INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Department of Internal Medicine

SYLLABUS
Medical Physical Training

2023-2024 academic year
for students of medical faculty
3 course 6 semester, groups 42
1 credit (36 h, including auditorial 18 h, independent work – 18h)

Practical class:

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The Syllabus is considered
at the meeting of the department of internal medicine
Protocol № 9 dated 22.05.2023
Head of the department prof. Kudaibergenova N.T.

Course Objective: The present program provides the profound study-targeted theoretical questions of the

Course Objective: The present program provides the profound study-targeted theoretical questions of the physiotherapeutic exercises and mastering of practical skills.

After study of the discipline the student must:
Know
• Principles of medical rehabilitation, the mechanism of their therapeutic action in various diseases
• Principles of compiling non-drug therapy complexes for patients of various profiles
Be able to:
• Choose appropriate rehabilitation measures for sick adults and children with various diseases
• Able to prescribe appropriate complexes of non-drug therapy and other physical methods for patients, taking into account the form, stage and course of the disease
Be master of:
• Skills to substantiate the choice of appropriate medical, social and professional rehabilitation measures
• Skills in compiling complexes of non-drug methods of treatment for patients of various profiles, correctly assessing the tolerability, adequacy and effectiveness of the measures taken

Pre-requisites. Normal and topographical anatomy.
Normal and pathological physiology
Post-requisites. Traumatology, orthopedics and extreme surgery
• Surgical diseases
• Neurology and basics of neurosurgery
• Polyclinic therapy
• Polyclinic Pediatrics
• Family medicine

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1	Subject and tasks of physical training. The aims and techniques of physical training. Classification of physical training. Procedure of medical gymnastics, methods of its performance	2	09.2023-02.2024
2	Physical training: headache and neck pain and limited motion.	2	09.2023-02.2024
3	Physical training: Shoulder, elbow and wrist joint pain and limited motion	2	09.2023-02.2024
4	Physical training: back pain and limited motion	2	09.2023-02.2024
5	Physical training: hip joint, knee joint and ankle joint pain and limited motion	2	09.2023-02.2024
6	Physical training for diseases of a gastrointestinal tract.	2	09.2023-02.2024
7	Physical training for diseases of respiratory organs and cardiovascular system.	2	09.2023-02.2024
8	Physical training for diseases of the motor system: arthritis, radiculitis, scoliosis, osteoporosis etc.	2	09.2023-02.2024
9	Credit lesson	2	09.2023-02.2024
	TOTAL	18	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

Unit №	Theme of independent work	Hours	Date
	Frozen shoulder	2	09.2023-02.2024
	Stroke rehabilitation exercises for improve mobility and function	2	09.2023-02.2024
	Coordination and balance exercises for patients with Parkenson's disease	2	09.2023-02.2024
	Exercise therapy after abdominal surgery	1	09.2023-02.2024
	Exercise therapy after thoracic surgery	1	09.2023-02.2024
	Hip replacement surgery rehabilitation exercises	2	09.2023-02.2024
	Work with literature	8	09.2023-02.2024

	Total	18	09.2023-02.2024

Recommended reading for the discipline:

1. **Basic:**

№	Authors	Title	Year of publishing	Edition	Availability in the library
1.	Fiona Wilson, John Gormley, Juliette Hussey	Exercise Therapy in the Management of Musculoskeletal Disorders	2011	1st edition	(electronic variant) https://drive.google.com/file/d/1mrMUgan8zR9P-LyJIkdaT-ElS-EJnP90/view?usp=sharing
2.	C.Nagavani, M.P	Text book of biomechanics and exercise therapy	2009	1st edition	(electronic variant)https://drive.google.com/file/d/1DuZuRSZ4Q6tA_aQp_vSsbtIeRNLU3FH6/view?usp=sharing

2. **Additional:**

№	Authors	Title	Year of publishing	Edition	Availability in the library
1.	Jerry Alan Johnson, PH.D., D.T.C.M., D.M.Q.	Chinese Medical Qigong Therapy	2002	Volume 4	(electronic variant) https://drive.google.com/file/d/1IPAc_rjXWGnJ-y90Hi80RB5zjZSvWJSj/view?usp=sharing
2.	W.J.Kraemer, S.J.Fleck, M.R.Deschenes	Exercise Physiology	2012	1st edition	(electronic variant) https://drive.google.com/file/d/1rqy-r5TGA_XAyk1mPfqUUqIB4qxxKZJj/view?usp=sharing

