

## The Story of Thalidomide: A New Chapter in Drug Regulation

Senior Division

Group Website

Ming Haller, Taletta Jones

Student Composed Words: 1200

Media Length: 2:46

Process Paper Words: 500

The medical industry and its origins have always been an interest of ours. When the Thalidomide Tragedy appeared in our research of mid century medications, the emphasis it put on honesty between government and consumers was especially intriguing, as well as its irreversible impact on the world. Prior to our research, the intricacies of drug testing processes were a mystery to us. We did not know the tragedy that had to occur in order to develop such strict drug testing laws. The Thalidomide tragedy was a turning point for toxicity testing protocols in the United States and the rest of the world. The malformations in thousands of children led to the construction of the Kefauver-Harris amendment that forced safer drugs and a more observant FDA, it also made the importance of toxicology known to governments around the world.

We analyzed countless newspaper articles, magazines, and advertisements from the 1950s, and utilized these sources to build our evidence. We also read many sources in the Gale in Context database and the National Library of Medicine, where we found photos and historical text that was crucial to building a strong understanding of the time period as a whole. Some of our most valuable sources were newspapers. The interviews and photos we uncovered provided primary sources for us to incorporate. One of the newspapers included an interview conducted with Frances Kelsey, a key figure in our project. The interview shed light on how her involvement affected citizens of the United States, and created a more personal view of the tragedy.

Our research was organized by a collection of quotes that shaped each section of our website. For each page, we found quotes with the central ideas we wanted to include, and used

our collection of images and information to build strong support around them. We finalized the structure and color scheme before transitioning to formatting. After familiarizing ourselves with the software, we were able to start formatting our text and media. Formatting was time consuming, and it took a lot of patience to learn the software. In the end we focussed on our individual strengths, one of us focussed on media and formatting, while the other researched information and incorporated it into the project.

The Thalidomide Tragedy marked a critical turning point in history because it not only created stricter drug regulation and testing in the United States. but also in the rest of the world. The systematic protocols implemented by the U.S. government were established to protect the safety of consumers. The tragedies' irreversible effects on thousands of victims around the world emphasized the frequently overlooked field of medicine: toxicology. Understanding how harmful substances can affect the human body and environment is crucial when developing new medications. Victims of the Thalidomide Tragedy are still alive to this day, and face the consequences of the influential pharmaceutical companies and government's actions. The story can not be left in the past, as its influence is still felt greatly in our current society today.

## Annotated Bibliography

### Primary Sources

*Articles on Birth Defects.* The Conversation US, 5 Dec. 2015,

[theconversation.com/us/topics/birth-defects-2955?page=2](https://theconversation.com/us/topics/birth-defects-2955?page=2). Accessed 2 Feb. 2024.

This website contains photos of thalidomide in various forms. We used these photos to provide an illustration of the historical event and time period.

"FDA Will Now Watch All Test Drugs." *Evening Star* [Washington D.C.], 27 Jan. 1963, p. A-8.

*Library of Congress,*

[chroniclingamerica.loc.gov/lccn/sn83045462/1963-01-27/ed-1/seq-8/#date1=1953&index=4&rows=20&words=amendments+drug&searchType=basic&sequence=0&state=&date2=1963&proxtext=Amendments+and+drug&y=13&x=23&dateFilterType=yearRange&page=1](https://chroniclingamerica.loc.gov/lccn/sn83045462/1963-01-27/ed-1/seq-8/#date1=1953&index=4&rows=20&words=amendments+drug&searchType=basic&sequence=0&state=&date2=1963&proxtext=Amendments+and+drug&y=13&x=23&dateFilterType=yearRange&page=1).

This was a newspaper from 1963, it contains an interview conducted with FDA member Dr. Frances Kelsey. We quoted this newspaper.

