Annotated Bibliography

Primary Sources

"Account of a New Anaesthetic Agent [Chloroform] as a Substitute for Sulphuric Ether in Surgery and Midwifery, [Pamphlet 6] Communicated to the Medico-Chirurgical Society of Edinburgh, 10th Nov. 1847 / [Sir James Young Simpson]." *Wellcome Collection*, 2025, wellcomecollection.org/works/s3esnpu9. Accessed 4 Jan. 2026.

This primary source was a picture of James Young Simpson's "Account of a New Anaesthetic Agent as a Substitute for Sulphuric Ether in Surgery and Midwifery" pamphlet. I used this picture in the "Developments" section to show what Simpson's pamphlet looked like as I talked about it.

"Anaesthetic Apparatus, England, 1880-1910." *Sciencemuseumgroup.org.uk*, 2026, collection.sciencemuseumgroup.org.uk/objects/co75999/anaesthetic-apparatus-england-1880-1910. Accessed 9 Jan. 2026.

This primary source was a picture of Thomas Clover's nitrous oxide and ether inhaler. I used this in the "timeline" section, to show what Thomas Clover's inhaler looked like. This source also gave me some information about what the inhaler did and how it worked.

"A Short History of Anaesthesia before 1846 - ESAIC." *ESAIC*, 30 Jan. 2025, esaic.org/a-short-history-of-anaesthesia-before-1846/.

This primary source was a painting showing a patient struggling against restraints during a surgery. I used it in my "Historical Context" section, to depict what surgeries were like before the discovery of anesthesia. This website also gave me information about surgeries before 1846.

Bigelow, Henry J. "Death by Chloroform, and Alleged Death by Ether." *Boston Medical and Surgical Journal*, vol. 87, no. 17, 24 Oct. 1872, pp. 277–279, https://doi.org/10.1056/nejm187210240871701. Accessed 7 Mar. 2025.

This website provided me with a news article Henry Bigelow wrote about ether and chloroform deaths. It helped me understand why people were skeptical about anesthesia at the beginning, because the safety risks of the anesthetic could cause death.

"Chloroform Fatalities: A Report of Cases." *JAMA Network*, 13 Jan. 1912, jamanetwork.com/journals/jama/article-abstract/450214. Accessed 29 Mar. 2026.
This primary source was an article about deaths caused by the use of chloroform as an anesthetic. It helped support the claim that chloroform–an anesthetic–caused many deaths, which was why people were hesitant about undergoing surgery with anesthesia.

"Department of Anesthesia History." *Medicine.ouhsc.edu*, medicine.ouhsc.edu/Academic-Departments/Anesthesiology/History.
In this website, I found a picture of Doctor Ralph Walters, the founder of the first academic department of anesthesiology. This picture was used in my "timeline" section; the website also informed me more about the particular event, which I used as the description along with the picture for the date, "1900s".

Ether Dome: 19 Mar 2026, Massachusetts General Hospital, Boston, MA
The Ether Dome in Massachusetts General Hospital provided me with first-hand artifacts and medical records from before and after the 1846 Ether Dome Demonstration. It was very useful in helping me understand what surgical tools were like before the discovery of anesthesia, and what people's reactions to this discovery was. It also helped me understand the reforms that happened due to this operation.

Firth, Paul G. "Ether Day Revisited." *Annals of Surgery Open*, vol. 3, no. 2, 17 May 2022, p. e166, https://doi.org/10.1097/as9.0000000000000166.
This website provided the medical records of Edward Gilbert Abbotta detailed description of the 1846 Ether Dome demonstration. In addition to that, it also described the events that happened before and after it, making it a very useful site. It helped me gain a better understanding of how the idea of anesthesia spread after Ether Day.

