

HISTORY OF MEDICINE  
Part One

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## HISTORY OF MEDICINE PRE-HISTORIC AGE

What we know about Homo sapiens is mostly calculated guesses and research from Anthropologists.

Homo sapiens evolved in Africa about 30,000 years ago.

- Hunter gathers
- Lived short lived
- Lived in small scattered groups in local areas
- Did not have to cope with plagues, small pox, flu, etc. since disease producing organisms thrived in densely populated locations.

Whatever medical needs Homo sapiens had been treated by a special person which were medicine men or shamans.

- Medicine men had special position and special powers to communicate with gods.
- Prepared special potions.
- Did perform a crude type of surgery for treating evil spirits in one's brain and for seizures. Procedure called ,Trepanning (holes made in skull to release evil spirits.

Homo sapiens eventually had to find different locations to live since food supply was low and game was depleted.

Tribes began to migrate to better fertile land and eventually found fertile land., Once settled, they began to till soil, grow wheat, rice and barley. Started to use dogs, cattle, sheep goats, pigs, and poultry. These animals were hosts for many diseases.

Populations increased and by 3,000 BC, city empires emerged such as, Mesopotamia, Egypt, and the Indus Valley.

- Larger populations developed.
- Groups lived in closer quarters,
- Dwellings and villages lacked sanitary conditions.
- Contagious diseases began to develop and spread quickly.
- Precursors for devastating plagues.

HISTORY OF MEDICINE  
ANTIQUITY  
MESOPOTAMIA  
(2,000 – 500 BCE)

- Mesopotamia – (between two rivers, Tigris and Euphrates). Known today as Iraq.
- Civilizations that lived in Mesopotamia:
  - Sumeria (3,000 – 2,000 BCE)
  - Akadian (2350 – 2218 BCE)
  - Assyrian (1380 – 612 BCE)
  - Persians (550 – 230 BCE)
- Cuneiform writing – One of the earliest forms of writing using wedge shaped marks on clay tablets. These tablets real information to Archeologists on medical practices during this time in history.
- Knowledge of anatomy was obtained by inspecting the organs of sacrificed animals.
- Types of Healers:
  - Seers – Inspired by gods.
  - Priests – Used drugs, performed surgery, healed wounds=.
  - Head physician – Highest position, court doctors.
- Hammurabi (1728 – 1686 BC) – Sixth king of Babylonia. Extremely power king who united all of southern Mesopotamia.

Known for the Hammurabi Code that was legal code containing 282 laws such as:  
Civil and criminal laws that had harsh consequences if not obeyed.  
Medical laws that could have been precursors to  
Malpractice laws of today Included specific rules  
for treatment. They were determined by the  
person's rank in society (nobleman, commoner or slave).  
Severe fines and punishment for incompetence or  
Failure to heal a patient,

These laws are among the oldest and have endured in some places through the ages.

HISTORY OF MEDICINE  
ANCIENT EGYPT  
(3300 – 525BCE)

- This period in history was the dawn of medicinal care.
- Egypt was a powerful civilization that possessed tremendous ambition and was skilled in technology for that period in history.
- Written evidence of Egypt's practice of medicine was revealed on papyri written in the ancient language of cuneiform. Papyri is thick paper from the papyrus plant.
- Edwin Smith Papyrus – (1600 BC). Named for the American Egyptologist who purchased it. This document gives an inventory of forty-eight case histories of patient, wounds, prognosis, and treatment. This document also lists scores of diseases and remedies.
- Ebers Papyrus - (1550 BC). Also listed scores of diseases and remedies such as herbs, minerals, magic spells and incantations. Amulets and prayers were also used for healing.
- Clay tablets also written in cuneiform gave us another example of how medicine was practiced. They showed a list of illnesses, diseases, and disorders.
- Egyptians believed in the healing powers of vegetables and fruits, tree resins, myrrh, frankincense, plant extracts, and castor oil used for stomach ailments.
- Egyptians believed that gods ruled the body and physicians were held in great esteem. They performed surgery, treated traumatic injuries, stitched wounds and repaired broken bones.
- Egyptians believed in the afterlife and prepared a corpse for mummification. As a result, the must have had an advanced knowledge of anatomy.
- Imhotep (2980 – 2900 BC):
  - Egyptian god (other than the pharaoh) who was human.
  - A polymath.
  - Was a vizier to the pharaoh (highest official in Egypt).
  - Aside from being an architect, engineer, poet, astrologer, philosopher, he was a renowned physician.
  - Authored the Edwin Smith Papyrus that listed ninety anatomical terms, described forty-eight injuries, and diagnosed and treated over two hundred