*Frances Kelsey Works with her Major Professor, E. M. K. Geiling, in the Department of Pharmacology at the University of Chicago, around the late 1930s. Food and Drug Administration,*

[www.fda.gov/about-fda/fda-history-exhibits/frances-oldham-kelsey-medical-reviewer-famous-averting-public-health-tragedy](https://www.fda.gov/about-fda/fda-history-exhibits/frances-oldham-kelsey-medical-reviewer-famous-averting-public-health-tragedy). Accessed 3 Feb. 2024.

This source is an image of Dr. Frances Kelsey working with a professor at University of Chicago. It was used to show Kelsey's notability because of her research and degree.

"The History of the Thalidomide Tragedy." *Grunenthal*, edited by Grunenthal, [www.thalidomide-tragedy.com/en/the-history-of-the-thalidomide-tragedy](http://www.thalidomide-tragedy.com/en/the-history-of-the-thalidomide-tragedy). Accessed 5 Feb. 2024.

This source is a website made by Grunenthal, the original manufacturer of Thalidomide. It explains Grunenthal's history and role in the Thalidomide Tragedy. We used photos for primary sources, quotes, and different perspectives of history.

Kelsey, Frances. Interview. Conducted by Noltan Nash. *CBC News: The National*, 1962, [www.youtube.com/watch?v=ykeREfe1Jpc](http://www.youtube.com/watch?v=ykeREfe1Jpc).

This source is an interview of Frances Kelsey in 1962, after her sparing the U.S. from the devastation of the Thalidomide tragedy. We used this interview in "A Bitter Pill" to explain Kelsey's view and role in drug legislation.

Kevadon. *Thalidomide Victims Association of Canada*, [thalidomide.ca/en/the-canadian-tragedy/](http://thalidomide.ca/en/the-canadian-tragedy/). Accessed 6 Feb. 2024.

This source is a picture of an original Kevadon pill bottle sold in Canada. We placed it in the causes section to show the product that would have been sold in the U.S. if the FDA hadn't refused it.

*Navajo Times*. [volume] (Window Rock, Ariz.), 29 Aug. 1962. *Chronicling America: Historic American Newspapers*. Lib. of Congress.

<<https://chroniclingamerica.loc.gov/lccn/sn85047513/1962-08-29/ed-1/seq-7/>>

This source is a newspaper published in 1962 about Thalidomide and its effects around the world. We quoted this newspaper.

*The 1960s Medicine and Health: Headline Makers. Gale in Context: High School,*

[link.gale.com/apps/doc/CX3436900378/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=a0e553e5](https://link.gale.com/apps/doc/CX3436900378/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=a0e553e5). Accessed 5 Jan. 2024.

This source provided photos of major figures in the Thalidomide tragedy including Frances Oldham Kelsey.

*The Nome Nugget. [volume] (Nome, Alaska), 01 Aug. 1962. Chronicling America: Historic American Newspapers. Lib. of Congress.*

<https://chroniclingamerica.loc.gov/lccn/sn84020662/1962-08-01/ed-1/seq-4/>

This source is a newspaper published in 1962, it provides information of when doctors started making more and more connections with Thalidomide to deformations. We used this for events immediately before section.

*President Kennedy Confers on Frances Kelsey the President's Award for Distinguished Federal Civilian Service in 1962. Food and Drug Administration,*

[www.fda.gov/about-fda/fda-history-exhibits/frances-oldham-kelsey-medical-reviewer-famous-averting-public-health-tragedy](https://www.fda.gov/about-fda/fda-history-exhibits/frances-oldham-kelsey-medical-reviewer-famous-averting-public-health-tragedy). Accessed 3 Feb. 2024.

This source is an image of Frances Kelsey and JFK. It shows Frances Kelseys effect and importance because she was recognised by John F. Kennedy during his presidency.

"The Shadow of the Thalidomide Tragedy | Retro Report | the New York Times." *Youtube*, New York Times, [www.youtube.com/watch?v=41n3mDoVbvk](https://www.youtube.com/watch?v=41n3mDoVbvk). Accessed 6 Feb. 2024.