H. A. H. “THE ETHER DISCOVERY.” *The Boston Medical and Surgical Journal*, vol. 45, no. 38, 28 Apr. 1852, pp. 256+. *American Historical Periodicals from the American Antiquarian Society*, link.gale.com/apps/doc/CUJPPA557625814/AAHP?u=vol_n82n&sid=bookmark-AAHP&xid=10b20e14. Accessed 26. Mar. 2026

This primary source was a letter from H.A.H. to The Boston Medical and Surgical Journal. It allowed me to gain a better understanding of the in-depth discoveries of not just ether, but nitrous oxide. It also talked about Horace Wells’s original, failed, demonstration, giving more information on that.

Hollingham, Richard. “How Agonising Surgery Paved the Way for Anaesthetics.” *Bbc.com*, 24 June 2020, www.bbc.com/future/article/20200624-how-agonising-surgery-paved-the-way-for-anaesthetics.

This website provided an engraving that showed a patient being held down during a surgery. I put it in the “Historical Context” section, as another picture that showed how surgeries were before the discovery of modern anesthesia. This picture also provided a visual for me, as it gave me an idea of the procedures needed to restrain a patient during a surgery.

“Horace Wells | Biography, Anesthesia, & Facts.” *Encyclopedia Britannica*, www.britannica.com/biography/Horace-Wells.

This website provided a picture of Horace Wells, the dentist whose public demonstration of anesthesia had failed. I used it in the “The Ether Dome Demonstration" page, as Horace Wells was the one who inspired William T.G. Morton to research anesthesia, resulting in the 1846 demonstration.

Huang, Terry. Zoom interview by Amelia Cheng. 3 Feb 2026, https://www.youtube.com/watch?v=4K9_yB3bi9Q

This primary source was an interview with an anesthesiologist. The anesthesiologist, Terry Huang, gave lots of useful information, including how anesthesia put people to

sleep. Fragments of the interview were included in the “Anesthesia Today”, “Development”, and “Criticisms” pages, helping contribute to the analysis and key ideas on the page.

“John Hunter.” *Hunterian Museum*, hunterianmuseum.org/about/john-hunter.
This website provided me with a picture of John Hunter–often called the father of modern surgery–, who transformed surgery from superstition to science. It was included on the “Historical Context” page, as he was an important figure in shaping modern surgery. The website also provided me with some more information about his contributions and role in history.

Kelsey-Sugg, Anna. “When People Partied with Nitrous Oxide, It Sparked a Medical Breakthrough.” *ABC News*, 20 Feb. 2019, www.abc.net.au/news/2019-02-20/laughing-gas-parties-discovery-of-anaesthesia/10811060.
This site provided a depiction of a laughing gas frolic. Both the picture and the site helped me understand what laughing gas parties were like, and how they led to the discovery of nitrous oxide (laughing gas) as an anesthetic.

“Morton, William T. G. - Libraries | UAB.” *Uab.edu*, 2019, library.uab.edu/locations/reynolds/collections/medical-greats/william-t-g-morton.
This site provided a picture of William T.G. Morton. I included it in the “The Ether Dome Demonstration”, as it showed that Morton was a key figure in developing modern anesthesia.

National Library Of Medicine / Science Photo Library. “Henry Bigelow.” *Fine Art America*, 2019, fineartamerica.com/featured/henry-bigelow-national-library-of-medicine.html. Accessed 5 Feb. 2026.
This website provided a picture of Henry Bigelow. It supported the idea that Bigelow was an essential figure in spreading the word about modern anesthesia through his pamphlet.

NYSORA. “Scope of Anesthesia Practice.” *NYSORA*, 3 June 2022, www.nysora.com/anesthesia/scope-of-anesthesia-practice/.
This website provided a picture of surgery today, with many protocols required for monitoring patients. I included this in my timeline, as it supported a key date (1950s-1980s), where protocols for monitoring patients during anesthesia were created. It showed that many of these protocols that were created then are still in use during surgeries today.

oldoptheatre. “John Snow, the First English Anaesthetist, Part 7: Chloroform, Death and Explanations | the Old Operating Theatre.” *Https://Oldoperatingtheatre.com/*, 25 July 2019, oldoperatingtheatre.com/john-snow-the-first-english-anaesthetist-part-7-chloroform-death-and-explanations/.
This site provided an illustration of John Snow’s chloroform inhaler, which made administering it easier. I included it in the “Development” section, as it was a vital part in ensuring chloroform administration got safer so deaths from overdose would not happen again.

