

## Edward Jenner and the Smallpox Vaccine

I am interested in Edward Jenner, whose discovery led to the elimination of smallpox. Jenner devoted his life to finding ways to help people, not charging for his discovery, but making it available to all. I can relate to Edward Jenner because I have benefited from medical advances, as my heart has a Teflon graft. My family has stayed at the Ronald McDonald House in Los Angeles and I am a patient at the Hershey Medical Center's Pediatric Cardiology office. At home I enjoy studying animals and the human body in my free time because I would like to become a doctor of medical research to help eliminate diseases like AIDS and cancer.

Edward Jenner was born on May 17, 1749, in Berkeley, England. At this time, the world was going through a period of great change. Bloody wars were fought over territories. The deadly disease, smallpox, was killing many people. Also, the eighteenth century was known as the Age of Reason, which was a time when people started to use their minds and scientific methods to question old beliefs and traditions. These changes influenced Jenner's childhood. He enjoyed observing nature, and was especially fascinated with the old tale that milkmaids couldn't get smallpox.

At the age of 14 years, he became an apprentice to a doctor named Daniel Ludlow. After learning as much as he could from Dr. Ludlow, Edward became a student of the surgeon, John Hunter, in 1770. Mr. Hunter taught Edward about viruses, and how the human body worked. But most importantly, he taught Jenner how to learn and think for himself. Edward learned that he should question, and answer his questions with facts gained from experimentation. Once the facts were proven true, then he could think about what they meant and how to use them to help sick people. Mr. Hunter also taught Edward Jenner how to fight smallpox with a procedure called inoculation. It involved introducing

## Edward Jenner and the Smallpox Vaccine

a small amount of the disease into cuts made on the patient's arm. Inoculation made Jenner uneasy because the procedure carried the risk of the patient dying or spreading the disease. Also, Edward had bad memories from being cut and inoculated when he was eight years old. He wondered if there was a less risky way to defeat smallpox.

In 1778, smallpox became an epidemic in England and was scarring and killing many people. Edward Jenner began to think again about the old tale of milkmaids not getting smallpox. As he had learned to do from Mr. Hunter, he began his research to find out why, and questioned farms and milkmaids. He learned that the milkmaids had all caught a disease from cows called cowpox, which produced fever and pox, but did not cause death to humans. The milkmaids who had gotten cowpox remained free of smallpox, although they lived near people who were infected with the disease. Edward Jenner believed there was a connection between cowpox and smallpox. He believed that getting cowpox was a safer way to protect people from smallpox than the practice of inoculation with the smallpox disease.

Many criticized Jenner's idea of using an animal disease to prevent a human disease, even Mr. Hunter, but Jenner did not give up. He continued to experiment and gather information on how to safely use cowpox pus to protect people from smallpox. He reasoned that pus taken from someone infected with cowpox at the height of the disease would provide the best protection against smallpox. On May 14, 176 Jenner conducted an experiment with a boy named James Phipps. Jenner cut the boy's arm and rubbed it with cowpox pus. Phipps caught cowpox, but recovered quickly. Several weeks later, Jenner introduced smallpox, but the boy did not get the disease. Exposure to the cowpox had given Phipps immunity to smallpox.

## Edward Jenner and the Smallpox Vaccine

In 1798, Jenner published a medical pamphlet which described his experiment so other doctors could perform the technique. Injecting cowpox seemed safer than inoculation, yet many medical and religious men criticized Jenner for risking the safety of children by performing the procedure. Eventually, vaccination would be accepted and requested by countries all over Europe. English doctors taught French physicians the vaccination technique, even though their countries were at war. Soon, America would use Jenner's vaccination technique to protect against smallpox.

By 1805, Edward Jenner was world famous. He was offered a job in London that would have made him rich from vaccination, but he turned it down. Instead, he kept busy by answering the world's questions and teaching about vaccination. He made sure he took care of the poor by setting aside one day a week to vaccinate for free those who could not afford to pay. His mission was to eliminate smallpox.

On January 23, 1823, Edward Jenner died in Berkeley, England, but his work continued. Scientists continued to improve Jenner's vaccination method, using sterile needles on one person at a time, rather than Jenner's arm-to-arm method. Louis Pasteur used Jenner's technique to make a vaccine against rabies. Vaccines have been made for many diseases including polio, influenza, mumps, and others. Edward Jenner is now known as the Father of Immunology because most of what is known about the branch of medicine began with Jenner's work. After a large-scale vaccination program, the World Health Organization declared smallpox to be defeated on May 8, 1980.

Edward Jenner was a man who used his God given intelligence, curiosity, and persistence, to help others, rather than to get rich. His work with the smallpox vaccine gave hope to people because it showed that diseases could be defeated. It also

## Edward Jenner and the Smallpox Vaccine

encourages medical researchers and doctors to never give up on new ideas. One day, I hope to work with others to eliminate diseases that cause people misery and death.

988 words

## Edward Jenner and the Smallpox Vaccine

## Bibliography

Gates, Phil. The History News Medicine. Cambridge: Candlewick Press, 1997. "The Life of Edward Jenner, 12 Nov. 2009.

<<http://www.jennermuseum.com/edwardjenner.html>.>

Rodriquez, Ana Maria. Great Minds of Science: Edward Jenner. Berkeley Heights: Enslow Publishers, Inc., 1975.

Scott, Patrick. Edward Jenner and the Discovery of Vaccination. 28 July 1999.

Department of Rare Books and Special Collections, University of South Carolina.

11 Nov. 2009. <<http://www.sc.edu/library/spcoll/nathist/jenner.html>.>

Ward, Brian. Dorling Kindersley Eyewitness Books Epidemic. New York: Dorling Kindersley Publishing, Inc., 2000.