

# Learning Objectives for pharmacy students

## Pathophysiology 1

1. Pathology essence, purpose, components
2. Health and disease
3. Disease classification, nomenclature, stages
4. Pathological reaction, pathological process and pathological condition
5. Death, reviving the body, post-resuscitation pathology
6. General etiology
7. General pathogenesis
8. Typical forms of cell damage, dystrophy, dysplasia
9. Cell necrosis, apoptosis, mechanism of their development
10. General mechanisms of cell damage. Cell damaging factors, disruption of energy processes in the cell
11. Mechanisms of cell membrane damage
12. Free radical oxidation and antioxidant system
13. Specific and non-specific manifestations of cell damage
14. General adaptation syndrome, stress reaction
15. Acute phase reactions. Activation of the proteolytic system
16. Shock, its pathogenesis and types
17. Collapse, coma, their pathogenesis
18. Damage effect of mechanical factors on the body. Traumatic injuries of the skull.
19. Damage effect of thermal factors on the body. Body overheating, heat stroke, their pathogenesis
20. Burn disease, its stages
21. Mechanism of damaging effects of low temperature on the body
22. Mechanism of damaging action of ionizing radiation
23. Radiation sickness. its effects
24. The role of body constitution in pathology
25. The role of body reactivity in pathology

26. Types of hypoxia
27. Arterial hyperemia: causes, mechanisms and consequences. Microhemocirculation during arterial hyperemia
28. Venous hyperemia: causes, mechanisms and consequences. Microhemocirculation during venous hyperemia
29. Ischemia: causes, consequences, microhemocirculation during ischemia
30. Thrombosis, disseminated intravascular coagulation, mechanisms of their development.
31. Embolism, its types
32. The essence of inflammation, its etiology. Vascular response during inflammation
33. Exudation, mechanism of its development. Types of exudate
34. Emigration of leukocytes. Phagocytosis and degranulation, mechanisms of their development
35. Mediators of inflammation, their mechanisms of action and effects
36. Forms of inflammation (alterative, exudative, proliferative). Pathogenesis of pain during inflammation.
37. Effects of inflammation on the body. Its importance for the body
38. Pathogenesis of chronic inflammation
39. Allergy: etiology, classification, general mechanisms of development
40. Pathogenesis of hypersensitivity type I (anaphylactic).
41. Type II (cytotoxic) hypersensitivity. pathogenesis
42. III (Artus) type of hypersensitivity, its mechanism
43. Pathogenesis of IV (tuberculin) type of hypersensitivity
44. Fever, its comparative pathology. Pyrogenic substances. The role of the CNS in the development of fever
45. Stages of fever. Difference between fever and hyperthermia.
46. Changes in functions of organs and systems during fever
47. The importance of fever for the body, its use in medicine
48. Hyperbiotic processes - hypertrophy and dysplasia, mechanisms of their development
49. Regeneration, wound healing, their mechanisms
50. Development mechanisms of hypobiotic processes
51. Sclerosis. Its etiology and pathogenesis

52. Pathophysiology of tumor growth. Character of growth and differentiation
53. Tumor metastasis, its main stages
54. Biological features of malignant growth. Interdependence of the organism and tumor
55. Etiology of tumors. carcinogenic factors
56. Neoplastic transformation of the cell. Antiblastoma resistance of the organism
57. Morphology of tumors. Classification of tumors.
58. Principles of treatment of oncological diseases
59. Mechanisms of violation of carbohydrate exchange regulation. Types of hyperglycemia and glucosuria, mechanisms of their development
60. Diabetes. Its etiology and pathogenesis
61. Hypoglycemia. Its clinical manifestations
62. Obesity, its types and mechanisms of development
63. Forms of violation of water exchange
64. Swelling and its types
65. Typical forms of vitamin metabolism disorders – hyper- and hypovitaminoses, mechanisms of their development
66. Mechanism of violation of exchange of vitamins A, D, K, C
67. Violation of metabolism of B-group vitamins