



BRITISH SURGEON: JOSEPH LISTER

JOSEPH LISTER AND HIS GROUNDBREAKING WORK:

Scientist: Joseph Lister

Born: 5th April 1827, Essex England

Died: 10th February 1912, aged 84 in Kent England. His funeral service was carried out at Westminster Abbey, London



Joseph Lister is known as the 'father of modern surgery' because he pioneered the earliest form of antiseptic as well as developing hospital hygiene and cleanliness.

MAIN ACHIEVEMENT:

As a surgeon Lister was shocked to discover half of patients died after surgery. He learned about invisible germs from French chemist Louis Pasteur's work on rotten food. Lister began experimenting with chemicals to clean patients' wounds. Cleaning wounds and surgical instruments with **antiseptic** made the **survival rate higher**. Lister published his discovery and began persuading others to use the same methods.

FAMILY:

Joseph Lister married Agnes Syme in 1856. Agnes often assisted her husband's medical research. They maintained a home laboratory, where Joseph Lister conducted experiments that would lead to the development of antiseptic sprays for surgical theatres.

EARLY LIFE:

Joseph was brought up in a village near London called Upton, the fourth of 7 children. His father a successful Quaker merchant was interested in optical lenses. This led to teaching Lister how to use a **microscope** and at the age of 16 Lister's ambition was to become a surgeon.

ADULT LIFE:

A brilliant student, he was graduated a Bachelor of Medicine with honours in 1852. In 1861 he was appointed surgeon to the Glasgow Royal Infirmary, where he was in charge of wards in a new surgical block. It is whilst working here as a surgeon, that his interest in germs and the and lack of cleanliness began

LISTER'S EXPERIMENTS

- Lister thought **germs** caused **infection**
- He soaked bandages in **carbolic acid** to keep wounds clean. It was normally used for cleaning sewers!
- Patients who would otherwise need limbs **amputated** due to infections, began to heal properly with Lister's new antiseptic treatment
- Lister decided that hands, clothes, surgical tools, and wounds should also be washed with this chemical.
- This led the way for other types of surgery due to less risk of infection.
- Lister even invented a carbolic acid spray machine to clear surgical theatres but breathing in acid was dangerous!



Hygiene and cleanliness are still the principals that modern surgeons work by today over a 150 years later.

GLOSSARY

- **Amputated**- remove a limb (arm or leg) by surgical operation
- **Antiseptic**- preventing the growth of disease-causing germs (microorganisms)
- **carbolic acid** - is one of the oldest antiseptic agents
- **germs** - a microorganism (bacteria), especially one which causes disease.
- **Infection** - An infection is any disease caused by a pathogen (germ) such as a virus, bacteria, parasite, or fungus.
- **Microscope** - A microscope is a device that magnifies tiny objects, or makes them look larger
- **Survival rate**- survival rate is defined as the percent of people who survive a disease for a specified amount of time.

FIND OUT MORE...

<https://www.bbc.co.uk/bitesize/topics/zxwxvcw/articles/zkpdjr6>

Joseph Lister story: <https://www.bbc.co.uk/bitesize/clips/zyps34j>

The importance of Joseph Lister's work: <https://www.youtube.com/watch?v=ZOYA00mE4MQ>

EXAMPLE PRACTISE QUESTIONS

1. What did Joseph Lister want to be at 16?
2. What year was Joseph Lister born?
3. In which Scottish city did Joseph Lister carry out his experiments?
4. What did his father teach him to use?
5. Why were patients dying in his hospital?
6. Which famous French scientist did Joseph Lister study?
7. What did Joseph Lister discover about germs?
8. What is important about Carbolic acid?
9. What machine did Joseph Lister invent?
10. How did a microscope help Joseph Lister?