“Painless Dreams.” *Science History Institute*, www.sciencehistory.org/stories/magazine/painless-dreams/.
This primary source was a painting of surgeons cutting open a person’s leg without anesthesia. I used it in the “Historical Context” section, to provide a visual of how painful surgical procedures used to be before anesthesia; it also supported the idea that surgeries back then were very different than they were now. In addition to that, it also gave me information about what surgeons used to do before the discovery of anesthesia.

Powell-Smith, Michelle. “The Seven Worst Surgeries before Modern Times - History Collection.” *History Collection*, 2024, historycollection.com/seven-worst-surgeries-modern-times/. Accessed 10 Jan. 2026.
This website provided a picture of a Neolithic skull with a hole drilled into it. It provided a visual of how Neolithic “surgeons” attempted to release evil spirits, unknowingly

curing headaches and more. In addition to that, this website also explained what trepanation–the process the Neolithic people used to drill holes into people's heads was, and helped me gain a better understanding of the process they used.

"Russell Museum." *Rediscoverysoftware.com*, 2017, massgeneral.rediscoverysoftware.com/mDetail.aspx?rID=710&db=objects&dir=MGHIST&osearch=apothecary%2520kit&list=global&rname=. Accessed 17 May 2026.
This primary source was a picture of an apothecary kit used to administer herbal remedies before the discovery of anesthesia. It helped provide a visual of how people attempted to perform pain management before the discovery of modern anesthesia.

Schwarz, Mackenzie. "A Brief History of Anesthesiology." *Sarasota Hospital - Sarasota Memorial Health Care System*, 7 Jan. 2025, www.smh.com/blog/a-brief-history-of-anesthesiology.
This website helped me understand a variety of things, including ancient attempts at anesthesia and important figures who contributed to the development of it. In addition to that, it provided a botanical illustration of an opium poppy, which was used in my timeline; it supported that key date (4,000 BC), as opium poppy was one of the first things used to attempt to sedate a patient.

Science Museum. "The Art of Anaesthesia." *Science Museum*, 26 Oct. 2018, www.sciencemuseum.org.uk/objects-and-stories/medicine/art-anaesthesia.
This website included a depiction of a nitrous oxide frolic, which was included in my timeline. It also taught me about different attempts at anesthesia, and ancient practices that might have played a role in the development of modern anesthesia.

"Sir James Young Simpson, 1st Baronet | Scottish Physician." *Encyclopedia Britannica*, www.britannica.com/biography/Sir-James-Young-Simpson-1st-Baronet.
On this website, there was a picture of James Young Simpson experimenting on himself with chloroform. It was used on the "Development" page, and helped support the idea that Simpson discovered that chloroform had the ability to make people pass out.

Story, Jen. “The Interesting History Of… the Ether Dome – SMYS Official.” *Smysofficial.org*, 25 Oct. 2021, smysofficial.org/the-interesting-history-of-the-ether-dome/. Accessed 27 Jan. 2026.

This website provided a picture of what the Ether Dome looked like today. It was used in the “Conclusion” section, to symbolize the importance of Ether Day in the medical world, sparking a surgical revolution.

“The Ether Dome.” *Russell Museum*, www.russellmuseum.org/ether-dome/.

This website provided a painting of Ether Day. It was vital in explaining the demonstration and its significance, being the official site for the Ether Dome museum. In addition to that, it also taught me about what caused William T.G. Morton to research into Ether, leading to the successful demonstration. It also provided a picture of the Ether Dome that I included as part of the home page picture (and the page title background), to show that what happened in the Ether Dome was what changed surgeries.

