

History and medicine

1 When do you think the vaccine was invented?

2 Look at the photos below. Who do you think Edward Jenner was? What do you think his contribution to medicine was?

The history of the vaccine

Vaccinations have saved millions of lives and are often taken for granted in the developed world. Many of us have immunity to serious illnesses simply by having an injection. Vaccines contain a tiny amount of these infectious diseases and although they may make us feel under the weather for a few hours, it is worth it as it means we are immune. But where did the story of the vaccination begin?

The vaccine has had a long and sometimes controversial history, stretching right back to Ancient Greece. In 429 BC, a smallpox plague swept through Athens. A Greek historian named Thucydides noticed that the people who survived the disease did not catch it again. However, it wasn't until 900 AD, that the first basic form of vaccination was discovered. The Chinese realised that healthy people could be protected from catching smallpox. Using a technique called *variolation*, where infected skin from a smallpox patient was inserted up the nose of a healthy person, doctors realised they could prevent smallpox. Variolation spread throughout the world and by the 18th century was common practice in medicine, although it was not entirely successful. Smallpox was still a devastating disease in Europe, killing 25% of those who caught it.



Edward Jenner



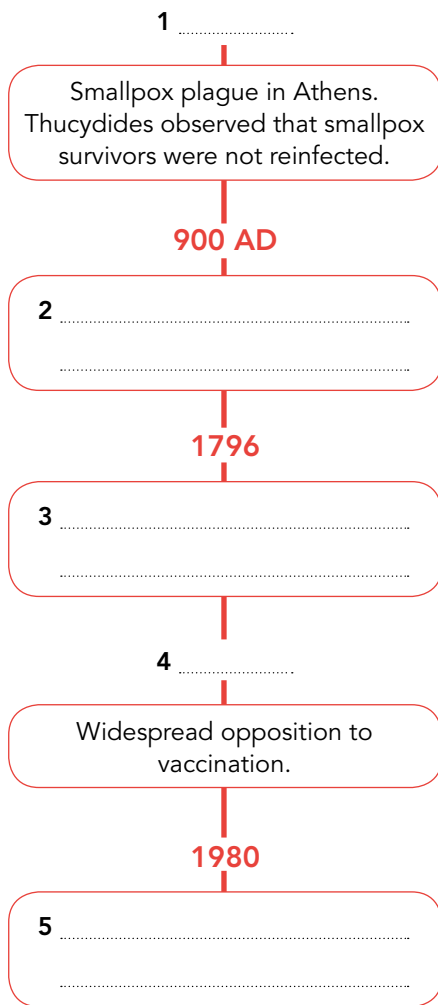
In 1796, a British doctor called Edward Jenner was the first to discover vaccination as we know it today. Whilst working in rural England amongst farmers, he observed that local milkmaids infected with the mild disease, cowpox, were immune to the deadly smallpox. Knowing that children were especially vulnerable to catching smallpox, Jenner experimented on 11-year-old James Phipps, by inoculating him with the cowpox virus. Phipps became immune to smallpox but it took two more years for Jenner to prove this. He named the discovery 'vaccine', from the Latin *vacca*, meaning cow.

Although the smallpox vaccine proved effective, Jenner was ridiculed at first. People were afraid of his new science and worried that they might turn into cows if injected with his vaccine. In fact, throughout the 19th century, there was widespread opposition to vaccination. To ensure the inoculations worked, the treatment became compulsory in many countries. A lot of people were strongly against this, saying that it took away their civil liberties. There were violent protests as people feared this unknown medicine.

However, this opposition did not prevent others from developing Jenner's discovery. As scientists began to understand immunology more, new vaccines were revealed. In the 1880s, Louis Pasteur produced a rabies vaccine, and a decade later Emil von Behring was awarded the first Nobel Prize in Medicine for his discovery of vaccines for tetanus and diphtheria.

By the 1920s, vaccinations were widely available and effective. In 1956, the World Health Organisation (WHO) was determined to eradicate smallpox across the planet. Incredibly, by immunising millions, in 1980 the deadly disease was officially eradicated. However, the fight to prevent deadly illnesses continues. New infectious diseases are emerging all the time and scientists are working hard to keep up with the changes, finding new ways to prevent us catching them.

3 Read the text carefully, then complete the missing information in the timeline.



4 Circle the correct alternative.

- 1 Vaccination has had a long and straightforward/ controversial history.
- 2 Variolation is a technique where healthy/diseased skin is put up the nose of a well person to prevent infection.
- 3 James Phipps was infected with cowpox/smallpox.
- 4 Louis Pasteur developed the smallpox/rabies vaccine.
- 5 In the 1880s/1890s, Emil von Behring discovered vaccines for tetanus and diphtheria.

5 Work with a partner and discuss the questions.

- 1 Who do you think has played the most important part in the history of vaccination so far? Explain why.
- 2 What do you think the world would be like without vaccinations?

?? DID YOU KNOW?

Vaccines rely upon something called 'herd immunity'. This means they are most effective when the majority of the population is inoculated. If most people in a community have been vaccinated against a disease, then any unvaccinated people are less likely to get infected. This is because those who have had the vaccine are less likely to get ill and then spread the disease. Herd immunity is used to prevent outbreaks of contagious diseases such as influenza, mumps and measles.

PROJECT

- 1 In pairs, choose one of the historical figures in the story of vaccination.
- 2 Find out more about the person you have chosen and what they did. Think about the historical period in which they lived and worked. Collect interesting details and photos.
- 3 Write a short newspaper article about the groundbreaking discovery of your chosen historical figure. Include your research details and a photo if possible. Try to bring the story to life by describing people's reactions and making up quotes to include in your article.

VOCABULARY FOCUS

- compulsory [adj]:** something that must be done by law
- controversial [adj]:** something that creates discussion and sometimes anger
- civil liberties [n]:** personal freedom
- devastating [adj]:** extremely harmful, destructive
- eradicate [v]:** remove completely
- milkmaid [n]:** a woman who milks cows
- inoculate [v]:** inject with a vaccine
- immune [adj]:** resistant to a disease
- prevent [v]:** stop
- ridicule [v]:** make fun of someone
- vaccine [n]:** injection to prevent disease
- vulnerable [adj]:** defenceless, weak