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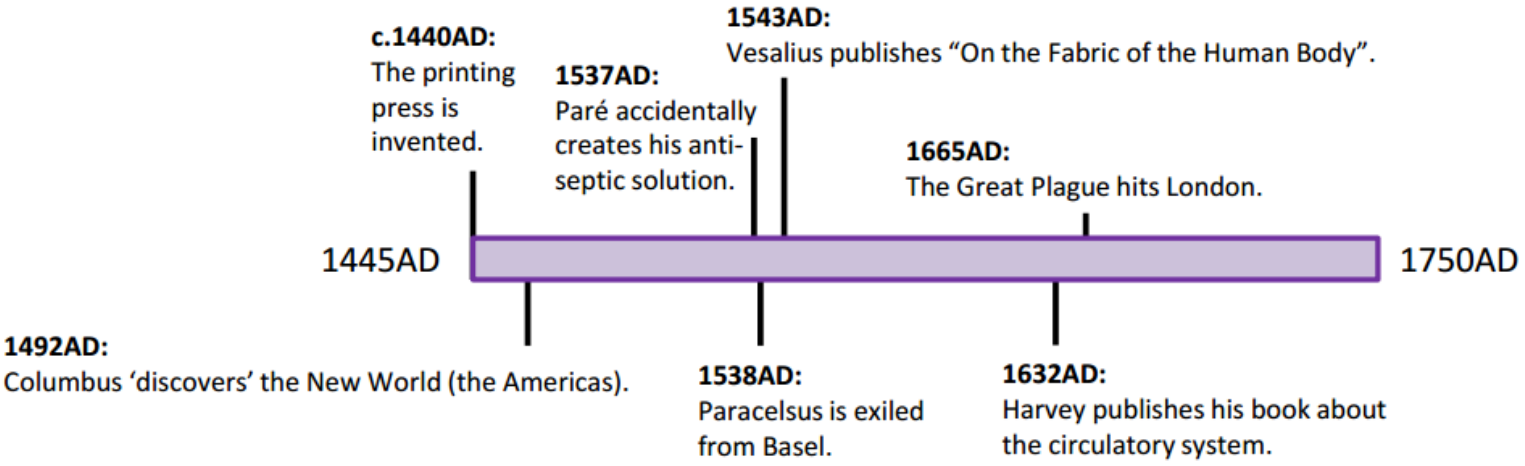
12. The Renaissance:

- The Renaissance, meaning **"rebirth"**, was the period between the Middle Ages and the Enlightenment and Industrial Revolution.
- During this period, people wanted to look back to **Ancient Greece**, when there was an emphasis on **education and beauty**.
- While **anatomical knowledge** and **surgery** advanced during this period, public health and the treatment of disease made little progress.

Key Event/Development:	Significance:
Trade, travel and discovery	People began to **explore** the world, making **trade links** and bringing back **new products** from other countries. Some of these products were used in medicine.
The invention of the printing press	The printing press allowed books to be printed **quickly** and **cheaply**. As a result, more people had access to **new knowledge** and ideas could **spread more quickly**.
Realism in art	Realism was a movement which tried to make art **as realistic as possible**. This allowed for the creation of **accurate anatomical diagrams**, allowing people to learn about the human body without as much dissection.
Military technology	New military technology, such as **gunpowder** and canons meant that soldiers got new **wounds**. Field surgeons had to develop **new techniques** to treat them.
The Reformation	As many countries and people **broke from the Catholic Church**, people became willing to **question** traditional ideas and to experiment. The **scientific method** developed as people tested new ideas.



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13. Medical care in the Renaissance:

- During the Renaissance the treatment of diseases was mainly based on the **four humours** and **bloodletting**.
- The care of the sick in church hospitals and **monasteries** largely stopped after Henry VIII dissolved the monasteries.
- People still relied on some **supernatural cures:** many people still believed that the king's touch could cure scrofula.
- However, the **printing press** and products which were brought back by **explorers** helped to expand **herbal medicines**.

An illustration of Charles II touching a patient to cure them of scrofula.