“The Gory Details: Pictures of Surgery through the Ages.” *New Scientist*, www.newscientist.com/gallery/surgery-history/.

This website provided a painting of soldiers amputating a leg on a battlefield. It was used to make the picture on the home page, as well as the background of the titles of each page. It was meant to depict what surgeries were like before the discovery of modern anesthesia.

“The Influence of Two World Wars | the Royal College of Anaesthetists.” *Www.rcoa.ac.uk*, www.rcoa.ac.uk/about-college/heritage/influence-two-world-wars.

This site provided a picture of surgery during World War 2. It also informed me about the influence of the World Wars on anesthesia protocols, helping support the point in the timeline.

“The Natural History of the Teeth 1771, 1773, 1778,1780, 1803, 1815, 1839, 1841, 1843, 1861, 1865 Editions.” *NYU Dentistry*,

dental.nyu.edu/aboutus/rare-book-collection/18-c/john-hunter.html?challenge=d06e90d7-4d8f-4b88-9d8c-10b73beb60f1. Accessed 27 Mar. 2026.

This website provided me with one of John Hunter's medical journals detailing teeth. It helped me gain a better understanding of how exactly John Hunter's journals helped correct medical knowledge at the time.

The Wood Library-Museum of Anesthesiology. "History of Anesthesia - Interactive Timeline." *Woodlibrarymuseum.org*, 2015, www.woodlibrarymuseum.org/history-of-anesthesia/.

This website provided me with another painting of Ether Day. It was used in my timeline under the "1846" date, which symbolized a revolution in the medical industry. Along with a variety of other websites, this was also one that provided me with more information about the demonstration in 1846.

Thomas, Roger K. "The Surprising (and Long) Story of the First Use of Ether in Surgery." *The Conversation*, 28 Mar. 2019, theconversation.com/the-surprising-and-long-story-of-the-first-use-of-ether-in-surgery-113340.

This source provided me with a picture of Crawford Long using an inhaled anesthetic. It was used in my timeline, supporting the idea that he successfully did it. However, he did not publicize his findings, so Morton's demonstration was the one that revealed anesthesia to the world.

"Who Invented Anesthesia?" *The New-York Daily Times*, 15 Nov. 1858. *TimesMachine*, https://timesmachine.nytimes.com/timesmachine/1858/11/15/issue.html.

This website provided a newspaper talking about Ether Day. I included a quote in it in the "Conclusion" page, to show that anesthesia had a major impact on the world, nullifying the pain of several operations and opening a whole new world of possibilities.

Secondary Sources

Abhyankar, Rima S, and Katherine M Jessop. “From Craft to Profession: The Development of Modern Anesthesiology: Part II.” *Missouri Medicine*, vol. 119, no. 1, Jan. 2022, p. 14, pmc.ncbi.nlm.nih.gov/articles/PMC9312459/.

This secondary source provided information about the 1846 Ether Dome experiment. In addition to that, it also provided me with information about major events in the development of modern anesthesia, many of which I used in the “Development” page.

“All about Anesthesia | National Institute of General Medical Sciences.” *Nih.gov*, 2022, nigms.nih.gov/biobeat/2022/07/all-about-anesthesia.

This secondary source provided me with a chart about how the chemical compounds of anesthesia have evolved over the time. It helped me get a better understanding of how anesthesia has evolved over the years, and supported the idea that anesthesia has been changing ever since the first demonstration.

“All about General Anesthesia.” *Verywell Health*, www.verywellhealth.com/before-during-and-after-general-anesthesia-4150168.

This website provided me with a stock photo of a person being anesthetized. I used it in the “Anesthesia Today” page, to show how modern anesthesia was typically administered. In addition to that, the website also gave me a lot of information about the types of anesthesia typically used today, and the uses for them.