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):
current score - 40 points
independent work - 20 points
control score (final assessment of knowledge per unit) - 40 points
Maximum score - 100 (40+20+40)

Grading system for student's achievements

Grading criteria per discipline				
Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
Current control - 40	0-23	24-30	31-35	36-40
Interval description	the presence of significant errors in the answer that are not corrected by the student	the presence of insignificant errors in the answer that are not corrected by the student	the presence of insignificant errors, confidently corrected by the student after additional and leading questions	complete, consistent, competent and logically stated answers
Independent work - 20	0-11	12-15	16-17	18-20
Interval description	the work is not done, or it is done incorrectly	the work has been completed in full, there are huge errors	the work has been completed in full, there are minor errors	the work is completely done without errors
Control work (module) - 40	0-23	24-30	31-35	36-40
Interval description	The diagnosis is correct The algorithm of action is not correct The choice of	The diagnosis is correct The algorithm of action is not full The choice of	The diagnosis is correct The algorithm of action is correct The choice of	The diagnosis is correct The algorithm of action is correct The choice of

	additional diagnostic methods is not correct The treatment is prescribed incorrectly	additional diagnostic methods is not full The treatment is not full	additional diagnostic methods is not full The treatment is prescribed, but not full	additional diagnostic methods is correct The treatment is prescribed correctly

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).
- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-5 points.

Academic Ethics Policy.
- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-5 points.

Guidelines for the lessons of the discipline

Key questions covered in lesson 1.
1. The aims of physical training.
2. Types of movement (active and passive)
3. Assessment of the patient's condition: Functional tests, test of range of motion, tests for neuromuscular efficiency.
4. A brief historical sketch of development of physiotherapeutic exercises.
5. Components of the exercise program
6. The general indications and contra-indications.

Recommended reading for the lesson:
1. Fiona Wilson, John Gormley, Juliette Hussey - Exercise Therapy in the Management of Musculoskeletal Disorders – 2011. [8-17]
2. W.J.Kraemer, S.J.Fleck, M.R.Deschenes- Exercise Physiology, 2012. [242-265, 275-277]

Key questions covered in lesson 2.
1. Headache: types, causes, symptoms, diagnostics, treatment.
2. The cervical spine: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.

Recommended reading for the lesson:
1. Fiona Wilson, John Gormley, Juliette Hussey - Exercise Therapy in the Management of Musculoskeletal Disorders – 2011. [29-50]

Key questions covered in lesson 3.
1. Topographic anatomy and function of upper extremities muscles.
2. The shoulder complex: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.
3. The elbow and forearm: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.
4. The wrist and hand: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.

Recommended reading for the lesson:
1. Fiona Wilson, John Gormley, Juliette Hussey - Exercise Therapy in the Management of Musculoskeletal Disorders – 2011. [94-138]
2. Margaret Hollis -Practical Exercise Therapy, Fourth Edition- 1999. [62-76; 206-220]
3. John H. C. Colson- Progressive exercise therapy in rehabilitation and physical education -1983. [118-154]

Key questions covered in lesson 4.
1. Topographic anatomy and function of back muscles.
2. The thoracic spine and rib cage: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.

3. The lumbar spine: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.
4. Trunk exercises.
Recommended reading for the lesson:
1. Fiona Wilson, John Gormley, Juliette Hussey - Exercise Therapy in the Management of Musculoskeletal Disorders – 2011. [53-91]
2. John H. C. Colson- Progressive exercise therapy in rehabilitation and physical education -1983. [69-108;115-117]

Key questions covered in lesson 5.
1. Topographic anatomy and function of lower extremities muscles.
2. The hip joint: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.
3. The knee joint: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.
4. The ankle joint: disorders, muscle tests, test of range of motion, practical use of exercise, duration, dosage.
Recommended reading for the lesson:
1. Fiona Wilson, John Gormley, Juliette Hussey - Exercise Therapy in the Management of Musculoskeletal Disorders – 2011. [141-207]
2. Margaret Hollis -Practical Exercise Therapy, Fourth Edition- 1999. [220-230]
3. John H. C. Colson- Progressive exercise therapy in rehabilitation and physical education -1983. [154-180]

