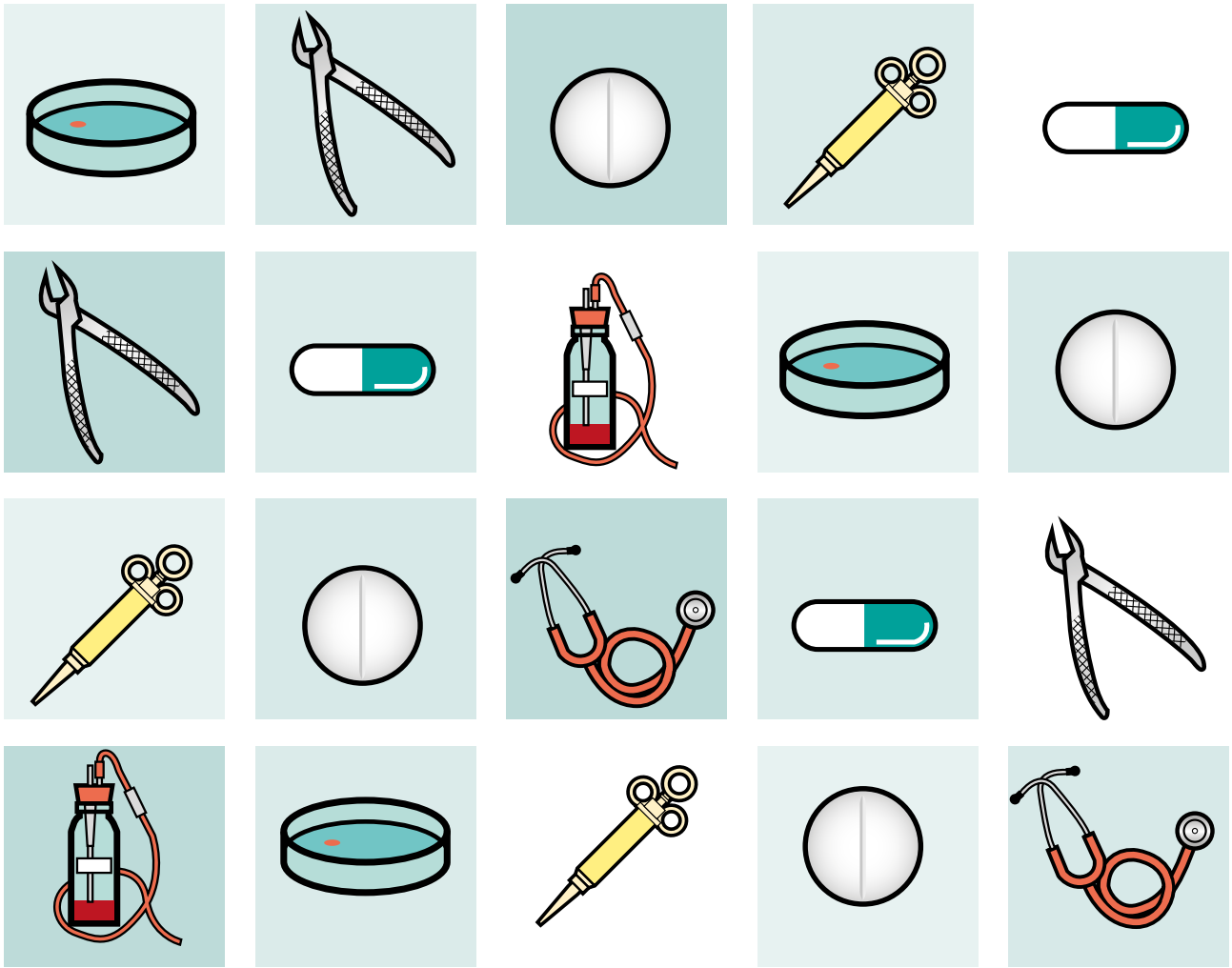
MANCHESTER 1824
The University of Manchester

Faculty of Biology, Medicine and Health

# History of Medicine

A digital learning resource from the Museum of Medicine and Health.
www.bmh.manchester.ac.uk/museum



# History **of Medicine**

The Museum of Medicine and Health is part of The University of Manchester. It contains over 8000 objects and is one of the most extensive collections of medical artefacts in England.

