

**MINISTRY OF HEALTH CARE OF UKRAINE**

**ODESA NATIONAL MEDICAL UNIVERSITY**

Department of physical rehabilitation, sports medicine and physical training

**APPROVED**

Vice-rector for scientific and pedagogical work

Eduard BURYACHKIVSKY

September 01, 2024



**WORK PROGRAM OF THE DISCIPLINE  
«MANUAL METHODS OF PHYSICAL THERAPY»**

**Level of higher education:** second (master's)

**Field of knowledge:** 22 «Health care»

**Specialty:** 221 «Dentistry»

**Educational and professional program:** Dentistry


Work program based on the educational and professional program of the second level of higher education for the preparation of masters in specialty 221 «Dentistry» of 22 «Health» area of knowledge, improved by scientific council of ONMedU (Protocol № 10 of June 27, 2024)

DEVELOPERS:


Head of the Department MD, Professor Iushkovska O.G.,  
Professor Plakida O.L.

The work program was approved at the meeting of the Department of physical rehabilitation, sports medicine and physical education  
Protocol № 1 dated 08.26.2024.

Head of the department

 \_\_\_\_\_ Olga IUSHKOVSKA

Approved by the guarantor of  
the educational and professional program

 \_\_\_\_\_ Anatoly GULIUK

Approved by the subject cycle methodical commission for therapeutic disciplines of ONMEDU  
Protocol № 1 dated 08.30.2024.

Head of the subject cycle methodical commission on therapeutic disciplines of onmedu

 \_\_\_\_\_ Olena VOLOSHYNA

Reviewed and approved at the meeting of the department \_\_\_\_\_

Protocol №. \_\_ dated \_\_\_\_\_ . \_\_\_\_ 20 \_\_\_\_\_

*Head of the department* \_\_\_\_\_ *Olga IUSHKOVSKA*

Reviewed and approved at the meeting of the department \_\_\_\_\_

Protocol №. \_\_ dated \_\_\_\_\_ . \_\_\_\_ 20 \_\_\_\_\_

*Head of the department* \_\_\_\_\_ *Olga IUSHKOVSKA*

## 1. Description of the academic discipline:

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
Total number: Credits - 3 Hours - 90 Contentful modules - 2	Discipline 22 "Health care"	<b>Full-time education</b>
		<b>Elective course</b>
		<b>Year of preparation: 5</b>
	Specialty 221 "Dentistry "	<b>Semesters IX - X</b>
		<b>Lectures (0 hours)</b>
		<b>Seminars (10 hours)</b>
	Level of higher education second (master's)	<b>Practical (20 hours)</b>
		<b>Laboratory (0 hours)</b>
		<b>including individual tasks (0 hours)</b>
		<b>Form of final assessment - Credit</b>

### 1. The purpose and tasks of the educational discipline, competencies, program learning outcomes.

**Purpose:** Acquisition by the student of higher education of knowledge and the formation of general and professional competencies defined by the educational and professional program, in particular, the acquisition of practical skills in the organization and conduct of manual therapy, post-isometric relaxation, and the improvement of skills and competencies acquired during the study of previous disciplines.

**Task:**

- To give the applicants an impression of the importance of using manual therapy in the complex treatment of patients;
- Learn theoretical data about the value of manual therapy and its place in physical rehabilitation.
- To learn theoretical data regarding the peculiarities of manual therapy techniques and their application.
- To acquaint applicants with the general provisions for the use of manual therapy for diseases of the musculoskeletal system;
- Providing students with theoretical knowledge and formation of practical skills regarding the use of various methods of manual therapy
- To be able to define the key concepts and terms of manual therapy.
- To be able to analyze and predict the impact of manual therapy techniques on the human body based on medical control data.
- To be able to choose and apply techniques of manual therapy in the complex treatment of patients for faster recovery of health, preservation of quality of life and prevention or elimination of the consequences of the pathological process.
- Be able to evaluate the effectiveness of manual therapy techniques.

### The process of studying the discipline is aimed at forming elements of the following competencies:

**General competences (GC):**

- GC1. Ability to abstract thinking, analysis and synthesis.
- GS2. Knowledge and understanding of the subject area and understanding of professional activity.
- GS3. Ability to apply knowledge in practical activities.
- GS4. Ability to communicate in the national language both orally and in writing.
- GS5. Ability to communicate in English.
- GS6. Skills in using information communication technologies.
- GS7. Ability to search, process and analyze information from various sources.

