

Who was Henrietta Lacks?

Joern B. Soltau, MD

University of Louisville School of Medicine

Dept. of Ophthalmology and Visual Sciences



No Disclosures

Henrietta Lacks

- Born Loretta Pleasant in Roanoke, VA August 1st, 1920
- When Henrietta was 4 her mother died giving birth to her 10th child.
- Siblings were divided among relatives
- Was raised together with one other sister by her grandfather, who grew tobacco in Clover, VA
- Married her cousin Day Lacks in 1941
- They moved to Turner Station outside Baltimore for Day to work in the steel plant Sparrow Point



Henrietta Lacks

- January 29th, 1951 went to Johns Hopkins Hospital
- Only hospital in the area that would treat “colored” people
- Recently had given birth to her 5th child, but nothing unusual was noticed then
- But now she had intermittent bleeding and noticed a knot in her womb



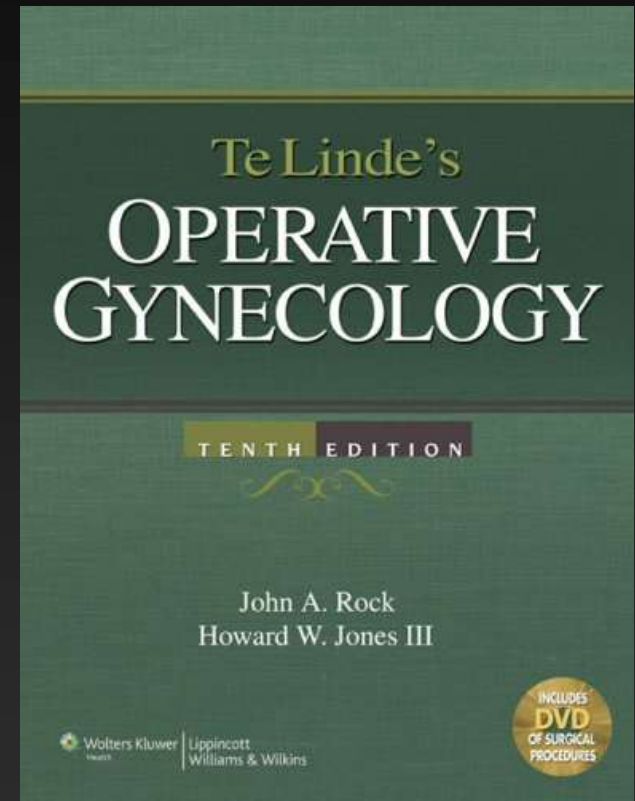
The Diagnosis

- Howard Jones, MD diagnosed a cervical tumor and took a biopsy
- Epidermoid Cancer of the Cervix, Stage I



Research

- Richard Wesley TeLinde, MD
- Carcinoma in-situ = invasive Cancer?
- Use of Pap smear
- Promoted hysterectomies if positive
- Need for cell cultures



Treatment

- Under general anesthesia Henrietta Lacks had a specimen removed and had a tube with Radium inserted into her cervix (state of the art therapy).
- She had given consent to the operation, but not to the collection of a specimen.

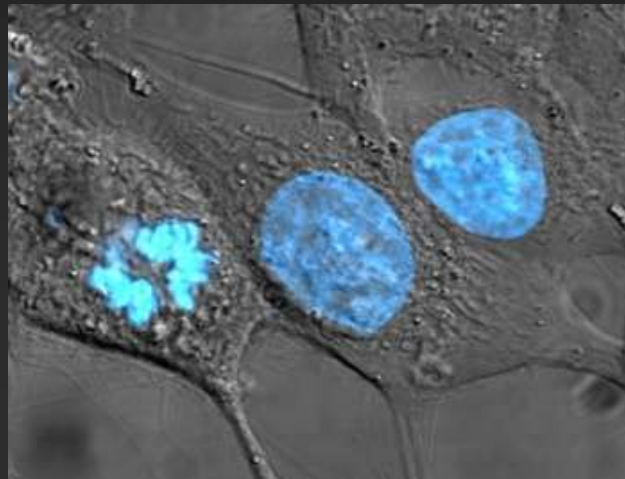
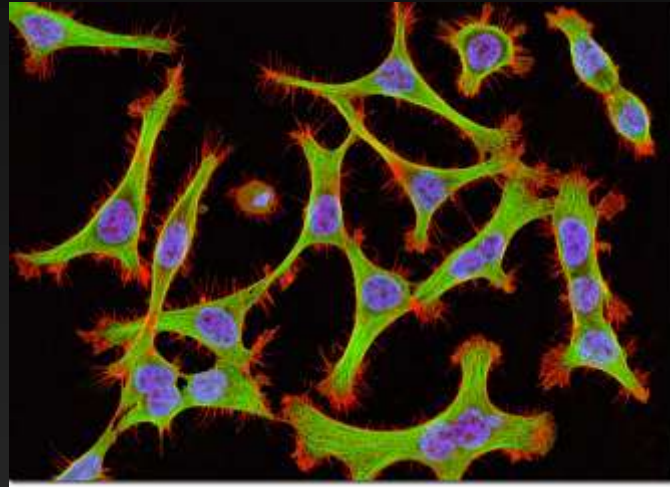