Option:	Medical care offered:
Physicians	- Treatments **still** focused on **balancing the humours**, although this now focused on **blood-letting**.
Barber-surgeons	- Barbers who trained as **apprentices** but also offered basic surgeries and treatments. - Treatments usually focused on **blood-letting**.
Wise women/men	- Ordinary people who lived in communities and gained their knowledge through **tradition** and **word of mouth.** - Treatments focused on **herbal remedies** and **supernatural cures**, such as **amulets.**
Apothecaries	- Shops which would sell **herbal remedies**, **potions** and **medicines**. - Apothecaries had **little or no medical training**.
Quacks	- Travelling salesmen who would sell **cure-alls** and **homemade medicines**. - These usually had no medical basis.
Herbals	- Books, printed cheaply using the **printing press**, which contained **herbal remedies**.

14. Surgery in the Renaissance:

- The Renaissance was a period of **frequent warfare**. This gave many **field surgeons** the chance to practice and develop new techniques.
- However, during this period **effective anaesthetics** and **anti-septics** were still unavailable. As a result, for most ordinary people surgery remained **basic** and a **last resort**.
- There was significant progress in **anatomy** and **dissection** due to the work of individuals such as **Vesalius** and **Harvey.**
- Many of the advances in anatomy during this period spread due to the **printing press**, which allowed books to be published quickly and cheaply.

Keywords:

Monastery:
A closed religious community where monks live.

Scrofula:
A disease which makes the glands swell.

Cure-all:
A product which was advertised as curing a range of different illnesses and problems.

Field Surgeon:
A surgeon who works on the battlefield.

Anatomy:
The knowledge of the body and how it works.

Dissection:
Cutting up the body in order to find out or explain how it works.

Anaesthetics:
Something which makes a patient unconscious or causes insensitivity to pain.

Anti-septics:
Something which destroys germs.

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15. Key Renaissance Individual: Vesalius:

- Andreas Vesalius was a **Professor of Surgery** at the University of **Padua** in Italy during the 16th century (the 1500s).
- He originally taught and studied at the university of Paris, where he had taught Galen's work.
- He contributed to the development of **anatomy** during the Renaissance.

A page from "On the Fabric of the Human Body" which shows the dissection of a brain.

Contributions:

- Vesalius **dissected humans** and **proved Galen wrong**. For example, he proved that the breastbone was made of three parts rather than seven (like some animals).
- Vesalius encouraged **investigative dissection**.
- Vesalius published a book called **"On the Fabric of the Human Body"** in 1543 which used **realism** to accurately show different systems, like the skeleton.
- In the late 16th century, many English surgeons were influenced by Vesalius' books.

Limitations:

- Vesalius had to leave his job as professor of surgery because of the **backlash** he suffered for disagreeing with Galen.
- Vesalius' work helped advance anatomical knowledge, but without effective anaesthetics and antiseptics, it didn't help many patients at the time.

16. Key Renaissance Individual: Paré

- Ambroise Paré was a French royal surgeon who became the most famous surgeon in Europe in the 16th century.
- He started his career as an apprentice in a hospital and a **field surgeon**.

Contributions:

- Gunshot wounds were relatively new and were usually treated with boiling oil. In 1537 Paré **accidentally** discovered a more effective way of treating them using egg whites, turpentine and rose oil.
- Paré promoted the use of **ligatures** to tie closed blood vessels, rather than **cauterising** wounds. Using ligatures had been recommended by **Galen**.
- Paré also worked to develop **prosthetic limbs** for wounded soldiers.
- Paré was inspired by **Vesalius** and wrote a number of books which were **published throughout Europe**.

Limitations:

- Paré did not know **why** his cream of egg whites, turpentine and rose oil helped gunshot wounds to heal more quickly.
- Ligatures were **time consuming** and, because Paré did not know about germs, they often increased the risk of **infection**.

Keywords:

Investigative dissection:
Dissecting the body in order to make new discoveries, rather than to just prove Galen right.

Realism:
A style of art, popular in the Renaissance, which tried to make art as close to real life as possible.

Backlash:
A strong negative reaction by a large number of people.

Field Surgeon:
A surgeon who works on the battlefield.

Ligature:
A thread which is used to tie a blood vessel closed.

Cauterisation:
Burning a wound in order to close it and stop blood loss. In the Renaissance this was done with a hot iron.

Prosthetic limb:
A fake limb.

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17. Key Renaissance Individual: Paracelsus

- Paracelsus was a **field surgeon** who travelled all over Europe.
- He eventually becoming **Professor of Medicine** at Basel University in Switzerland in 1526.
- Paracelsus openly challenged **Galen** and encouraged **ordinary people** to attend his lectures.

