

# 13 trail

## Discover London Trails 08







### map & introduction

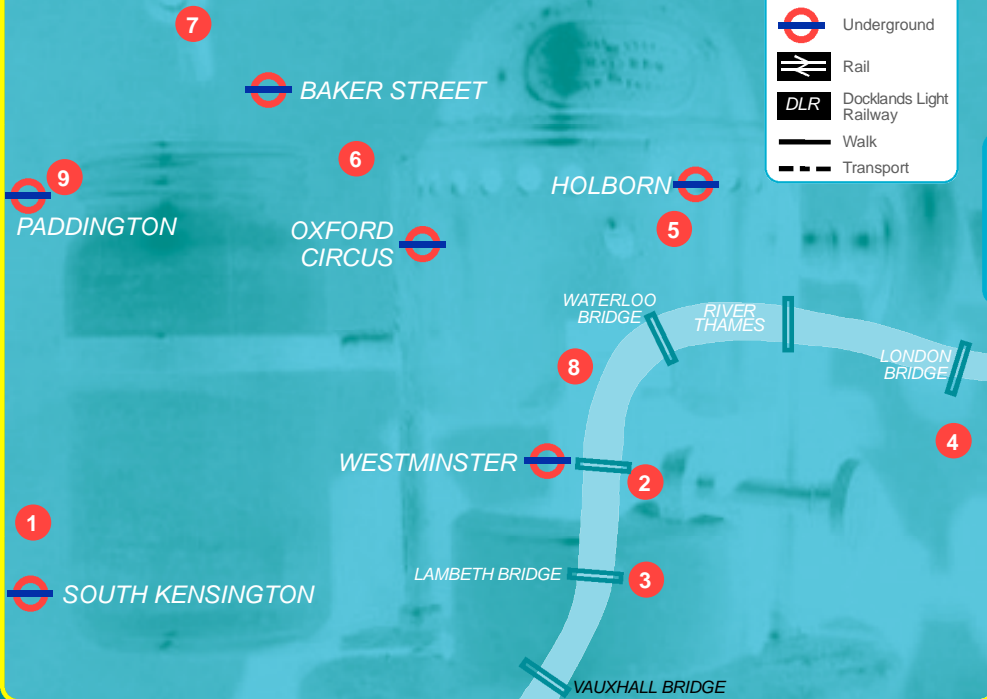
Not to scale

**MEDICINE UNCOVERED...**  
Ideas and innovations in London's  
medical and science museums



#### KEY TO MAP

-  Museum
-  Underground
-  Rail
-  Docklands Light Railway
-  Walk
-  Transport



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#### MEDICINE UNCOVERED...

*Ideas and innovations in London's medical and science museums*

#### Full day/two half days

London's museums of health and medicine are packed full of innovations, ideas and inventions. Use this trail to explore just some of the fascinating objects on display. You can find out more about all of the members of the London's Museums of Health and Medicine network at [www.medicalmuseums.org](http://www.medicalmuseums.org).

This trail has been developed in conjunction with the network and inspired by the Museums and Galleries Month 2008 theme "Ideas and Innovation". It highlights a particular innovative development in each museum on the trail, but there is of course much more on display in each museum.

We have organised the trail in two sections to make it easier for you but do chop and change if something sounds more appealing to you.

#### TRAIL 1

1. **The Science Museum**
2. **Florence Nightingale Museum**
3. **Museum of the Royal Pharmaceutical Society**
4. **Old Operating Theatre Museum and Herb Garret**

#### TRAIL 2

5. **Hunterian Museum at the Royal College of Surgeons**
6. **BDA Dental Museum**
7. **Royal College of Obstetricians and Gynaecologists**
8. **British Optical Association Museum at the College of Optometrists**
9. **Alexander Fleming Laboratory Museum**

*...go to next page for addresses & summary*

**The Science Museum**

25 Exhibition Road, South Kensington,  
London, SW7 2DD

[www.sciencemuseum.org.uk](http://www.sciencemuseum.org.uk)

Telephone: 020 7942 4446

Open: 10.00 – 18.00 Daily

Innovation: DNA

**Florence Nightingale Museum**

St Thomas' Hospital, 2 Lambeth Palace Road,  
SE1 7EW

[www.florence-nightingale.co.uk](http://www.florence-nightingale.co.uk)

Telephone: 020 7620 0374

Open: Every day 10.00 - 17.00

Admission Charge

Innovation: The pie chart

**Museum of the Royal Pharmaceutical Society**

1 Lambeth High Street, London, SE1 7JN

[www.rpsgb.org/museum](http://www.rpsgb.org/museum)