GS8. Ability to adapt and act in a new situation.

GS9. Ability to identify, pose and solve problems.

GS10. The ability to be critical and self-critical.

GS11. Ability to work in a team.

GS12. The desire to preserve the environment.

GS13. The ability to act socially responsibly and consciously.

GS14. The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

GS15. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

GS16. The ability to make decisions and act in accordance with the principle of inadmissibility of corruption and any other manifestations of dishonesty.

**Special competences (SC):**

SC1. Ability to collect medical information about the patient and analyze clinical data

SC2. The ability to interpret the results of laboratory and instrumental research. SC13. Ability to carry out sanitary and hygienic and preventive measures

SC14. Ability to maintain regulatory medical documentation

**Program learning outcomes (PRO):**

PRO1. Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.

PRO2. Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.

PRO21. Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.

PRO25. It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.

PRO28. Make effective decisions about health care problems, assess the necessary resources, take into account social, economic and ethical consequences.

**As a result of studying the academic discipline, the student of higher education should**

**Know:**

- principles of selection of methods of manual diagnosis of the state of muscle tissue in various diseases;

- principles of organizing manual therapy and post-isometric relaxation for diseases of various organs and systems;

- methodical recommendations for patients for self-massage at home in the period after clinical rehabilitation;

**Be able to:**

- select adequate and effective types of manual therapy and post-isometric relaxation for diseases of organs and systems;

- select the most adequate and effective types of manual therapy techniques for soft tissues, post-isometric and post-reciprocal relaxation techniques for diseases of various organs and systems;

- determine the initial position of the patient during the procedure for diseases of various organs and systems;

- determine the indications and contraindications for manual therapy and post-isometric relaxation procedures;

- carry out operational and integrative control of the effectiveness of the procedure (course) of manual therapy and post-isometric relaxation in patients with various pathologies.

### **Content of the academic discipline**

#### **Content module 1**

#### **Manual therapy.**

**Topic 1.** Application of manual therapy techniques in complex programs of physical therapy and occupational therapy. General characteristics of manual therapy methods. Principles of manual therapy application in physical therapy and occupational therapy programs. The specifics of the application of manual therapy techniques in complex programs of physical therapy and occupational therapy.

**Topic 2.** Modern developments and methods of manual therapy (MT) for spinal injuries. Functional anatomy of the spine, detection of functional pathology. Principles of manual therapy and massage for spinal cord injury.

**Topic 3.** Methods of manual therapy in children and adolescents. Methods of therapeutic massage with elements of manual therapy for children and adolescents. Features of the analytical structure of the musculoskeletal system. Basic information about congenital dislocation of the hip, congenital torticollis and congenital clubfoot. Information about adolescent deviations in posture. Mastering the ability to perform massage and correction to eliminate abnormalities of the musculoskeletal system in children.

**Topic 4.** Manual therapy for joint dysfunction. Manual therapy for joint dysfunction. General information about joint dysfunction. Clinical manifestations. Modern principles of healing. Basic methods of manual therapy for restoring joint function.

**Topic 5.** Features of injuries in athletes. Modern methods of manual therapy. Consideration of the most common types of injuries in sports. Classification of the effectiveness of using manual therapy for sports injuries. Manual therapy at different stages of athlete training.

**Topic 6.** Features of the manual therapy technique for people with disabilities with musculoskeletal disorders. Reasons for disability. Disability categories. The importance of manual therapy in rehabilitation. Features of the therapeutic massage technique after amputation of the upper and lower extremities.

**Topic 7.** Features of the manual therapy technique for diseases of the peripheral and central nervous systems. Features of the occurrence of diseases of the nervous system. Features of manual therapy for diseases of the nervous system. Manual therapy for neuritis and neuralgia. Features of the use of manual therapy in complex physical therapy programs for cerebral palsy.

**Topic 8.** Features of the manual therapy technique for diseases of the digestive organs. Anatomical characteristics of the digestive organs and their diseases. The use of manual therapy in the complex treatment of chronic diseases.

#### **Content module 2**

#### **Postisometric relaxation**

**Topic 9.** Concept of postisometric muscle relaxation. The technique of postisometric muscle relaxation. The technique of postisometric relaxation of the neck muscles.

**Topic 10.** Postisometric relaxation of trunk muscles. Postisometric relaxation of the muscles of the upper limbs. Postisometric relaxation of the muscles of the lower extremities.

