

**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 Health Sciences Department of Rehabilitation, Physical and Sports Medicine			
Course unit title (ECTS credits, hours)	Comprehensive Rehabilitation in Patients after Cerebrovascular Disorders 8 credits (212 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	1	7
Method of the assessment (in 10 point system)	Exam (in written form). The written exam task consists of 4 open questions. The value of the each question is 2.5 points.			
PURPOSE OF THE COURSE UNIT				
<p>The purpose of the course is to provide knowledge about comprehensive rehabilitation interventions and methods in patients after cerebrovascular disorders in order to restore the patient's biopsychosocial functions or, in the case of irreversible changes in the body, to compensate or maintain the patient's biopsychosocial functional capacity; and to introduce the methodologies for evaluation of rehabilitation effectiveness.</p>				
THE MAIN TOPICS OF COURSE UNIT				
<p>Classification of cerebrovascular disorders. Ischemic cerebrovascular disorders: asymptomatic stage, transitory ischemic attack, reverse ischemic neurological deficit, stroke. Ischemic stroke: etiology, pathogenesis, clinic. Pilot strokes. Hypertensive encephalopathy. Binswanger disease. Vascular dementia. Hemorrhagic cerebrovascular disorders: etiology, pathogenesis, clinic. Classification of hemorrhagic cerebrovascular disorders: supratentorial haemorrhage, subtentorial haemorrhage, subarachnoid haemorrhage.</p> <p>Principles of treatment. Organizational structure of rehabilitation: rehabilitation in the first, second and third stages, rehabilitative treatment, re-rehabilitation, supportive rehabilitation, anti-relapse treatment. Criteria and indications for these forms of rehabilitation. Rehabilitation tasks, organizational principles. Indications for rehabilitation after cerebrovascular accident. Socio - economic aspects of rehabilitation after cerebrovascular disorders. The impairment of biopsychosocial functions of patients after cerebrovascular disorders: movement and self-service, orientation and communication, control of information transfer and behavior, opportunities to work and study. Rehabilitation members: physical medicine and rehabilitation physician, physiotherapist, occupational therapist, speech therapist, psychologist, social worker, physical medicine and rehabilitation nurse, their interaction and cooperation with the patient and his relatives. The role of rehabilitation team members in rehabilitation after cerebrovascular disorders.</p> <p>Rehabilitation services: physiotherapy, occupational therapy, speech therapy, psychotherapy, provision of necessary social assistance, physical medicine, massage, prevention of complications, training of the patient and relatives, medical treatment. Methods for examination of a patient after cerebrovascular disorders during rehabilitation. Assessment of patients' functional independence (Barthel ind.,</p>				

FIM, ADL). Methods for physical fitness assessment in patients with cerebrovascular disorders. Formulation of rehabilitation goals: short-term and long-term goals.

Evaluation of the effect of physiotherapy, methodologies. Short-term and long-term goals of physiotherapy. Physiotherapy in the acute period after cerebrovascular accident: the significance of the patient's position in bed. Physiotherapy in later periods: methodology and goal setting of physiotherapy, methods of solving hemiplegic arm shoulder problems, methods for balance and mobility training, formation of correct step and gait. Active physiotherapy tools: exercise, balance and coordination training, gait training, and gait correction. Passive physiotherapy: positional treatment, passive joint flexion, mechanotherapy, massage.

The importance of occupational therapy, its goals in the acute and later periods. Occupational therapy models. Methods of training self-service functions. Assessment and training of hemiparesis arm functions: elimination of synergistic movements, training of coordination, training of fine motor skills, improvement of sensations. Methods for activation of hemiplegic arm, prevention of contractures. Cognitive dysfunctions, its assessment and development. Negative syndrome, its evaluation and methods of elimination. Household adaptation, aids.

Logotherapy. Classification of speech disorders. Voice disorders: aphonia, dysphonia, phonasthenia, rhinophony, mutation, dyslalia, dysarthria; systemic speech disorders: alalia, aphasia; written language disorders: alexia, dyslexia, agrography, dysgraphia; cognitive impairment agnosia. Types of aphasias: motor, sensory, sensorimotor, semantic, acoustic mnemonic, dynamic, motor efferent. Removal of aphasias. Removal of dysarthria. Articulation training exercises.

