

Microbiology

[Science](#), [Biology](#)



Before Koch's developed the understanding of the causes of disease, Louis Pasteur published his 'germ theory' in 1861. His theory was that germs also cause human diseases. He carried out a series of experiments three years later, which convinced scientists that his germ theory was correct. It meant that for the first time in history, scientists and doctors knew the origin of diseases – in general. When Koch further developed Pasteur's germ theory, he was the first person to have identified the specific microbe that causes an individual disease.

Robert Koch's breakthrough was important because his methods were adapted from other scientists, who discovered the bacteria that cause other diseases. Once they had indentified the bacteria, they could develop vaccines to prevent people getting diseases. For example, Koch investigated tuberculosis and found a way of staining the microbe causing the disease so that it stood out under a microscope from other microbes.

This breakthrough was important because now other scientists could use this method and they found other microbes that caused diseases such as typhoid, cholera, pneumonia, meningitis and plague. Koch's work didn't save people's lives by itself; more vaccines were needed to give people weak doses of diseases to build up their immunity. However, now that Pasteur knew that microbes caused diseases, he carried out experiments to find more vaccines.

He's developed vaccines to prevent anthrax and chicken cholera in animals. He then investigated his vaccine for rabies on Joseph Meister, a boy who had been bitten by a rabid dog. Pasteur gave Joseph 13 injections over a two-

week period and survived. Because of Koch's development, Pasteur was able to investigate vaccination and other scientists to develop vaccines to prevent other diseases such as tuberculosis, tetanus and diphtheria. This saved many people's lives.