Key questions covered in lesson 6.
1. Physical training for diseases of the gastrointestinal tract, the liver, gastritis, a stomach ulcer, cholecystitis, colitis, etc.
2. Physical training after abdominal surgery.
3. Principles of administration of physiotherapeutic exercises depending on a stage of disease.
4. Non- gymnastic forms of MG for diseases of a therapeutic nature
Recommended reading for the lesson:
1. John H. C. Colson- Progressive exercise therapy in rehabilitation and physical education -1983. [184-2011]
2. Jerry Alan Johnson, PH.D., D.T.C.M., D.M.Q. - Chinese Medical Qigong Therapy, Volume 4- 2002 [25-26, 135-136, 213-243]

Key questions covered in lesson 7.
1. Physical training for diseases of respiratory organs (pneumonia, acute and chronic bronchitis, pulmonary abscess, pleurisy, a bronchial asthma, etc.)
2. Physiotherapeutic exercises at diseases of cardiovascular system: hypertonic illness, an arterial hypotonia, heart diseases, etc.
3. Methods of functional research and the account of efficiency of application of physical exercises.
4. Principles of dosage physiotherapeutic exercises depending on a stage of disease.
5. Cardiac rehabilitation exercises
6. Non-gymnastic forms of MG for diseases of a therapeutic nature.
Recommended reading for the lesson:
1. John H. C. Colson- Progressive exercise therapy in rehabilitation and physical education -1983. [109-114]
2. C.Nagavani, M.P.-Text book of biomechanics and exercise therapy- 2009. [71-79]
3**.** W.J.Kraemer, S.J.Fleck, M.R.Deschenes- Exercise Physiology, 2012. [167-196]

Key questions covered in lesson 8.
1. Scoliosis of the spine: causes, symptoms, physical examination, exercise program.
2. Joint gymnastics. Treatment and prevention of osteoporosis Methods of functional research and the physical exercises performance efficiency account.
3. Principles of administration of physiotherapeutic exercises depending on a stage of disease.
Recommended reading for the lesson:
1. Fiona Wilson, John Gormley, Juliette Hussey - Exercise Therapy in the Management of Musculoskeletal Disorders – 2011. [242-257]

Key questions covered in lesson 9. **Credit lesson**
Theoretical skills:
1. Subject and tasks of physical training
2. The aims of physiotherapy exercises
3. The techniques of physiotherapy exercises
4. The approach to the patient problem
5. Indications and contra-indications to application physical therapy.
Practical skills:
1. Which exercises of physical training for patients after a pneumonia?
2. Which exercises of physical training for patients after an abscess lung?

3. Which exercises of physical training for patients after a chronic bronchitis?
4. Which exercises of physical training for patients in rehabilitation for coronary heart disease?
5. Which exercises of physical training for patients with hypertonic disease?
6. Which exercises of physical training for patients with arterial hypotonic?
7. Which exercises of physical training for patients with gastritis?
8. Which exercises of physical training for patients with colitis?
9. Which exercises of physical training for patients with constipation?
10. Complex of exercises for patients with headache
11. Complex of exercises for patients with neck pain
12. Complex of exercises for patients with shoulder, elbow, wrist joint pain limiting moving
13. Complex of exercises for patients with back pain and limiting moving
14. Complex of exercises for patients with hip joint pain and limiting moving
15. Complex of exercises for patients with knee, ankle join pain and limiting moving
16. Complex of exercises for patients with scoliosis
17. Complex of exercises for patients with arthritis
18. Complex of exercises for patients with lumbago
19. Warm up exercises
20. Cool down exercises

Methodological instructions for the implementation of independent work on the discipline

Create an exercise program requires consideration of the distinct phases of a session, which are defined in sequence as:

_ Warm – up (duration 10 min)
_ Endurance phase (30 min)
_ Recreational activities (10 min)
_ Cool - down. (10 min)