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## TOPICS AND BIBLIOGRAPHY FOR ASSOCIATE PROFESSOR, Hygiene Discipline, 23, 24 POSITION

### 1. TOPICS

1. Environmental health novelties: the environment, environmental factors, basic requirements for a healthy environment, environmental medicine, the contemporary ecological crisis in relation to the health of the environment and the health of the population (global warming and its consequences, deforestation, resource reduction, desertification, environmental pollution, demographic changes, the emergence and recurrence of infections).
2. Ambient air: physical characteristics (temperature, humidity, air movement, atmospheric pressure, aeroionisation, terrestrial electric field, terrestrial magnetic field, for each factor: ecological peculiarities and relationship with health status), chemical characteristics (oxygen, carbon dioxide, nitrogen, ozone, for each factor: ecological peculiarities and the relation to health status).
3. Air pollution (factors that condition air pollution and self-purification of air: sources of pollution, meteoric-climatic conditions, natural and artificial topographic features; health-related pollution and medical measures to monitor air quality (maximum admissible concentrations, biological markers)
4. Occupational indoor air. Modern sanitary housing: physical conditions in relation to health - location and orientation, construction materials, interior design and equipment, thermal environment, air vitiation, ventilation, lighting, sound environment, home heating; chemical conditions - air pollution in relation to health; biological conditions - aeromicroflora, the role of air in the transmission of infectious diseases and prophylaxis. Sanitary units: constructive and functional sanitary conditions by type of units; biological conditions – air microflora, the role of air in transmission of infectious diseases and prophylaxis; nosocomial infections: contemporary features, enteropathogenesis, epidemiology, prophylaxis
5. Non-ionizing radiation: solar radiation, infrared radiation, light radiation, ultraviolet radiation (sources and relation to health status: general and local direct action - skin, eye, meninges, indirect action on environmental factors, prophylaxis). Ionizing Radiation: Natural Radioactivity and Natural Irradiation / Year / Individual; artificial radioactivity - medical, professional radio-exposure, through consumer products, nuclear explosions, radioactive waste, accidents to nuclear power plants in operation. Radioecology: accumulation of radioisotopes in environmental factors, increased radioactivity, primary and secondary ecological effects. Radio

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genetics: tissue radio sensitivity; early biological effects by global and localized external radio exposures to the human embryo; late biological somatic and genetic effects. Radioprotection - monitoring of human radio-exposure.

6. Water: sources (atmospheric, meteoric, underground, surface) and sanitary characteristics; natural and artificial water pollution; water self-purification; non-specific water consumption (individual needs and human collectivities needs). Sanitary requirements of central drinking water supply: advantages, water catchment sector, surface water treatment sector (simple sedimentation and coagulation, slow and rapid filtration, water disinfection with physical methods - boiling distillation, ultraviolet, ionizing radiation water disinfection with chemical methods - with chlorine, iodine and bromine, potassium permanganate, ozone, silver), water storage - sanitary requirements of water tanks, water distribution sector - sanitary requirements of the underground pipeline network. Corrosion in drinking water supply installations: characteristics of materials (metals, plastics) and corrosion; water characteristics (pH, residual chlorine, degree of agitation, temperature, bacteria) and corrosion; corrosion reduction (pH, hardness, corrosion inhibitors).

7. Water: biological contamination and the risk of infectious water pathology: conditions of occurrence of infectious water diseases, forms of manifestation, main microbial diseases (typhoid and paratyphoid fever, bacillary dysentery, cholera, enterocolitis, zoonoses), viral (hepatitis A, infections caused by rotaviruses, adenoviruses, parvoviruses), parasitic (amoebic dysentery, lamblia, trichomoniasis, tapeworm); prophylaxis. Changes in chemical composition (deficiency or excess of biogenic substances, toxic chemicals, toxic by-products of water treatment), and the risk of non-infectious water pathology (endemic thyroid dystrophy, dental caries, endemic fluorosis, methemoglobinemia); prophylaxis.