### **4. The structure of the academic discipline**

Names of topics	Кількість годин	
	Total	including

		Lectures	Seminars	Practical	Laboratory	IW
<b>Content module 1 Manual therapy</b>						
<b>Topic 1.</b> Application of manual therapy techniques in complex programs of physical therapy and occupational therapy. General characteristics of manual therapy methods. Principles of manual therapy application in physical therapy and occupational therapy programs. The specifics of the application of manual therapy techniques in complex programs of physical therapy and occupational therapy..	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Topic 2.</b> Modern developments and methods of manual therapy (MT) for spinal injuries. Functional anatomy of the spine, detection of functional pathology. Principles of manual therapy and massage for spinal cord injury.	<b>10</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>Topic 3.</b> Methods of manual therapy in children and adolescents. Methods of therapeutic massage with elements of manual therapy for children and adolescents. Features of the analytical structure of the musculoskeletal system. Basic information about congenital dislocation of the hip, congenital torticollis and congenital clubfoot. Information about adolescent deviations in posture. Mastering the ability to perform massage and correction to eliminate abnormalities of the musculoskeletal system in children.	<b>10</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>Topic 3.</b> Methods of manual therapy in children and adolescents. Methods of therapeutic massage with	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>

elements of manual therapy for children and adolescents. Features of the analytical structure of the musculoskeletal system. Basic information about congenital dislocation of the hip, congenital torticollis and congenital clubfoot. Information about adolescent deviations in posture. Mastering the ability to perform massage and correction to eliminate abnormalities of the musculoskeletal system in children.						
<b>Topic 5.</b> Features of injuries in athletes. Modern methods of manual therapy. Consideration of the most common types of injuries in sports. Classification of the effectiveness of using manual therapy for sports injuries. Manual therapy at different stages of athlete training.	<b>10</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>Topic 6.</b> Features of the manual therapy technique for people with disabilities with musculoskeletal disorders. Reasons for disability. Disability categories. The importance of manual therapy in rehabilitation. Features of the therapeutic massage technique after amputation of the upper and lower extremities..	<b>10</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>6</b>
<b>Topic 6.</b> Features of the manual therapy technique for people with disabilities with musculoskeletal disorders. Reasons for disability. Disability categories. The importance of manual therapy in rehabilitation. Features of the therapeutic massage technique after amputation of the upper and lower extremities.	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>Topic 8.</b> Features of the manual therapy technique for diseases of the digestive organs. Anatomical characteristics of the digestive organs and their diseases. The use of manual	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>

therapy in the complex treatment of chronic diseases.						
<i>A total of hours for content module 1</i>	<b>72</b>	<b>0</b>	<b>8</b>	<b>16</b>		<b>48</b>
<b>Content module 2</b> <b>Postisometric relaxation</b>						
<b>Topic 9.</b> Concept of postisometric muscle relaxation. The technique of postisometric muscle relaxation. The technique of postisometric relaxation of the neck muscles.	<b>10</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>Topic 10.</b> Postisometric relaxation of trunk muscles. Postisometric relaxation of the muscles of the upper limbs. Postisometric relaxation of the muscles of the lower extremities.	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>
<i>Total hours for content module 2</i>	<b>18</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>12</b>
<i>Individual tasks</i>						
<i>Total hours</i>	<b>90</b>	<b>0</b>	<b>10</b>	<b>20</b>	<b>0</b>	<b>60</b>

## 5. Topics of lectures / seminars / practical / laboratory classes

### 5.1. Topics of lectures

Lectures are not provided.

### 5.2. Topics of seminar classes

<b>№</b>	<b>Topic name</b>	<b>Number of hours</b>
1	<b>Topic 1. Seminar lesson 1.</b> Application of manual therapy techniques in complex programs of physical therapy and occupational therapy.	2
2	<b>Topic 2. Seminar lesson 2.</b> Modern developments and methods of manual therapy (MT) for spinal injuries.	2
3	<b>Topic 3. Seminar class 3.</b> Methods of manual therapy in children and adolescents.	2
4	<b>Topic 5. Seminar lesson 4.</b> Peculiarities of injuries in sportsmen. Modern methods of manual therapy.	2
5	<b>Topic 9. Seminar lesson 5.</b> The concept of postisometric muscle relaxation.	2
	<b>Total</b>	<b>10</b>



