

HISTORY OF MEDICINE



Lecture 1.

Prehistoric Medicine



Why to study the History of Medicine?



Humans have been practicing medicine in one way or another for over a million years. In order to understand how modern medicine got to where it is now, it is important to learn more about the history of medicine.

Prehistoric medicine



Prehistoric medicine refers to medicine before humans were able to read and write. It covers a vast period, which varies according to regions and cultures.

Anthropologists, people who study the history of humanity, can only make calculated guesses at what prehistoric medicine was like by collecting and studying human remains and artifacts.

Medical research

- Nobody knows precisely what prehistoric peoples knew about how the human body works, but we can base some guesses on limited evidence that anthropologists have found.
- Prehistoric burial practices, for example, suggest that people knew something about bone structure. Scientists have found bones that were stripped of the flesh, bleached, and piled together, according to what part of the body they came from.
- There is also archeological evidence that some prehistoric communities practiced cannibalism. These people must have known about the inner organs and where there is most lean tissue or fat in the human body.
- Most likely, prehistoric people believed that spirits determined their lives. Some people around the world today still consider illness as losing or compromising one's soul.
- Colonists found that people in Australia were able to stitch up wounds and encase broken bones in mud to set them right. Medical historians believe these skills probably existed in prehistory.
- Most of the evidence that archeologists have found in prehistoric graves shows healthy but badly set bones. This indicates that people in most communities did not know how to set broken bones.

Disease prevention

- Some of the priorities of public health today are:
 - preventing the spread of disease
 - following good hygiene practices
 - providing clean water for people to keep themselves, their animals, and their homes clean
- In contrast, medical historians are fairly sure that prehistoric peoples had no concept of public health. Instead, individuals tended to move around a lot and did not remain in one place for long, so the idea of a public health infrastructure was probably not relevant.
- Throughout prehistory, people had health problems, just as we do today. However, because they had different lifestyles and lifespans, the diseases would have varied from those we have now.

To study Prehistoric medicine

Archeological findings helped greatly to learn more about prehistoric medicine.

Otzi the Iceman is the modern nickname of a well-preserved natural mummy of a man from about 3300 BC, found in 1991 in a glacier of the Otztal Alps, near the border between Austria and Italy.



Common diseases and conditions in prehistoric times:

- ❑ **Osteoarthritis:** Many people had to lift and carry large and heavy objects frequently. This might have put a strain on the knee joints because archeological remains suggest that osteoarthritis was common.
- ❑ **Micro-fractures of the spine and spondylolysis:** These conditions that affect the vertebrae could have resulted from dragging large rocks over long distances.
- ❑ **Hyperextension and torque of the lower back:** The transportation and raising of large boulders and stones, such as huge Latte Stones, could have caused these problems.
- ❑ **Infections and complications:** People lived as hunter-gatherers, and cuts, bruises, and bone fractures probably occurred frequently. There were no antibiotics, vaccines, or antiseptics, and people probably knew little about bacteria, viruses, fungi, or other potential pathogens.
- ❑ They were probably unaware of how good hygiene practices can prevent infections and their complications. As a result, infections were more likely to become serious and life-threatening, and contagious diseases may have spread rapidly and become epidemics.

Common diseases and conditions in prehistoric times:

- ❑ **Rickets:** Anthropologists have evidence that rickets: Anthropologists have evidence that rickets was widespread throughout most prehistoric communities, probably due to low vitamin D or C levels.
- ❑ **Environmental exposure:** There was little protection from natural disasters, such as cold periods lasting 10 years or longer, droughts, floods, and diseases that destroyed large food sources.
- ❑ **Sex:** Men lived longer than women, probably because males were the hunters. They would have had access to their kills before the women, and so, possibly less chance of malnutrition. Also, mortality associated with childbirth shortened the average lifespan of women.
- ❑ **Life expectancy**
 - ❑ It is difficult to assess life expectancy in prehistoric times. However, archaeologists who have studied remains of adults from two prehistoric eras note that remains of those aged 20 to 40 years are more common than those aged over 40 years.
 - ❑ This suggests that most people did not live to be over 40 years old, although this would depend on when and where the person lived.

Medications

- People used medicinal **herbs** in prehistoric times, say anthropologists.
- There is some limited evidence that they used herbs and substances from natural sources as medicines.
- However, it is hard to be sure what the full range might have been because plants rot rapidly.
- We can speculate that many medicinal herbs or plants would have been local ones, although this was not necessarily always the case. Nomadic tribes traveled long distances and may have had access to a wider range of materials.

Medicinal plants

- ❑ Yarrow
- ❑ Mallow
- ❑ Rosemary
- ❑ Birch Polypore



Medicinal plants

- There is some evidence from present-day archeological sites in Iraq that people used mallow and yarrow about 60,000 years ago.
- **Yarrow (*Achillea millefolium*)**: This is said to be an astringent, a diaphoretic, an aromatic, and a stimulant.
- An astringent causes tissues to contract and so helps reduce bleeding. People probably applied astringents to wounds, cuts, and abrasions.
- A diaphoretic promotes sweating and is a mild aromatic. It may also have anti-inflammatory, anti-ulcer, and antipathogenic properties, among others.
- Nowadays, people still use yarrow around the world to treat wounds, respiratory infections, digestive problems, skin conditions, and liver disease.
- **Mallow (*Malva neglecta*)**: People may have prepared this as an herbal infusion for its colon-cleansing properties.