8. Soil: physical, chemical, biological quality conditions. Biological pollution and the risk of infectious pathology with human-soil-human, animal-soil-human, soil-human transmission; biological pollution indicators; prophylaxis. Chemical pollution with organic substances, toxic industrial substances and those used in agriculture, deposits and radioactive residues, and the risk of non-infectious pathology; chemical pollution indicators; prophylaxis. Soil remediation. Liquid residues of human communities: composition and risks of biological and chemical contamination of the environment and humans; sanitary conditions for collection (sewerage network), purification, disinfection and disposal. Solid residues of human communities: composition and risks of biological and chemical contamination of the environment and man; sanitary conditions for collection, neutralization and removal / recovery. Complex ecological factors. Notions of biometeorology: optimal and exciting weather; climate and climatic zones defined by characteristics, acclimatization, morbidity / mortality (polar, temperate, tropical,



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continental, maritime climate). Notions of meteoropathology: meteorosensitivity, meteorotropism, primary and secondary prophylaxis in meteoropathology

9. Energy requirement: basal metabolism and additional energy expenditure (food-induced thermogenesis, muscle activity, thermoregulation under unfavorable microclimate conditions); the effects of caloric under-nutrition (causes, consequences); the effects of caloric overheating (forms, consequences). High calorie nutrient requirements (proteins, carbohydrates and lipids) and noncalorogens (water-soluble and fat-soluble vitamins, minerals): classification of nutrients by biological value, role in nutrition, quantitative and qualitative requirements, food sources, effects of inadequate consumption (deficient, exaggerated). The need for nutrients (proteins, carbohydrates and lipids) and no calorogenic substances (water-soluble and liposoluble vitamins, mineral elements): classification of nutrients according to their biological value, role in nutrition, quantitative and qualitative needs, food sources, inappropriate consumption.

10. The need for natural foods: milk and milk derivatives; meat and meat products; eggs. Forms of consumption and ways of obtaining; composition and nutritional value; necessary; the effects of inappropriate consumption (flawed, exaggerated)

11. The need for natural foods: vegetables and fruits; cereal derivatives and dried legumes; dietary fats; sugar products; drinks. Forms of consumption and methods of obtaining; composition and nutritional value; necessary; the effects of inadequate consumption (deficient, exaggerated)

12. Chemical contamination of food, risk of non-infectious pathology. Contamination of food with nitrites, nitrates, nitrosamines, mycotoxins and the effects on consumers. Natural chemical contaminants from inedible mushrooms and the effects on consumers. Biological contamination of food, risk of infectious pathology. Bacterial infectious diseases (food poisoning, typhoid fever and paratyphoid fevers, bacillary dysentery, cholera), viral infectious diseases (viral hepatitis A, poliomyelitis), parasitic infectious diseases (geohelminthiasis, trichinosis, tapeworm), botryoccephalosis. Prophylaxis: general measures for foods of animal and plant origin, measures for food groups.

13. Direct indicators of children's and adolescents' health: somatic and pubertal development (general principles of development for the body, by tissues and devices, by sex; staging of pubertal maturation; factors with a formative role in development; acceleration of development; variability of anthropometric indicators with age; dynamics of body proportions with age); neuropsychic maturation (general and particular laws of different periods of development; factors influencing neuropsychic development: heredity, environment, education; neuropsychic staging according to the morpho-physiological, social, schooling criteria; neuropsychic development by age groups; intellectual performance and school failure).



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14. Direct indicators of children's and adolescents' health: the adaptation of the growing organism to the instructive-educational process. The life program appreciated by the hygienic peculiarities of the ages, food, games and toys for children, the instructive-educational program, rest and sleep, the increase of non-specific resistance by hardening the body and physical education. The institutionalized program according to the work capacity, the physiological norms regarding the activity and rest by age groups, the school schedule, the school success, the school and professional orientation. Health risk behaviors: eating habits, smoking, alcohol consumption, drug use, sexual behavior, aggression, suicide, accidental behaviors, oral hygiene, physical and mental disability, addressed by general considerations, causes, health risks, prevention and control measures.

## **2. BIBLIOGRAPHY**

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3. Brigitha Vlaicu, Sorina Doroftei, Cristina Petrescu, Salomeia Putnoky, Corneluța Fira-Mlădinescu, Elemente de Igiena copiilor și adolescenților, Editura Solness, Timișoara, 2000, PAGINA WEB
4. Brigitha Vlaicu, Tuță-Sas Ioana, Băcean Miloicov Codruța, Putnoky Salomeia, Fira-Mladinescu Corneluța, Note teoretice și practice de nutriție și economia nutriției, ISBN 978-973-0-28535-2, Timișoara, 2018