

## Learning Objectives in Pathophysiology

V semester module No. 15

### **„ Reaction of the organism on disorders"**

- 1. Typical forms of cell damage**
- 2. Dystrophy**
- 3. Dysplasia**
- 4. Paranecrosis**
- 5. Necrobiosis**
- 6. Necrosis**
- 7. Apoptosis**
- 8. General mechanisms of cell damage**
- 9. Mechanisms of cell membrane damage**
- 10. Mechanisms of disorders of cell respiration**
- 11. Cell protection-compensatory mechanisms**
- 12. Atrophy**
- 13. Hypertrophy**
- 14. Hyperplasia**
- 15. Metaplasia**
- 16. Dysplasia**
- 17. Exo- and endogenous factors of cell damage**
- 18. The role of nitric oxide in cellular processes**
- 19. Disorders of energy processes in the cell**
- 20. The role of lipid peroxidation in cell damage**
- 21. Causes and consequences of cell hypoxia**
- 22. Cell damage by oxygen**
- 23. Non-specific manifestations of cell damage**
- 24. General adaptation syndrome**
- 25. The essence of adaptation**
- 26. Stress reaction**
- 27. Stages of general adaptation syndrome**
- 28. Mechanism of General adaptation syndrome**
- 29. Alarm Stage of Stress-reaction**
- 30. Stress-reaction resistance stage**
- 31. Stress-reaction exhaustion stage**
- 32. diseases of altered Adaptation**
- 33. Stress (heat shock) proteins**

34. Acute phase reactions
35. Effects of interleukin-1
36. C-reactive protein
37. Haptoglobin
38. Results of activation of proteolytic systems
39. Basic principles of hydrodynamics and their importance in local hemocirculation
40. Arterial hyperemia - etiology and pathogenesis
41. Microcirculation changes during arterial hyperemia
42. Venous hyperemia etiology and pathogenesis
43. Microcirculation changes during venous hyperemia
44. Consequences of venous hyperemia
45. Ischemia - etiology and pathogenesis
46. Signs of ischemia
47. Ischemic forms
48. Compression ischemia
49. Obturational ischemia
50. Neurotonic ischemia
51. Neuroparalytic ischemia
52. Postischemic hyperemia
53. Results of ischemia
54. Microcirculation during ischemia
55. Causes of disorders of microcirculation at ischemia
56. Sludge phenomenon, its causes
57. Mechanism of Sludge
58. Causes and mechanisms of stasis
59. Ischemic stasis
60. Congestive stasis
61. True capillary stasis
62. Thrombosis
63. Mechanism of thrombosis
64. Types of Thrombi
65. Blood vessel wall in thrombus formation
66. Thromboplastin, thrombin, fibrinogen in thrombus formation
67. Thrombasthenin and thrombus retraction
68. Basic moments of arterial thrombus formation
69. Venous thrombus formation
70. The main difference between arterial and venous thrombus formation
71. Outcome of Thrombosis
72. Disseminated intravascular coagulation
73. Forms of embolism according to etiology
74. Types of Emboli
75. Embolism of large blood vessels

76. Embolism of small blood vessels
77. Syndrome of cor-pulmonale
78. Clinical forms of ischemia
79. Regulation of water exchange in norm and at pathological conditions
80. Significance of blood hydrodynamic, osmotic, and colloid-osmotic pressure changes
81. Forms of disorders of water metabolism (types of hyperhydration and hypohydration)
82. Pathogenesis of edema formation
83. Mechanism of cardiac edema
84. Mechanism of nephritic edema
85. Mechanism of development from nephrotic edema
86. Mechanism of development of cachexic edema
87. Exicosis, its causes and pathogenesis
88. Disorders of sodium, potassium, calcium, magnesium and microelements concentration
89. Disorders of the ratio of electrolytes and water at the cellular and subcellular level
90. Disorders of electrolytes
91. Inflammation, etiology
92. Alteration and inflammatory process
93. Cellular components of inflammation
94. Inflammatory redness mechanism
95. Hemodynamic alterations at inflammation
96. Mechanism of capillary dilatation at inflammation
97. Linear and volumetric speed of blood flow during acute inflammation
98. Comparative characterization of hemodynamic during inflammation, arterial and venous hyperemia
99. "Secondary alteration" and lysosomal enzymes
100. Mechanism of exudation
101. Results of exudate accumulation
102. Leukocyte emigration mechanism
103. Mechanism of Inflammatory edema
104. Reaction of Leukocytes during inflammation
105. Margination and adhesion of leukocytes during inflammation
106. Phagocytosis during inflammation
107. Classification of inflammatory mediators
108. Cellular and plasma mediators of inflammation
109. Vasoactive amines
110. Plasma proteases
111. Arachidonic acid metabolites
112. Oxygen free radicals
113. Platelet activation factor
114. Cytokines
115. Mechanism of formation and effects of inflammatory mediators
116. Types of exudate

- 117. Serous exudate**
- 118. Fibrinous exudate**
- 119. Purulent exudate**
- 120. Hemorrhagic exudate**
- 121. PaOutcome of acute inflammation**
- 122. Importance of inflammation for the organism**
- 123. Chronic inflammation**
- 124. Leukotrienes and macrophages in chronic inflammation**
- 125. Lymphocyte-derived collagen in chronic inflammation**
- 126. Cells and fibrous elements involved in chronic inflammation**
- 127. The essence of fever, its general characteristics**
- 128. Fever**
- 129. Difference between Hyperthermia and fever**
- 130. Primary and secondary pyrogens, mechanisms of action**
- 131. Stages of fever**
- 132. Types of fever**
- 133. Biological significance of fever**
- 134. Pathophysiological principles of antipyretic therapy**
- 135. Use of fever in medicine. Pyrotherapy**