This video provides history of thalidomide and interviews of thalidomide victims. We used a clip from this source.

"Thalidomide: Grunenthal Responds." *The Guardian (London, England)*, 15 Nov. 2014, p. 28.

*Gale in Context: High School*,

[link.gale.com/apps/doc/A390172715/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=df3f0705](https://link.gale.com/apps/doc/A390172715/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=df3f0705). Accessed 5 Jan. 2024.

Includes Grunenthal taking responsibility for Thalidomide and the company's response to event. We used quotes and photos.

"Thalidomide Victims Get Apology from Makers after Half a Century." *The Guardian (London, England)*, 1 Sept. 2012, p. 4. *Gale in Context: High School*,

[link.gale.com/apps/doc/A301353771/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=0a67692a](https://link.gale.com/apps/doc/A301353771/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=0a67692a). Accessed 5 Jan. 2024.

Newspaper that provides information on Grunenthal's apology to Thalidomide victims, and response to tragedy. We used this for perspective on biases in the companies past.

"Thalidomide Victims Get Cash and Apology." *Daily Telegraph (London, England)*, 9 Dec. 2005.

*Gale in Context: High School*,

[link.gale.com/apps/doc/A139578597/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=f006af75](https://link.gale.com/apps/doc/A139578597/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=f006af75). Accessed 4 Jan. 2024.

Newspaper article on Thalidomide. Includes statistics of how many babies were affected, and information on compensation given to thalidomide victims.

Thomas, Katie, editor. *The Unseen Survivors of Thalidomide Want to Be Heard*. New York Times, 23 Mar. 2020,

[www.nytimes.com/2020/03/23/health/thalidomide-survivors-usa.html](https://www.nytimes.com/2020/03/23/health/thalidomide-survivors-usa.html). Accessed 3 Feb. 2024.

This source is a photo of thalidomide in packaging. We used this in our advertisements section.

Ultrasound Image of Baby with Deformity. *Collaborative for Health and Environment*, [www.healthandenvironment.org/environmental-health/health-diseases-and-disabilities/birth-defects-research-and-resources](http://www.healthandenvironment.org/environmental-health/health-diseases-and-disabilities/birth-defects-research-and-resources). Accessed 6 Feb. 2024.

This is an ultrasound image of a baby with a malformation. We used this source in the cause section to show what doctors saw looking at babies and determining possible drug related troubles.

United States, Congress, Senate. Kefauver-Harris Amendment. Gale, 19 July 1962. *Gale in Context: High School*, [link.gale.com/apps/doc/BT2359030131/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=c072b82d](http://link.gale.com/apps/doc/BT2359030131/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=c072b82d). Accessed 4 Jan. 2024. Senate Bill 87-781.

This source is the government amendment that changed drug regulation for the U.S. this amendment passed as a result of the Thalidomide tragedy. It helped us understand the amendment's influence and changes in policy.

Wellcome collection. *Safe Sedation 'Distaval'. Thalidomide, a Bitter Pill*, Wellcome Collection, [wellcomecollection.org/articles/YIBmoBAAACgA1TRE](http://wellcomecollection.org/articles/YIBmoBAAACgA1TRE). Accessed 4 Feb. 2024.

This source is a photo of a thalidomide advertisement from 1950s. It illustrated the ideas and biases of the pharmaceutical companies in regards to the toxicity of Thalidomide

The WM. S. Merrell Company. Letter to American Doctors who participated in trial. 21 Feb. 1962. *The New York Times*,



[www.nytimes.com/2020/03/23/health/thalidomide-fda-documents.html](http://www.nytimes.com/2020/03/23/health/thalidomide-fda-documents.html). Accessed 26 Feb. 2024.

This source is a letter from Richardson Merrell pharmaceutical company to doctors who participated in drug trials for Thalidomide in the U.S. Richardson Merrell defends the drug.

