

Study program: Integrated Academic Studies in Dental Medicine
Course title: Pathophysiology
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Course status: compulsory
ECTS Credits: 6
Condition Anatomy, Histology and Embryology (entrance); Medical Chemistry, Medical Biochemistry, Physiology (exam)
<p>Course aim</p> <p>The study of particular etiological factors, their interaction with particular structures of the organism and how they lead to the initiation of the pathological process. The study of the genesis of the pathological processes, the emergence of humoral and tissue functional disorders, and functional disorders of different organs and organ systems. Understanding the general principles of organ and organ system disorders. Introduction to the basic principles of functional testing used in the diagnostic procedure for determining changes in the function of the diseased organ or the whole organism.</p>
<p>Expected outcome of the course:</p> <p>Knowledge: Training students to identify the causative agents of the disease, understanding the mechanisms of the onset of impaired function in the diseased organ and organ system, how to respond and adapt the diseased organism and pathophysiological disorders leading to appropriate clinical manifestations of the disease.</p> <p>Skills: Training students to understand the basic principles of performing individual laboratory and different functional tests used in modern laboratory diagnostics, procedures for preparing patients in order to obtain different biological material. Training to use the most important laboratory parameters (results of different functional tests), as well as the changing of their values in various pathophysiological disorders, diseases and pathological conditions. Training to interpret the findings of individual functional testing.</p>
<p>Course description</p> <p><i>Theoretical education</i></p> <ul style="list-style-type: none"> - Etiological factors in diseases. Etiology and pathogenesis of the disease. Inflammation. Fever. Barrier disorders and phagocyte functions. - Immunity disorders as an etiological factor of disease. - Chemical agents as an etiological factor of disease. - Malignant neoplasia as an etiological factor in diseases. - Eating disorders as an etiological factor of disease. - Vitamin metabolism disorders. The role of enzymes in the etiopathogenesis of the disease and clinical diagnosis. - Disorders of protein metabolism. - Disorders of carbohydrate metabolism. - Disorders of lipid metabolism and pathogenesis of atherosclerosis. - Disorders of body fluid, electrolyte and acid-base balance. - Physical etiological factors. The effect of heat on the body. The effect of changes in atmospheric pressure on the organism. The effect of cold on the body. The effect of mechanical factors, electric currents and electromagnetic radiation. The effect of radiation on the human body. - Pathophysiology of the cardiovascular system. - Pathophysiology of the respiratory system. - Pathophysiology of the digestive tract. - Pathophysiology of the liver. - Pathophysiology of the kidney. - Pituitary and gonadal disorders. General adaptation syndrome. - Thyroid disorders. - Calcium and phosphorus homeostasis, calcitropic mediators and bone metabolism. - Disorders of adrenal glands. - Red blood cell disorders. - White blood cell disorders. - Disorders of hemostasis and thrombosis. - Pathophysiology of the nervous system. - Pathophysiology of the locomotor system.

- Pathophysiology of Dental Diseases. Stomatitis. Gingivitis. Tooth decay. Parodontopathies.

Practical education

- Basic functional evaluation in inflammation.
- Basic functional testing of protein metabolism.
- Functional examination of basic disorders of carbohydrate metabolism.
- Functional evaluation of lipid metabolism.
- Functional examination of basic disorders of calcium, phosphorus and bone metabolism.
- Functional evaluation of the thyroid gland.
- Functional evaluation of the red blood cells.
- Basic white blood cell functional testing.
- Functional examination of hemorrhagic syndromes.
- Functional testing of the hemostatic system in thrombosis.
- Functional testing of the cardiovascular system.
- Basic functional liver testing.
- Basic functional examination of the digestive tract (stomach and pancreas).
- Basic functional testing of the respiratory system.
- Basic kidney function testing.

Literature

Compulsory

1. Norris TL, Lalchandani R. Porth's Pathophysiology: Concepts of Altered Health States. Tenth Edition. Philadelphia: Wolters Kluwer; 2019.

Additional

1. Huether SE, Mc Cance KL. Understanding Pathophysiology. 6th edition. St. Louis, Missouri: Elsevier; 2016.
2. Hammer GH, Mc Phee JS. Pathophysiology of disease. An Introduction to Clinical Medicine, 7th ed. New York: McGraw-Hill Education; 2014.
3. Đerić M, ed. Practical Handbook of Pathophysiology [CD-ROM]. Novi Sad: faculty of Medicine; 2019.

Number of active classes	Theoretical classes: 60	Practical classes: 30
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Teaching methods

Interactive theoretical and practical education, Consultation, Seminars.

Student activity assessment (maximally 100 points)

Pre-exam activities	points	Final exam	points
Lectures	10	Written	15
Practices	15	Oral	45
Colloquium	5	
Essay	10		