

With No Pain Came No Gain: The Discovery of Modern Day Anesthesia
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William Morton's discovery of modern anesthesia did more to alleviate human suffering than possibly any other invention in human history. It would allow for lifesaving procedures and advancements in medicine that would be impossible otherwise. Prior to anesthesia, major surgery was regarded as a death sentence and speed was the single most important trait of a surgeon. Effective anesthesia also significantly lessened the trauma associated with surgery, allowing patients to forego the excruciating pain that had been normalized in medicine. You would expect such a noble discovery to be motivated by comparably noble intentions, yet Morton was driven not by the pain of millions, but by the greed of one individual— himself.

After pursuing a handful of failed business ventures and a small stint at Harvard Medical School, 23 year old William Morton decided dentistry could supply him with the affluence he so confidently knew he deserved. In 1842 Morton first met Horace Wells, a renowned dentist in Hartford, Connecticut who agreed to teach Morton.¹ While learning Wells' advanced techniques in prosthetic dentistry, the two also researched anesthetic agents. Despite surgeons conducting far more risky procedures to be done without anesthesia, it was actually dentists who championed the movement towards conquering pain.² Since tooth ailments are rarely life-threatening, people were far more likely to endure painful surgery if it was for a more deadly condition. Less painful tooth extractions would significantly improve the amount of people who would pay a visit to the dentist, especially as it was an emerging field.

During their partnership, Morton and Wells attempted to administer nitrous oxide gas to a patient to render them unconscious, but the effects were underwhelming. During a demonstration at Harvard Medical School in 1845, a student's tooth was removed while inhaling nitrous oxide gas.³ The dose provided could not sustain the patient's sleep state and he woke up to a familiar, yet painful reality. Both dentists were publicly humiliated. Morton and Wells parted ways shortly after, when Morton opened his own dentistry practice in Boston. Their partnership may have ended amicably, but both parties were too committed to finding effective anesthesia to stop their research.

Finally on his own, Morton thought back to his short time at Harvard Medical School. He remembered one specific chemistry lecture by professor Charles Jackson the year before, who shared that the common organic solvent sulfuric ether could cause a person to lose consciousness. Jackson's willingness to share his inclination towards the potential of ether gas

¹ PBS NewsHour. "The painful story behind modern anesthesia." PBS, 2022, <https://www.pbs.org/newshour/health/the-painful-story-behind-modern-anesthesia#:~:text=A%20year%20earlier%2C%20in%201844,of%20chemistry%20professor%20Charles%20Jackson>.

² UAB Libraries. "William T.G. Morton." UAB Libraries, Publication Date not available, <https://library.uab.edu/locations/reynolds/collections/medical-greats/william-t-g-morton>.

³ "The painful story behind modern anesthesia." PBS NewsHour, Public Broadcasting Service, Publication Date not available, <https://www.pbs.org/newshour/health/the-painful-story-behind-modern-anesthesia#:~:text=A%20year%20earlier%2C%20in%201844,of%20chemistry%20professor%20Charles%20Jackson>.

suggests that he didn't fully understand the gravity of his advice, but nevertheless Morton began testing this claim. Morton bought sulfuric ether from a local chemist and administered it on small animals, himself, and eventually dental patients. He renamed sulfuric ether Letheon, inspired by the mythological Greek River Lethe which was said to erase painful memories.⁴ Despite Letheon being a very common chemical compound, Morton was determined to sell it as his own invention.

Tooth-aching Bostonians lined the street outside Morton's office, excited to have teeth extracted without the customary pain associated with the practice. Morton was ecstatic at his financial gains, and relished in his ability to provide a service that no one else in the world could provide. Many medical professionals were experimenting with anesthetic agents at the time, but it was Morton's delivery instrument that set him apart from others. The system included a glass container with a mouthpiece that could open or close based on the patient's consciousness.⁵ The more Morton considered his business model, he came to realize that moving into more invasive surgeries could bring him even greater wealth and glory.

In 1846 Morton convinced Dr. John Warren to allow him to administer his Letheon gas, along with Morton's unique gas regulating system, to a patient during the removal of a neck tumor at Harvard Medical School.⁶ The patient made it through the procedure with no pain or consciousness, making history as the first procedure done under general anesthesia. Medical journals began printing Morton's success and his work soon spread across the world. However, Morton's medical fame was not accompanied by the riches he had dreamed of, so he knew he needed to act fast.

Desperate for both fortune and fame, and having already acquired that latter, Morton patented his design. Scientific discoveries, especially ones as beneficial as anesthesia, were not normally patented at this time and the scientific community ridiculed Morton for his lack of concern for the greater good. While Europe had a common practice at the time where inventors of particularly useful designs or discoveries were showered in gifts, America had no such system.⁷ Morton's patent was largely unsuccessful. Since he couldn't patent the simple compound that was the keynote to his discovery, he added oil of orange to sulfuric ether and claimed this was the key to his success. Audiences were both quick to identify that the oil of orange played no role in the anesthesia as well as that Morton's intentions were not moral in the slightest.

⁴ "Etymology of Letheon: Nineteenth-century Linguistic Innovations." *Anesthesiology*, American Society of Anesthesiologists, Publication Date not available, <https://pubs.asahq.org/anesthesiology/article/131/6/1210/108750/Etymology-of-LetheonNineteenth-century-Linguistic>.

⁵ "The painful story behind modern anesthesia." PBS NewsHour, Public Broadcasting Service, Publication Date not available, <https://www.pbs.org/newshour/health/the-painful-story-behind-modern-anesthesia>.

⁶ "William T.G. Morton." UAB Libraries, University of Alabama at Birmingham, Publication Date not available, <https://library.uab.edu/locations/reynolds/collections/medical-greats/william-t-g-morton>.

⁷ "Ethical Implications of Anesthesia Practice in Resource-Limited Settings." *Journal of Clinical Anesthesia*, 33 (2016): 488-491. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4920664/>.

During Morton's failed attempts to receive compensation for his work, those he had worked with earlier began to demand credit for their assistance towards the discovery. Professor Jackson, who had initially given Morton the idea to experiment with sulfuric ether, demanded credit for his work. Wells, the dentist under whose tutelage Morton began experimenting with anesthesia, also claimed the basic discovery would not have been possible without his guidance and assistance. Until the end of his life, Morton forcefully petitioned Congress for \$100,000 in a futile attempt to receive compensation for his discovery. Historians agree that Wells and Jackson both contributed greatly to Morton's discovery, but Morton's greed prevented him from distributing any credit.

Morton is still widely accepted as the father of modern-day anesthesia, but it became clear after the release of his discovery that many other researchers were on the brink of a similar conclusion. Morton's glory came more directly from him being the first person with unwavering confidence in his findings to present a specific agent to a group of esteemed professionals. The fight for financial compensation also greatly publicized Morton's research, allowing anesthesia to spread rapidly on a global scale.

As spectators, we so badly want to root for a modest hero. We want a dentist who is overcome by the pain he witnesses in his patients and is determined to discover a way to avoid it. We want him to resolutely thank each individual who laid the foundation for his discovery, and to ask for nothing but grateful, acheless patients in return. This is, however, not the reality of scientific discovery. Progress is not made in a vacuum and benevolence is often not the driving force behind even the most noble of discoveries.

A great deal of pain surrounded a discovery that was meant to erase it. Morton's selfishness would have drastic impacts on the lives of his colleagues, and himself. Wells was said to be deranged from the chemicals he inhaled during his experiments, and committed suicide in 1848. Jackson never got the recognition he believed he deserved for the invention of ether and spent the last seven years of his life in an asylum. Even Morton himself was overcome by his obsession with money, fighting for years to get compensation that would never come. Humble to the very end, when he passed in 1864 Morton's tombstone read "*Before Whom, Surgery was Agony; Since Whom, Science has Control of Pain.*"⁸

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