diseases.

- Drugs and Treatments:
  - Plants, herbs, cumin, fennel, caraway, aloe and safflower.
  - Other substances used were eggs, liver, animal horns, fat and honey. A healer would soak a substance in water to use either as a potion to drink or a paste made to apply to a diseased area of the body.

HISTORY OF MEDICINE  
ANCIENT GREECE  
(700 BC – 600 AD)

- As the Egyptian civilization faded, the Greek civilization emerged and lasted until the end of antiquity.
- The Greeks were great philosophers and had a thirst for knowledge.
- They enjoyed culture, science, poetry, debated politics, architecture, drama, and sculpture.
- Greek physicians contributed more towards rational thinking than previous cultures.
- Greece was practicing medicine 1,000 years before the birth of Christ.
- Some of the Greek population still called upon the gods for healing.
- The first great medical school was built in Alexandria. Great thinkers from all cultures came to Alexandria to study and exchange ideas.
- Considered the “Golden Period” with achievements that still continue to dazzle the world today.
- Hippocrates (Hippocrates of Kos 460 BC – 370 BC) is considered “The Father of Medicine”. His contributions to the field of medicine were revolutionary. He taught the idea that illness was the result of natural causes and not supernatural.
- Numerous illnesses were documented in a voluminous collection of writings called, “The Hippocratic Corpus”.
- The theory of “Humorism” was developed during this period in Greek medical history. It suggests that the healthy body is made of four humors, blood, black bile, yellow bile and phlegm. A person is healthy when these humors are in balance. Disease is present when there is an excess or deficiency of these humors. As a result of this premise, the treatment of bloodletting emerged. (This will be discussed as we travel through the ages.
- Another great achievement by Hippocrates is the creation of the Hippocratic Oath. Physicians should uphold a strict ethical code. This code is still used today.

HISTORY OF MEDICINE  
ANCIENT ROME  
(753 BC – 476 CE)

- Ancient Rome was one of the greatest civilizations in history.
- Rome conquered Greece in 146 BC and controlled Greek speaking lands in the Mediterranean.
- Greece became a province of the Roman Empire and Rome was greatly influenced by Greek medicine.
- Many Greek physicians went to Italy to practice and study.
- Claudius Galen (129 – 216 CE) was a prominent Greek physician, surgeon and philosopher who went to Italy to study and practice. It was Galen who developed theory and practice of medicine and it was Hippocrates who laid the foundation of medicine.
- Galen's main interest was the study of anatomy. Rome did not allow dissection of human cadavers since it was considered ungodly. As a result, Galen resorted to study dead pigs and primates for his experiments.
- Galen also followed Hippocrates in believing that the four humors played a role in health and illness.
- Romans believed a healthy mind equaled a healthy body and put a great emphasis on public health. Romans were the first to construct sewers and toilets.
- Personal hygiene was also stressed in the Roman Empire. baths played an important role in a Roman's life.
- Greek and Roman medicine laid the foundation for learned medicine and the physician was believed to be the healer for the patient, rather than a medicine man. The achievements of these two civilizations lasted for centuries. However, all this came to a halt in 500 CE with the fall of the Roman Empire. Europe sinks into the "Dark Ages", a period of ignorance, superstition, repression and lack of scientific and cultural development.

