

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**

**NATIONAL UNIVERSITY OF UKRAINE  
ON PHYSICAL EDUCATION AND SPORT**

**FACULTY OF HEALTH, PHYSICAL EDUCATION AND TOURISM**

**Department of Physical Therapy and Occupational Therapy**

**SYLLABI OF THE EDUCATIONAL DISCIPLINE**

**«Physical Therapy in Gerontology and Geriatrics»**

**Second level of higher education: second (master's level)**

**Specialty: 227 Physical Therapy and Occupational Therapy**

**Specialization: Physical Therapy and Occupational Therapy**

**Code of discipline in the educational - professional program: MΦE.OK9**

**Education language: Ukrainian**

APPROVED by the decision  
of the Scientific and Methodological Council of the University

(protocol № 16 on August 29, 2018)

Head of the Scientific Methodical Council  
of the University

\_\_\_\_\_ M. Dutchak

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**RECOMMENDED:**

Department of Physical Therapy and Occupational Therapy  
(Meeting of the Department August, **protocol № 2 on August 27, 2018**)  
27, 2018, protocol No. 2)

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**Abstract of the discipline.** The discipline is aimed at forming the general and professional competences determined by the educational and professional program, in particular, the ability to analyze medical, social and personal problems based on the biopsychosocial model of disability (BMD); understanding of complex pathological processes and disorders that can be corrected by physical therapy measures. The amount of discipline is 5 ECTS credits. Main topics: modern ideas about old age and aging; factors that determine the health of older people and active longevity; physical therapy and occupational therapy with age-related structural and functional changes in various organs and systems. The final grade is based on the results of the current control and examination.

**The purpose of the discipline.** Formation of general and professional competencies, including the ability to understand the clinical diagnosis of the patient / client, the course of the disease, the principles and nature of the treatment defined by the educational and professional program; examination and determination of the functional state, the level of physical development, motor and other disorders of the elderly and senile age, and the conduct of physical therapy and occupational therapy for persons of gerontological age.

The list of competences that are formed during the study of the discipline in accordance with the educational and professional program "Physical Therapy and Occupational Therapy" for the second (master's) level of higher education in specialty 227 Physical Therapy

Code	Competencies
General competencies	
3K1	Ability to abstract thinking, analysis and synthesis.
3K2	Ability to apply knowledge in practical situations.
3K3	Ability to plan and manage time.
3K5	Ability to conduct research at an appropriate level.
3K6	Ability to learn and master modern knowledge.
3K7	Ability to search, process and analyze information from various sources.
3K8	The ability to be critical and self-critical.
3K9	Ability to adapt and act in a new situation.

3K10	Ability to identify, pose and solve problems.
3K11	Ability to make informed decisions.
3K12	Ability to work in a team.
3K13	Ability to interpersonal interaction.
3K14	Ability to motivate people and move towards a common goal.
3K19	Ability to act based on ethical considerations (motives).
Professional competencies	
CK 01	Ability to understand complex pathological processes and disorders, which are amenable to the correction of Physical Therapy.
CK 02	Ability to understand the clinical diagnosis of the patient/client, the course of the disease, the principles and nature of the treatment.
CK 03	Ability to conduct Physical Therapy for people of all ages, nosological and occupational groups with complex progressive and multisystem disorders.
CK 04	Ability to analyze, select and interpret information received from colleagues.
CK 05	Ability to examine and determine the functional state, level of physical development, motor and other persons' disorders of different ages, nosological and occupational groups with complex progressive and multisystem pathology.
CK 06	The ability to assist patients/clients understands, formulate and implement their own needs.
CK 07	Ability to predict the results of Physical Therapy, formulate goals, compile, discuss and explain a physical therapy program, or components of an individual rehabilitation program related to Physical Therapy.
CK 08	Ability to determine the optimal level of therapeutic load, control the duration and intensity of rehabilitation measures to ensure their compliance with the state of health, the functional capabilities of the patient/client.
CK 09	Ability to monitor the condition of the patient/client with complex and multisystem disorders by appropriate means and methods.
CK 10	Ability to maintain professional documentation.
CK 11	Ability to implement modern scientific data into practice.
CK 13	Ability to manage physical therapy, manage the work of assistants.
CK 14	Ability to act independently in conditions of professional isolation.
CK 15	Ability to do business in physical therapy.