Look at the objects and read the descriptions.

Use the questions and activity suggestions to help spark discussion and debate around the three themes:

**Understanding the Body**

**Surgery**

**Medicine in Conflict**

We would love to hear your feedback

medical.museum@manchester.ac.uk

or click on the link below totake part in a quick questionnaire:
https://bit.ly/2TlpXMK

# Understanding the Body

1 Dissection Room, 1920s

This is a photograph from the dissecting room of the old Medical School at The University of Manchester.

In 1814, Joseph Jordan opened the first anatomy school in Manchester. Dissection was done in the winter months and lectures during the summer. During the early 1800s, the study of anatomy and pathology changed the understanding of the nature of disease from that of an imbalance of the body's 'humors' to a process of localised damage in tissue and organs. Obtaining bodies for dissection was sometimes difficult until after the Anatomy Act of 1832, which permitted the use of the unclaimed bodies of those who died in Workhouses.

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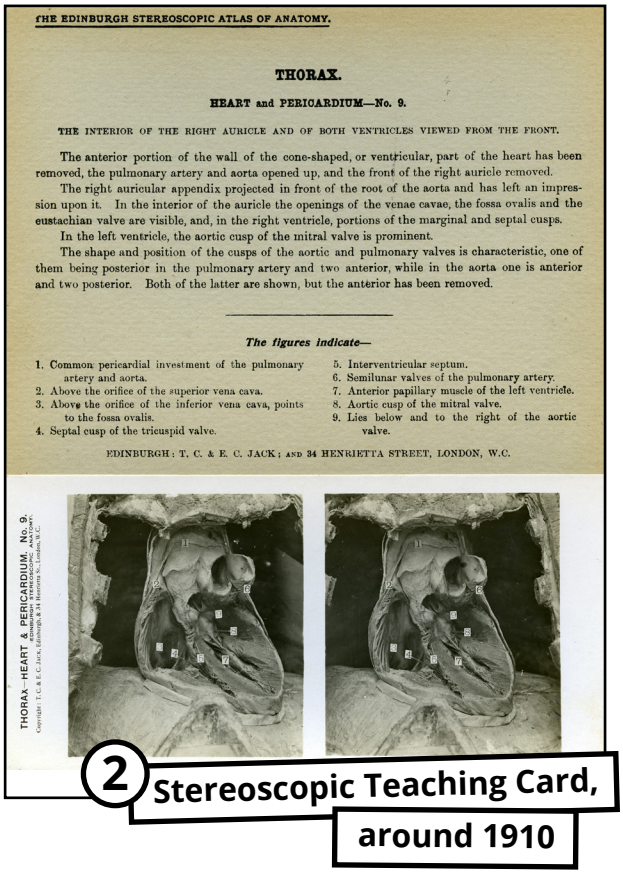
This Stereoscopic card shows the interior of the heart and was used in teaching medical students in Manchester. Viewed through a 'stereoscope' the image appears in 3D.

The heart has been known about since ancient times. The Ancient Greek physician Galen knew that arteries and veins contained blood but did not realise that they were connected. It was not until William Harvey's work in the 1600s that a clear idea of the heart and its place in the circulatory system was established. The first human heart transplant was carried out by Christiaan Barnard in 1967.



THE EDINBURGH STEREOSCOPIC ATLAS OF ANATOMY.

THORAX.

HEART and PERICARDIUM—No. 9.

THE INTERIOR OF THE RIGHT AURICLE AND OF BOTH VENTRICLES VIEWED FROM THE FRONT.

The anterior portion of the wall of the cone-shaped, or ventricular, part of the heart has been removed, the pulmonary artery and aorta opened up, and the front of the right auricle removed.

The right auricular appendix projected in front of the root of the aorta and has left an impression upon it. In the interior of the auricle the openings of the venae cavae, the fossa ovalis and the eustachian valve are visible, and, in the right ventricle, portions of the marginal and septal cusps.

In the left ventricle, the aortic cusp of the mitral valve is prominent.

The shape and position of the cusps of the aortic and pulmonary valves is characteristic, one of them being posterior in the pulmonary artery and two anterior, while in the aorta one is anterior and two posterior. Both of the latter are shown, but the anterior has been removed.