Complications and its prevention: hypostatic pneumonia, bedsores, contractures, changes in muscle tone, lack of patient motivation, perceptual impairment.

The use of physical factors in rehabilitation in patients after cerebrovascular disorders: muscle electrostimulation, sinusoidal modulated currents, diadynamic currents, magnetotherapy, laser therapy, darsonvalization, electrophoresis and its combination.

Psychological assistance for patients after cerebrovascular disorders. Stages of providing psychological help: assessment of the problem and its cause, concretization of the problem and ways to solve it, assessment of the patient's mental condition and development of an action plan, determination of criteria according to which the problem is assessed. Tools: autogenous training, relaxation exercises, aerophytomusic therapy, discussion groups, visualization.

The role of the social worker in rehabilitation in patients after cerebrovascular disorders. Areas of activity of a social worker: compensatory equipment, level of workability or special needs, benefits, continuation of employment, vocational guidance, employment, adaptation of the environment. Law on Social Integration of the Disabled. The nature of the social worker's activity in working with patients after cerebrovascular disorders. Opportunities to acquire and change a profession, institutions engaged in this activity.

Enrolment of patients and their family members in the rehabilitation program. Training and education on the prevention of complications and diseases.

The use of compensatory equipment and braces in rehabilitation after cerebrovascular disorders. Compensatory equipment in the. Compensatory walking aids, its selection and adaptation in each individual case. Standard and individual

braces to compensate for deficiency of various functions in patients after cerebrovascular disorders. Braces manufacturing technologies and companies.

RECOMMENDED LITERATURE SOURCES

1. Glen Gillen, Dawn Nilsen. Stroke Rehabilitation A Function-Based Approach. 5th Edition. 2020. Mosby. ISBN: 9780323639941.
2. Thomas Platz. Clinical Pathways in Stroke Rehabilitation. Evidence-based Clinical Practice Recommendations. 1st edition. 2021. Springer Nature. ISBN: 978-3-030-58504-4. URL: <https://library.oapen.org/handle/20.500.12657/46814>
3. Joel Stein et al. Stroke Recovery and Rehabilitation. 2nd Edition. 2014. ISBN: 978-1-6207-0006-8.
4. Leeanne M. Carey. Stroke Rehabilitation: Insights from Neuroscience and Imaging 1st Edition. 2012. Oxford University Press. ISBN: 0199797889.
5. Trevor Powell. The Brain Injury Workbook: Exercises for Cognitive Rehabilitation. 2nd edition. 2013. Routledge. ISBN-10:0863889786.
6. Ghalib Abdulah Alghamdi, Sultan Mohammed Samoun Benten, Abdulkarim SAI-Humaid. Assessment of Stroke in Physiotherapy: Stroke Evaluation. 2020. LAP LAMBERT Academic Publishing. ISBN-10:6203194050.
7. Dawn M. Nilsen, Timothy J. Wolf. Occupational Therapy Practice Guidelines for Adults With Stroke. 2015. AOTA Press. ISBN: 9781569003671.
8. Nadina B. Lincoln, Ian I. Kneebone, Jamie A. B. Macniven, Reg C. Morris. Psychological Management of Stroke. 2011. Wiley. ISBN: 978-1-119-95497-2.
9. Hebert D, Lindsay MP, McIntyre A, Kirton A, Rumney PG, Bagg S, et al. Canadian stroke best practice recommendations: Stroke rehabilitation practice guidelines, update 2015. Int J Stroke. 2016 Jun;11(4):459-84. doi: 10.1177/1747493016643553. <https://pubmed.ncbi.nlm.nih.gov/27079654/>
10. Winstein CJ, Stein J, Arena R, Bates B, Cherney LR, Cramer SC, et al. Guidelines for Adult Stroke Rehabilitation and Recovery: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. Stroke. 2016 Jun;47(6):e98-e169. doi:10.1161/STR.0000000000000098. <https://pubmed.ncbi.nlm.nih.gov/27145936/>
11. International Journal of Stroke: <https://journals.sagepub.com/home/wso>
12. Stroke (American Heart Association/American Stroke Association journal): <https://www.ahajournals.org/journal/str>

CONSULTING LECTURERS

1. Coordinating lecturer: Juozas Raistenskis (Prof. Dr.).
2. Svetlana Lenickienė (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