

# Formation of sanitary and hygienic knowledge as a separate science in the history of medicine

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**Abstract:** The work presents material concerning the formation and development of hygiene as a science of preventive medicine from empirical to scientific-experimental periods. Their works served as the basis for the development of hygiene as an independent medical science.

**Keywords:** hygiene, sanitary, preventive medicine, life environment, surroundings, scientific and experimental period

In today's understanding, hygiene is an independent fundamental medical science that studies the effect of various environmental factors and social activities on the human body and develops measures aimed at preventing diseases, maintaining health and prolonging life. The object of study of hygiene is a person. The subject of the study is the human body in its continuous and inextricable connection with the environment. The goal of hygienic science is to study the characteristics of the environment, develop hygienic standards, requirements and preventive measures, the implementation of which will ensure optimal living and working conditions for people, reduce morbidity and mortality, increase their performance and increase their lifespan. To achieve this goal, hygienic science sets and solves the following tasks: study of environmental factors; study of their influence on the human body; development of quantitative standards, regulations, pollution levels and preventive measures aimed at preventing the adverse effects of these factors on the body.

Hygiene is a fundamental medical science and is closely related to all theoretical and clinical areas of medicine. Correct diagnosis, treatment and prevention of diseases associated with exposure to environmental factors require the practitioner to have knowledge of the basics of hygienic diagnostics and the clinical picture of known environmentally-related diseases. If there are symptoms or syndromes that allow one to suspect the influence of environmental factors, the doctor, in the process of collecting anamnesis, should pay attention to all possible risk factors, for example, contacts with harmful factors (chemicals, ionizing radiation, noise, vibration,

temperature changes, etc.) such as in production conditions and in everyday life (houses located near hazardous enterprises, quality of drinking water, health status of persons living in the same apartment, decoration of the apartment, presence of pets, etc.).

In the course of his life, a person is constantly exposed to the positive and negative influence of many environmental factors. Strictly speaking, hygiene distinguishes between the living environment and the surrounding environment. Habitat is a complex of interconnected abiotic and biotic factors located outside the organism and determining its life activity; Environmental environment - human habitat and production activities; includes working, living, rest and nutrition conditions.

When talking about environmental factors, we usually mean the following:

1. Physical factors: temperature, humidity, air speed, sound, pressure, etc.;
2. Chemical factors (more than 10 million of them are now known) are all compounds that are part of air, water, soil, food, etc.;
3. Biological - bacteria, viruses, rickettsia, protozoa, helminths, fungi, which, penetrating into the human body, can cause disease, poisoning, toxicosis;
4. Mechanical - machines, machines, equipment that surround us in everyday life and in production;
5. Social - psychogenic factors that cause strong emotional irritations through words, speech, and writing.

Hygiene is closely related to "Sanitation" - (from the Latin *sanitarius* - promoting health and from *sanitas* - health) - a set of practical activities aimed at implementing hygienic standards and requirements, which is currently the responsibility of the sanitary-epidemiological service. Preventive medicine has global significance and is preventive in nature. Prevention of human health disorders can be carried out in various ways. Primary (radical) prevention is aimed at eliminating the causes that cause decline in health, at stimulating and activating factors that can preserve and strengthen health. Secondary prevention is aimed at early diagnosis and timely treatment of emerging diseases at the initial, premorbid stage of its development and preventing the progression of the disease and its consequences and is carried out among sick people. It includes such palliative measures as increasing the body's resistance, using personal protective equipment, etc. Tertiary prevention (rehabilitation, medical examination) is a set of measures to prevent complications of an already developed disease. Unfortunately, this is the most common and least effective way in practical medicine, since it is aimed primarily at improving the environment and lifestyle, which is always associated with large and often not always feasible measures.

Hygiene uses many different methods, including:

1. Epidemiological (study of population health);
2. Sanitary inspection (sanitary-topographical, sanitary-technical, sanitary-epidemiological);
3. Hygienic experiment (natural and laboratory);
4. Sanitary examination;
5. Health education (hygienic education and training of the population).

Hygiene includes a number of independent specialized sectors:

1. Occupational hygiene - improvement of labor in production, prevention of the development of occupational diseases;
2. Communal hygiene - environmental protection, improvement of living conditions of the population;
3. Hygiene of children and adolescents - full development and education of the younger generation;
4. Food hygiene - studies and develops problems of rational nutrition;
5. Radiation hygiene - prevention of adverse effects of radioactive radiation on humans;
6. Military hygiene - hygienic aspects ensuring the combat effectiveness of the army.

An objective understanding of the challenges facing hygiene at the present stage of its development is helped by the history of the formation and development of this science.

Hygiene arose in the distant past from the customs and skills accumulated in folk preventive medicine that helped peoples survive in conditions of adverse environmental influences.

