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The history of human organism

Khasan Musaev  [orcid: 0000-0002-1204-0451](https://orcid.org/0000-0002-1204-0451)
e-mail: musayeva28967@gmail.com

Lecturer, University of Tashkent for Applied Sciences, Gavhar Str. 1, Tashkent 100149, Uzbekistan

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Abstract: This article presents the main ancient doctors in the history of the study of the human body, their research, and the methods used in the treatment of diseases. Their scientific research is highlighted in the article. The study of the human body, the scientific researches of ancient doctors and modern medical scientists in the treatment of diseases and treatment methods are presented.

Key words: organism, body, physiology, anatomy, hygiene, nature of diseases.

1 Introduction

Since ancient times, people have been interested in their own creation, and at the same time, a number of doctors have been interested in and studied the structure and function of the human body, its organs, and used the acquired knowledge in the treatment of some body diseases. The methods they used are being studied by our current scientists and are being improved in modern ways, and scientific research is being carried out by scientists of the world without stopping. In the system of imparting medical knowledge to future educators and forming their clinical reasoning, it is desirable to be aware of the researches of ancient scientists who study the aspects of various diseases and know the mechanisms of the origin of human diseases.

2 Discussion

The most beautiful and at the same time the most mysterious creature of nature is man. The human body is made up of a complex set of various organs and systems. In some cases, the complex physiological and biochemical structures of the organism, which arose during the evolution of many centuries, are finally perfected. Since ancient times, people have been interested in the creation of themselves in the nature that surrounds them, and at the same time, they have been interested in the structure of their body and the functioning of some of its organs. About the human body, the doctors and philosophers of ancient China, India, Greece and ancient Rome tried to study the structure of the human body and its organs.

First, the philosophers and doctors of the Croton school, the author of works on human anatomy, are connected with Alcmaeon, a scientist of the 5th century BC. In order to study the structure of the human body, they first tried to study the structure of the animal organism, because the study of the human body was prohibited by religion in previous centuries.

In many islands of the ancient Greek state, the medical and philosophical schools established the study of the human body and its bodily functions. Among these was Hippocrates, who founded the ancient Greek medical school on the island of Kos (about 460-377 million years ago). In the researches of Hippocrates that have come down to us, the structure of human bones and animal bones are similar. In those times, theoretical conclusions about the science of physiology were presented for the first time.

Hippocrates and his students studied the different behaviors of patients and based on the "humoral theory" came to the conclusion that living bodies are composed of 4 main fluids: blood (sanguis), bile (chole), black bile

(melanos chole), mucus (phlegma). Based on the "humoral theory", which of these fluids is superior to the others, the temperament of a person is divided into 4: sanguine, choleric, melancholic, phlegmatic.

The ancient Greek philosopher and physician Aristotle (384-322 BC) first introduced the concept of aorta and put forward the idea of the "inorganic world" as the main stages of nature - plants, animals, and humans. He was the first to put forward the idea that man is a social creature, distinguished from animals by reason and perception.

In his study of the human body, the ancient Roman physician Galen (200-129 BC) recorded his research on the functions of human body parts. He showed that the basis of anatomy and physiology, diagnosis, therapy (treatment) and prevention (disease prevention) is treatment. Galen cut the nerves and organs of animals to study the effects of drugs, showing that the body is connected to the brain and sense organs. In experiments, animals proved blood flow in arterial blood vessels.

The great doctor, mathematician, poet and philosopher from Central Asia Abu-Ali ibn Sina (980-1037) is known as "Avicenna" in foreign countries. He included anatomy, physiology, pathology and hygiene, internal medicine, surgery, pharmaceuticals and other branches of medicine in his 5-volume Laws of Medicine.

Leonardo da Vinci (1452-1519), an Italian artist, showed the real image of the human body in his paintings, and thus he first laid the foundation for plastic anatomy.

Andreas Vesalius (1515-1564), an Italian scientist, in his lectures at the anatomy department of Paduan University, pointed out the gross mistakes of Galen before him and other doctors after him in the structure of the human body by cutting and dissecting human corpses. Vesalius was the first to write down the first manual of human anatomy.