HISTORY OF MEDICINE  
MIDDLE AGES (DARK AGES)  
(400 – 1400 CE)

- After nearly 500 years of rule, Rome crumbled.
- Causes:
  - Invasion of barbaric tribes – Visigoths & Huns
  - Economic troubles
  - Over expansion
  - Military overspending
  - Corruption & political instability
  - Weakening of Roman legions
- Catholic church became most powerful institution of the Medieval Age.
- The Middle Ages were marked by difficulties & calamities.
  - Living conditions declined. Fear and poverty spread.
  - Rule of law became weak.
  - Masses had to live as serfs under the feudal system beholden to fiefs (land owners) with no opportunity for advancement
  - Religious superstition among the masses
- Medicine in the Middle Ages:
  - Medical care was dominated by the Catholic church.
  - Teachings of the great men of science and medicine were discarded.
  - Emergence of quackery and witchcraft.
  - Medicine was embedded in superstition.
  - Hygiene was terrible, cities were crowded, filth from open sewers all added up to a perfect climate of devastating illness and plague.
- Medical diagnosis and treatment:
  - Medical cure for illness was blood letting.
  - Medical practitioners were still influenced by the theory of the four humors and used it as a diagnosis of an illness and method of treatment. Stagnant blood was removed to restore the balance of humors.
  - Astrology was also used in the treatment of illness. Astrological charts informed physicians what not to do for people born under certain astrological signs.
- Notorious illness of the Middle Ages:
  - Bubonic plague
  - Leprosy
  - St. Anthony's fire



- Pneumonic plague
- Bubonic Plague (Yersinia Pestis) Black Death
  - In early 1300 CE there was outbreak of bubonic plague in China.
  - At that time China was one of the busiest trade routes. It was only a matter of time before the plague would spread to Europe.
  - Source of the plague were rat fleas found in rodents (they are considered the hosts – which is a person, animal, or micro -organism that carries and transmits an infectious pathogen into another human).
  - The bubonic bacilli can resist destruction by the body's immune system.
  - The disease can affect the lungs or the blood. Both are devastation and cause death.
  - The bubonic plague was one of the most catastrophic pandemics ever to strike Europe. More than thirty-million people died from it over a three- year period.
  - Europe was a perfect breeding ground for the plague. Living conditions were abominable and helped to spread the disease.
  - There was no cure and only minor concoctions of herbs and warm poultices of butter and garlic to relieve the symptoms which were buboes – swelling of the lymph nodes.
  - Bubonic plague ran its course by the 1350s CE, but there is no known explanation as to why it ended.
- Leprosy (Hansen's disease)
  - Leprosy appeared in Egyptian papyrus around 1500 BCE.
  - It is another form of bacterial infection involving skin, nerves and other tissues.
  - Causes deformities of the face and body, blindness and local paralysis.
  - Highly contagious and Leprosy victims had to endure terrible laws of exclusion from society.
  - Reached its peak in the Middle Ages. It was exacerbated by abominable living conditions during that time.
  - Leprosy started to decline around 1350 CE. Today Leprosy is curable and treatable in its early stages.
- St. Anthony's Fire (Ergot)
  - Human poisoning due to the consumption of rye bread made from ergot infected grain.
  - The disease causes a burning pain in the limbs and extremities. Also causes pathological syndromes (mentally disturbed condition).
  - Tranquilizing balms were used to give relief.
  - Some historians believe the abnormal behavior from ergot poisoning was misinterpreted as madness or witchcraft. These women were either put in insane asylums or even killed.

- Insanity
  - Some scientists thought madness was the result of humoral imbalance.
  - Folklore believed the moon caused lunacy. Theology believed it was the consequence of evil or sorcery.
  - Treatment varied from bloodletting to sedation. Exorcism (to cast out) was also used by a priest, shamans or saints possessing special powers.
  - Mental illness was a social stigma and the insane were either kept in cellars, caged in pigpens, abandoned by their family and left to beg and wander without a home.
  - The first lunatic asylum in Europe was the Bedlam Royal Hospital in London in the year 1247.
  
