

## Learning Objectives in Pathophysiology

### IV semester module No. 14 "Environment and Health"

1. Damaging effects of different types of radiation on the organism
2. Injury Produced by ionizing radiation
3. Main determinants of the biologic effects of ionizing radiation
4. Pathogenesis of main disorders developed after exposure to ionizing radiation
5. Effects of ionizing radiation on DNA and their consequences
6. Effects of ionizing radiation - carcinogenesis
7. Acute radiation effects on specific organs and organ systems
8. Pathogenesis of acute radiation sickness
9. Chronic radiation sickness
10. Effects of whole-body ionizing radiation – major consequences of radiation
11. Damaging effects of high temperature on organism
12. Thermal injury
13. Thermal burns (stages of burn, full thickness/partial thickness)
14. Thermal inhalation injury
15. Burn disease, pathogenesis
16. Pathogenesis of burn shock (hypovolemic, septic)
17. Mechanism of false/relative polycythemia at burn disease
18. Hyperthermia
19. Factors supporting development of hyperthermia
20. Factors affecting heat emission
21. Heat cramps
22. Heat exhaustion
23. Heat stroke, pathogenesis
24. Damaging effects of low temperature on organism
25. Compensatory reactions of organism at low ambient temperature
26. Supporting conditions of hypothermia
27. The direct effect of freezing
28. The indirect effects of freezing

29. „Trench foot“
30. Electrical injury
31. Determinants of outcome severity at electrical traumas
32. Local effects of electrical current
33. General effects of electrical current
34. Basic principles regarding the toxicity of exogenous chemicals and drugs
35. Injury by therapeutic agents – oral contraceptives, acetaminophen, acetylsalicylic acid (aspirin)
36. Injury by Nontherapeutic Agents (Drug Abuse)
37. Drug addiction, overdose
38. Mechanism of cocaine abuse
39. Mechanism of heroin (opioids) action
40. Mechanism of marijuana abuse
41. Harmful effects of tobacco on the body
42. Effects of selected tobacco smoke constituents
43. Common diseases caused by cigarette smoking
44. Maternal smoking
45. Passive smoke inhalation
46. Harmful effects of alcohol on the body
47. Metabolism of alcohol
48. Toxic effects of ethanol metabolism
49. Acute alcoholism
50. Effects of acute alcoholism on different organs
51. Chronic alcoholism
52. Effects of chronic alcoholism on different organs