Physiology as a separate science begins with the name of the English doctor William Harvey (1578-1657), in the field of physiology, blood circulation in the body is his greatest discovery. He demonstrated blood circulation in his experiments on animals, and published his scientific research in 1628 "Anatomical research on the movement of the heart and blood in animals" showed in his work.

René Descartes (1596-1650) was a French scientist who made a great discovery in the science of physiology, explaining the reflexive relationship of the organism and the mechanisms of the reflex act in the external environment. He showed protective reflex reaction mechanisms, such as closing the eye reflex when a finger touches the eyelids, and withdrawing the foot when touching the fire.

The rector of the first university in Russia, M.V. Lomonosov, is a poet, a great Russian scientist in the field of chemistry. The scientific basis of oxidation processes was described long before the French scientist Lavoisier, and later his scientific views and opinion became the main theory in human breathing. In 1757, he presented the theory of three-component color vision and the first classification of human perception from a scientific point of view.

In the 19th century, a great generalization of anatomy, physiology, and other biological sciences was laid, and Charles Darwin (1809-1882) explained the activities of the human organism from a materialistic point of view in his work "Evolutionary theory".

In the 19th and 20th centuries, Claude Bernard, Helm Holtz, Dubois Raymond, Ludvik, Russian scientists especially I.M. Sechenov, I.P. Pavlov, N.E. Vedensky enriched the science of medicine and hygiene with their new scientific works on the science of physiology.

I.P. Pirogov (1810-1881) clearly showed the location of organs in surgical anatomy.

Sechenov Ivan Mikhailovich (1829-1905) was a great Russian natural scientist. Founder of Russian school of physiology. He is the author of the works "Reflexes of the brain", "Physiology of the nervous system", which founded the natural scientific direction in psychology. He discovered the reflective properties of the brain.

Ilya Ilyich Mechnikov (1845-1916) was a Russian scientist who founded the field of microbiology and immunology. He created a theory about the importance and activity of immune phagocytes, which revealed the disease-resistant properties of the body. He emphasized that he deserved the Nobel Prize for his scientific research on gerontology (extending human life).

Ivan Petrovich Pavlov (1849-1936) was a Russian scientist who made a great contribution to the science of physiology, Nobel laureate. He created great works on the physiology of digestion, blood circulation in the body,

and the nervous system of humans and animals. I.M. Sechenov improved the theory of inhibition of conditioned reflexes, his scientific works and created his theory. Contributed to the development of medical sciences

Central Asian scientists Abu Ali ibn Sina, Abu Raikhan Beruni, Abu Bakr Bukhari, Abu Mansur Bukhari, Ismail Jurjani, Sultan Ali Khorasani made a great contribution to the development of medical science.

Abu Raikhan Beruni (973 - 1048) is a great scholar in the field of encyclopedia. "Saydana", who collected major scientific works of that time, collected information about 880 types of plants and discovered 1000 medicinal preparations.

Abu Ali Ibn Sina (980 - 1037) was a great physician, philosopher, poet, musicologist. His 5-volume "Laws of Medicine" contains information on anatomy, hygiene, internal medicine, surgery, pharmacology and other fields of medicine. His work has been the main guide in the field of medicine for several centuries to this day.

Physiology, Biochemistry, Biophysics.

Yunusov Atxam Yunusovich (1940-1971), one of the scientists of our country in the treatment of sick people and transplantation of organs, a physiologist studied the physiological mechanisms of water and salt exchange in the body of humans and animals in hot climate conditions, and at the same time revealed the features of adaptation of animals to high temperatures.

Aripov Uktam Oripovich (1927-2001) treated patients in Uzbekistan by transplanting organs. He scientifically substantiated the transplantation of a part of the kidney and pancreas and used it in medical practice.

Zufarov Komiljon Akhmadjonovich (1925-2002) developed the science of histology in Uzbekistan. Revealed the cellular mechanism of filtration, secretion and absorption processes in the body.