*The figures indicate—*

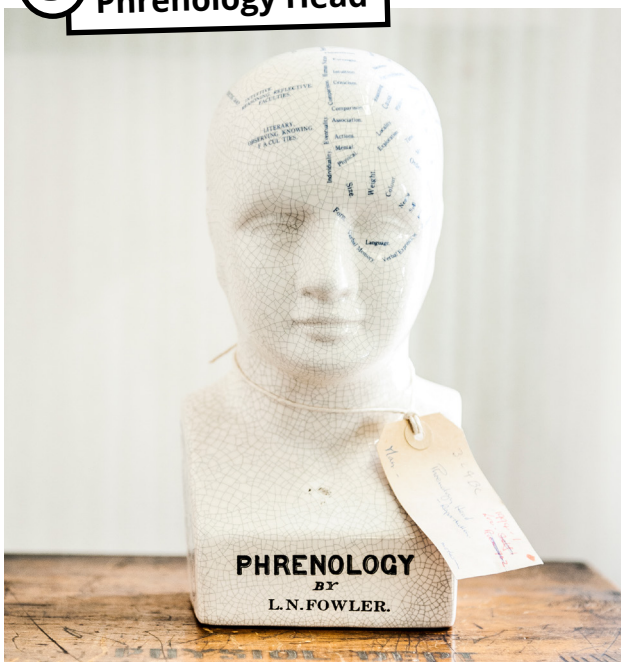
1. Common pericardial investment of the pulmonary artery and aorta.
2. Above the orifice of the superior vena cava.
3. Above the orifice of the inferior vena cava, points to the fossa ovalis.
4. Septal cusp of the tricuspid valve.
5. Interventricular septum.
6. Semilunar valves of the pulmonary artery.
7. Anterior papillary muscle of the left ventricle.
8. Aortic cusp of the mitral valve.
9. Lies below and to the right of the aortic valve.

EDINBURGH: T. C. & E. C. JACK; AND 34 HENRIETTA STREET, LONDON, W.C.

THORAX—HEART & PERICARDIUM. No. 9.

2 Stereoscopic Teaching Card, around 1910

## 3 Phrenology Head




## Understanding the Body

The history of medicine is not a simple progression of discoveries. Phrenology is a good example of a misleading idea. In the 1800s some people believed there were 37 separate areas of the brain which determined personality characteristics. Joseph Spurzheim invented the word 'phrenology' and popularised the technique of feeling 'bumps on the head' to predict behaviour and character. In 1860, a clergyman, Lorenzo Fowler, established a Phrenological Society in Britain and performed readings of the bumps on the head for a fee. He also produced and sold pottery phrenology heads which are still sold today as curiosities.

# Questions

| | |
|---|---|
| *How did scientists and doctors discover what the inside of the body is like?* | |
| *Why was dissection done in the winter?* | |
| *How have art and technology changed the way anatomy has been taught?* | |

# Activity Suggestion

**Make a timeline plotting the events and discoveries revealed by the objects and information in this theme.**

# Surgery

1 **Charnley Hip Prosthetic, around 1965**

This is an early Charnley total hip prosthesis. John Charnley qualified as a doctor in 1935 from Victoria University of Manchester. During World War Two he enlisted as a Lieutenant in the Royal Army Medical Corps. He returned to Manchester as an orthopaedic surgeon and later set up a centre for hip surgery at Wrightington Hospital, near Wigan in 1958. He worked with biomedical engineers to develop an artificial hip and overcame technical problems with the cement and polyethylene cup. He also developed an air filtration system in the operating theatre to reduce the risk of infection during surgery.

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Joseph Lister was a British surgeon and a pioneer of antiseptic surgery. In the 1860s he believed that germs (bacteria) in the air caused diseases to spread. Patients undergoing amputation or other operations were especially vulnerable as bacteria could easily infect the wound, often with a fatal outcome.

He developed a machine known as a Carbolic Spray that was used in operating theatres in the 1870s and 1880s. It pumped out a fine mist containing carbolic into the air of the operating theatre and over the operation site. This new technique of 'anti-sepsis' greatly reduced post-operative deaths and improved recovery.