“Anesthesia Is Crucial for Treatment and Requires Careful Monitoring.” *Anesthesia Is Crucial for Treatment and Requires Careful Monitoring*, 2024, www.cmhfreetown.com/blogs/anesthesia-the-silent-hero-of-modern-medicine. Accessed 20 Jan. 2026.

This site provided a stock photo of anesthesia today. I used it in the “Thesis” section to show how modern surgery was different after the discovery of modern anesthesia. It also helped support the claim that surgeries had undergone a lot of reforms after the discovery of modern anesthesia, leading to what we have today.

"Anesthesiologists." *Bureau of Labor Statistics*, 25 Apr. 2023, www.bls.gov/oes/2022/may/oes291211.htm.
This secondary source provided an infographic with the amount of anesthesiologists in the United States. I included this in the "Conclusion", to show how important anesthesiologists were to modern society, which is why there were so many of them.

"Anesthesiology Manual - NYSORA." *NYSORA*, 4 Feb. 2026, www.nysora.com/books/anesthesiology-manual/. Accessed 17 May 2026.
This secondary source provided a picture of an anesthetic procedures manual. It provided a visual of some of the new anesthetic procedures that were created as a result of the 1846 Ether Dome demonstration.

"An Unexplained Death: Hannah Greener and Chloroform." *Semantic Scholar*, Anesthesiology, 1 May 2002, www.semanticscholar.org/paper/An-Unexplained-Death%3A-Hannah-Greener-and-Chloroform-Knight-Bacon/aa278c3fc851523373b82e82aec1bab767c6606a. Accessed 24 Jan. 2026.
This secondary source gave me information about Hannah Greener's–the first recorded victim to overdose of chloroform–death. It helped me understand what caused her death, and how chloroform was proven to be too dangerous to use as an anesthetic.

"American Board of Anesthesiology | an ABMS Member Board." *American Board of Medical Specialties*, 5 Jan. 2026, www.continuingcertification.org/board/anesthesiology/. Accessed 12 Jan. 2026.
This site supplied me with a picture of the American Board of Anesthesiology's logo. It was used in my timeline, under the key event where this board–a place where anesthesia standards are set–was created.

Brown, S. M., and J. R. Sneyd. "Nitrous Oxide in Modern Anaesthetic Practice." *BJA Education*, vol. 16, no. 3, 1 Mar. 2016, pp. 87–91, academic.oup.com/bjaed/article/16/3/87/2897753, https://doi.org/10.1093/bjaceaccp/mkv019. Accessed 20 Mar. 2020.

This site supplied me with information about nitrous oxide (laughing gas), which I used in the “Historical Context” section. It helped me gain a better understanding of laughing gas and its origin, and how it became one of the bases we use for anesthesia today.

Dr. Marc Barton. “Joseph Lister – “the Father of Antiseptic Surgery.”” *Past Medical History*, 12 June 2019, www.pastmedicalhistory.co.uk/joseph-lister-the-father-of-antiseptic-surgery/.
This website was one of the ones used to create the “Surgery Mortality Rates” graph on the “Anesthesia Today” page. It provided me with useful information such as the surgical mortality rates before and after the discovery of modern anesthesia and sterilization. It also supported the claim that the amount of deaths after the discovery of anesthesia has plummeted.

Harrah, Scott. “Medical Milestones: Discovery of Anesthesia & Timeline.” *Www.umhs-Sk.org*, University of Medicine and Health Sciences, 11 Nov. 2015, www.umhs-sk.org/blog/medical-milestones-discovery-anesthesia-timeline.
This site was a timeline, and helped me develop some of the dates included on my timeline. In addition to that, it also helped me figure out some events that I could research to include on other pages.

History.com Editors. “Ether and Chloroform.” *HISTORY*, 26 Apr. 2010, www.history.com/articles/ether-and-chloroform.
This secondary source included important information about both the anesthetics ether and chloroform. It helped me gain a better understanding of the two anesthetics, and the dangers behind them, leading to the eventual decline in their use.