### 5.3. Topics of practical classes:

№	Topic name	Number of hours
1	<b>Topic 2. Practical lesson 1.</b> Modern developments and methods of manual therapy (MT) for spinal injuries.	2
2	<b>Topic 3. Practical lesson 2.</b> Methods of manual therapy in children and adolescents.	2
3	<b>Topic 4. Practical lesson 3.</b> Manual therapy for joint dysfunction.	2
4	<b>Topic 5. Practical lesson 4.</b> Peculiarities of injuries in sportsmen. Modern methods of manual therapy.	2
5	<b>Topic 6. Practical lesson 5.</b> Peculiarities of the technique of manual therapy for disabled people with damage to the musculoskeletal system.	2
6	<b>Topic 6. Practical lesson 6.</b> Causes of disability. Categories of disability.	2
7	<b>Topic 7. Practical lesson 7.</b> Peculiarities of the technique of manual therapy in diseases of the peripheral and central nervous systems. Peculiarities of the use of manual therapy in complex programs of physical therapy for cerebral palsy.	2
8	<b>Topic 8. Practical lesson 8.</b> Peculiarities of the technique of manual therapy for diseases of the digestive organs.	2
9	<b>Topic 9. Practical lesson 9.</b> The technique of postisometric muscle relaxation.	2
10	<b>Topic 10. Practical lesson 10.</b> Postisometric relaxation of the muscles of the trunk, upper limbs, lower limbs.	2
	<b>Total</b>	20

### 5.4. Topics of laboratory classes

Laboratory classes are not provided.

### 6. Independent work of a student of higher education

№	Name of the topic / types of tasks	Number of hours
1	Topic 1. Preparation for the seminar class 1	6
2	Topic 2. Preparation for the practical lesson 1	6
3	Topic 3. Preparation for the practical lesson 2	6
4	Topic 4. Preparation for the practical lesson 3	6
5	Topic 5. Підготовка до практичного заняття 4	6
6	Topic 6. Preparation for the practical lesson 5-6	6
7	Topic 7. Preparation for the practical lesson 7	6
8	Topic 8. Preparation for the practical lesson 8	6
9	Topic 9. Preparation for the practical lesson 9	6
10	Topic 10. Preparation for the practical lesson 10	6
	Total	60

### 7. Teaching methods

**Practical classes:** explanation, discussion, debate, demonstration.

**Seminar classes:** conversation, story, explanation, demonstration, instruction, exercises, training exercises.

**Independent work:** partly search, research, presentation of the results of own research, performance of individual tasks.

### **8. Forms of control and assessment methods (including criteria for evaluating learning outcomes)**

Current control: oral survey, testing, performance evaluation practical skills, assessment of communication skills during role play, solution situational clinical tasks, assessment of activity in class.

Final control: credit.

Evaluation of the current educational activity in a practical session:

1. Evaluation of theoretical knowledge on the subject of the lesson:

- methods: survey, solving a situational problem
- the maximum score is 5,
- minimum grade – 3,
- unsatisfactory rating - 2.

2. Evaluation of practical skills and manipulations on the subject of the lesson:

- methods: assessment of the correctness of the performance of practical skills
- the maximum score is 5,
- minimum grade – 3,
- unsatisfactory rating - 2.

The grade for one practical lesson is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

#### **Criteria for ongoing evaluation in the seminar class**

<b>Assessment</b>	<b>Criteria for the assessment</b>
«5»	The applicant worked systematically during the semester, showed versatile and deep knowledge of the program material, is able to successfully perform the tasks assigned by the program, has mastered the content of basic and additional literature, has realized the relationship of individual sections of the discipline, their importance for the future profession, has revealed creative abilities in the use of educational and program material, showed the ability to independent updating and replenishment of knowledge.
«4»	The applicant revealed full knowledge of the curriculum material, successfully performed the tasks provided by the program, absorbed the basic literature recommended by the program, showed a sufficient level of knowledge in the discipline and is able to independently update and update them during further training and professional activities.
«3»	The applicant has identified knowledge of the basic curriculum material to the extent necessary for further training and subsequent work in the profession, copes with the tasks provided by the program, made some mistakes in the answers and in the performance of test tasks, but has the necessary knowledge to overcome the mistakes made under the guidance of a scientific and pedagogical worker.
«2»	The applicant did not identify sufficient knowledge of the basic curriculum material, made fundamental errors in the performance of the tasks provided by the program, cannot use the knowledge without the help of the teacher in further training, could not master the skills of independent work.

#### **Assessment of independent work of applicants:**

Students' independent work is assessed during the current control of the topic in the relevant class. Mastery of topics that are submitted only for independent work is checked during classroom classes.