2 **Carbolic Spray, 1870s**


**3** **Halothane Vaporiser, 1970s**

## Surgery

This anaesthetic machine was used to control the flow of the anaesthetic gas Halothane (Fluorthane). The use of anaesthetics was an important medical discovery, allowing painless surgery and the development of new surgical operations. The anaesthetic effects of ether had been known from 1846 and chloroform was discovered by James Simpson in 1847. The use of anaesthetics gradually became routine after Queen Victoria used chloroform during the delivery of her eighth child.

Dr Michael Johnstone was an anaesthetist at Manchester Royal Infirmary who carried out clinical trials of the first synthetic general anaesthetic, Halothane in 1956. Dr. Johnstone helped to introduce a more scientific approach to the use of anaesthetics and improved their safe use in the National Health Service.

# Questions

| | |
|---|---|
| *Why do surgical instruments need to be sterilised?* | |
| *Can you imagine a time without pain relief? Write down five words that might reflect how surgery was for people of the past.* | |
| *What event changed public opinion on the use of chloroform?* | |

# Activity Suggestion

Make a poster or social media content which attempts to educate people about the dangers of germs and lack of hygiene. What makes the poster effective?

# Medicine in Conflict

## 1 Penicillin syringe, 1944


Penicillin, the world's first antibiotic, was discovered by Alexander Fleming in 1928. This syringe was kept and given to the musuem by Professor George Archibald Grant Mitchell, Head of Anatomy at The University of Manchester 1946 to 1974. Professor Mitchell pioneered the use of penicillin in treating wounded soldiers during Second World War.

This brass syringe was made from the oil can of a machine-gun by the Royal Electrical and Mechanical Engineers. It is a 'reservoir syringe' which can hold several doses for repeated injection and replaced the glass syringes which could be broken in an explosion.

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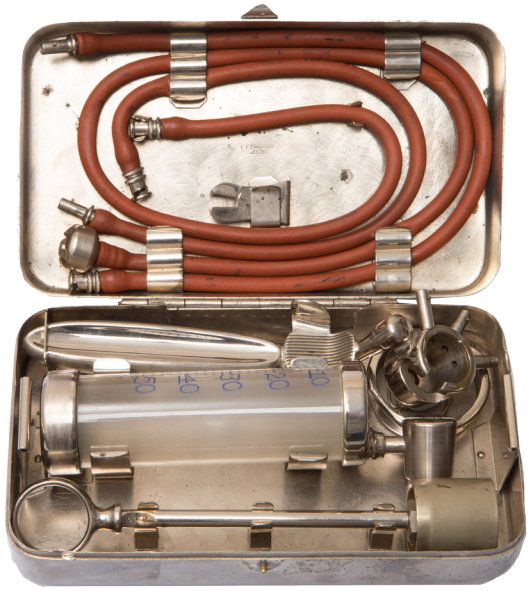
This blood transfusion set was used to take blood directly from a donor and inject it into a patient. Blood transfusions were only successful after Karl Landsteiner in Austria discovered blood groups in 1901. During the First World War blood from donors was collected in glass bottles and prevented from coagulating with sodium citrate. The bottles could be stored for a short time and transported packed in ice.

A network of blood donation centres were established during the Second World War and the National Blood Transfusion Service started in 1946. Plastic bags replaced glass bottles for blood storage in 1975.



## 2 Blood Transfusion equipment, 1940s

**2** **Red Cross Arm Band, before 1918**

## Medicine in Conflict

This arm band dates from the First World War and belonged to Captain Ralph F. Eminson. The British Red Cross was formed in 1905 and part of their volunteers' role was to triage patients. Triage is a process of sorting casualties into immediate, urgent, and non-urgent cases – essential in treating patients in mass-casualty situations.

Orthopaedic surgeon, Robert Jones used a triage system to deal with injured workmen during the building of the Manchester Ship Canal in the 1890s. The triage system is still used today in natural disasters, accidents, warfare and mass epidemics.

# Questions

| | |
|---|---|
| *How are injuries in war different to those in regular, everyday situations?* | |
| *People used to say "true surgeons are made in war". Do you agree with this sentence? Why?* | |
| *What is the advantage of plastic bags for blood transfusion?* | |

# Activity Suggestion

Imagine you are donating an object to the Museum of Medicine and Health.
Write an email to the curator explaining what the item is, how you came to own it and what story it can tell.