Dr. George Gey's Lab

- Mary Kubicek (technician)
- “The cells were spreading like crab grass”
- First immortal human cell line



HeLa cells



Henrietta Lacks

- After several Radium treatments Henrietta suffers terribly until she dies October 4th, 1951 and was buried in an unmarked grave in Clover, VA

The HeLa Factory

- In 1952 Trillions of cells were grown to test Jonas Salk's polio vaccine (Tuskegee)
- (Harry) Eagle Medium
- 46 chromosomes
- Testing of drugs
- Injected into rats
- Experiments in space



Problems Revealed

- G6PD-A marker discovered:
 - almost exclusively in African American
- Contamination of cell cultures world-wide
- 1971 tribute to Dr. Gey
 - Adenocarcinoma of the cervix
 - Henrietta Lacks' name revealed
 - Family totally uninformed



Unethical Research

- Injection of HeLa cells into humans
 - Patients
 - Prisoners
 - No informed consent
 - Chester Southam, Sloan-Kettering Institute

Tuskegee Syphilis Study

- 1932-1972
- 399 poor African American share croppers with syphilis
- Research on the natural progression of the disease
- By 1947 Penicillin therapy standard of care



Profit of Research

Cell Biology

ATCC® Number: CCL-2™ Price: \$256.00
Designations: HeLa
Depositors: WF Scherer
Biosafety Level: 2 [Cells contain human papilloma virus]
Shipped: frozen
Medium & Serum: See Propagation
Growth Properties: adherent
Organism: Homo sapiens (human)
Morphology: epithelial

Source: Organ: cervix
Disease: adenocarcinoma
Cell Type: epithelial

Cellular Products: keratin

Lysophosphatidylcholine (lyso-PC) induces AP-1 activity and c-jun N-terminal kinase activity (JNK1) by a protein kinase C-independent pathway [26623]

Permits/Forms: In addition to the MTA mentioned above, other ATCC and/or regulatory permits may be required for the transfer of this ATCC material. Anyone purchasing ATCC material is ultimately responsible for obtaining the permits. Please click here for information regarding the specific requirements for shipment to your location.

Applications: transfection host ([21491] Nucleofection technology from Lonza Roche FuGENE® Transfection Reagents)

screening for Escherichia coli strains with invasive potential [21447] [21491]

Virus Susceptibility: Human adenovirus 3

Encephalomyocarditis virus

Human poliovirus 1

Human poliovirus 2

Human poliovirus 3

DNA Profile (STR): Amelogenin: X :

•Some
members
of the
Lacks
family
felt they
should
have a
share

Belmont Report

- 1979
- United States Department of Health, Education, and Welfare
- Belmont Conference Center



Belmont Report

The six fundamental ethical principles for using any human subjects for research are:

