

# **Topic 1.14 Safety of medical work**

**Lecture for 2nd year students of the  
medical faculty**

# Lecture questions

- 1. Features of the medical profession**
- 2. Characteristics of threats to the life and health of medical workers**
- 3. Specific occupational diseases of doctors**
- 4. Occupational health and safety system in medical organizations**

# **Question 1. Features of the medical profession**

**Several types of professions are distinguished depending on the subject of labor. According to this classification, a doctor belongs to the type of profession “person - person”, which presupposes responsiveness, observation, developed communication skills, and emotional stability.**

**By the nature of work, two classes of professions are distinguished. The performing professions are associated with working according to a given pattern, adhering to existing rules and regulations, following instructions, and are characterized by a stereotyped approach to solving problems.**

**Professions of the creative class involve analysis, research, testing, control, making non-standard decisions, require independent and original thinking, a high level of mental development. Doctors are traditionally referred to the second class of professions, nurses - to the first.**



According to the existing scale of the severity of labor, medical specialties are located from the second to the fifth category (there are six of them in total, with the sixth being the highest level of severity).

The work of a doctor and nursing staff is associated with a high risk. For example, when dealing with infectious and mental patients, physicians work in unfavorable conditions and must take increased precautions. Depending on the position and functional responsibilities of the doctor, the risks can be conditionally divided into high and medium.

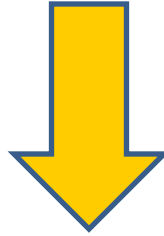
<b>The fifth category of the severity of labor</b>	<b>Surgeon, anesthesiologist, resuscitator, ambulance doctor, endoscopist, radiologist, pathologist, forensic expert.</b>
<b>The fourth category of the severity of labor</b>	<b>Local doctors, dentists, doctors of the therapeutic profile, working in a hospital, dermatovenerologists, otolaryngologists, obstetricians-gynecologists, bacteriologists, doctors of functional diagnostics</b>
<b>The third category of labor severity</b>	<b>Polyclinic doctors, laboratory doctors, epidemiologists, hygienists, physiotherapists</b>
<b>The second category of labor severity</b>	<b>Statisticians and valeologists</b>

**According to experts, in the structure of occupational diseases, infectious diseases consistently occupy the first place - about 80% of all occupational ailments, and the undoubted leaders in the infection of doctors are viral hepatitis, which makes up almost 40% of all diseases acquired in the service. Occupational diseases of doctors are longer and more severe than those of other occupational groups. In recent years, the highest level of occupational diseases has been observed among nurses, and among doctors - among dentists, infectious disease specialists, and pathologists.**



**Question 2. "Characteristics of  
threats to life and health  
medical workers "**

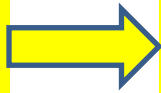
**The following harmful and dangerous physical factors  
are characteristic of the medical environment:**



- **mechanical (moving objects),**
- **thermal (surface temperature, thermal radiation),**
- **microclimatic (air temperature, humidity, air velocity),**
- **radiation (ionizing radiation, non-ionizing electromagnetic fields and radiation, including laser and ultraviolet radiation),**
- **acoustic (noise, ultrasound, infrasound),**
- **vibration (local, general),**
- **solid aerosols (dust) of predominantly fibrogenic action,**
- **natural lighting (lack or insufficient) and artificial (insufficient illumination, ripple of illumination, excessive brightness, high unevenness of brightness distribution, direct and reflected glare)**

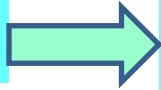


**Chemical safety issues**



**Disinfectants, antibiotics, vitamins, hormones, enzymes, protein preparations, means for inhalation anesthesia (fluorothane, diethyl ether, nitrous oxide), chemical reagents, etc.**

**Hazardous biological factors**



**Microorganisms, living cells and spores contained in bacterial preparations; pathogenic viruses and microorganisms - causative agents of infectious diseases; carriers of pathogens of infectious diseases; body and head lice, scabies mites, fleas and other parasitic arthropods.**

**Psychophysiological factors**



**Physical and neuropsychic overload, static and dynamic overload, physical inactivity, mental overstrain, overvoltage of analyzers (when working with microscopes and video endoscopes, ultrasound examinations, etc.), monotony of work, emotional overload when working with patients, colleagues and managers**

**Risk factors for the occurrence of occupational pathology are: unsatisfactory design of working rooms, imperfection of equipment and instruments, imperfection of technological processes, prolonged contact with medicines and harmful substances, lack or imperfection of personal protective equipment, increased sensitivity of the body to chemicals.**

**Thus, according to some reports, doctors (for obvious reasons, this is the most dangerous medical profession) live 10-20 years less than their patients.**



**Question 3. "Specific  
occupational diseases of  
doctors"**



**Infectious diseases are in first place with a strong gap (from 75.0 to 83.8% in the structure of occupational diseases, on average 80.2%). Which is understandable: every doctor regularly comes into direct contact with infectious patients, and other employees of medical institutions too. The leaders in terms of detection are viral infections that can be infected anywhere. This is followed by tuberculosis. The drug resistance of mycobacterium tuberculosis is extremely high among medical workers (31.3%).**

**The second place among occupational diseases of health care workers is held by allergic diseases (from 6.5 to 18.8%, on average 12.3%). High-grade allergens can be drugs that both doctors and other healthcare professionals deal with. And in addition, chemical reagents used in laboratory practice: substances for anesthesia, disinfection, detergents, biological preparations (enzymes, vaccines, serums, blood products).**



**The third place among the occupational diseases of doctors is shared by intoxication and diseases of the musculoskeletal system. For example, an examination of Voronezh dentists showed that diseases of the musculoskeletal system among them occur in 75% of cases, and the defeat of osteochondrosis of the 2nd and 3rd divisions is combined with curvature of the spine and joint diseases in 30% and muscles in 17%.**



**Shift work itself (daily shifts), which is common for doctors, carries additional psycho-emotional and physical stress. This, coupled with increased responsibility for the result, easily causes stress. And stress, in turn, is a prerequisite for early changes in the cardiovascular system. Surgeons and anesthesiologists-resuscitators are especially prone to stress. In addition, they often encounter seriously ill patients, with dying people. And this is another source of stress. The result is burnout syndrome - a state of physical, emotional and mental exhaustion.**

**Thank you for attention**