or once common diseases. The CDC immediately after its founding started to help fund research to end the tragedy of polio. In this article it looks at many of the once common diseases that were then defeated. This article was helpful to my research because it not only shows polio, but many other tragic infectious diseases that were triumphed over.

**Children's Hospital, Philadelphia. "Making Vaccines: How Are Vaccines Made?"  
Children's Hospital of Philadelphia. 19 Nov. 2014.**

Vaccines are quite a controversial topic in today's world. Do they cause more harm than good? These are questions many people are now asking themselves. That is why I used this article. It goes in depth to how many different types of vaccines are made. From polio to smallpox, or even just the flu. I used this article in my research to see what the polio vaccine is like from a scientific standpoint.

**"Deadly Diseases: Polio." PBS, Public Broadcasting Service, 2005.**

In 2005 it marked the twenty-sixth anniversary of the triumph over polio in the United States. This article published by PBS looks back at the disease and its tragic aftermath. This article was very well in the fact of showing both sides of the disease. It showed the scientific view of the disease, and the public uneducated view of the disease. This article was useful to my research because it is looking back to a time where constant threat of disease was a part of everyday life.

**Hackney, Amy. "Poliomyelitis." Poliomyelitis(1). Encyclopedia of Science, 2015.**

When I first started my research I only wanted to learn a basic overview of my topic. To do that I learned about the disease itself. This is one of the articles I used to do that. The article talks about the origins of the disease, and how it came to be about. It also goes into the disease from a medical standpoint including causes, symptoms, and treatments. This article was very useful because it gave basic background knowledge of my topic.

**Hand, Carol. "Modern Epidemiology." Gale Virtual Reference Library, History of Science-Minneapolis, 2015.**

Epidemics were a part of life before there were vaccines. From the Black Death to Ebola this article covers the major epidemics that rocked our world. This article covers how we triumphed over even the worst of epidemics, and what we are doing to prevent future tragedies. This article was useful to my research because it shows how epidemics like polio and many others can be defeated and prevented.

**“Jonas Salk.” Biography.com, A&E Networks Television, 28 Apr. 2017.**

Doctor Jonas Salk will forever be known as the man who triumphed over polio. In this article it gives an overview of his life including the time when he was researching and developing the polio vaccine. It also goes into how he came to be working on the polio research project. I used this source because it shows the man behind the vaccine, and what it was like for him before, during, and after the vaccine.

**Khan, Farrah, et al. “Progress Toward Polio Eradication - Worldwide, January 2016-March 2018.” MMWR. Morbidity And Mortality Weekly Report, vol. 67, no. 18, May 2018.**

The world today is still working to end the polio tragedy. In this report it gives an update of where we are at in defeating polio. It also tells of places that need more work, new outbreaks, and places where it is eradicated. This report is very helpful to my project because it shows how far we have come as a whole in the fight to end the tragedy of Polio.

**O’Brien, Dennis M. Personal Interview. 1 Mar 2019.**

Polio is just one of the many diseases that we have found a triumphant way to prevent. In this interview with Dr. O’Brien who is a pediatric oncologist/virologist, we discussed how far we have come with preventative medicine. We also discussed the effect of vaccines from a scientific viewpoint, and how viruses actually attack our bodies. This interview is very useful to my project because it gives an insight on how viruses like polio work, and what new research is happening today.

**Pallansch, Mark. "Vanquishing the terror of poliomyelitis." Science, vol. 308, no. 5729, 2005, p. 1744+. Health Reference Center Academic.**

In the height of the tragic polio disease thousands would be affected. In this article it tells of the terrors of the disease during and after its reign of terror. It follows up with those who were affected by the disease and those who helped fight the disease. This article gave me insight on the impact of the disease both mentally and physically of those who were tragically affected by the disease.

**“Post-Polio Syndrome.” National Institute of Neurological Disorders and Strokes, U.S. Department of Health and Human Services, 2012.**

People affected by polio not only had to deal with the initial disease, but also a condition called post-polio syndrome that affects them late in life. This syndrome presents itself exactly like the disease itself. This can be tragic especially those who were strongly affected by polio the first time through. This article was helpful to my research because it shows that the effect of polio will never go away.

**Reed, Teresa. Personal Interview. 1 Mar 2019.**

Vaccines are not new to our society. We all have to get them to get into school, and to hold certain jobs. In this interview with the head nurse in charge of immunizations in Kosciusko County, Indiana, we discussed the effect of vaccines in preventing major outbreaks. The topic of people against vaccines came up in the fact of them breaking down the herd immunity, or the effect of a large group of people being vaccinated. This interview showed how one person could affect the health of thousands, and what could happen if there were to be another large outbreak of polio.

**Remington, William. Personal Interview. 1 Mar 2019.**

Monitoring outbreaks is no easy task especially in larger communities. In this interview, I interviewed the county health department medical director of Kosciusko County, Indiana. Dr. Remington is in charge of tracking outbreaks within the county. We discussed the current Hepatitis A outbreak that is occurring in this county at the time, and how vaccines play a role in the outbreak. We also discussed how more and more people are not vaccinating their children, and the greater risks with it. I conducted this interview to see what is the major disease that we are currently fighting. Whether polio or Hepatitis A we will always be fighting diseases.

**Society, Kansas Historical. “Iron Lung.” Kansas Historical Society, Sept. 2014.**

The iron lung was the thing that everyone who had polio feared. Many people would be stuck in one for the rest of their lives because they can't breath without it. In this article it goes over the history of the iron lung. This includes the problem it tries to solve, the creation, and its legacy. This article was useful to my research because it shows the

background of an item that was the symbol of polio for decades.

**Toole, Michael J. "Polio's Last Stand?" *Natural History*, vol. 125, no. 9, Sept. 2017, p. 32. EBSCOhost.**

The complete eradication of polio is within grasp. Only three countries in the world still have polio. In this article it goes back to the time when polio was running rampant. It also goes into how polio is still affecting the culture of the United States even today. This article proves that the tragedy of polio will never go away. That is why I used it in the creation of my project.

## **Secondary Source Pictures:**

### **Polio in Pakistan. Photograph. World Health Organization, 2010. Accessed 28 Dec 2018.**

Today in the world there are only three countries that have the poliovirus. One of these had a relapse. This country was Pakistan. In this photo it shows a map of all the countries that had the polio virus in 2010. I used this photo in the center of the board because it shows how large of an effect the polio vaccine had.

### **TEM of a Cluster of Polio Viruses. Photograph. Britannica ImageQuest, Encyclopædia Britannica, 22 Oct 2018. Accessed 28 Dec 2018.**

The polio virus went hundreds of years unidentifiable. Until one British doctor managed to isolate it under a very powerful microscope. That is what this picture is showing; the virus that tragically affected thousands of people each year in the early twentieth century. I used this picture because it shows that even the microscopic things can have a huge impact.