MassGeneralHospital. “Advent of Anesthesia.” *YouTube*, 30 Dec. 2014, www.youtube.com/watch?v=IqU6Wmb0RIY. Accessed 10 May. 2026.
This was a video showing a silent reenactment of the 1846 Ether Dome Demonstration which I included in the section of my website talking about Ether Day. It helped me gain an in depth visual of what Ether Day was like, and how the operation actually worked.

McKellar, Shelley. “A History of Surgery: From Superstition to Science.” *Canadian Medical Association Journal*, vol. 182, no. 8, 10 May 2010, pp. 809–809, https://doi.org/10.1503/cmaj.100436.

This secondary source provided a lot of information about the history of surgeries, which I used in the “Historical Context” section. It helped me gain a better understanding of what surgeries were like back in ancient times, and how it evolved over time. This site also provided me with secondary source quotes that I used to describe how the Egyptians and Indians contributed to the development of surgeries.

Meyer, Rachel, and Sukumar P. Desai. “Accepting Pain over Comfort: Resistance to the Use of Anesthesia in the Mid-19th Century.” *Journal of Anesthesia History*, vol. 1, no. 4, 1 Oct. 2015, pp. 115–121, pubmed.ncbi.nlm.nih.gov/26828088/, https://doi.org/10.1016/j.janh.2015.07.027.

This website provided me with information about why some people were hesitant towards the idea of anesthesia. It was useful in helping find information for the “Criticisms” section, as there were several reasons why people were hesitant towards anesthesia. It also taught me about reasons why people were skeptical about anesthesia, as I didn’t know that was a reaction before.

“National Institute of General Medical Sciences.” *National Institute of General Medical Sciences (NIGMS)*, 2023, www.nigms.nih.gov/education/fact-sheets/Pages/anesthesia.

This secondary source provided a stock photo of the way surgeries are performed today. I used it as part of the home page picture (and the page title background) to symbolize the fact that Ether Day led to the development of surgery as we know it today.

“Nitrous Oxide Common Use Is Also Called Laughing Gas or Happy Gas due to Its Intoxicating Effects When Inhaled.” *Www.cornerstonedentistrybrantford.ca*, www.cornerstonedentistrybrantford.ca/site/blog/2016/04/05/a-brief-history-of-happy-gas-nitrous-oxide.

This site was another one that talked about nitrous oxide in particular. It was extremely helpful in helping me figure out when nitrous oxide was reintroduced as an anesthetic

after Horace Wells's failed demonstration with it. Several of the information found there was useful in explaining the "Nitrous Oxide: A Safer Alternative" section of the "Development" page.

Nuttall, Gregory A., et al. "Perioperative Mortality: A Retrospective Cohort Study of 75,446 Noncardiac Surgery Patients." *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*, vol. 8, no. 5, 21 Aug. 2024, pp. 435–442, www.sciencedirect.com/science/article/pii/S2542454824000432, https://doi.org/10.1016/j.mayocpiqo.2024.07.002.
This website was one of the ones that helped provide information for the "Surgery Mortality Rates" graph on the "Anesthesia Today" page. It helped me figure out the amount of surgical deaths today (which was very low), helping support the claim that surgical deaths today are much lower than that of the 19th century, as there is anesthesia and sterilization.

Staff. "Ether in Surgery." *Historical Medical Library*, 18 Dec. 2020, histmed.collegeofphysicians.org/ether-in-surgery/.
This website helped explain more about the drawbacks of ether. It informed me about the reason why many people stopped using ether as an anesthetic, and helped me gain a better understanding about the dangers of it.

"What Are the Types of Anesthesia?" *Anesthesia Patient Safety Foundation*, 17 Dec. 2024, www.apsf.org/patient-guide/what-are-the-types-of-anesthesia/.
This secondary source contained an infographic about the different types of anesthesia, and what part of the body each usually affects. I included the infographic in the "Anesthesia Today" section, to help explain the different types of anesthesia used today.