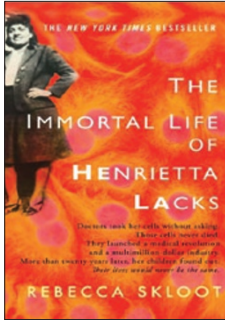


## Living forever



### The Immortal Life of Henrietta Lacks

Rebecca Skloot

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Reviewed by Zena Werb

Immortal cell lines, such as HeLa cells, are the backbone of many experiments conducted by today's cell and molecular biologists, but most of them give little thought to the origins of the 'standard' human cell lines they use. In many cases these cells originated from tissue discarded from medical procedures, with the patient, as a person, being dissociated from the scientist. Indeed, nowadays this information is highly confidential and protected by Health Insurance Portability and Accountability Act of 1996 (HIPAA) rules.

*The Immortal Life of Henrietta Lacks* is a provocative first book by Rebecca Skloot, a science writer, on the origins of HeLa cells, the first immortalized human cell line. This book provides an account of how a tumor turned into a valuable research tool. But, more importantly, it is also about the ethics of medical research. Thus, as she humanizes the HeLa cell line, Skloot tells two interwoven tales: one of scientific inquiry and its ethics and a second of the trials of an African-American family devastated by racism and poverty.

In 1951, a 31-year-old African-American woman named Henrietta Lacks went to the segregated clinic at Johns Hopkins Hospital in Baltimore, the only hospital in the region that would see black patients, with a "knot in [her] womb" that was diagnosed as malignant cervical carcinoma. Before Henrietta was treated with radium, a dime-sized biopsy was removed from the very unusual looking tumor and passed on to George and Margaret Gey, pioneers in tissue culture at Johns Hopkins University. No permission to obtain or use those samples was required or sought. Within a week, Henrietta's cells were growing out of the biopsy with "mythological intensity," and within eight months Henrietta was dead. But HeLa cells lived on and were distributed around the world. Soon, HeLa cells were changing science forever. Indeed, HeLa cells were so robust that they contaminated many other cell cultures and were responsible for erroneous observations that normal cells became malignant with time in culture.

By now, tons of HeLa cells have been cultured, furthering scientific inquiry in cell and molecular biology and cancer therapy enormously in the nearly 60 years since they were derived. The cells were used in the newly developing discipline of virology to test the development

of polio vaccine by Jonas Salk and eventually led to a Nobel Prize for Harald zur Hausen for discovering that human papilloma virus causes cervical cancer.

But there has also been a dark side to the use of HeLa cells. One scientist, Chester Southam, injected HeLa cells into humans without telling them that the injections contained cancer cells. This took place before the era of informed consent but well after the Nuremberg Code of ethics to govern human experimentation had been set forth as a result of the Nazi war tribunal. It was only after three young Jewish doctors refused to give these injections without informing the patients that ethics requirements came into medical research, albeit over the objections of scientists who felt that the research would be doomed. One lesson of the book is that members of the scientific community must take responsibility for the societal impact of their experiments.

Meanwhile, Henrietta's family was living in abject poverty. Combined with the racist attitudes of society, this left her five children hungry, angry, poorly educated and sick. Skloot leads us through the racial politics of the lives of her children, from the sad tale of Elsie, her blind, deaf and retarded daughter, locked up in the Crownsville State Hospital for her short life, to her angry, violent and often incarcerated son, Zakariyya. But it is another daughter, Deborah, who searched to know her mother through the cells that gave birth to the HeLa cell line. It is heartwarming that, as Skloot accounts, at last the family could see Henrietta's legacy when a kindly and sensitive scientist, Christoph Lengauer, brought the family to see their mother living on through HeLa cells in his laboratory.

There are hundreds of millions of human samples in repositories. Most will at best be used as one of many samples in a research project. Only a handful will lead to reagents or cells of any commercial value. Those that do result from the intellectual pursuits by scientists, and the courts concur that these patentable materials belong to the researchers. Yes, it would be a nuisance to deal with any ownership by the people who are the source of such cells. Yet the fact that something of great value such as the HeLa cell line gave nothing back to the poor family from which it was derived somehow seems rather disheartening.

This book speaks to how the culture of science must change. Certainly, the rules have become more stringent since the time when Henrietta Lacks was in the 'colored' ward of Johns Hopkins Hospital. But, at the same time, it is clear that even today only a few scientists are sensitive to the public perception that the patients, rather than the scientists, should have ownership of the fragments of human tissue from their own bodies. One hopes that scientists will learn to appreciate that their experiments do not justify the end. To my mind, this message will be the impact of this remarkable book about HeLa cells and the story behind them.

On a final note, immortality is a strange thing. It is the desire of a number of people to be immortal, and the scientific community and pharmaceutical industry want to conquer mortality, in part by curing cancer—yet it is cancer that is immortal. Having read this book, I can appreciate why it has become a best seller. Skloot has a talent that I hope to see more of in the future.

#### COMPETING INTERESTS STATEMENT

The author declares no competing financial interests.

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