The son of the sun god Apollo gave birth to a son, Asclepius (Aesculapius), who was a weak and sick child from birth. To improve his health, Apollo placed him in a sunny valley surrounded by doctors. They not only cured him, but also passed on to him all the wisdom of medicine. And he himself began to skillfully heal the inhabitants of this valley. His children helped him in this - sons Machaon and Podalirius, who healed the heroes of the Trojan War, and daughters Hygieia ("health"), Iaso ("treatment") and Panacea ("healing"). And so, on behalf of one of the daughters of Aesculapius (Hygeia), the name of the science of hygiene arose - bringing health.

In ancient times - up to 1 thousand years BC - various preventive prescriptions were used, based on observations of people, their everyday experience - the period of empirical hygiene. Its leading elements were the developed recommendations of a restrictive nature, aimed at the conditions of housing in a particular area, the use of certain plants and prohibitions on eating dangerous plants, rules for drinking water, avoiding the consequences of possible adverse effects. Already in a slave society,

empirical hygiene was further developed, especially in the countries of the Ancient East.

Various religious instructions, which certainly contained a lot of wisdom for prevention, had a huge influence on the development of hygiene during this period. In addition, already in the legislative documents of the Assyro-Babylonian state (3-4 thousand years ago) there were medical records related to personal and public hygiene, isolation of infectious patients. In the cities of this state (Babylon, Nineveh), the streets were paved and there were water supply and sewerage facilities made of clay pipes.

In ancient Greece and Ancient Rome, hygienic knowledge received further development, especially during the heyday of culture, the materialistic views of ancient Greek philosophers - Aristotle, Democritus and others, who directly pointed to the dynamic connection between human health and the environment. Democritus owns the famous catchphrases - hygiene is the friend of health; and the saying that disease is easier to prevent than to cure. During this period, the first medical works appeared here, which for many years had a huge influence on the development of preventive thinking in medicine. These are the outstanding works of the brilliant physician-thinker Hippocrates - treatises "On Air, Waters and Places", "On a Healthy Lifestyle", which contain materialistic judgments about the connection between human health and environmental factors, based not on religious or administrative regulations, but based on special medical observations and generalizations. Hippocrates identified two groups of factors influencing human health: 1. - general - climatic features, soil and water conditions; 2. - individual - the nature of nutrition, lifestyle, behavior, heredity.

In Ancient Greece, a system of hygienic measures was widespread, in which special attention was paid to physical culture, personal hygiene, and a healthy lifestyle. Already in Ancient Greece, special attention was paid to sanitary inspection of the quality of sold food products, drinks, placement and construction of buildings. Water pipelines were built in cities and sewer systems were built.

In Ancient Rome, sanitary facilities were first created and public sanitation measures were implemented. And now the famous Roman water supply and sewerage structures, built in the 600s BC. Amaze the imagination both with the scale of the structures and the art of engineering. Water pipelines (there were more than 30 of them) supplied the city with drinking mountain water of about 500 - 600 liters per person. The city's wastewater was collected in a large sewer, 4 m wide and 5 m high, and then drained into the Tiber.

In the period before the 15th century AD. (Middle Ages) the center of medical science moved to the countries of the East, where one of the outstanding educators was Avicenna (980-1037 AD). In his five-volume "Canon of Medical Science" there

are many chapters devoted to hygiene: "On good air", "On the quality of water", "On maintaining health". Avicenna believed that the natural environment, climatic features, air condition, nutrition, personal hygiene, upbringing and child care are components of health. His brilliant guess about the possibility of the spread of certain diseases through air and water was implemented by the urgent recommendation to ventilate homes and drink boiled or filtered water.

The 15th-16th centuries were marked by the emergence of the capitalist mode of production, which led to the development of sciences and arts, including modern natural science. Medicine, overcoming religious and scholastic ideas about illness and its causes, about the function and structure of the body, takes the scientific path of development. The physician and chemist Paracelsus (1493-1541) studied metabolic diseases, occupational diseases of miners, injuries and issues of medicinal chemistry. The Venetian physician and writer Girolamo Fracastoro (1478-1553) summarized observations of the ways of spreading infections and wrote a treatise "On Contagious Diseases" (1546). In his major work, "On Contagion, Contagious Diseases and Treatment," he proposed that epidemics were caused by tiny particles ("seeds") transferred from the patient through direct, indirect (or even visual) contact. Physician Bernardino Rammacini (1633-1714) - treatise on diseases caused by people's professions (1700). The Prussian pastor Süssmilych published his "Divine Order in the Changes of the Human Race" in 1742, which laid the foundation for health statistics and demography. In 1788, the first major six-volume work on all issues of public hygiene by Peter Frank (1745-1821), "The Complete System of Medical Police," was published, and in 1796, "Macrobotics" by H.V. Gufeland - on all matters of personal hygiene. These two books sum up the empirical, contemplative period in the development of hygiene, based on everyday experience.

Further progress in science, social life and culture has raised new challenges for hygienic science and practice. To solve them, scientifically sound provisions based on precise research and experiment were required.

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