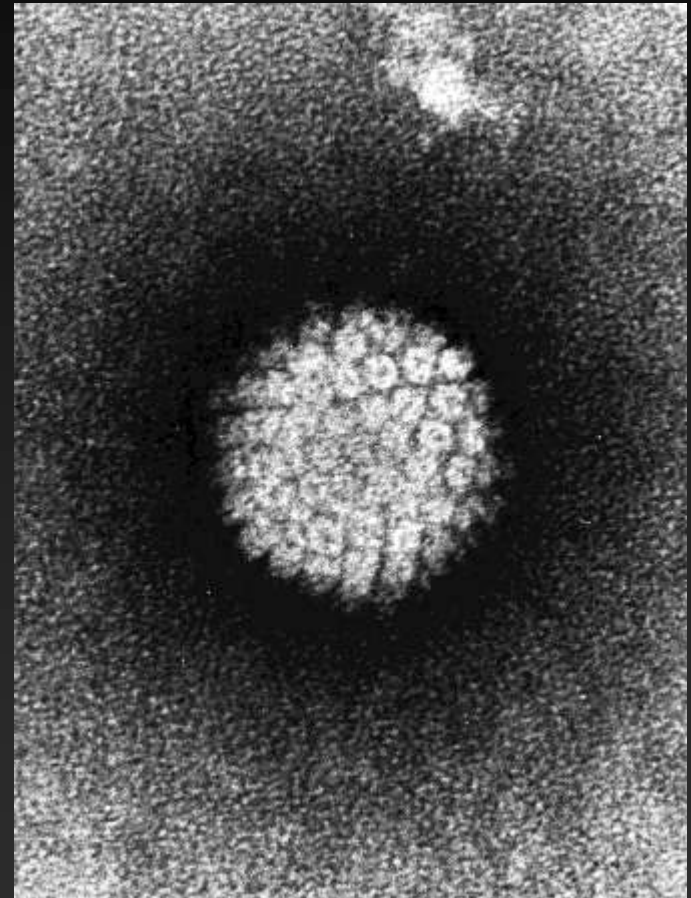
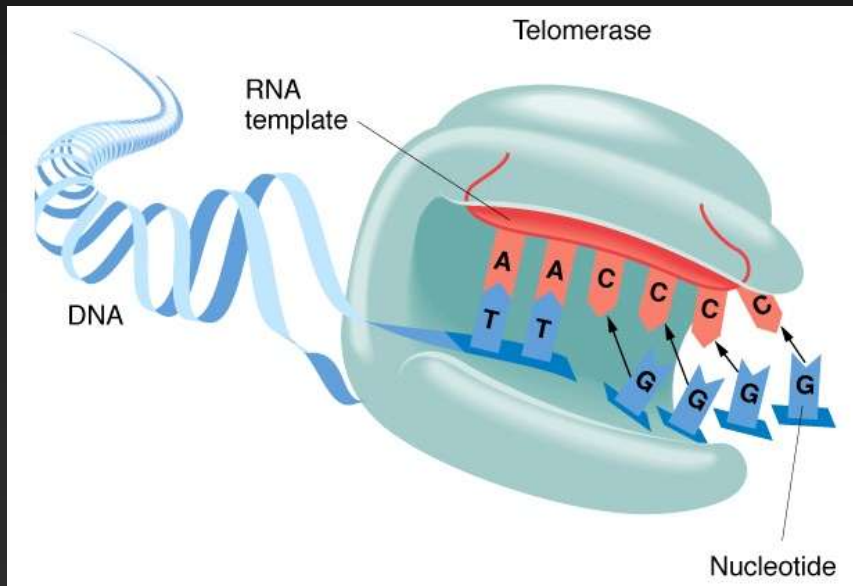
- (1) Respect for persons: protecting the autonomy of all people and treating them with courtesy and respect and allowing for informed consent
- (2) Beneficence: maximizing benefits for the research project while minimizing risks to the research subjects; and
- (3) Justice: ensuring reasonable, non-exploitative, and well-considered procedures are administered fairly (the fair distribution of costs and benefits to *potential* research participants.)
- (4) Fidelity: fairness and equality.
- (5) Non-maleficence: Do no harm.
- (6) Veracity: Be truthful, no deception.