The W.M. S. Merrell Company. Letter to American Doctors who participated in trial. 21 Feb. 1962. *The New York Times*,

[www.nytimes.com/2020/03/23/health/thalidomide-fda-documents.html?searchResultPosition=1](http://www.nytimes.com/2020/03/23/health/thalidomide-fda-documents.html?searchResultPosition=1). Accessed 14 May 2024.

This source is a letter written by Richardson Merrell company to American doctors who participated in the experimental trials of Thalidomide. The company had applied to sell Thalidomide in the U.S. and were denied. This letter details their denial of side effects that the drugs were proven to cause.

## Secondary Sources

Adams-Spink, Geoff. "Life after Thalidomide; Geoff Adams-Spink Explores the 40-year Legacy of a Drug That Drove Families to Despair." *Daily Telegraph (London, England)*, 7 June 2002. *Gale in Context: High School*, [link.gale.com/apps/doc/A86858893/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=4ffaed76](http://link.gale.com/apps/doc/A86858893/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=4ffaed76). Accessed 5 Jan. 2024.

This website provided insight into real life families affected by Thalidomide. It tells the story of Mr. and Mrs. Moriarty, who's baby was born without arms, and were advised to give the baby up to the government, as at the time there was a

great stigma around deformed baby's. We used this source for our overall understanding of the background to this historical event.

*After 60 years, Scientists Uncover How Thalidomide Produced Birth Defects.* Dana-Farber Cancer Institute, 1 Aug. 2018, [www.dana-farber.org/newsroom/news-releases/2018/after-60-years-scientists-uncover-how-thalidomide-produced-birth-defects#:~:text=The%20degradation%20of%20SALL4%20interferes,a%20treatment%20for%20morning%20sickness](http://www.dana-farber.org/newsroom/news-releases/2018/after-60-years-scientists-uncover-how-thalidomide-produced-birth-defects#:~:text=The%20degradation%20of%20SALL4%20interferes,a%20treatment%20for%20morning%20sickness). Accessed 26 Feb. 2024.

This website goes into specific detail on how the chemical thalidomide affects the body. It explains how thalidomide causes congenital malformations by interfering with the cell protein SALL4. We used this website to better understand the science behind it.

*AIHP.*

[aihp.org/remembering-pharmacys-past-looking-back-at-pharmacy-and-the-kefauver-hearings/](http://aihp.org/remembering-pharmacys-past-looking-back-at-pharmacy-and-the-kefauver-hearings/). Accessed 5 Feb. 2024.

This website provides information about the history of the Kefauver-Harris amendments and hearings. We quoted this article in our kefauver harris section.

Blue, Ruth. "Thalidomide, a bitter pill." *wellcome collection*, 22 Apr. 2021, [wellcomecollection.org/articles/YIBmoBAAACgA1TRE](http://wellcomecollection.org/articles/YIBmoBAAACgA1TRE).

This article provided history about thalidomides impact on trust in the medical field and its justice system. We quoted this article to summarize a main point in one of our sections.

"Clinical Trials in Pregnancy and the 'Shadows of Thalidomide':Revisiting the Legacy of Frances Kelsey." *National Library of Medicine*, 30 May 2022,

[www.ncbi.nlm.nih.gov/pmc/articles/PMC9420797/#:~:text=Kelsey's%20work%20on%20thalidomide%20led,trials%20%5B11%2C%2012%5D](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC9420797/#:~:text=Kelsey's%20work%20on%20thalidomide%20led,trials%20%5B11%2C%2012%5D). Accessed 25 Jan. 2024.

General overview of effects, aftermath, and key figures in thalidomide tragedy.

We used it for our background knowledge.

"Contamination Ruling: Thalidomide: 'Wonder Drug' Left Babies with Deformed Limbs." *The Guardian (London, England)*, 30 July 2009, p. 5. *Gale in Context: High School*, [link.gale.com/apps/doc/A204677574/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=0587b7ad](http://link.gale.com/apps/doc/A204677574/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=0587b7ad). Accessed 4 Jan. 2024.