Telephone: 020 7572 2210

Open: 9.00-17.00 Mon-Fri

Innovation: Penicillin culture vessel

**Old Operating Theatre Museum and Herb Garret**

9a St. Thomas's St. London, SE1 9RY

[www.thegarret.org.uk/](http://www.thegarret.org.uk/)

Telephone: 020 7188 2679

Open: 10.30-17.00 Daily

Admission Charge

Innovation: Carbolic spray

**Hunterian Museum at the Royal College of Surgeons**

The Royal College of Surgeons of England,  
35-43 Lincoln's Inn Fields, London, WC2A 3PE

[www.rcseng.ac.uk/museums](http://www.rcseng.ac.uk/museums)

Telephone: 020 7869 6560

Open: 10.00-17.00 Tue-Sat, Closed Mon and Sun

Innovation: Lister's donkey engine

**BDA Dental Museum**

64 Wimpole Street, London, W1G 8YS

[www.bda.org/museum/](http://www.bda.org/museum/)

Telephone: 020 7563 4549

Open: 13.00-16.00 Tues and Thurs.

Other times by appointment.

Innovation: Clockwork dentist's drill

**Royal College of Obstetricians and Gynaecologists**

27 Sussex Place, Regent's Park, London  
NW1 4RG

[www.rcog.org.uk](http://www.rcog.org.uk)

Telephone: 020 7772 6200

Open: (by appointment) 9.00-18.00 Mon-Fri

Admission Charge

Innovation: First modern obstetric forceps

**British Optical Association Museum at the College of Optometrists**

College of Optometrists, 42 Craven Street,  
London, WC2N 5NG

[www.college-optometrists.org/museum](http://www.college-optometrists.org/museum)

Telephone: 020 7766 4353

Open: Mon-Fri 9.30 – 17.00 (by appointment)

Innovation: The Neu-Vita Oculizer

**Alexander Fleming Laboratory Museum**

St Mary's Hospital, Praed Street, London, W2 1NY

[www.imperial.nhs.uk/aboutus/museumsandarchives/index.htm](http://www.imperial.nhs.uk/aboutus/museumsandarchives/index.htm)

Telephone: 020 7886 6528

Open: Mon-Thu 10.00 – 13.00

Admission Charge

Innovation: Opsonisation bath

Images :

1. BDA Dental Museum - Clockwork dentist's drill
2. Hunterian Museum - Lister Donkey spray
3. Old Operating Theatre - Carbolic spray
4. Science Museum - Original DNA model

**MEDICINE UNCOVERED...****TRAIL SUMMARY**

This trail focuses on past and recent innovations in an amazing selection of museums. Start at the **Science Museum** to look at the original DNA model; the contrast with the next stop at the small **Florence Nightingale Museum** couldn't be greater and your views on the importance of statistics will be changed. At the **Museum of the Royal Pharmaceutical Society** an even more important development for public health is explored – penicillin. This part of the tour ends at the intriguing **Old Operating Theatre Museum**. Climb the stairs to see the carbolic steam spray as well as the old operating theatre itself.

The second part of the trail starts at the recently refurbished **Hunterian Museum** at Lincoln's Inn. The displays are fascinating and the innovation chosen illustrates how Lister developed Pasteur's germ theory and the carbolic spray further to make it more likely that you would survive an operation. Going to the dentist is never much fun but you will enjoy this visit to the charming **BDA Dental Museum** to see how the dreaded dentist's drill developed. From here travel to Regents Park and the **Royal College of Obstetricians and Gynaecologists** to see the original Chamberlen's forceps – and do take a break in the wonderful surroundings. You have to make an appointment for the **British Optical Association Museum** to find out how some people once claimed you could improve your eye-sight through exercise. The last museum on this trail is the **Alexander Fleming Museum** near Paddington Station to explore the early history of vaccination, and the fascinating story of the discovery of penicillin.

Plan your own journey by visiting Transport for London's website [www.tfl.gov.uk](http://www.tfl.gov.uk).

## MEDICINE UNCOVERED...

## TRAIL 1

**Science Museum** Take the District, Circle, or Piccadilly lines to South Kensington station. The museum is a short walk from the station, close to the Victoria and Albert Museum and the Natural History Museum.

**Watson and Crick's original DNA model is on display in the Science Museum's Making of the Modern World gallery.**

Unravelling the secret of the structure of life was one of the greatest innovations of the 20th century. The original DNA model was commissioned by James Watson and Francis Crick, soon after their momentous discovery in 1953. DNA is found in the cells of nearly every living thing, controlling every activity. But for years scientists had puzzled over how the genetic information contained in DNA is inherited from one generation to the next. Watson and Crick discovered that it was the twisted ladder-like shape of DNA that enabled identical copies of genetic information to be created and passed on. Now the DNA double helix is among the most iconic images of our time. Understanding the structure of DNA has had far-reaching impacts and offers huge medical potential in the future.

