

THEME 14

THE INFLUENCE OF NATURAL AND ENVIRONMENTAL FACTORS ON HUMAN HEALTH

Motivational statement of theme

Ecology and human health in the modern world are closely interrelated. Numerous works of scientists have shown that pollution and denaturation of the environment has a negative impact on the functional state of various body systems, physical endurance, human performance, accompanied by an increase in the prevalence of acute and chronic nonspecific morbidity of the population. And in the end, it leads to a decrease in the birth rate and an increase in mortality, what influences demographic processes and the security of the state. The natural environment affects a person — through dependence on natural factors of existence, on the abundance or lack of food, that is, game, fish, plant resources.

According to many authors, environmental factors (pollution) determine the state of health in 18-20% and are in second place after lifestyle.

Objective: to get acquainted with the possible influence of the environment on humans and methods of improving the quality of the environment.

Questions for discussion

1. Name the natural focal diseases affecting the human population.
2. Natural focality. Methods of combating natural focal diseases.
3. The environment artificially created by man, which includes.
4. Factors influencing the occurrence of human diseases in an artificially created environment.

Independent work of a student in the classroom

Participation in a business game on the topic: "Sustainable development of the Russian Federation".

Organization of work:

1. The study group of students is divided into 4 teams
-an initiative group of residents dissatisfied with the environmental situation;

- representatives of the Rospotrebnadzor service in the field of public health protection;
- representatives of the administration of the settlement
- and representatives of the Green Party.

The teacher acts as a moderator/

Students are given a task based on a preliminary acquaintance with the project of sustainable development of Russia to formulate proposals for improving the environmental situation in the region of residence, based on belonging to a specific group (20 minutes).

Then, one representative from each group presents their projects within 5 minutes and, under the guidance of a teacher,

A regulated discussion is organized to discuss the results of each group's work (25 minutes).

Reference material

Initially, Homo sapiens lived in the natural environment, like all the consults of the ecosystem, and was practically unprotected from the action of its limiting environmental factors. Primitive man was subject to the same factors of regulation and self-regulation of the ecosystem as the whole animal world, his life expectancy was short, and the population density was very low. The main limiting factors were hyperdynamics and malnutrition. Among the causes of mortality, pathogenic effects of a natural nature were in the first place. Of particular importance among them were infectious diseases, characterized, as a rule, by natural foci.

Natural focal diseases are closely associated with a certain territory, with a particular type of landscape, and therefore with its climatic features, for example, they differ in seasonality of manifestation. Natural focal diseases were the main cause of death of people until the beginning of the XX century. The most terrible of such diseases was the plague, the mortality from which many times exceeded the death of people in the endless wars of the Middle Ages and later.

Diseases associated with the natural environment surrounding a person still exist today, although they are constantly being fought. Their existence is explained, in particular, by the reasons of a purely ecological nature, for example, resistance (development of resistance to various factors of influence) of carriers of pathogens and the pathogens themselves. A typical example of these processes is the fight

against malaria. More and more attention is being paid to integrated, environmentally sound methods of combating malaria — methods of "managing the living environment". These include drainage of wetlands, reduction of water salinity, etc. The following groups of methods are biological — the use of other organisms to reduce the danger of mosquitoes; in 40 countries, at least 265 species of larvivorous fish are used for this, as well as microbes that cause diseases and death of mosquitoes.

Plague and other infectious diseases (cholera, malaria, anthrax, tularemia, dysentery, diphtheria, scarlet fever, etc.) destroyed people of various ages, including reproductive. This caused a rather slow population growth ~ the first billion inhabitants on Earth appeared in 1860 . But the discoveries of Pasteur and other scientists at the end of the XIX century, which gave a powerful impetus to the development of preventive medicine of the XX century. in the treatment of very serious diseases, a sharp improvement in sanitary and hygienic living conditions, culture and education of mankind as a whole, led to a sharp decrease in the incidence of natural focal diseases, and some of them practically disappeared in the XX century.

However, in order to combat the effects of natural factors regulating the ecosystem, man had to use natural resources, including irreplaceable ones, and create an artificial environment for his survival. The artificial environment also requires adaptation to itself, which occurs through diseases. The main role in the occurrence of diseases in this case is played by the following factors: physical inactivity, overeating, information abundance, psychoemotional stress. In this regard, there is a constant increase in the "diseases of the century": cardiovascular, oncological, allergic diseases, mental disorders, AIDS and others.

Environmental safety measures:

- a) Air pollution control;
- b) Protection of water from pollution and use of fresh water;
- c) Protection of the marine environment;
- d) Efficient use of soil;
- e) Protection and security of existing genetic resources (reserves);
- e) Improvement of the environment in settlements and residential areas.