**The amount of discipline - 5 ECTS credits, distributed in hours:**

Forms of education	Types of classes				Individual work	Total
	lectures	laboratory	practical	seminar		
Full-time education	16	0	34	0	100	150

**Course status:** required.

**Prerequisites for the study of academic discipline:** successful mastery of the following subjects:

at the first (bachelor's) level of higher education: "Examination, methods of evaluation and control in violation of the nervous system"; "Clinical Rehabilitation Management in Neurological Dysfunctions"; "Training of motor activity of sick and disabled"; "Physical therapy and occupational therapy in cognitive disorders"; "Propedeutics of internal diseases"; "Therapeutic exercises"; "Reformed physical factors";

at the second (master's) level of higher education: "Physical therapy and Occupational Therapy in diseases of internal organs"; "Examination methods in physical therapy".

### The program of academic discipline

#### *Topic plan of the discipline*

Topic number and title	Number of hours							
	full-time education				external form of education			
	total	including			total	including		
		l.	p.	i.w.		l.	p.	i.w.
Topic 1. Modern ideas about old age and aging.	10	2	2	6	-	-	-	-
Topic 2. Geriatric syndromes. Factors that determine the health of older people and	8	2	2	6	-	-	-	-

active longevity.								
Topic 3. Physical therapy for diseases of the respiratory system in the elderly.	20	2	4	14	-	-	-	-
Topic 4. Physical therapy for diseases of the cardiovascular system in the elderly.	20	2	4	14	-	-	-	-
Topic 5. Physical therapy for diseases of the digestive system in the elderly.	10	2	2	6	-	-	-	-
Topic 6. Physical therapy for diseases of the urinary system in elderly.	10	2	2	6	-	-	-	-
Topic 7. Physical therapy for diseases of the nervous system in the elderly.	28	2	8	16	-	-	-	-
Topic 8. Physical therapy for diseases of the musculoskeletal system in the elderly.	24	2	6	16	-	-	-	-
Topic 9. Physical	10	-	2	8	-	-	-	-

therapy for diseases of the endocrine system in the elderly.								
Topic 10. Physical therapy for blood diseases in the elderly.	10	-	2	8				
Total hours:	150	16	34	100	-	-	-	-

### *Content of the discipline by topic*

#### **Topic 1. Modern ideas about old age and aging.**

General information about old age and aging, basic hypotheses and theories of aging. Pathological and physiological aging. Accelerated aging criteria.

#### **Topic 2. Geriatric syndromes. Factors that determine the health of older people and active longevity.**

Geriatric syndromes. Aging asthenia syndrome. Sarcopenia. Geroprotective factors. Prevention of disorders and mental disorders in the elderly.

#### **Topic 3. Physical therapy for diseases of the respiratory system in the elderly.**

General information on age-related changes in the respiratory system. Chronic bronchitis. Acute pneumonia. Bronchial asthma. Chronic obstructive pulmonary disease. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

#### **Topic 4. Physical therapy for diseases of the cardiovascular system in the elderly.**

General information on age-related changes in the cardiovascular system. Atherosclerosis. Coronary heart disease. Myocardial infarction. Arterial hypertension. Chronic cardiovascular failure. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

#### **Topic 5. Physical therapy for diseases of the digestive system in the elderly.**

General information on age-related changes in the gastrointestinal tract. Dysphagia. Malnutrition syndrome. Neurogenic bowel syndrome. Chronic gastritis. Peptic ulcer. Diseases of the gallbladder, pancreas, liver. Stomach cancer. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

#### **Topic 6. Physical therapy for diseases of the urinary system in elderly.**

General information on age-related urinary changes. Urinary incontinence syndrome. Pyelonephritis. Prostate adenoma. Prostate cancer. Bladder cancer.

Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

**Topic 7. Physical therapy for diseases of the nervous system in the elderly.**

General information on age-related changes in the nervous system. Vascular disease of the brain. Cognitive impairment and Alzheimer's disease. Parkinson's disease. Diseases of the peripheral nervous system. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

**Topic 8. Physical therapy for diseases of the musculoskeletal system in the elderly.**

General information on age-related changes in the musculoskeletal system. Osteoporosis. Deforming osteoarthritis. Rheumatoid arthritis. Gout. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

**Topic 9. Physical therapy for diseases of the endocrine system in the elderly.**

General information on age-dependent changes in the endocrine system. Diabetes. Thyroid Disease. Adiposity. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

**Topic 10. Physical therapy for blood diseases in the elderly.**

General information on age-related changes in the blood system. Hemostasis disorders. Anemia. Oncohematological diseases. Definition, etiology, epidemiology, clinical manifestations, principles of physiotherapy research and physical therapy in elderly and senile people.

*Topics of practical classes*

Number and title of the discipline topic	Number and topic name of the practical classes	Number of hours	
		full-time education	external form of education
Topic 1. Modern ideas about old age and aging.	Topic 1. Modern ideas about old age and aging. Basic hypotheses and theories of aging.	2	-
Topic 2. Geriatric syndromes. Factors that determine the health of older people and active longevity.	2. Geriatric syndromes. Risk factors, diagnosis and prevention of premature aging.	2	-
Topic 3.	3. Physical therapy for chronic	2	-

Physical therapy for diseases of the respiratory system in the elderly.	obstructive pulmonary disease in the elderly.		
	4. Physical therapy for acute pneumonia and bronchial asthma in the elderly.	2	-
Topic 4. Physical therapy for diseases of the cardiovascular system in the elderly.	5. Physical therapy for atherosclerosis and arterial hypertension in the elderly.	2	-
	6. Physical therapy for ischemic heart disease, myocardial infarction and chronic cardiovascular failure in elderly.	2	-
Topic 5. Physical therapy for diseases of the digestive system in the elderly.	7. Physical therapy for dysphagia, malnutrition syndrome, neurogenic bowel syndrome, diseases of the stomach, gallbladder, pancreas and liver in elderly.	2	-
Topic 6. Physical therapy for diseases of the urinary system in elderly.	8. Physical therapy for urinary incontinence syndrome, nephrological and urological diseases in the elderly.	2	-
Topic 7. Physical therapy for diseases of the nervous system in the elderly.	9. Physical therapy for vascular diseases of the brain in the elderly.	2	-
	10. Physical therapy for Parkinson's disease in the elderly.	2	-
	11. Physical therapy for cognitive impairment and Alzheimer's disease in the elderly.	2	-
	12. Physical therapy for diseases of the peripheral nervous system in the elderly.	2	-
Topic 8. Physical therapy for diseases of the musculoskeletal system in the elderly.	13. Physical therapy for osteoporosis in the elderly.	2	-
	14. Physical therapy for deforming osteoarthritis in the elderly.	2	-
	15. Physical therapy for rheumatoid arthritis and gout in the elderly.	2	-

Topic 9. Physical therapy for diseases of the endocrine system in the elderly.	16. Physical therapy for diabetes and obesity in the elderly.	2	-
Topic 10. Physical therapy for diseases blood in the elderly.	17. Physical therapy for disorders of hemostasis, anemia, oncohematological diseases in elderly.	2	-
Total hours:		34	-

***Tasks for independent work of students***

Number and title of the discipline topic	Tasks	Number of hours	
		full-time education	full-time education
Topic 1. Modern ideas about old age and aging.	1. Annotation of information sources regarding the concepts of modern ideas about old age and aging, the main hypotheses of aging.	3	-
	2. Preparation for the practical lesson on the Topic 1.	3	-
Topic 2. Factors that determine the health of older people and active longevity.	3. Annotation of information sources on risk factors, diagnostics and means of preventing premature aging; physical activity and rational nutrition in the elderly.	2	-
	4. Preparation of a summary and presentation on issues of combating bad habits; prevention of sleep disorders and mental disorders in the elderly.	2	-
	5. Preparation for the practical lesson on Topic 2.	2	-
Topic 3. Physical therapy for diseases of the respiratory system in the elderly.	6. Annotation of information sources regarding the use of physical therapy in chronic bronchitis and chronic obstructive pulmonary disease in	5	-

