



Prep Steps

Unit 2: Lesson 4



History of Vaccine Research



Lesson Questions

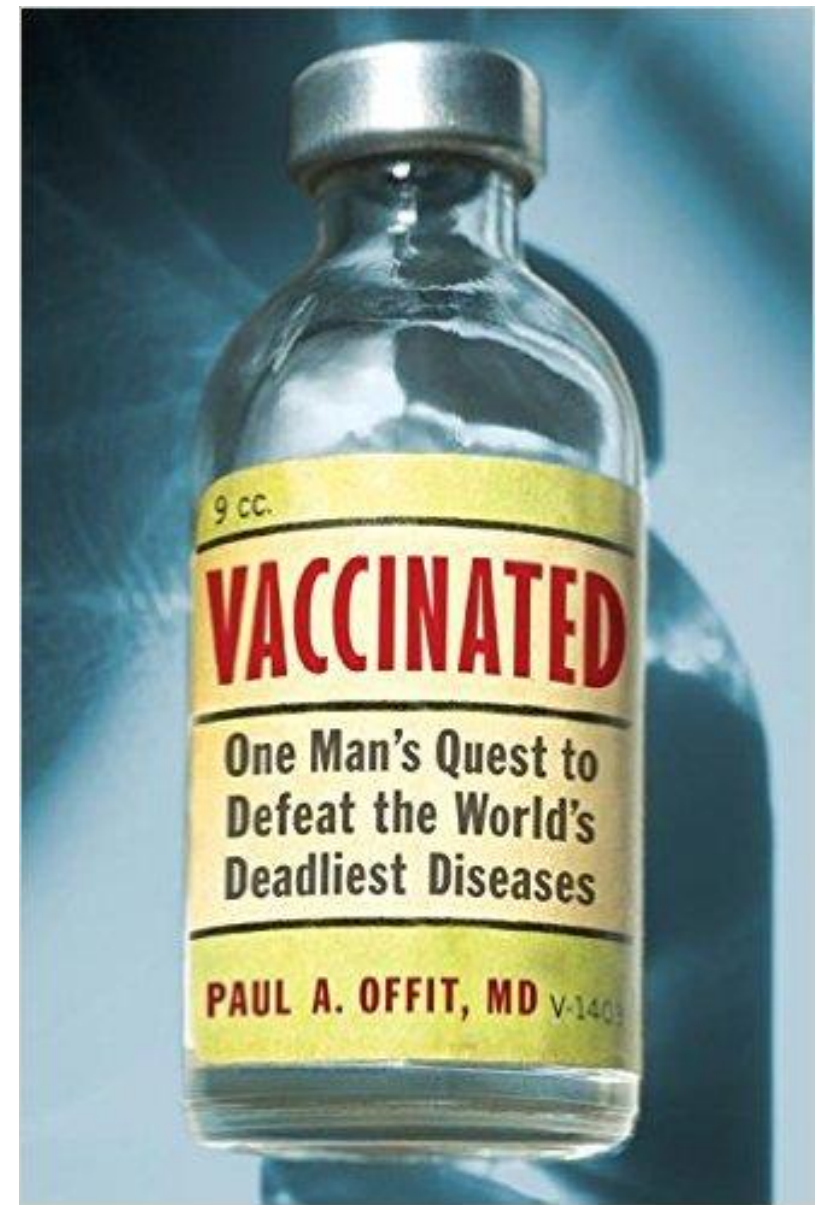
- What are the key discoveries in the history of vaccine research?
- Who are the leading scientists in the history of vaccine research?
- What are the main ethical considerations of vaccine research?

Lesson Objectives

- Describe key discoveries in the history of vaccine research.
- Identify leading scientists in the history of vaccine research.
- Analyze ethical considerations of vaccine research.

Unique Lesson Features

- Readings from *Vaccinated: One Man's Quest to Defeat the World's Deadliest Diseases*
- Create a timeline of the history of vaccine research



Lesson FAQs

- What's in the lesson?
 - Students explore the history of vaccines.
 - Students create a timeline showing key discoveries and leading scientists in the history of vaccine research.
 - Students read from Dr. Paul Offit's book, *Vaccinated: One Man's Quest to Defeat the World's Deadliest Diseases*, to analyze how vaccine research is based on prior discoveries.
 - Students investigate the roles of recombinant technology and viral attenuation in the manufacture of modern vaccines.
 - Students write an essay on the methods and ethics of using recombinant technology to manufacture vaccines.

Lesson FAQs (cont.)

- What interactives are there?
 - Students watch the animations *Attenuation: How Scientists Make Live Vaccines* and *Using Genetic Engineering to Make Vaccines*.
 - What other activities are there?
 - Students view sections of the documentary, *Hilleman*, related to the development of the mumps and Hepatitis B vaccines.
 - Students work in groups to compare Hepatitis B vaccine derived from blood with Hepatitis B vaccine made using genetic engineering.
 - Groups present their findings to the class.
 - The class debates the science and ethics of blood derived vaccines versus vaccines made using genetic engineering.

Lesson FAQs (cont.)

- How long is the lesson?
 - Two to three 45-minute sessions
- What are the lesson prerequisites?
 - Students should have:
 - Passed high school biology and chemistry
 - Completed all lessons in Unit 1 and Lessons 1, 2 and 3 in Unit 2.
- Who is the lesson designed for?
 - College prep students
 - Honors students
 - Advanced placement students
 - GED students (lesson may need adapting)

Lesson Content and Timing