Belmont Report

- Institutional Review Boards (IRB)
 - Informed Consent
 - The Common Rule
- U.S. Department of Health and Human Services Title 45 CFR 46, Subpart A

The Secret of Immortality

- Human Papilloma Virus 18
- Telomerase



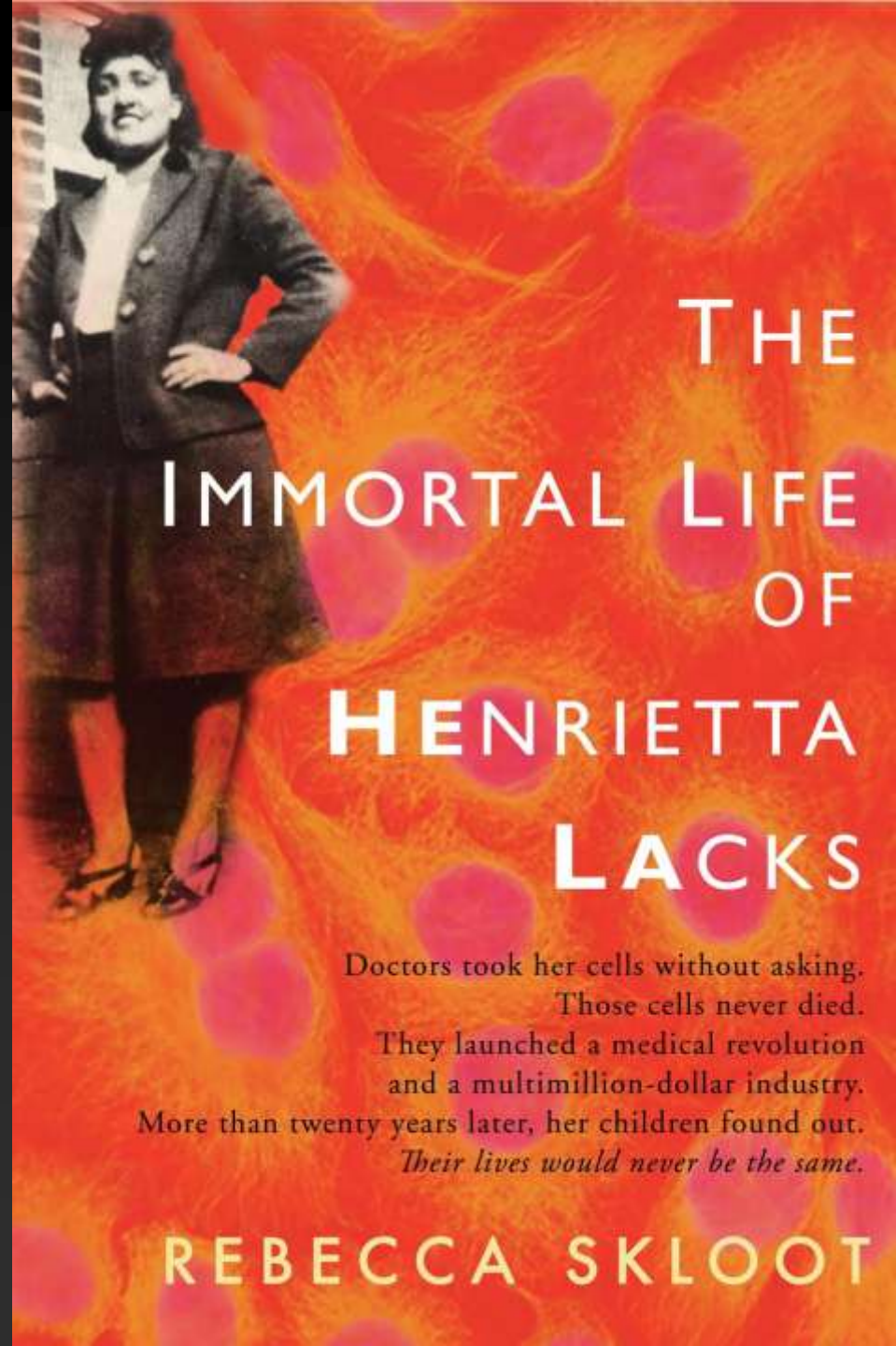
Honoring Henrietta Lacks and her Family

October 11th, 1996

First Annual HeLa Cancer Control Symposium



Acknowledgement



THE IMMORTAL LIFE OF HENRIETTA LACKS

Doctors took her cells without asking.
Those cells never died.
They launched a medical revolution
and a multimillion-dollar industry.
More than twenty years later, her children found out.
Their lives would never be the same.

REBECCA SKLOOT