

Subject: Pathological physiology 2	Subject type:	Compulsory
Study year: 3	Content:	3/3 summer semester
Study program: General Medicine		

Aim of the course

Pathophysiology is the essential part of pre-clinical medical education. Pathological Physiology 2 provides a systematic review of pathophysiology of organ systems. It is devoted to analysis and explanation of pathomechanisms involved in functional disturbances of the organs and systems of the organism such as cardiovascular system, respiratory system, nervous system, endocrinology, gastrointestinal tract and connective tissue.

The course is included in the summer semester of the 3rd year of study. The prerequisite subjects are Pathological Physiology 1 and Medical Biochemistry 1. Pathophysiology is an integrative biomedical subject that helps to understand the mechanisms of diseases. It is an important part of undergraduate medical education and a necessary prerequisite for the study of clinical subjects.

Education: lectures/seminars

Assessment: exam (written and oral)

Syllabus

Week 1

Cardiovascular system I: Congenital heart diseases; Congenital and acquired valve defects; Heart failure; Electrical activity of the heart – action potential, conduction system of the heart
Introduction to ECG diagnostics

Week 2

Cardiovascular system II: Atherosclerosis; Coronary heart diseases – acute and chronic; Cardiomyopathy; Myocardial infarction, angina pectoris, ECG diagnostics of the myocardial infarction

Week 3

Cardiovascular system III: Dysrhythmias – etiology, mechanisms, classification, ECG diagnostics; Systemic hypertension

Week 4

Cardiovascular system IV: Hypotension, collapse, syncope
Respiratory system I: Pathophysiology of the basic manifestations of respiratory diseases; Pulmonary hypertension, Pulmonary embolism; Respiratory failure; Disorders of ventilation, Sleep apnea; Ventilometric parameters - spirometry

Week 5

Respiratory system II: Obstructive and restrictive lung diseases; Pulmonary edema; Manifestation of heart and pulmonary disorders; Heart and lung murmurs

Week 6

Nervous system I: Pathophysiology of the main clinical manifestations of motor dysfunction;
Motor disorders; Spinal cord disorders

Week 7

Nervous system II: Multiple sclerosis
Review of knowledge

Week 8

Nervous system III: Somatosensory disorders; Autonomic nervous system; neuromuscular
diseases; Epilepsy

Week 9

Nervous system IV: Neurodegenerative disorders; Dementia; Cerebrovascular diseases
Endocrine system I: Thyroid disorders

Week 10

Endocrine system II: Mechanisms of hormonal regulation disorders; Hypothalamic-pituitary
diseases; Adrenal diseases; Parathyroid diseases; Gonadal disorders

Week 11

Endocrine system III: Diabetes mellitus; Complications of Diabetes mellitus
Gastrointestinal tract I: Pathophysiol. of the main clinical manifestations of GIT diseases,
Diseases of the of the oral cavity, esophagus

Week 12

Gastrointestinal tract II: Pathophysiology of the stomach, small and large intestines; liver and
gallbladder; Pancreas diseases

Week 13

Nervous system III: Pathophysiology of the senses – vision, hearing
Review of knowledge

Week 14

Connective tissue: Pathophysiology of the bones and joints
Discussion of selected topics, knowledge assessment, evaluation of semester, credits