Credit is given to an applicant who has completed all the tasks of the work program of the discipline, actively participated in seminars, completed and defended an individual assignment and has a current average grade of at least 3.0 and has no academic debt.

The test is given: at the last class before the examination session - in the case of the tape system of education, at the last class - in the case of the cycle system of education. The grade for the test is the arithmetic mean of all components on a traditional four-point scale and has a value that is rounded according to the statistical method with two decimal places.

### **9. Distribution of grades received by undergraduate applicants**

The obtained grade point average for the discipline for students who have successfully completed the work program of the discipline is converted from the traditional four-point scale to points on a 200-point scale, as shown in the table:

**Table of conversion of traditional assessment into multi-point**

Traditional four-point scale	Multipoint 200-point scale
Excellent («5»)	185 – 200
Good («4»)	151 – 184
Satisfactory («3»)	120 – 150
Unsatisfactory («2»)	Below 120

The multi-point scale (200-point scale) characterizes the actual performance of each student in mastering the educational component. The conversion of the traditional grade (grade point average) into a 200-point scale is performed by the University's Information Technology Department.

According to the points received on a 200-point scale, the achievements of applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows evaluating the achievements of applicants in the educational component who study in the same course of one specialty, according to the points they received.

The ECTS scale is a relative and comparative rating scale that establishes the applicant's belonging to the group of the best or worst among the reference group of fellow students (faculty, specialty). Grade A on the ECTS scale cannot be equal to grade A, and grade B cannot be equal to grade B, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" on the ECTS scale do not coincide with the limits of grades "5", "4", "3" on the traditional scale. Applicants who have received grades "FX" and "F" ("2") are not included in the list of ranked applicants. The grade "FX" is assigned to applicants who have scored the minimum number of points for current academic activities, but who have not been credited with the final control. The grade "F" is assigned to applicants who have attended all classes in the discipline, but have not gained an average score (3.00) for current academic activities and are not allowed to take the final control.

Applicants enrolled in the same course (one specialty), based on the number of points gained in the discipline, and are ranked on the ECTS scale as follows:

### **Conversion of the traditional discipline grade and the sum of the ECTS scale scores**

Assessment on the ECTS scale	Statistical indicator
<b>A</b>	The best 10% of the student
<b>B</b>	The next 25% of the student
<b>C</b>	The next 30% of the student
<b>D</b>	The next 25% of the student
<b>E</b>	The next 10% of the student

## 10. Methodological support

Working program of the academic discipline

Syllabus

Methodological developments for practical and seminar classes

Methodical recommendations for independent work of higher education applicants

Tests for theoretical and thematic evaluation of passed topics by applicants.

## 11. Questions for preparing for the final control

1. Concept of manual therapy.
2. History of the development of manual therapy.
3. General characteristics of manual therapy methods. Types of manual therapy.
4. The importance of manual muscle testing in physical therapy.
5. Assessment of muscle strength. Study of muscle tone.
6. Manual muscle testing according to Lovett.
7. General characteristics of the spinal column.
8. Structure of intervertebral joints, openings, intervertebral discs.
9. Methods of reflex impact on the periosteum - periosteal massage.
10. Degenerative-dystrophic changes of intervertebral discs in osteochondrosis of the spine.
11. Segmental innervation and methods of segmental-reflex influence on the human body.
12. Techniques for examination of the spine and paraspinal structures.
13. Examination of the cervical spine. Examination of the thoracic (back) spine.
14. Examination of the lumbar spine.
15. Signs of reflex disorders in tissues (examination, palpation, diagnosis).
16. Research of the muscular system of the lumbosacral area and lower limbs.
17. Study of joints.
18. X-ray examination.
19. Restorative treatment of spine diseases by manual therapy.
20. Indications and contraindications for the use of manual therapy.
21. General requirements and rules of manual therapy.
22. Manual methods of therapy on the cervical spine.
23. Methods of manual correction of myofascial trigger points - ischemic compression, stretching, deep friction method.
24. Manual methods of therapy on the thoracic spine.
25. Manual techniques for the lumbar spine.
26. Manual techniques for the sacroiliac, sacrococcygeal joint.
27. Manual correction of upper limb joint blockages. 10. The concept of postisometric muscle relaxation.
28. The technique of postisometric muscle relaxation.
29. Technique of postisometric relaxation of neck muscles.
30. Postisometric relaxation of trunk muscles.
31. Postisometric relaxation of the muscles of the upper limbs.
32. Postisometric relaxation of the muscles of the lower extremities.
33. The concept of kinesiotaping. Mechanism of action.
34. Types of kinesiotaping. Indications, contraindications.
35. Taping technique. Therapeutic efficiency.
36. Segmental taping as a method of reflex action on the human body.
37. Eastern reflex massage - linear, method of conducting.
38. Point neurometameric massage - technique.
39. Segmental massage as a method of reflex influence (demonstrations, method of conducting) - a basic technique.