	elderly.		
	7. Preparation of a summary and presentation on physical therapy in acute pneumonia and bronchial asthma in the elderly.	5	-
	8. Preparation for the practical lesson on Topic 3.	4	-
Topic 4. Physical therapy for diseases of the cardiovascular system in the elderly.	9. Annotation of information sources on the use of physical therapy for atherosclerosis and arterial hypertension in the elderly.	4	-
	10. Preparation of a summary and presentation on physical therapy for coronary heart disease, myocardial infarction, and chronic cardiovascular failure in the elderly.	6	-
	11. Preparation for the practical lesson on Topic 4.	4	-
Topic 5. Physical therapy for diseases of the digestive system in the elderly.	12. Annotation of information sources on the use of physical therapy for dysphagia, malnutrition syndrome, neurogenic intestines, and diseases of the gallbladder, pancreas and liver in the elderly.	2	-
	13. Preparation of a summary and presentation on physical therapy in chronic gastritis, peptic ulcer and gastric cancer in the elderly.	2	-
	14. Preparation for the practical lesson on Topic 5.	2	-
Topic 6. Physical therapy for diseases of the urinary system in elderly.	15. Annotation of information sources on the use of physical therapy in the syndrome of urinary incontinence and pyelonephritis in the elderly.	2	-
	16. Preparation of a summary and presentation on physical therapy for prostate adenoma, prostate cancer and bladder cancer in the elderly.	2	-

	17. Preparation for the practical lesson on Topic 6.	2	-
Topic 7. Physical therapy for diseases of the nervous system in the elderly.	18. Annotation of information sources regarding the use of physical therapy in vascular brain diseases in elderly people.	3	-
	19. Preparation of a summary and presentation on physical therapy in cognitive impairment and Alzheimer's disease in elderly.	3	-
	20. Preparation of a summary and presentation on physical therapy in Parkinson's disease in the elderly.	3	-
	21. Preparation of a summary and presentation on physical therapy in diseases of the peripheral nervous system in elderly.	3	-
	22. Preparation for the practical lesson on Topic 7.	4	-
Topic 8. Physical therapy for diseases of the musculoskeletal system in the elderly.	23. Annotation of information sources on the use of physical therapy for osteoporosis in the elderly.	4	-
	24. Preparation of a summary and presentation on physical therapy in deforming osteoarthritis in the elderly.	4	-
	25. Preparation of a summary and presentation on physical therapy in rheumatoid arthritis and gout in elderly.	4	-
	26. Preparation for the practical lesson on Topic 8.	4	-
Topic 9. Physical therapy for diseases of the endocrine system in the elderly.	27. Annotation of information sources regarding the use of physical therapy in diabetes and obesity in the elderly.	3	-
	28. Preparation of a summary and presentation on physical therapy for thyroid diseases in elderly.	3	-

	29. Preparation for the practical lesson on Topic 9.	2	-
Topic 10. Physical therapy for diseases blood in the elderly.	30. Annotation of information sources regarding the use of physical therapy in disorders of hemostasis, anemia, onco-hematological diseases in the elderly.	3	-
	31. Preparation of a summary and presentation on physical therapy in disorders of hemostasis, anemia, onco-hematological diseases in elderly.	3	-
	32. Preparation for the practical lesson on Topic 10.	2	-
Total hours:		100	-

**Expected learning outcomes in the discipline:** the use of physical therapy for the elderly, depending on the clinical diagnosis of the patient / client, the course of the disease, the principles and nature of treatment; examination and determination of functional status, level of physical development, motor and other disorders due to:

**knowledge:** features occurring in the body during aging; basic concepts of aging, modern age classification; features of the manifestation and course of various diseases in gerontological practice; methods for conducting classes with specialized patients, research methods and evaluation of physical therapy and occupational therapy in gerontology and geriatrics;

**ability to:** determine the physical level of an elderly person and his motor abilities; to plan physical therapy programs for geriatric patients of different age groups, depending on the clinical diagnosis, the course of the disease and the nature of the treatment; to define clinically-based motor modes; control and take into account the effectiveness of individual classes and the entire program as a whole; to document physical therapy plans and results of classes or procedures.