This website provided history of thalidomide and what the medication could be used to treat. This was an important source for our our causes background section.

Elash, Anita. "Thalidomide Is Back; A Horror Drug from the '60s May Find New Uses." *Maclean's*, vol. 110, no. 10, 10 Mar. 1997, p. 48. *Gale in Context: High School*, [link.gale.com/apps/doc/A19227669/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=10c12d95](http://link.gale.com/apps/doc/A19227669/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=10c12d95). Accessed 4 Jan. 2024.

This website gives insight on the history and origins of Thalidomide. It was helpful in our conection of the whole event.

*Emerging Trends in Conceptualizing the Environment in Reproductive Research in the US and Germany, c. 1945–1975. Science Direct*, [www.sciencedirect.com/science/article/pii/S003936812200098X](http://www.sciencedirect.com/science/article/pii/S003936812200098X). Accessed 26 Feb. 2024.

This source is a diagram showing trends of environmental causes in reproductive research in Germany and the U.S. from the 1940s-1970s. We used this to show the denial of thalidomide as a cause of birth deformities and deaths.

"Frances Oldham Kelsey." *Encyclopedia of World Biography Online*, vol. 31, Gale, 2011. *Gale in Context: High School*,

[link.gale.com/apps/doc/K1631009590/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=23799e4a](https://link.gale.com/apps/doc/K1631009590/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=23799e4a). Accessed 5 Jan. 2024.

This book writes about Dr. Frances Oldham Kelsey and her story leading up to the Thalidomide tragedy. It helped us understand her life and what made her the strong person she was.

"Frances Oldham Kelsey." *World of Health*, Gale, 2006. *Gale in Context: High School*,

[link.gale.com/apps/doc/K2191100206/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=6d05cdb4](https://link.gale.com/apps/doc/K2191100206/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=6d05cdb4). Accessed 5 Jan. 2024.

This book provides insight on the recognition Dr. Frances Kelsey received after thalidomide, as well as history of the drug. It helped us understand Kelsey's legacy.

*The History of Thalidomide*. Open Book Publishers, [books.openedition.org/obp/1991](https://books.openedition.org/obp/1991). Accessed 26 Feb. 2024.

This website explains the numbers of Thalidomide cases that occurred in Germany from 1957 to 1963. It includes a graph with a timeline, highlighting major events in the Thalidomide tragedy and key times in its history. We used it to understand how the cases fluctuated throughout the years.

Jarrett, Wendy. "Sixty Years On: The History of the Thalidomide Tragedy." *Understanding Animal Research*, 12 Feb. 2021,

[www.understandinganimalresearch.org.uk/news/sixty-years-on-the-history-of-the-thalido](https://www.understandinganimalresearch.org.uk/news/sixty-years-on-the-history-of-the-thalido)

mide-tragedy#:~:text=Thalidomide%20was%20developed%20in%20Germany,high%20doses%20were%20not%20harmful. Accessed 31 Jan. 2024.

This source is a website on history of Thalidomide and animal research. We used this for in-depth detail of the history of Thalidomide and the omission of pregnant women in trials of this medication.

"Kelsey, Dr. Frances Oldham 1914-." *American Decades*, edited by Judith S. Baughman et al., vol. 7, Gale, 2001. *Gale in Context: High School*, link.gale.com/apps/doc/CX3468302435/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=2685b83b. Accessed 5 Jan. 2024.

This source is a book about Frances Kelsey. It provided a photo of Dr. Frances Oldham Kelsey.

Kim, James H, and Anthony R Scialli. "Thalidomide: The Tragedy of Birth Defects and the Effective Treatment of Disease." *Toxicological Sciences : An Official Journal of the Society of Toxicology* vol. 122,1 (2011): 1-6. doi:10.1093/toxsci/kfr088

This source provided information on the turning point that was Thalidomide and implications of drug use in the present, past, and future. We used this for stronger thesis.