Contributions:

- Paracelsus **passionately challenged Galen and Ibn Sina**, publically burning their books.
- In particular, Paracelsus disagreed with the **four humours**.
- Paracelsus encouraged people to **experiment** with new ideas.
- Paracelsus argued that the body was a **chemical system** which needed to be in balance. He introduced a number of chemical treatments.

Limitations:

- Paracelsus' ideas were so controversial that he was **exiled** from Basel in 1538 (he worked there for 12 years).
- Paracelsus' alternatives to balancing the humours were incorrect: he believed people should look for plants which looked like different body parts to find cures.
- Some of the chemical cures that Paracelsus introduced, such as **mercury to treat syphillis**, were wrong and actually damaged patients.

18. Key Renaissance Individual: Harvey

- William Harvey was a **royal physician** for Charles I.
- His work focused on **anatomy** and the **circulatory system**.
- Harvey read the work other anatomists of this period and used their work and his own experiments to make his discoveries.

Contributions:

- Galen believed that blood was a **fuel** which was made in the liver and used up in the muscles. Harvey proved that **blood could only move one way around the body**.
- Harvey's work proved that **bloodletting** would not treat disease.
- Harvey published a book about his work in 1632.
- Harvey's work is a good example of the **scientific method**: Harvey had an idea which he carefully investigated. It took him 12 years to publish his work.
- Harvey's work paved the way for blood tests, blood transfusions and other major operations.

Limitations:

- Harvey could not explain why blood in the arteries and veins was a different colour.
- Many people objected to Harvey's ideas. This was because he **questioned Galen** and many physicians **made a lot of money from bloodletting**.
- Harvey's ideas were not taught in universities until 50 years after his death.
- **Blood transfusions** would not be possible until the discovery of **blood groups** in 1901.

Keywords:

Field surgeon:
A surgeon who works on the battlefield.

Exile:
When a person is banned from a town or country.

Mercury:
A metal which is poisonous to humans, often causing insanity and death.

Syphilis:
A sexually transmitted disease which can cause painful rashes and sores.

The scientific method:
A way of making discoveries where someone has an idea, tests it, and then comes to a conclusion based on the results, rather than personal opinion.

Blood letting:
Removing blood from the body to balance the four humours.

Blood transfusions:
Transferring blood from one person to another.

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19. The Great Plague 1665:

- In 1664 a epidemic of the plague hit Britain, particularly London, killing roughly 70,000 people.
- Small outbreaks of the **pneumonic plague** and **bubonic plague** had hit England since the 14th century, but it had not hit Britain on this scale since 1348.
- The Great Plague demonstrated that, **while people still did not understand how to treat diseases**, they were **beginning to understand how they spread**.

Causes

What **actually** caused it:

Many causes of the Great Plague were the same as the Black Death in the 14th century:

- Poor disposal of rubbish in towns encouraged rats.
- Towns and ports were **crowded**, meaning the disease spread quickly.
- People fleeing the disease carried fleas and the plague on their clothes.

What people **thought** caused it:

People's ideas about the causes of disease had changed very little, although the focus was now on **miasma**. People thought the plague was caused by:

- The position of stars and the planets (astrology).
- Jews poisoning wells.
- God punishing people for their sins.
- Bad air (miasma)

Reaction

Individual people:

'Cures' for the plague remained ineffective. They included:

- Bleeding with leeches
- Breathing through sponges soaked in vinegar.
- Using **pomanders** to keep away bad smells.
- Using animals to draw out the 'poison'.
- Moving to the countryside (the rich and Charles II).

Government:

- **Searchers** took note of people with the plague.
- When a plague victim was discovered, their house was **quarantined** and guarded.
- **Public gatherings** were banned.
- Bodies were buried at night.
- **Trade** between towns was stopped.
- Fires were lit on street corners.
- Cats and dogs were killed.

Significance

Short term:

- Roughly 70,000 Londoners died.
- **Bills of Mortality** showed that most people died in the poorest and dirtiest parts of the city.

Medium term:

- When London was rebuilt after the Great Fire of London, it was built with **spacious streets** and stone buildings, temporarily improving living standards.

Long term:

- The Great Plague was the last major outbreak of plague in Britain.

Keywords:

Epidemic:
A widespread outbreak of one disease.

Pomander:
A ball, sometimes worn around the neck, which contained sweet smelling herbs.

Miasma:
The belief that bad smells cause disease.

Bills of Mortality:
Documents which show how many people died from which causes within a certain time period.

Leeches:
A bloodsucking worm which was used to balance the four humours.

Quarantine:
When people are isolated to make sure they can't spread diseases.