

Theme 2:

Medicine in the Renaissance, c.1500-1700



Background:

- Renaissance means “**re-birth**”. There was a reborn interest in **Classical** thinking, architecture and art.
- It was a time of renewed interest in learning, and a willingness to challenge old ideas.
- Society became more **secular**. This meant that people were more willing to look for scientific explanations for things, rather than religious or supernatural ones.
- During this period the **Reformation** took place in England – Henry VIII broke from the Catholic Church and **closed the monasteries**. This led to a decline in the power of the Church.



Ideas about Causes of Disease

- Religious Explanations

Most people now recognised that God **did not** send disease, although in desperate times of epidemics (such as the Great Plague 1665) they still turned to religious explanations.

Humanism was on the rise – this was a way of thinking that broke away from religious or supernatural explanations, and believed that humans could make up their own minds about the world.

- Astrology

Though not as popular as before, people still believed that **astrology** influenced disease. Some blamed the 1665 plague on **unusual planet alignments** that had occurred in October and November 1664.

- Miasma

Most people still believed that **miasmata** caused disease. A miasma could be caused by rotting food, decaying corpses, excrement or any other smelly, dirty place.

- The Four Humours

Although many top physicians were now challenging Galen’s ideas, most ordinary people continued to believe that illness was caused by an **imbalance of humours**.

Therefore, most physicians also stuck to the Four Humours theory, even if they were beginning to doubt it. Patients were paying physicians to treat them, not experiment.

- New Ideas and Discoveries

There were some new discoveries which **began** to suggest alternative causes of disease.

Antony von Leeuwenhoek observed “**animalcules**” under a microscope, although he did not know that these were bacteria, or that they caused disease.

An Italian physician, **Girolamo Fracastoro**, theorised that disease was caused by seeds spread in the air. These ideas were close to the truth, but had very **little impact** at the time.

Thomas Sydenham (“the English Hippocrates”) refused to rely on medical books. Instead, he believed that physicians should **closely observe** the patient and **record their symptoms**.

In his book *Observationes Medicae* (1676), Sydenham said that **illness was caused by something external**, not internal factors like a person’s diet or humoural balance.

Sydenham correctly said that measles and scarlet fever were separate diseases, even though he couldn’t identify the individual microbes that caused each. This **laid the foundations** for future individuals to take a more scientific approach to medicine.



Why were new ideas able to be shared more easily?

- Printing press

New ideas about medicine could be spread more quickly due to the invention of the **printing press**.

Books were no longer copied out by hand in monasteries, which meant that scientists could more **easily share new information** with each other. The Church – who had promoted Galen’s theories – no longer had control over what was published.

- The Royal Society

The **Royal Society** was an influential group of scientists formed in **1660**. Its members shared experiments and promoted scientific ideas.

The Society published a journal called *Philosophical Transactions*, which featured information and experiments from European scientists. Members were encouraged to write their reports in English rather than Latin, to make them more **accessible** to everyone.

People were especially willing to take notice of the Royal Society because it was given a **Royal Charter** by **Charles II** in **1662**. This showed that the king supported the group, so gave it more credibility.



Fill in the table below, summarising how ideas about the causes of disease were either similar or different in the medieval and Renaissance periods.

Ideas that stayed the same (Continuity)	Ideas that were different (Change)
<ul style="list-style-type: none"> • Most ordinary people still believed that illness was caused by an imbalance of the Four Humours. 	<ul style="list-style-type: none"> • Religion no longer played a major part in beliefs about causes. People recognised that disease was not sent as a punishment from God.

Approaches to Treatment

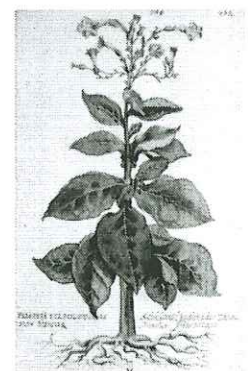
- Transference

Transference was the popular new theory that disease could be transferred to something else. For example, rubbing warts with an onion was believed to “transfer” the warts to the onion. People also tried to transfer illnesses to live animals, such as sheep or chickens.

- Herbal remedies

Herbal remedies continued to be used, but they were now chosen because of their colour or shape – for example, yellow herbs were used to treat jaundice, which turns the skin yellow.

Many new herbs appeared from the **New World**, which was discovered in **1492**. Ipecac, from Brazil, was used to treat dysentery, and Thomas Sydenham used cinchona bark from Peru to cure malaria. **Tobacco** was also used to treat disease, because the smell and taste was believed to ward off miasma.



- Chemical cures

Alchemy (an early form of chemistry) led to the new science of **medical chemistry**.

This involved looking for new chemical cures, rather than relying on herbs or humoural treatments.