- End of Middle Ages
  - The Middle Ages came to an end around 1500 CE. Several factors played a role:
    - Feudal structure was coming to an end.
    - Rise in trade and crafts created jobs.
    - Mercantilism gave rise to guilds.
    - Communication improved greatly with the discovery of the printing press by Johannes Guttenberg.
    - Republican forms of government sprang up.
    - Secular education improved.
    - Catholic church control was eroding with the Protestant Reformation.

HISTORY OF MEDICINE  
RENAISSANCE  
(1350 – 1550 CE)

- Renaissance – A transitional period between the medieval age and the modern world. A rebirth of classic learning and rediscovery of ancient Rome and Greece.
- Cultural revival that occurred in Europe from approximately 14<sup>th</sup> – 17<sup>th</sup> century.
- Brought new developments in art, literature, science and architecture.
- Scientists and thinkers broke loose from stringent laws of the church to focus on medical advancement.
- The invention of the printing press in 1440 by Johannes Gutenberg was one of the greatest in history. It drastically changes the way society evolved.
- There was a new interest in secular life in Europe. The church lost much of its power. The consensus was that the church should not be involved in civic issues, only spiritual matters.
- Easing of legal and cultural restrictions allowed doctors to perform dissections on cadavers.
- Artists were able to use the human figure in their work with greater realism and emotion.
- The scientific method was introduced in conducting experiments. It allowed for clearer observation of experiments to reach conclusions.
- Andreas Vesalius (1514 – 1564) Was a 16<sup>th</sup> century Flemish anatomist, physician, professor of surgery and author.
  - In 1543, Vesalius published 'De Humani Corporis Fabrica'. The book was based largely on human dissection and transformed anatomy into a subject that relied on observations taken directly from human dissections.
- William Harvey (1578 – 1657)-An English physician who was the first known to describe in detail the systemic circulation and properties of blood being pumped to the brain and body by the heart.
  - He was very progressive in his approach to medicine regarding the use of experimentation & observation.
  - His experiments proved that circulating blood nourishes all parts of the body.
  - His best-known work, "De Motu Cordis" (On the Motion of the Heart and

- Blood in Animals).
- His proof of continuous circulation of the blood was 17<sup>th</sup> century's most significant achievement in physiology and medicine and one of the most important contributions in the history of medicine.
- Paracelsus (1493 – 1541) A German/Swiss physician and alchemist who established the role of chemistry in medicine.
  - Combined his interest in chemistry and biology to what we now consider toxicology.
  - He stressed the importance of scientific method & the importance of fact & data.
  - Believed accurate dosage of medicine is vital.
- Leonardo da Vinci (1452 – 1700) – Born in a town outside Florence, Italy.
  - Considered to be the leading artist and intellectual of the Italian Renaissance.
  - As a result of the loosened restrictions on human dissections Da Vinci was able satisfy his relentless curiosity about the human body.
  - His drawings on the Vitruvius Man show precise measurements and geometric relationships of human proportions.
- Ambrose Pare' (1510-1590) French physician and one of the most notable surgeons of the European Renaissance.
  - Doctors considered surgery to be beneath them & left cutting to lowly barber-surgeons,
  - Unlike many surgeons at this time, Pare' resorted to surgery only when necessary. He learned much of his surgical skills treating the wounded on the battlefield.
  - His published book, "Apology & Treatise", advocated changes to the way surgeons treated wounds & amputations & raised the status of the Barber Surgeon.
- Anthony Leeuwenhoek (1632-1723) Born in Delft, Holland.
  - The first to produce a microscope. He is known as "The Father of the Microscope".
  - This discovery allowed Leeuwenhoek to study and describe bacteria, yeast plants, life in a drop of water and the circulation of blood corpuscles in capillaries.