**Florence Nightingale Museum** From South Kensington Station, take the circle or district line towards Tower Hill, getting off at Westminster

Station. Walk across Westminster Bridge to Lambeth Palace Road. The Florence Nightingale Museum is a part of St. Thomas's Hospital.

**Florence Nightingale was the first person to use statistics to persuade people of the need for change and reform. Explore her work at this enjoyable museum.**

Florence Nightingale compiled the statistics into charts to illustrate the causes of death in the soldiers during the Crimean War and to prove that more died of preventable diseases than of their wounds. The charts which she referred to as 'coxcombs', were the first pie charts. Nightingale's experience of hospital conditions, disease and mortality during the Crimean War made her determined to tell her story and to bring about change in the British Army. She set about composing a report using compelling statistics to push for a Royal Commission to investigate medical conditions in the army. It worked and the Royal Commission was set up in 1858.

**Royal Pharmaceutical Society Museum** From the Florence Nightingale Museum, walk for about ten minutes along to Lambeth High Street to your next location. Drop in, or call to book a guided tour which take place on Tuesdays at 2pm and 4pm.

**The discovery and making of penicillin is one of many histories of medicines illustrated**

**in this small but informative museum.**

In 1940, a team working at the Sir William Dunn School of Pathology, Oxford, found that penicillin seemed to have almost miraculous healing properties in some common infections. Penicillin is extracted from a fungus, *Penicillium notatum*, so to test these properties further the team needed to grow great quantities of the fungus.

Developing a container in which to grow the fungus fell to team member Norman Heatley who later modestly described his role as "gadgetry and cookery." Specially designed containers were called for urgently. War-time added extra manufacture and supply problems, but in late 1940 Heatley collected 174 ceramic vessels from a company in The Potteries, James McIntyre of Burslem. Each was washed, filled with 1 litre of the medium and sterilised on Christmas Eve 1940. Half were inoculated with fungal spores on Christmas Day.

In total, more than 400 of these vessels were made, enabling enough penicillin to be made to treat 6 patients in the Radcliffe Infirmary, Oxford, and to establish that penicillin could be the miracle drug that had been suggested.

**Old Operating Theatre and Herb Garret** A two minute walk from London Bridge Underground Station (via Northern or Jubilee line)

## MEDICINE UNCOVERED...

***The carbolic steam spray improved hygiene. Climb the stairs to find out more.***

This carbolic steam spray was used at Guy's Hospital by Sir Henry Howse, who was a great advocate of Joseph Lister's 'new' hygienic practices introduced in the late 19<sup>th</sup> century. The spray was designed to kill bacteria floating in the air and was used for about 20 years after its introduction in 1871. At first worked by hand, it soon became steam operated and covered the surgeon, his assistants and the patient with a cloud of carbolised steam. Absorption of the carbolic was common, and many surgeons passed black urine as a result. However, before the introduction of antiseptic procedures like this, hospital infections routinely killed many patients, and it wasn't uncommon for a hospital to have a death rate of one in three of its surgical patients. This object is on loan to the Old Operating Theatre Museum by the Howse Estate.

## TRAIL 2

**Hunterian Museum at the Royal College of Surgeons** At Lincoln's Inn Field, within walking distance of Holborn (Piccadilly and Central lines) and Temple (District and Circle Lines) underground stations.

Free guided tours every Wednesday at 1 pm, call to book.

***The practical use of Pasteur's germ theory to save the lives of surgical patients is illustrated in this comprehensive museum.***

Patients needing a major operation in the 19<sup>th</sup> century, such as an amputation, faced a difficult choice. Many knew that their chance of survival was not good, with nearly fifty percent of patients dying from infected wounds after surgery.

Joseph Lister (1827-1912) used Pasteur's germ theory to develop a practical solution to the problem of post operation infections. His solution was carbolic acid in a dilute form which was sprayed liberally around the operating room using this hand-pumped spray. Bandages and other dressings were also soaked in carbolic acid and applied immediately to the wound after the operation. Lister's patient's survival rate improved from 55 percent to 85 percent and in 1867 he published his 'Antiseptic Principle'. Although it took some time for his ideas to be universally accepted, this was to mark the beginning of the antiseptic revolution.

**BDA Dental Museum** Take the Jubilee or Central Lines to Bond Street station, or Victoria, Central, Bakerloo Lines to Oxford Circus station.