Turakulov Yolkin Kholmatovich (1916-2005) organizer of medical sciences in Uzbekistan. He studied thyroid hormones, cell metabolism and endocrine diseases. He applied new methods of diagnosing patients and treating them in medicine with the help of isotopes in his practice and developed ways of using them.

Vokhidov Vosid Vokhidovich (1917-1994) was the organizer of the school of specialized surgical assistance in Uzbekistan. He studied diseases of the lungs, bile ducts, liver, medulla, heart, blood vessels, locomotor organs, abdomen and chest and introduced treatment methods.

Tashmukhammedov Bekzhan Oybekovich (1935 - 2020), doctor of biological sciences, professor, academician of the RFA, laureate of the Beruni State Prize. In the implementation of the All-Union program "Nerve Impulse" and "Ion Channel" in the fields of physiology, biophysics and biochemistry, modifier - toxins (poisons) and canoloformer - classifications of toxins, affecting the lipid matrix of membranes and identifying toxins affecting sodium and calcium channels of excitable membranes. With the help of these toxins, it was possible to isolate glutamate receptors in synapses and reconstruct them into artificial membranes. Among the toxins of highly pathogenic bacteria such as staphylococci, cholera vibrio, and cereus bacillus, new channel-forming proteins have been identified.

Musaev Utkir Nasirovich (1936-2007) is a leading scientist in the field of chemistry of high molecular compounds of Uzbekistan, doctor of chemical sciences, professor, honored scientist of Uzbekistan, academician of the International Academy of Science and Education.

Modification of physiologically active macromolecular substances and polymers and synthesis of polymer products used in medicine and surgery. He carried out scientific research and applied it in the creation of macromolecular preparations, organic medicinal preparations.

3 Results

Anatomy is the science of body structure. Human anatomy studies the human body, its activity and the influence of the external environment. Macroscopic anatomy studies an organism's external shape, dimensions, body proportions, and the structure of internal organs. Microscopic anatomy or histology studies the microscopic structure of cells, tissues, and organs.

Physiology is a science that studies the activity of the organism. He studies the laws of development of individual organs-systems as a whole. Physiology studies the activity of a living organism and the processes that take place in it, as well as its mechanisms. Experimental physiology is the creation and observation of the most

favorable conditions for determining certain processes in the body. Scientific researches of a number of scientists mentioned above can be cited.

Human hygiene. Health is the greatest wealth of a person. Healthy is person's joy of life, ability to drink, and achievement. Based on current scientific research, it can be said that a person can easily live for 120-150 years if he maintains his health and work. The science of hygiene is the conditions for maintaining human health, the proper organization of life, the ways of making food and living comfortable, and medicine is considered a special branch of hygiene, and this branch deals with these issues from a scientific point of view and offers a convenient diet for the treatment of certain diseases.

Practical application of hygiene knowledge, knowledge used in preventing certain diseases and strengthening human health is called sanitation. Hygiene of children and adolescents - studying the living conditions of the organism of children and adolescents, its mental and physical development, high workability, health, resilience, and based on the results, develops sanitary-hygiene requirements and standards.

School hygiene - location, comfort and planning of children's organizations creates sanitary and hygienic requirements. Based on the produced sanitary-hygienic requirements, it is used by architects, in the design of projects, in the construction of schools and children's recreation camps. Lighting of children's organizations is based on sanitary-technical provision. The main requirements of school hygiene: building heating, water supply, sewage, ventilation, room ventilation and artificial lighting. School hygiene equips pedagogy with the standards of hygienic requirements. These requirements ensure the comprehensive normative development of children and adolescents, and at the same time, the effective conduct of educational processes. Children's and adolescents' hygiene issues are the creation of hygienic conditions for raising a young generation who are physically strong and enjoy life. Health is formed from a young age. For this reason, it is necessary for parents, pedagogues, children and teenagers to get acquainted with the basics of anatomy and physiology and hygiene in order to build a proper lifestyle. Physical culture is important in the life of people of different ages. Anatomy and physiology form the scientific basis of physical culture and sports - this is a huge factor in the development of humans' physical and mental strength.