The list learning outcomes of the programme achieved during the study of the discipline in accordance with the educational and professional program "Physical Therapy and Occupational Therapy" for the second (master's) level of higher education in specialty 227 Physical Therapy

Code	Learning outcomes of the programme
IIP 01	Demonstrate knowledge of the biopsychosocial model of life limitations and the ability to analyze the medical, social and personal problems of the patient/client.

PIP 03	Demonstrate the ability to conduct physical therapy of patients/clients of different ages with complex pathological processes and disorders.
PIP 04	Demonstrate the ability to find, select, evaluate, discuss and apply research results in clinical, scientific, educational and administrative activities.
PIP 05	Demonstrate the ability to determine the functional state of people of different ages, nosological and occupational groups with complex progressive and multisystem pathology.
PIP 06	Conduct patient /client surveys to identify dysfunction, activity, and participation.
PIP 08	Demonstrate the ability to perform examinations of patients/clients of different nosological groups and in complex progressive and multisystem pathology, using appropriate tools.
PIP 09	Demonstrate the ability to communicate with the patient / client, conduct surveys of the patient/client to determine his needs and expectations regarding his motor activity and the expected results of physical therapy.
PIP 10	Demonstrate the ability to predict the results of physical therapy of patients/clients of different nosological groups and in complex progressive and multisystem pathology.
PIP 11	Demonstrate the ability to establish intervention targets.
PIP 12	Demonstrate the ability to develop intervention technology.
PIP 13	Demonstrate ability to implement customized physical therapy programs following available resources and environment.
PIP 15	Demonstrate the ability to adjust the progress of the physical therapy program based on the analysis of planned and achieved results.
PIP 16	Maintain safety at all times for the practitioner and patient/client.
PIP 17	Demonstrate the ability to conduct independent practical activities.
PIP 18	Demonstrate the ability of verbal and nonverbal communication with individuals and groups of interlocutors, different in age, level of education, social and professional affiliation, psychological and cognitive qualities, etc., in a multidisciplinary team.
PIP 19	Demonstrate ability to coach and educate clients, their families, colleagues and small groups.
PIP 22	Demonstrate and plan for professional development.
PIP 23	Demonstrate the ability to carry out research activities.
PIP 24	Adhere to basic legal and ethical requirements, conduct activities with the consent of the patient/client.

### **The procedure for assessing learning outcomes in the discipline**

The final grade for the discipline is formed taking into account the results of the current control and exam.

During the semester, a higher education applicant can receive a maximum score of 100 as the sum of points based on the results of current control at practical (seminar, laboratory) classes and during consultations of scientific and pedagogical staff on topics that do not include classroom hours. Work program of the discipline for part-time students, or in the established order for the topics, from which the classes were missed by the higher education applicant. The following forms of current control and the distribution of points that a student may receive for a topic are used:

<b>Number and topic title of practical classes</b>	<b>Assessment tools</b>	<b>Number of points per topic</b>
1. Modern ideas about old age and aging. Basic hypotheses and theories of aging.	Express control. Essay. Presentations. Solution of situational problems.	5
2. Geriatric syndromes. Risk factors, diagnostics and prevention of premature aging.	Express control. Essay. Presentations.	5
3. Physical therapy for chronic bronchitis and chronic obstructive pulmonary disease in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
4. Physical therapy for chronic pneumonia and bronchial asthma in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
5. Physical therapy for atherosclerosis and arterial hypertension in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
6. Physical therapy for coronary heart disease, myocardial infarction, and chronic cardiovascular failure in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	10
7. Physical therapy for diseases of the	Express control.	5

gallbladder, pancreas, liver and constipation in the elderly.	Essay. Presentations. Solution of situational problems.	
8. Physical therapy for pyelonephritis and urolithiasis in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
9. Physical therapy for vascular diseases of the brain in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
10. Physical therapy for Parkinson's disease in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
11. Physical therapy for cognitive impairment and Alzheimer's disease in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	10
12. Physical therapy for diseases of the peripheral nervous system in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	10
13. Physical therapy for osteoporosis in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
14. Physical therapy for deforming osteoarthritis in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
15. Physical therapy for rheumatoid arthritis and gout in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5