New remedies such as **mercury** and **antimony** were used to purge the body, as they encouraged sweating and vomiting. These were poisonous in their pure form.



- Hospitals

Hospitals now put a greater emphasis on **curing** patients, not just caring for them. Many employed physicians, unlike in medieval times.

However, the number of hospitals decreased significantly because of the **closure of the monasteries**, where many hospitals were located. A few stayed open with funding from charities. St. Bartholomew's in London was re-founded by Henry VIII himself.

Pest houses were a new type of hospital which cared only for plague or pox victims. This meant that contagious people had somewhere to go without the risk of infecting others.

Aside from hospitals, most people were still cared for by **women in the home**.

- Apothecaries, physicians and surgeons

- **Physicians** continued to learn mainly from books, although they were taught some new ideas about **anatomy** and **medical chemistry**. Universities continued to give little hands-on training, because this was considered to be a surgeon's job.
- **Surgeons** now had to have a **licence** to practise medicine. **Dissections** were now allowed, although it was still hard to get hold of corpses to work on. Surgeons were also able to learn from detailed drawings of the body called **fugitive sheets**.
- **Apothecaries** also had to have a licence to trade. Their role remained the same as in medieval times, although they now had many more ingredients and recipes from the **New World**.

- Humoural treatments

Despite all the new approaches, **many people still believed in humoural treatments** like purging and bloodletting. This was because they still followed the Four Humours theory and wanted to be treated with a tried and tested method, not experimented on with new ideas.

When **Charles II** fell ill in 1685, humoural treatments like bloodletting and purging were used to treat him – they didn't work!

Important Individuals

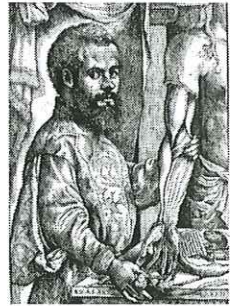
- Andreas Vesalius

Vesalius was an Italian physician. His most famous work was his **1543** book ***On the Fabric of the Human Body***, which included many detailed drawings of the human anatomy.

Vesalius was allowed to carry out **dissections** of executed criminals, which meant his illustrations were more **accurate** than previous works by Galen, who had only dissected animals. He found around **300** mistakes in Galen's work, including:

- The human jawbone was in one part, not two.
- Men did not have one fewer pair of ribs than women.
- The vena cava (main artery leading from the heart) did not go to the liver.
- The human breastbone was in 3 parts, not 7.

Vesalius encouraged other doctors to carry out dissections, rather than relying on old books. **He therefore laid the foundation for others to investigate the human body in more detail.**



- William Harvey

William Harvey discovered the circulation of the blood, and published ***An Anatomical Account of the Motion of the Heart and Blood*** in **1628**.

He said that the heart acted as a pump, pumping blood around the body in a one-way system. This **disproved Galen's theory** that blood was constantly being made in the liver and burned up by the body.

Harvey's discovery was helped by several factors:

- **Individuals:** Harvey's own abilities as a doctor and anatomist.
- **Government:** Harvey was employed by Charles I, which gave him credibility.
- **Technology:** He was inspired by modern inventions like the mechanical water pump.
- **Scientific breakthroughs:** Dissections were more commonplace.
- **Attitudes in society:** There was more interest in science and anatomy. People were looking for rational explanations for things.

Unfortunately, Harvey's discovery had a **limited impact** on medicine at the time.

Though his theory was correct, it offered no practical use in the treatment of disease, so many people ignored or criticised it.





True or False?

New hospitals called pest houses were set up which cared only for pox victims.	T	F
William Harvey published <i>On the Fabric of the Human Body</i> in 1543.	T	F
People believed that disease could be transferred to other things, such as live animals and vegetables.	T	F
Most people still followed the idea of the Four Humours in the everyday practice of medicine.	T	F
Vesalius found around 300 examples of where Galen had been correct about the human body.	T	F
Most people continued to be treated by women at home during the Renaissance period.	T	F
People were advised not to use tobacco because of the harmful smoke fumes.	T	F
Surgeons and apothecaries now had to have a licence to practice their trade.	T	F

Approaches to Prevention

Since treatments hadn't changed much, the only sure way to avoid dying from disease was to avoid catching it in the first place – **prevention was better than the cure.**

- Lifestyle advice

Physicians still gave advice from the **Regimen Sanitatis**. People were advised to practice **moderation** in all things – that meant avoiding too much exhaustion, fatty foods, strong alcohol and laziness.

Bathing became much less fashionable because people thought that **syphilis** was caught from bathing in public bathhouses. (In actual fact syphilis spread in bathhouses because many were also brothels!)

- Purifying the air

Miasma was still widely believed, so people continued to clean the air. Sewage and rubbish were picked up from the streets, and bonfires were lit in public areas to ward off foul smells.

