Fighting Disease – Louis Pasteur (2)

For centuries doctors had tried to find out how disease was caused. In the mid-19th century, many people in Britain still believed in Miasma, the idea that disease was caused by polluted air. the real breakthrough in understanding the cause of disease was made not by a doctor, but a chemist called Louis Pasteur.

Who was Louis Pasteur?

Louis Pasteur was a French chemist working as a teacher in a university. He was asked by a wine company to explain why some wine turned sour whilst it was being made. Pasteur's research discovered that there were germs in the air that could cause liquids to go off.

What did he do next?

Having discovered that 'bad' wine had germs in it which could be seen through a microscope, Pasteur developed a process for killing the germs by boiling the wine and then cooling it down. He called this process 'pasteurisation'. Pasteur then set about proving that the germs came from the air and could therefore be prevented from entering the liquid in the first place. He demonstrated this by sealing a quantity of a liquid in an airtight jar and leaving another quantity exposed to the air. Pasteur now used his discovery to help treat diseases. He knew that the British doctor Edward Jenner had developed a process of vaccination against the killer disease, smallpox. Pasteur believed that his germ theory could be used to explain how vaccination worked. He examined the blood of healthy people and compared it with the blood of people with various diseases. He observed that when people were infected with disease their blood contained lots of germs.

What new ideas did Pasteur develop?

the process of boiling a liquid to destroy germs is still used today; most dairy products are pasteurised. Pasteur went on to discover vaccinations for chicken pox, cholera, diphtheria, anthrax and rabies. However, not all of Pasteur's ideas were accepted. He recommended that surgical instruments be boiled before an operation to kill any germs on them, but most surgeons ignored this advice. This had to wait until aseptic surgery developed in the 20th century.

How important was Pasteur?

Pasteur's work was revolutionary in discovering the link between germs and disease. This led the way for Robert Koch to later discover how each type of germ caused specific disease and who established a complete germ theory of disease.