

The Greater Good

of *HeLa Cells*

Ava Eliasson

02.12.2022



Preface

The world's most famous and first immortal cell line, denoted as *HeLa cells*, has altered the fabric of medical research decades after her passing. This significant series of tissues has even allowed scientists to study cancer and AIDS, or contribute to the development of the polio vaccine. Although, the individual whose cells were originally harvested from, Henrietta Lacks, or the Lacks family, never gave consent to the use of this woman's cells after she lost her battle from cervical cancer and a sample of her cervix was removed without permission.

In light of Black History Month, this once mother of five children and hardworking, African American wife possesses a legacy that has influenced our society, stemming from the smallest unit of life. Certain people while dwelling on this subject matter may enounce the insensitivity and profiteering of the biomedical industry that has exploited this woman. While health inequalities by race were likely and unfortunately existent during this time, the multifaceted impacts of this medical-industrial complex have benefited humankind.

Henrietta Lacks' Story

Henrietta Lacks endured a life that was difficult almost from the start. Born in 1920 in Roanoke, Virginia, she lost her mom at just four years old. She was sent to live with her grandfather's log cabin which had been a former slave quarters in an ancestor's Virginian plantation. Here and her cousin, David Lacks shared one room and had their first son, Lawrence, when Henrietta was fourteen years old. The two of them got married in 1941 after having a daughter named Elsie. The family moved to Maryland and there they had three more children: David, Deborah, and Joseph.

Her story took an unfortunate turn when in January 1951, she noticed a knot in her stomach with atypical vaginal bleeding and a lump on her cervix that persisted months after giving birth. She decided to seek medical advice at Johns Hopkins Hospital because she did not think there were any other options for her. In the black ward, doctors had quickly diagnosed Henrietta with cervical cancer and were prompt to begin with radium treatments proceeding with X-ray therapy. Yet when she claimed to have been receiving medicine from the hospital to her family, she was given her first cancer treatment involving Lawrence Wharton Jr., a surgeon on duty

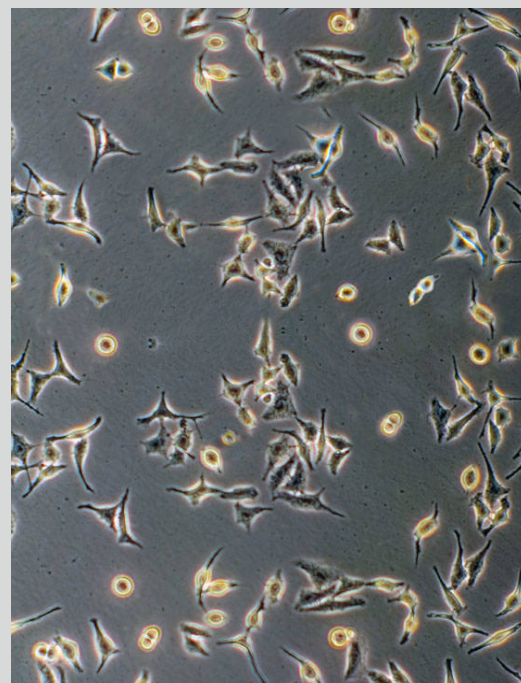
who after sewing vials of radium into the inside of her cervix, took a sample from Lacks's tumor.

Months after her diagnosis, Henrietta still had not begun experiencing symptoms, but by September of 1951, cancerous tumors almost completely covered her internal organs. Later on October 4th, 1951, Lacks died of terminal uremia, which the MayoClinic explains as the inability of “your kidneys [to] work as they should to meet your body's needs”. The head of tissue culture research, George Otto Gey then collected her cells that would become the most commonly used cells in biomedical research, the *HeLa cell line*.

What are HeLa Cells?

Though Henrietta Lacks died on 4 October 1951 at The Johns Hopkins Hospital in Baltimore, Maryland, her cells continue to live on through the *HeLa cell line*, as of 2022. In order for the physicians at the hospital to conduct an autopsy, Gey needed permission from Lacks's family. According to the Embryo Project Encyclopedia, they “convinced Lacks's husband to authorize the autopsy after claiming they would run medical tests on Lacks that could produce beneficial health information for his children”. They had also agreed to keep the Lacks family name private, in order to prevent the profit of companies or research institutions from her cells.

Even though this assurance was not fulfilled, studies showed that her cells were able to proliferate continuously in the lab. Considering that those of other patients' cells would quickly die, scientists called these *HeLa cells*, named after their owner, the first “immortal” line of human cells.



An Advantageous Aspect

Use of these cells has paved the way for many other immortalized cell lines and changed the course of scientific history and modern living conditions. The unknowing sacrifice attributed by Henrietta Lacks has driven a plethora of areas of medicine forward.

