

**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 Neurology and Neurosurgery			
Course unit title (ECTS credits, hours)	Headache Disorders 6 credits (162 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	1	5
Method of the assessment (in 10 point system)	Oral examination. Five questions will be provided.			
PURPOSE OF THE COURSE UNIT				
<p>To provide knowledge about the prevalence and burden of headache disorders globally and in Lithuania. To acquaint with the classification of headache, the concept of chronic headache, the mechanisms of the pathophysiology of primary headache diseases, medication overuse headache, trigeminal neuralgia, animal and human models for headache studies, mechanisms of action of modern specific migraine drugs, and neuromodulation. Introduce the importance of a multidisciplinary team for headache management and provide up-to-date information on COVID-19 induced headaches.</p>				
THE MAIN TOPICS OF COURSE UNIT				
<p><u>Epidemiology and burden of headache disorders.</u> Prevalence of primary headache disorders in the world and in Lithuania. Diagnostic challenges in clinical practice. Individual and global burden of headache disorders, questionnaires on headache severity, paper headache diaries, and electronic applications. The concept of chronic headache.</p> <p><u>Classification of headache disorders, diagnostic principles of primary and secondary headache disorders.</u> III International Classification of Headache Diseases. Basic diagnostic criteria for primary headache. Investigation plan for a patient with suspected secondary headache: findings of fundoscopy; imaging of the brain and spinal cord, intracranial vessels; evaluation of cerebrospinal fluid pressure and composition; blood parameters important for headache diagnosis.</p> <p><u>Migraine.</u> The main types complications, and comorbidity of migraine. Migraine genetics. Animal and human models. Pathophysiology: role of cortical spreading depolarization, hypothalamus, trigeminovascular system, and calcitonin gene-related peptide (CGRP). Acute and prophylactic treatment: indications and criteria of efficacy. Mechanisms of action of specific migraine treatment (triptans, ditans, gepants, anti-CGRP monoclonal antibodies) and neuromodulation (external trigeminal nerve stimulation, non-invasive vagal nerve stimulation, transcranial magnetic stimulation, remote electrical stimulation). The role of a multidisciplinary team in migraine management.</p> <p><u>Tension-type headache.</u> Classification, pathophysiology, principles of treatment.</p> <p><u>Trigeminal autonomic cephalalgias.</u> Classification. Pathophysiology of cluster headache: the role of the hypothalamus, trigeminovascular system, trigeminocervical complex, and autonomic system. Principles of treatment of cluster headache attack and cluster period. Indomethacin-responsive headache disorders.</p> <p><u>Medication overuse headache.</u> Risk factors, strategies of detoxification, and prophylactic treatment.</p>				

Trigeminal neuralgia. Classification, instrumental examination, medical and surgical treatment. Other causes of facial pain: trigeminal neuropathy, temporomandibular pathology.

COVID-19 and headache. Headaches caused by SARS-CoV2 and COVID-19 vaccination, changes in primary headache disorders after COVID-19, and quarantine, personal protective equipment induced headache, advantages, and disadvantages of remote consultation.

RECOMMENDED LITERATURE SOURCES

1. Headache Classification Committee of the International Headache Society (IHS). The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018; 38(1): 1–211.
2. CONTINUUM: lifelong learning in neurology. Headache. Ed. Lewis S. 2021; 27 (3). ISSN: 1080-2371.
3. Rastenytė D, Mickevičienė D, Stovner LJ, et al. Prevalence and burden of headache disorders in Lithuania and their public-health and policy implications: a population-based study within the Eurolight Project. J Headache Pain 2017; 18(1). doi: 10.1186/s10194-017-0759-5.
4. Vos T, Abajobir AA, Abbafati C, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: A systematic analysis for the Global Burden of Disease Study 2016. Lancet 2017; 390(10100): 1211–59.
5. Katsarava Z, Mania K, Lamp Ch, et al. Poor medical care for people with migraine in Europe – evidence from the Eurolight study. J Headache and Pain 2018; 19: 10. doi: 10.1186/s10194-018-0839-1.
6. Ashina M, Katsarava Z, Do T, et al. Migraine: epidemiology and systems of care. Lancet 2021; 397: 1485–95.
7. Steiner TJ, Jensen R, Katsarava Z, et al. Aids to Management of Headache Disorders in Primary Care (2nd Edition): On Behalf of the European Headache Federation and Lifting the Burden: The Global Campaign against Headache. J Headache Pain 2019; 20(1): 57. doi: 10.1186/s10194-018-0899-2.
8. Schulte L, May A. The migraine generator revisited: continuous scanning of the migraine cycle over 30 days and three spontaneous attacks. Brain 2016 1-7.
9. Nosedá R, Burstein R. Migraine pathophysiology: anatomy of the trigeminovascular pathway and associated neurological symptoms, cortical spreading depression, sensitization, and modulation of pain. Pain 2013;154, S44-53.
10. Ashina M, Terwindt G, Al-Karagholi M, et al. Migraine: disease characterisation, biomarkers, and precision medicine. Lancet 2021; 397: 1496-504.
11. Edvinsson L, Haanes KA, Warfvinge K, et al. CGRP as the target of new migraine therapies – successful translation from bench to clinic. Nat Rev Neurol 2018; 14(6): 338–50.
12. Halker Singh RB, Ailani J, Robbins MS. Neuromodulation for the acute and preventive therapy of migraine and cluster headache. Headache 2019; 59(S2): 33–4.
13. Diener HC, Dodick D, Evers S, et al. Pathophysiology, prevention, and treatment of medication overuse headache. Lancet Neurol 2019; 18: 891-902.
14. Bendtsen L, Zakrzewska J, Abbott J, et al. European Academy of Neurology guideline on trigeminal neuralgia. Eur J Neurol 2019, 26: 831–49.
15. Ziegler Ch, Beikler Th, Gosau M, et al. Idiopathic facial pain syndromes. Dtsch Arztebl Int 2021; 118: 81–7.

KONSULTUOJANTYS DĖSTYTOJAI

1. Coordinating lecturer: Kristina Ryliškienė (Assoc. Prof. Dr.).

2. Dalius Jatužis (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