- The role of the government


The government now took a **more active** role in preventing disease. Homeowners were fined for not cleaning the street outside their house, and minor criminals picked up rubbish as a punishment.

Henry VIII closed down the London bathhouses in the early 1500s to stop the spread of syphilis. **Charles II** (1660-1685) had a keen interest in science, and helped raise the profile of the Royal Society by giving them his support.

Case Study: The Great Plague 1665



The **Great Plague** broke out across England in **1665**. The disease was spread by fleas on rats, and people were as helpless to stop it as they had been during the Black Death.

Causes	Treatments	Preventions
<p><u>Religious and supernatural:</u> People thought God had sent the plague to clear up the kingdom. There had also been unusual planet alignments the previous year, which worried people.</p> <p><u>Miasma:</u> The most popular theory about the cause of the plague was bad air, created by rubbish and sewage in cities.</p> <p>People thought the foul fumes were held in the soil, and escaped during warmer weather. This seemed logical because the plague was worse in the summer months.</p> <p><u>Other people:</u> Many correctly realised that plague was spread from person to person, though they didn't know how.</p>	<p>Not a great deal is known about treatment because most victims were isolated in their homes.</p> <p><u>New ideas:</u> Physicians suggested wrapping up in thick woollen clothes and sitting by a fire, so that the disease could be sweated out. Transference was also tried, e.g. strapping a live chicken to the buboes.</p> <p><u>Herbal remedies</u> continued to be popular. Quack doctors also mixed remedies. These were people with no medical qualifications, who took advantage of people's panic to make some easy money.</p>	<p><u>Religious and supernatural:</u> People were advised to pray and repent their sins.</p> <p><u>Purifying the air:</u> Carrying a pomander (a ball of sweet-smelling herbs) was advised, and fires were lit.</p> <p><u>Plague doctors:</u> Plague doctors wore special beaked masks and coated their cloak in wax, so that pus and blood did not soak into it.</p> <p><u>Diet advice:</u> Fasting was suggested, as well as specific foods such as a garlic-heavy diet.</p> <p><u>Government orders:</u> The government took a much bigger role in public health:</p> <ul style="list-style-type: none"> ● Quarantine laws ● Large crowds banned ● Stray animals killed ● Searchers appointed ● Streets cleaned
		<p><u>Other healers:</u> Apothecaries provided herbal remedies, and others such as "plague water". Chewing and smoking tobacco was also advised to ward off miasma.</p> <p><u>People also just ran away!</u></p>



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- A set of instructions on hygiene and lifestyle.
- A disease which was spread in bathhouses in the early 1500s.
- Disease which hit London in 1665.
- The belief that ‘bad air’ caused disease.
- The king who closed London’s bathhouses.
- These people were employed to check houses for plague.
- A ball of sweet herbs, often stuffed in the beak of a plague doctor’s mask.
- It was recommended to smoke or chew this to fight off miasma.
- A doctor who made money by selling useless remedies.
- The act of putting a diseased person into isolation.

QUICK SUMMARY

- The Renaissance was a time of new interest in **learning**, and a desire for **rational** explanations.
- The power of the Church declined because of the **Reformation**, and this had the knock-on effect of closing many hospitals.
- The **printing press** and the **Royal Society** meant that medical knowledge could be spread more easily.
- Ideas about what caused disease, like miasma and the Four Humours, largely **stayed the same**.
- Individuals such as Thomas Sydenham, Andreas Vesalius and William Harvey made important discoveries which **paved the way for future progress**, but had a **limited impact** at the time.
- Old humoral treatments and herbal remedies continued to be used, but there were some new treatments such as **transference** and **medical chemistry**.
- Methods of prevention were largely the same, although the **government** now took a more active role than before.
- The Great Plague of 1665 killed hundreds of thousands of people. Like the Black Death, people were unsure what caused it, or how to stop it.

Topic Test - Theme 2: Medicine in the Renaissance

- 1. What is meant by “Renaissance”?**

- 2. Name 2 beliefs about the causes of disease that were the same in the medieval and Renaissance periods.**

- 3. What did Antony von Leeuwenhoek observe through a microscope, which we now know is bacteria?**
- 4. How did Thomas Sydenham's approach to medicine differ from most other physicians'?**
- 5. Explain 2 reasons why medical knowledge could be spread more easily.**
- 6. Name 2 treatments that were the same in the medieval and Renaissance periods.**
- 7. Name 2 treatments that were new or different in the Renaissance period.**
- 8. Give 2 examples of ways in which Vesalius proved Galen wrong.**
- 9. What did William Harvey discover?**

10. Name 3 factors which influenced Harvey's discovery.

11. Explain why the power of the Church declined.

12. How did the government's role in medicine change?

13. How did people try and treat the Great Plague?

14. Name 3 methods used to prevent the Plague.