Starting in the 1950s, scientists learned large amounts of the poliovirus could be grown in *HeLa cells*, leading to the availability of the polio vaccine five years later. Decades later, during a pandemic, *HeLa cells* are being used to research COVID-19 vaccines. Astoundingly, it's also been found that HPV (human papillomavirus) can be a cause of cervical cancer. Other cancer treatments have been developed with the slowing down of the

cells' growth, establishing the FDA-approved drug camptothecin. The cells also aided in discovering how X-rays harm cells or how repetitive radiation can increase the risk of cancer.

Countless more examples consist of: documenting Salmonella infection more in-depth, testing the blood disorder drug hydroxyurea, creating In Vitro Fertilization (IVF), discovering how the virus HIV causes AIDS, learning about cellular aging, and finding out how thalidomide can be used as a treatment for multiple myeloma.

Under appropriate conditions, the cells can divide indefinitely, grow fast, stay alive long enough for scientists to conduct projects on them. This is unlike any other known cell and removes the need to test on live humans.



An Ethical Disagreement

Controversially, Henrietta was classified as both lower-class and African American, which during his lifetime, offered many social obstacles for her and her family. Yet, her present-day family does not profit from the billions of dollars HeLa products have generated. Despite the establishment of the cell line's impressive track record in society, this patient's permission was never obtained before her cells were harvested. As a matter of ethics, this person of color's human rights was breached.

Simply put, Henrietta Lacks' family was only informed about the harvesting of her cancer cells decades later. As written in Rebecca Skloot's *The Immortal Life of Henrietta Lacks*, Henrietta's daughter expressed, "since they [had] gone ahead and taken her cells and they [have] been so important for science,... least they can do is give her credit for it" (197). This gives perspective into the discredit a rather impactful black person in medicine has been given.

This matter has grown prominent in recent years since the Lacks family began preparing a lawsuit against a number of pharmaceutical companies for profiting from the commercialized cells. They aim to reclaim their family legacy and deserved recognition.



Conclusion

As a result of years of fighting in her name, the National Institute of Health (NIH) has required by law that funded research on *HeLa cells* needs to receive approval by a board that consists of two members from the Lacks family. Especially when considering how Henrietta passed away from cancer, her cells are undoubtedly being made beneficial use of. It can then be predicted that for decades to come, Henrietta's cells will continue to revolutionize medicine, with more strict rules set to govern the use of specimens in research.

Going into the future, it's important to know how the undeniable effects of COVID- 19 in communities have offered difficulties, but the disease has been better understood with *HeLa cell* research. Also, with racial injustices still present, the gap between scientists and the public can be closed. All the more it may be easier to assume the use of *HeLa cells* is solely exploitative and a shortcoming to the reputation of yet another historical black figure, it's vital to think of the unparalleled effects they've supplied the world with.

Even if in an ideal world, where the uses of human biological samples used in the laboratories have clearer guidelines, on whether or not the identities of those samples should be shared, or even used, unanswered questions will remain. In view of all of its wide uses from testing toxins, cosmetics, radiation, and chemicals, I believe that society should be more aware of who Henrietta Lacks was and what impact her unique biology has had. But, her cells do not have reason to be discontinued, rather they should live on for years to come.

Works Cited

“End-Stage Renal Disease.” *Mayo Clinic*, Mayo Foundation for Medical Education and Research, 12 Oct. 2021, www.mayoclinic.org/diseases-conditions/end-stage-renal-disease/symptoms-causes/syc-20354532.

“Henrietta Lacks (1920-1951).” *Henrietta Lacks (1920–1951) | The Embryo Project Encyclopedia*, embryo.asu.edu/pages/henrietta-lacks-1920-1951.

“Henrietta Lacks Family Seeks Justice: Grandchildren Sue Biotech Company.” *ABC News*, ABC News Network, abcnews.go.com/US/henrietta-lacks-family-seeks-justice-grandchildren-sue-biotech/story?id=80539229.

Kira Dineen, My Gene Counsel. “Women in Science: Remembering Henrietta Lacks.” *The Jackson Laboratory*, www.jax.org/news-and-insights/jax-blog/2016/august/women-in-science-remembering-henrietta-lacks.

McDaniels, Andrea K. “Henrietta Lacks' Family Wants Compensation for Her Cells.” *Baltimoresun.com*, Baltimore Sun, 19 Aug. 2019, www.baltimoresun.com/health/bs-hs-henrietta-lacks-johns-hopkins-20170213-story.html.

Skloot, Rebecca. *The Immortal Life of Henrietta Lacks*. Crown Publishers, 2010.

Spigner, Clarence. “Henrietta Lacks and the Debate over the Ethics of Bio-Medical Research.” *Black Past*, 11 Oct. 2019, www.blackpast.org/african-american-history/henrietta-lacks-and-debate-over-ethics-bio-medical-research/.

Starkman, Evan. “What Are HeLa Cells?” *WebMD*, WebMD, www.webmd.com/cancer/cervical-cancer/hela-cells-cervical-cancer.