16. Physical therapy for diabetes and obesity in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
17. Physical therapy for disorders of hemostasis, anemia and oncohematological diseases in the elderly.	Express control. Essay. Presentations. Solution of situational problems.	5
Total:		100

At the end of the lecture on the subject of discipline, the lecturer acquaints higher education applicants with the corresponding tasks for independent work and topics of practical classes.

Before beginning a practical (seminar, laboratory) class, the scientific and pedagogical worker acquaints the higher education applicants with the forms of current control that will be applied, and the number of points they can receive. At the end of each class, each present student of higher education is announced the number of points he have received.

An applicant for higher education received less than 34 points during the semester, is not allowed to take the exam, and may, in the prescribed manner, undergo a second study of this discipline.

Exams are conducted in accordance with the Regulations on the organization of the educational process at the university.

## RECOMMENDED SOURCES OF INFORMATION

### ***Basic literature:***

1. David X.Cifu, Henry L.Lew, Mooyeon Oh-Park. Geriatric Rehabilitation. ELSEVIER; 2018. 228 s.
2. Timothy L.Kauffman, Ron Scott, John O.Barr, Michael L.Moran, editors. A Comprehensive Guide to Geriatric Rehabilitation. ELSEVIER; 2014. 598 s.

### ***Additional literature:***

1. Вороненко ЮВ, Шекера ОГ, Стаднюк ЛА, редактори. Актуальні питання геронтології і гериатрії у практиці сімейного лікаря. К.: Заславський; 2015. 530 с.

2. Денхем М.Дж, Чинарин И, редакторы. Болезни крови у пожилых. М.: Медицина; 1989. 249 с.
3. Джесси Джоунс С., Дж. Роуз Дебра, редакторы. Старение и двигательная активность. К.: Олимпийская литература; 2012. 440с.
4. Коркушко ОВ. Передчасне старіння. Київ; 2004. 211 с.
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8. Рекомендации Европейской Ассоциации урологов по нейроурологии. Европейская ассоциация урологов. 2016. 34 с.
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10. Чеботарев Д.Ф., Коркушко О.В. Гериатрия в клинической практике. Киев; 2001. 355 с.
11. Яблчанский НИ, Лысенко НВ. Остеопороз тихая эпидемия. Харьков: Medicus Amicus. 2011. 172 с.
12. Jill C.Cash, Cheryl A.Glass, editors. Adult-Gerontology Practice Guidelines. New York. SPRINGER PUBLISHING COMPANY; 2019. 1112 s.
13. Leseley K.Bowker, James D.Price, Kunal S.Shah, Sarah C.Smith, editors. Oxford hendbookof geriatric medicine. OXFORD UNIVERSITY PRESS; 2018. 1037 s.
14. Marke A.Brimer, Michael L.Morgan, editors. Clinical Cases in Physical Therapy. BUTTERWORTH HEINEMANN; 2004. 206 s.

Electronic resources:

1. <https://abilis.com.ua/korysna-informatsiia/korysni-internet-resursy.html>
2. <http://www.nbuu.dov.ua/>
3. <http://www.nlm.nih.gov/>
4. <http://studentam.net>
5. <https://www.hopkinsarthritis.org/patient-corner/disease-management/rehabilitation-management-rheumatoid-arthritis-patients/#ref10>
6. <http://www.medbook.net.ru/21.shtml>
7. <http://www.rehabilitology.ru/>
8. <http://www.vertigo.ru>
9. <http://www.parkinson.org/>
10. <http://www.parkinson.spb.ru/>
11. <http://www.movementdisorders.org/>
12. <http://www.strokeassociation.org/>
13. <http://www.stroke.org/>

14. <http://www.alz.org/>
15. <http://www.alzforum.org/>
16. <http://www.alz.uci.edu/>
17. <http://www.sleepfoundation.org/>