"Laws Enforced by FDA." *U.S. Food and Drug*, FDA, 19 Apr. 2021, www.fda.gov/regulatory-information/laws-enforced-fda#:~:text=The%20Kefauver%2DHarris%20Amendments%20of,to%20prove%20their%20drugs%20effectiveness. Accessed 25 Jan. 2024.

This source gave us insight on laws enforced by the FDA, including Kefauver-Harris amendment. We used this source for understanding the key points and improvements of the amendment.

"Mother to Baby | Fact Sheet." *National Library of Medicine*, Feb. 2023, [www.ncbi.nlm.nih.gov/books/NBK582976/#:~:text=Thalidomide%20is%20a%20medication%20that,cause%20birth%20defects%20in%20humans](https://www.ncbi.nlm.nih.gov/books/NBK582976/#:~:text=Thalidomide%20is%20a%20medication%20that,cause%20birth%20defects%20in%20humans).

This website is a source of a book written about Thalidomide and its teratogenic properties. We quoted this in our longterm impacts section.

"The Shadow of Thalidomide." *Gale in Context: High School*, Gale, 23 Sept. 2013, [link.gale.com/apps/doc/CT344529862/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=7bff58cc](https://link.gale.com/apps/doc/CT344529862/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=7bff58cc). Accessed 4 Jan. 2024.

This source is a video providing history and effects of Thalidomide. Also interview of victim of Thalidomide. We used it for better understanding of history.

"Sixty Years on: the History of the Thalidomide Tragedy." *Understanding Animal Research*, 12 Feb. 2021, [www.understandinganimalresearch.org.uk/news/sixty-years-on-the-history-of-the-thalidomide-tragedy](https://www.understandinganimalresearch.org.uk/news/sixty-years-on-the-history-of-the-thalidomide-tragedy). Accessed 14 May 2024.

This website is talks about Thalidomides impact on Regulation and has an in depth history of the medication. We quoted this article.

Stephens, Trent, and Rock Brynner. "DARK REMEDY: The Impact of Thalidomide and Its Revival as a Vital Medicine." *Publishers Weekly*, Perseus Publishing, 2001, p. 76. *Gale in Context: High School*,

[link.gale.com/apps/doc/A72864225/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=a26f402f](https://link.gale.com/apps/doc/A72864225/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=a26f402f). Accessed 5 Jan. 2024.

Trent Stephens and Rock Brynner's book, "Dark Remedy, The Impact of Thalidomide and Its Revival as a Vital Medicine." It gives insight into the effects of Thalidomide and how it was deemed "safe," when the pharmaceuticals company was not being completely honest to its consumers. This was important in our causes section.

Tantibanchachai, Chanapa. *U.S. Regulatory Response to Thalidomide (1950-2000)*. Arizona State University. School of Life Sciences. Center for Biology and Society. Embryo Project Encyclopedia., 1 Apr. 2014. *Arizona State University*, [embryo.asu.edu/pages/us-regulatory-response-thalidomide-1950-2000](https://embryo.asu.edu/pages/us-regulatory-response-thalidomide-1950-2000).

U.S. response throughout the years to the application of Thalidomide in medicine. 1950 - 2000. We used this for the timeline and synthesizing of information on U.S. and Thalidomide into a streamlined history.

"Thalidomide." *The Gale Encyclopedia of Science*, edited by K. Lee Lerner and Brenda Wilmoth Lerner, 5th ed., Gale, 2014. *Gale in Context: High School*, [link.gale.com/apps/doc/CV2644032231/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=2e24732a](https://link.gale.com/apps/doc/CV2644032231/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=2e24732a). Accessed 4 Jan. 2024.

This source is a book on the tragedy of Thalidomide. It provided information on how many babies were affected and the current uses of thalidomide.