***Going to the dentist was definitely worse in the past. Find out about the development of dental drills in this informative museum.***

Improvements to dental drills made the possibility of filling teeth a practical alternative to extraction. Dentists had initially prepared cavities by removing the decay with files and chisels. Various types of hand drill were invented but all of them required one hand to provide the rotation. The first British clockwork drill was developed by dentist George Fellows Harrington (1812-1895) in 1864. Although it only ran for two minutes it was the first time continuous rotation was possible for a drill. Harrington named it 'Erado' from the Latin for 'I scrape out'. Although a commercial failure (overshadowed in 1872 when a foot operated drill with 2000 revolutions per minute was invented), Harrington's clockwork drill must still rate as one of the most beautiful of inventions.

**Royal College of Obstetricians and Gynaecologists** Take Hammersmith and City, Bakerloo, Circle, Metropolitan, or Jubilee Lines to Baker Street and walk to the Royal College in Regent's Park.

***Improving childbirth....***

The invention of obstetric forceps as we know them today is generally attributed to the Chamberlen family at the end of the 16<sup>th</sup> century. Before this time, a variety of other instruments existed for assisting with deliveries but these were mainly for extracting babies who had died in the womb. The Chamberlen's forceps were designed for use on living babies.

## MEDICINE UNCOVERED...

The invention of the forceps is shrouded in mystery. Several generations of the Chamberlen family used the forceps and, although Peter the Elder (d.1631) is thought to have devised the instrument, it is likely that a number of members of the family contributed to their design. The original Chamberlen forceps were hidden under the floorboards of Woodham Mortimer Hall in Essex, by the widow of Dr Peter Chamberlen some time after 1683. They were eventually discovered in 1813 and were given to the Medico-Chirurgical Society of London from where they passed to the Royal Society of Medicine and eventually the Royal College of Obstetricians and Gynaecologists.

**British Optical Association Museum at the College of Optometrists** Take Northern/Bakerloo lines to Charing Cross or District/Circle/Northern/Bakerloo to Embankment. The museum is in Craven Street, just south of the Strand.

***Make an appointment to view the British Optical Association Museum at the College of Optometrists and you'll see a very strange device which was once very popular, but we'd advise you not to put it any closer to your eyes.***

The Neu-Vita Oculizer worked on the principle that exercise is good for you...even for your eyes. The inventor, John Highwater, claimed that you could throw away your spectacles if

you used it to give your eyes a physical workout for just a few minutes a day. You closed your eyes and then pumped the rubber bulbs to produce a gentle air pressure against the eyelids. He claimed the device could prevent or cure myopia (short-sight) and correct visual errors caused by an eye having a deformed front surface. You bought one by mail order from a private address in Southend-on-Sea and would also receive an impressive-looking publication, *The Way to Better Sight*. With the book came a personally written set of instructions for each new customer and testimonials from supposedly happy patients. Neu-Vita also supplied a device for massaging your ear. We haven't heard of one of those recently, but astonishingly, you can still buy eye massagers that work on the same principle as the Oculizer at lifestyle exhibitions.

**Alexander Fleming Laboratory Museum** Take Bakerloo, Circle, District, or Hammersmith and City lines to Paddington Station, the museum is a 5 minute walk along Praed Street. ***Vaccinations and their impact.***

In the early 1900s, Sir Almroth Wright tried to affect a revolution in medicine through the work of his Inoculation Department at St Mary's Hospital, Paddington. His big idea was Vaccination Therapy, the use of vaccines to treat disease by stimulating the body's own immune system as well as using vaccines to prevent disease. He believed that the best time

to inoculate was when the body's production of leucocytes (white blood cells) was at its peak. The aim was to 'stimulate the phagocytes'. Wright designed the opsonisation bath to assess when phagocytosis, the destruction of the bacteria by the white blood cells, was most active.

Wright's innovations attracted attention from all over the world and his methods were widely copied, but when the results of this method of treating patients with infectious diseases proved disappointing, Vaccine Therapy was quietly dropped. This was not before it had inspired George Bernard Shaw to base his play *The Doctor's Dilemma* on Wright and his work. Wright's most lasting innovation was the development of the first effective anti-typhoid vaccine, a lifesaver in the First World War. He also inspired younger researchers including Alexander Fleming, whose discovery of penicillin in Wright's Department at St Mary's in 1928 was to transform medicine in a way that had eluded the efforts of his mentor.

***The Medical trails end here.***

**CHILDREN'S/FAMILY ACTIVITIES**

Hands-on herb grinding, pill-making and children's trails and activities are always available at the **Old Operating Theatre Museum**, with popular special events for families during school holidays. Many of the other museums also offer children's and family activities. Contact them to find out what's on during your visit.