## 12. Recommended literature

### Main:

1. Myers, Thomas. Anatomy Trains/Thomas Myers; [Trans. from English N. V. Skvortsova, A. A. Zimin]. - Lviv: Spline, 2019. - 320 p.
2. Muscles. anatomy. Movement. Testing / Klaus-Peter Valerius and others: prov. from English, under the editorship of M.B. Tsikunova. - Kyiv: MEDpress-inform, 2016.-432 p.
3. Sitel A.B. Current issues of manual therapy - Kyiv.: BINOM, 2014. - 468 p.
4. Gross J. Physical study of the musculoskeletal system. Illustrated manual / Trans. from English, edited by S.P. Myronova, N.A. Yeskin - Kyiv.: Panfilova Publishing House, 2018. - 488 p.
5. Wieben K. Visual guide to functional muscle testing / Karin Wieben, Bernd Falkenberg; prov. from English - Ternopil: Ukrmedknyga, 2017. -296 p.
6. Visceral manipulations / Jean-Pierre Barral, Pierre Mercier, prov. from French - Ternopil: Ukrmedknyga, 2015. - 227p.
7. Ferguson L.U. Treatment of myofascial pain. Clinical guidance/Trans. from English, edited by M.B. Tsikunov, M.A. Yeremushkina. - Kyiv.: MEDpress-inform, 2015. - 544 p.
8. Hans Harten. Manual on muscle testing. Functional assessment, myofascial trigger points and meridian connections. Institute of Clinical Applied Kinesiology – Kyiv: BINOM, 2013, - 344 p.

### Additional:

1. Walter D.S. Applied kinesiology. – Lviv: Spline, 2014.-644 p.
2. Kapandzhi A.I. Upper extremity. Physiology of joints/A.I. Kapanji; [Trans. from English AHEM.Abeleva, E.V. of Kishinev]. - Lviv: Spline, 2019. - 368 p.
3. Cleland, Joshua A. et al. Clinical examination in orthopedics with Netter's illustrations. Evidence-based approach / J. A. Cleland, S. Koppenhaver, J. Su; translation from English - Kyiv: Panfilova Publishing House, 2018. - 624 p.
4. Leaf D. Applied kinesiology: a guide in tables. T1.- Kyiv: Publishing HousePanfilova. 2016. - 410 p.
5. Leaf D. Applied kinesiology: guide in tables. T2.- Kyiv: Publishing HousePanfilova. 2016- 372 p.
6. Muscles. Anatomy, movements, testing. Prov. in English under the editorship of M.B. Tsikunov, Moscow, 2015,432 p.
7. Neimatov E.M., Sabinin S.L. Fundamentals of biomechanics of body movement - Kyiv: Publishing HousePanfilova, 2016 - 480 p.
8. Orel A.M. Systemic analysis of spine roentgenograms in the practice of manual medicine. Kyiv: Panfilova Publishing House, 2018. – 432 p.
9. Peninu Zh. Muscle tension. From diagnosis to treatment/JilPenin, Serge Tiksa;prov. from French; in general ed. Prof. M.B. Tsikunova. - 2nd edition. – Lviv: Spline, 2016. – 360 p.
10. PNF in practice / Susan S. Adler, Dominic Beckers, Mat Buck, prov. from English - Lviv: Spline 2013. - 330 p.
11. Fischer P. Tests and exercises for functional disorders of the spine / Peter Fischer; prov. from English Kyiv: Panfilova Publishing House, 2017. – 224 p. : fig.

## 13. Electronic information resources

1. Institute of Clinical Applied Kinesiology<http://kinesiolog-spb.ru>
2. Interregional Association of Applied Kinesiology<http://applied-kinesiology.ru>
3. Interregional Association of Applied Kinesiology - <http://www.kinesiolog.ru>
4. ClinicalKey electronic information resource <http://www.clinicalkey.com>