"Thalidomide." *Science Museum*, 11 Dec. 2019, [www.sciencemuseum.org.uk/objects-and-stories/medicine/thalidomide#:~:text=As%20a](https://www.sciencemuseum.org.uk/objects-and-stories/medicine/thalidomide#:~:text=As%20a)

%20result%2C%20changes%20were,the%20basis%20of%20animal%20testing.

Accessed 5 Feb. 2024.

Article on history and impact of Thalidomide. Provided photos, quotes, and information.

"Thalidomide Apology Rejected by Sufferers." *Youtube*, uploaded by Channel 4 News, 1 Sept. 2012, [www.youtube.com/watch?v=SlEraCkQIcU](http://www.youtube.com/watch?v=SlEraCkQIcU). Accessed 6 Feb. 2024.

This source is a video of a news segment done on Channel 4 News about effects of an apology speech made by Grunenthal. We used this source for media and longterm effects.

"Thalidomide Approval Controversy, 1961." *DISCovering U.S. History*, Gale, 2003. *Gale in Context: High School*, [link.gale.com/apps/doc/EJ2104240437/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=8aca5703](http://link.gale.com/apps/doc/EJ2104240437/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=8aca5703). Accessed 5 Jan. 2024.

Provided information about history of Thalidomide, why it wasn't approved in the U.S. and what the side effects were. We used this for information on our main turning point and the effect that the FDA had in denying Thalidomide.

"Thalidomide: Timeline of a Scandal; It Has Taken Half a Century for the Victims of Birth Defect Pregnancy Drug Thalidomide to Receive an Apology from Its German Inventors." *The Telegraph Online*, 1 Sept. 2012. *Gale in Context: High School*, [link.gale.com/apps/doc/A301368736/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=72107692](http://link.gale.com/apps/doc/A301368736/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=72107692). Accessed 4 Jan. 2024.

Timeline of events directly before and after Thalidomide. Helped us understand key events and when they occurred.



"Unlocking a Mystery of Thalidomide." *NewsRx Health*, 25 May 2014. *Gale in Context: High School*,

[link.gale.com/apps/doc/A370144556/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=4ba2571a](https://link.gale.com/apps/doc/A370144556/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=4ba2571a). Accessed 5 Jan. 2024.

This source explores specifically why victims of Thalidomide are born with congenital malformations. Used this for understanding it's effects.

*Use of Topical Tazarotene for the Treatment of Acne Vulgaris in Pregnancy: A Literature Review.*

*Journal of Clinical and Aesthetic Dermatology*, 1 Sept. 2020,

[jcadonline.com/topical-tazarotene-in-pregnancy-review/](https://jcadonline.com/topical-tazarotene-in-pregnancy-review/). Accessed 26 Feb. 2024.

This website explains the FDA pregnancy ratings of medications put in place after Thalidomide. The website includes a chart with the ratings, descriptions, and examples in each of the ratings.

Vanderbes, Jennifer. Interview. 2023.

This source is a recording of an interview with the Jennifer Vanderbes, the author of the book "Wonder Drug." The book provided an in-depth story of the thalidomide tragedy.

"William McBride; Obstetrician Who Helped to Raise the Alarm about Thalidomide." *Daily*

*Telegraph (London, England)*, 9 July 2018, p. 27. *Gale in Context: High School*,

[link.gale.com/apps/doc/A545883393/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=948b2d06](https://link.gale.com/apps/doc/A545883393/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=948b2d06). Accessed 5 Jan. 2024.

Insight on a figure in Thalidomide history, helped connect thalidomide to malformations in babies. We used this for a quote.

Winerip, Michael. "The Death and Afterlife of Thalidomide." *The New York Times*, 23 Sept.

2013, p. NA(L). *Gale in Context: High School*,

[link.gale.com/apps/doc/A343780540/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=f6a585c6](https://link.gale.com/apps/doc/A343780540/SUIC?u=mnkdelshs&sid=bookmark-SUIC&xid=f6a585c6). Accessed 4 Jan. 2024.

Explains aftermath of Thalidomide and how regulations were put in place in U.S.

Used this to understand long term impact.