Man's place in nature. Man is the stage of the highest evolution of the organic world with its complex structure, physiological and psychic characteristics. Charles Darwin in his book "The Descent of Man and Sexual Selection" (1871) provided clear scientific evidence that man originated from the development of living nature, and the history of his formation was based on the laws common to all living creatures. He says that man does not occupy a separate place in nature, but is only a highly developed part in the chain of development of all living beings. Man is connected by bonds of kinship with animals, primarily with monkeys. Darwin said that monkeys are the closest relatives of man.

Scientific study of the human embryo shows that it goes through all the stages characteristic of vertebrates. One-month-old human embryos have a smooth surface, and the heart has a flute-like structure. It is of great importance that the structure of the human body corresponds to the structure of the vertebrae.

What is this commonality? The backbone of the vertebrate body is its skeleton. The central nervous system of vertebrates has a tube-like structure, they are: the spinal cord is located inside the spine, the brain is located inside a box of bones. Vertebrate circulatory system is closed and consists of heart, arteries, veins and capillaries. In them, the blood from the portal vein passes through the stomach and intestines to the liver and joins the veins. It starts from the venous system and ends with the posterior opening. Mammals are among the most highly developed vertebrates. Humans are also mammals. Mammals feed their newborn babies with breast milk. A human child is also fed with mother's milk. The biological characteristic of mammals is live birth, and the biological characteristic of humans is live birth. According to systematics, man is assigned a place in the order of primates, under the ape-like order, or pithecoidea. The composition of the hominid family (family of people - hominidae) includes modern people and forms one family: conscious man (*homo sapiens*). *Homo* species includes modern humans. Man is superior to anthropoids by the advantage of his brain, the perfection of his analyzer, the upright posture of his body, and the freedom of his legs from walking. A human's brain is three times larger than a gorilla's brain, but a gorilla's brain is three times heavier than a human's. The human braincase is large relative to the face, while the gorilla

braincase is small relative to the face. There are also differences in the fingers of the lake. Humans have shorter spines when they walk upright, while apes have longer spines than humans.

Concepts of tissues, organs and organ systems. An organism is a unit of the organic world that lives independently and responds to changes in the external environment as a whole. Each organism has its own structure.

In the course of evolution, differentiation of cells occurred for multicellular organisms: cells with different shapes, structures, functions and sizes arose from them. The developmental process is that tissues arise from the same individual differentiated cells, and different tissues are specialized according to their functions. For example: contraction is characteristic of muscle tissue, conduction of excitation is characteristic of nerve tissue, etc.

Several tissues combine into a specific complex to form an organ (kidney, eye, medulla, etc.). An organ is a part of an organism, located in a permanent place in the body, has a certain structure and performs one or more functions. The organ consists of several tissues, one of which is specialized to perform the main activity. For example, the main structure of muscle is muscle tissue. Organs are the working apparatus of the body, and for the body to function as a whole, they are specialized to perform complex activities: the heart acts as a pump, the veins carry blood to the arteries, the kidneys perform the function of removing the last waste products from the metabolism, the bone marrow - the production of blood and others.

There are many organs in the human body, but each of them is a part of the whole system of the organism and serves its requirements.

A number of members together form a system of members performing a certain activity. An organ system is a combination of several organs from anatomic and functional aspects, participating in the performance of some complex activity - it is called an organ system (digestive system, respiratory system, cardiovascular system).

Of all the systems in the body, the nervous system is the most important. It controls all systems of the organism and their activities together and determines its actions in the external environment.

Two and several member systems together define the concept of hardware. For example, the skeleton and muscles together form the musculoskeletal system.

But it is necessary not to forget that a living organism with a complex association is considered as a whole, in which all structural activities: cells, tissues, organs and organ systems are coordinated and subservient to this whole.

4 Conclusion

Every disease is a suffering of a whole organism. In this case, all the organs and systems of the body are involved in suffering. Taking into account the resulting changes, organs and systems in the development of the disease are determined in their interdependence, and it is possible to distinguish certain stages and patterns in the development of various diseases. It is possible to see with the naked eye whether these structural changes are known - unknown (microscopic) or gross and extensive.

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