Medicinal plants

- **Rosemary** *Rosmarinus officinalis*: There is evidence from several areas of the world that people used rosemary as a medicinal herb. Globally, people attribute many different medicinal qualities to rosemary. As a result, it is hard to be sure what they used it for in ancient times.
- **Birch Polypore** (*Piptoporus betulinus*): Birch is common in the European Alps, and people may have used ~~Medicinal plants~~ **Medicinal plants**. Archeologists found traces of birch in a mummified man. Botanists say the plant can cause diarrhea when swallowed.
- Women would have gathered and administered herbal remedies, and they were probably in charge of treating sickness and keeping their families healthy.
- As people did not read or write in those days, people would have passed down their knowledge of the benefits and harm of various herbs they used for medicines by word-of-mouth.

Procedures and practices

- Three practices that are no longer common in medicine are
- **Geophagy**
- **Trepanning**
- **Shamanism**

Geophagy

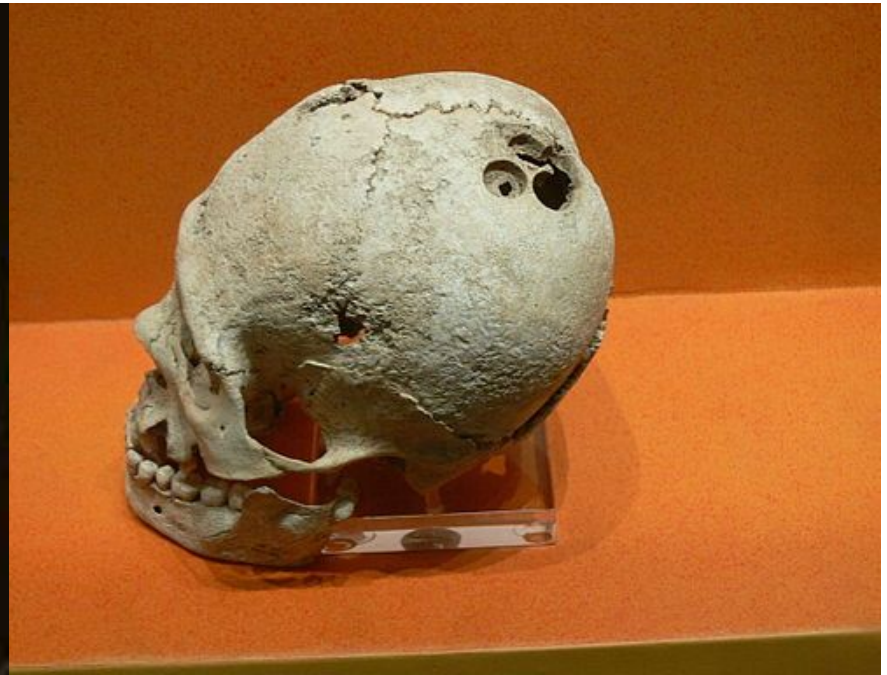
- This practice refers to eating soil-like or earthy substances, such as chalk and clay. Animals and humans have done this for hundreds of thousands of years. In Western and industrialized societies geophagy is related to an eating disorder known as pica.
- Prehistoric humans probably had their first medicinal experiences through eating earth and clays.
- They may have copied animals, observing how some clays had healing qualities, when animals ingested them.
- Similarly, some clays are useful for treating wounds. In some communities around the world, people still use clay externally and internally to heal cuts and wounds.

Benefits and risks of geophagy

- Clay minerals have been reported to have beneficial microbiological effects, such as protecting the stomach against toxins, parasites, and pathogens. Humans are not able to synthesize vitamin B12 (cobalamin), so geophagia may be a behavioral adaption to obtain it from bacteria in the soil.

Many soils contain high levels of calcium Many soils contain high levels of calcium, copper Many soils contain high levels of calcium, copper, magnesium Many soils contain high levels of calcium, copper, magnesium, iron Many soils contain high levels of calcium, copper, magnesium, iron, and zinc Many soils contain high levels of calcium, copper, magnesium, iron, and zinc, minerals that are critical for developing fetuses which can cause metallic, soil, or chewing ice cravings. There are obvious health risks in the consumption of soil that is contaminated by animal or human feces Many soils contain high levels of calcium, copper, magnesium, iron, and zinc, minerals that are critical for

A Human skull with trepanations



Trepanning

- In prehistoric times, trepanning was a medical procedure.
- This practice involves treating health problems by drilling a hole into the human skull.
- There is evidence that humans have been boring holes into people's heads since Neolithic times to try to cure diseases or free the victim of demons and evil spirits.
- From studying cave paintings, anthropologists believe that prehistoric peoples used trepanning in an attempt to rid their fellows of mental disorders, migraines, and epileptic seizures.
- The individual, if they survived, may have kept the extracted bone as a good luck charm.
- There is also evidence that trepanning was used in prehistoric times to treat fractured skulls.

Magic and medicine men



Prehistoric Shaman Painting
from Les Trois Frères Cave



«A successful operation»
The National Library of Medicine

The medicine man or shaman

- Medicine men, also known as witch doctors or shamans, existed in some prehistoric communities. They were in charge of their tribe's health and gathered plant-based medications, mainly herbs and roots, carried out rudimentary surgery, and cast spells and charms.
- Tribes people would also seek out a shaman for medical advice when they needed it for sickness, injury, or disease.

Conclusion

- People in prehistoric times believed in a combination of natural and supernatural causes and treatments for conditions and diseases.
- The health challenges in prehistoric times were somewhat different from those that exist today, although a number of diseases and conditions remain common now, such as arthritis and back problems.
- While people no longer have holes drilled in their skulls to free them from demons, herbs such as rosemary still play a role in herbal medicine and aromatherapy.