

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES
AT VILNIUS UNIVERSITY**

Scientific Area/eas, Field/ds of Science	Medical and Health Sciences (M 000): Medicine M 001			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Clinical medicine Clinic of Internal Diseases, Family Medicine and Oncology			
Course unit title (ECTS credits, hours)	Obesity and Endocrine Hypertension (5 credits, 135 hours.)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	1	4
Method of the assessment (in 10 point system)	<p>Doctoral course unit will be assessed during the exam, where PhD student will have to provide written and oral answers to 3 open questions and solve one clinical case. Final exam score will be calculated as an arithmetical mean of all four scores.</p> <p>Assessment of each question/clinical case will be based on 10 points grading system:</p> <p>10 points – excellent knowledge and capabilities; 9 points – very good knowledge and capabilities; 8 points – good knowledge and capabilities; 7 points – average knowledge and capabilities; 6 points – satisfactory knowledge and capabilities; 5 points – poor knowledge and capabilities; 4 points – does not meet minimal requirements</p>			
PURPOSE OF THE COURSE UNIT				
<p>To provide the latest theoretical and practical knowledge about the endocrine causes of obesity and hypertension, emphasizing differential diagnosis, modern diagnostic and treatment options. To promote the ability to integrate knowledge into clinical practice, discuss and make evidence-based decisions. To encourage the application of research skills, learn to collect, analyze, interpret and present research data. To develop a holistic approach to the patient with arterial hypertension and obesity.</p>				
THE MAIN TOPICS OF COURSE UNIT				
<p>I. Obesity</p> <ol style="list-style-type: none"> 1. Epidemiology of obesity and overview of general issues. 2. Neuroendocrine regulation of appetite. 3. Physiology of energy metabolism. Peculiarities in obesity. 4. Endocrine function of adipose tissue. 5. The concept of metabolically normal obesity. 6. Complications of obesity, diagnosis, long-term patient care and prognosis. 7. Endocrine causes of obesity – differential diagnosis. Endocrine disorders associated with obesity: <ul style="list-style-type: none"> • Hypothyroidism – etiology, diagnosis, differential diagnosis, treatment. • Cushing syndrome – classification (ACTH-dependent and ACTH-independent), diagnosis, differential diagnosis, treatment. • Polycystic ovary syndrome – diagnostic criteria, differential diagnosis, treatment. • Growth hormone deficiency – etiology, diagnosis, treatment. • Hypothalamic obesity – etiology, mechanisms of development, treatment. 				

- Hypogonadism – etiology, pathogenesis, symptoms, diagnosis, treatment.
 - Weight changes during menopause and andropause.
 - Insulinoma – symptoms, diagnosis, differential diagnosis, treatment.
8. Pseudohypoparathyroidism – etiology, pathogenesis, symptoms, diagnosis.
 9. Syndromic obesity – gene mutations, hormonal abnormalities, diagnosis, treatment. Prader-Willi syndrome.
 10. Iatrogenic causes of obesity – antidiabetic drugs, corticosteroids.
 11. Non-pharmacological treatment and drug therapy: physical activity, nutrition and diet, weight loss medications: indications, evaluation of treatment effectiveness.
 12. Bariatric surgery: indications, types of operations, complications, effectiveness.

II. Hypertension

1. Epidemiology of hypertension and overview of general issues.
2. Complications of hypertension, target organ damage, prognostic factors of the disease.
3. Causes of endocrine hypertension:
 - 3.1. Adrenal dependent causes:
 - Aldosteronism – classification (primary and secondary), diagnosis, differential diagnosis, treatment.
 - ACTH-independent Cushing syndrome – classification, diagnosis, differential diagnosis, treatment.
 - Challenges in the diagnosis and treatment of the ectopic Cushing syndrome.
 - Pheochromocytoma and sympathetic paraganglioma – classification, diagnosis, differential diagnosis, treatment.
 - Acute cardiac syndromes associated with pheochromocytoma - challenges of differential diagnosis and treatment
 - 3.2. Pituitary dependent causes:
 - Acromegaly – diagnosis, treatment.
 - Cushing disease – diagnosis, treatment.
 - 3.3. Calcium and vitamin D metabolism disorders:
 - Vitamin D deficiency
 - Hyperparathyroidism – classification, diagnosis, differential diagnosis, treatment.
 - Challenges in the diagnosis and treatment of hypertension in secondary hyperparathyroidism and renal insufficiency.
 - 3.4. Thyroid-dependent causes:
 - Hyperthyroidism – diagnosis, differential diagnosis, treatment.
 - Amiodorone induced thyroid dysfunction, etiopathogenesis.
 - Cardiovascular damage in thyroid disorders – diagnosis, differential diagnosis, treatment.
 - Hypothyroidism - diagnosis, differential diagnosis, treatment.

RECOMMENDED LITERATURE SOURCES

1. Williams Textbook of Endocrinology, Fourteenth Edition, Elsevier, 2020.
<https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20160054128>

2. Winter, William E. Handbook of Diagnostic Endocrinology, Third Edition, Elsevier, 2021.
<https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20170001039>
3. Shifrin Alexander L. Endocrine Emergencies, First Edition, Elsevier, 2022.
<https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20190031184>
4. David G. Gardner, Dolores Shoback. Greenspan's Basic & Clinical Endocrinology, 10th Edition, McGraw Hill, 2018.
<https://accessmedicine.mhmedical.com/book.aspx?bookID=2178>
5. Christian A Koch, George P Chrousos. Endocrine Hypertension, Humana Press, 2013.
<https://link.springer.com/book/10.1007/978-1-60761-548-4>
6. Emiliano Corpas. Endocrinology of Aging, Elsevier, 2021.
<https://doi.org/10.1016/B978-0-12-819667-0.09995-9>.
(<https://www.sciencedirect.com/science/article/pii/B9780128196670099959>)
7. Hironori Ando, Kazuyoshi Ukena, Shinji Nagata. Handbook of Hormones (Second Edition), Academic Press, 2021.
<https://doi.org/10.1016/B978-0-12-820649-2.09990-3>.
(<https://www.sciencedirect.com/science/article/pii/B9780128206492099903>)
8. Amir Hamrahian. Endocrine Hypertension, An Issue of Endocrinology and Metabolism Clinics: Volume 48-4, Elsevier, 2019.
<https://www.elsevier.com/books/endocrine-hypertension-an-issue-of-endocrinology-and-metabolism-clinics/978-0-323-68323-4>
9. Katharine Owen, Helen Turner, John Wass. Oxford Handbook of Endocrinology and Diabetes, Fourth Edition, Oxford University Press, 2022.
<https://oxfordmedicine.com/view/10.1093/med/9780199644438.001.0001/med-9780199644438>
10. Manuel Faria, Francisco Bandeira, Luiz Griz, Hossein Gharib. Endocrinology and Diabetes: A Problem Oriented Approach, Second Edition, Springer, 2022.
<https://www.kriso.lt/endocrinology-diabetes-problem-oriented-approach-2nd-db-9783030906832.html?lang=eng>

CONSULTING LECTURERS

1. Coordinating lecturer: Žydrūnė Visockienė (Assoc. Prof. Dr.).

2. Laura Šiaulienė (Assist. Prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė