

ODESSA NATIONAL MEDICAL UNIVERSITY
Department of Rehabilitation Medicine

Syllabus of the discipline
"CURRENT PROBLEMS OF PHYSIOTHERAPY, BALNEOLOGY AND
REHABILITATION"

Workload	90 hours /3.0 ECTS credits
Term, Year of study	4 th year
Days, hour	Monday-Friday 8.30-15.00
Work location	Center of Reconstructive and Restorative medicine (University clinic), Odesa, 8, Tenista St.
Lecturers	Head of the department, D.M., Professor Shmakova Irina Petrivna Director of studies, teaching assistant Pavlotska Irina Georgiivna Ph.D, assistant professor Prokopchuk Yulia Viktorivna Ph.D, teaching assistant Michailenko Veronika Evgeniivna teaching assistant Morshnev Yuriy Yuroyovuch
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THE COURSE ABSTRACT

The subject of study of the discipline: understanding the features of the therapeutic effect of natural and preformed physical factors, methods of their application, indications and contraindications for the use in various diseases;

Prerequisites.

To master the discipline "CURRENT PROBLEMS OF PHYSIOTHERAPY, BALNEOLOGY AND REHABILITATION" it is necessary to have knowledge and skills from the previous years of study, in particular: human anatomy, medical physics, medical chemistry, physiology, pathologic physiology, pediatrics, hygiene.

The purpose of the discipline is: to form students' skills to use various physical factors in the treatment of patients at different stages of the pathological process, to lay the groundwork for students for acquisition of knowledge of the sanogenetic effect of natural and preformed physical factors, understanding the basic principles of physiological prevention and medical rehabilitation.

The main tasks are: a modern physician must be master of not only medical but also non-medical methods of treatment, making them effective medical complexes, know the options for therapeutic physical factors in the form of standardized techniques based on the low-intensity laser, impulse current devices, magnetic fields, microwaves, light - and mechanotherapy, shock wave, cryo - and others as well as physiological prevention with water, air, ultraviolet and other procedures.

Expected results

Students must know the modern arsenal of physiotherapeutic techniques: electric currents and electromagnetic fields, ultrasound, shock waves, artificial light, refrigerants, heat transfer agents, mechanical therapeutic effects, mineral healing waters, therapeutic mud, climatic factors, etc;

- master the basic views on the mechanisms of action of physical therapeutic techniques and the principles of their administration and use;
- understand the provisions and principles of medical rehabilitation;
- study, in which branches of medicine physical methods of rehabilitation are used;
- get acquainted with the modern physiotherapeutic equipment used at the department, the peculiarities of its application and the structure and activities of the sanatorium- resort and rehabilitation center.

THE COURSE DESCRIPTION

Forms and methods of teaching

The course takes the form of practical classes (20 hours) and individual students' work (ISW) (10 hours). The following training methods are used during teaching of the discipline: explanations, multimedia presentations, situational training, simulation training, oral examination, testing, individual tasks, individual work with the textbook, follow-up of patients.

The content of the discipline

Topic 1. The place and role of physiotherapy, balneology and medical rehabilitation in the health care system of Ukraine. Classification of physical factors, mechanisms of therapeutic effect, indications and contraindications for using. Technique and methods of procedures.

Physiotherapy, mechanisms of physiological and therapeutic impact of natural and preformed physical remedies on humans. General principles of physiotherapy.

Physioprevention. Preventive, health-improving use of physical factors in the framework of primary, secondary and tertiary prevention. Primary prevention includes mainly using of water, air, sunlight and ultraviolet rays, artificial air ions, dosed exercises. Preformed physical factors are used for secondary prevention. The whole arsenal of physical remedies can be used for tertiary prevention.

Balneology. It includes preventive and therapeutic use of natural physical remedies: mineral waters, peloids, healing climate, ozokerite, naphthalene, etc., as well as the organization of spa business.

Medical rehabilitation. Basic tasks and principles of medical rehabilitation. The main groups of patients who are subject to medical rehabilitation.

Classification of physical therapies and methods. Basic principles of application of physical treatment and preventive measures. Mechanisms of physiological and therapeutic impact of physical factors taking into account the age of patients (adults and children).

Topic 2. The use of electric currents and electromagnetic fields in the clinical practice (direct, impulse and alternating currents; electromagnetic fields of HF, UHF, microwave, EHF, treble therapy). Mechanisms of effect, indications, contraindications, techniques and methods of procedures.

Galvanization, electrophoresis with drugs, diadynamotherapy, amplipulse therapy, interference therapy, fluctuorization, CHENS therapy, electrostimulation, electrosleep therapy, transcranial electroanalgesia, darsonvalization, ultratone therapy, franklinization, infita therapy, magnetic therapy (constant, alternating and other magnetic fields), ultrahigh frequency therapy (UHF-therapy), inductothermy, SMV-therapy, DMV-therapy, EHF-therapy, HiToP.

Physical and chemical effects. Physiological and therapeutic mechanisms of impact. Methods of application in adults and children. Indications and contraindications taking into account age restrictions and features. Apparatuses.

Topic 3. Phototherapy. Laser therapy, magnetic therapy, magnetic laser therapy. Use of ultraviolet, visible and infrared light for therapeutic and prophylactic purposes. Mechanisms of action, indications and contraindications, techniques and methods of procedures.

Non-selective chromotherapy (visible light), infrared radiation, ultraviolet radiation (long-wave, medium-wave in suberythematous and erythematous doses, short-wave ultraviolet radiation), red and infrared magnetotherapy, laser therapy.

Physical and chemical effects. Physiological and therapeutic mechanisms of action. Methods of application in adults and children. Indications and contraindications taking into account age restrictions and features. Apparatuses.

Topic 4. Mechanical factors. Mechanisms of the therapeutic action. Ultrasound, shock wave therapy indications, contraindications, techniques and methods of procedures. Physicopharmacotherapy. Organization of physiotherapeutic service in Ukraine (seminar-excursion to the balneo-physiotherapeutic department of the basic sanatorium).

Acupressure, acupuncture, reflexotherapy, medical applicators, medical cups, barotherapy (hyper- and hypobarotherapy), vacuum decompression, vacuum massage, vibration therapy, vibrovacuum therapy, therapeutic immobilization, massage therapy, manual therapy. Ultrasound (ultraphonotherapy), shock wave, ultrasound puncture, ultraphonophoresis with drugs.

Physical and chemical effects. Physiological and therapeutic mechanisms of action. Methods of application in adults and children. Indications and contraindications taking into account age restrictions and features. Apparatuses.

Topic 5. The main spa treatment factors (climate, mineral waters, mud). Mechanisms of action, indications and contraindications. Heat treatment. Hydrobalneotherapy. Technique and methods of procedures. Cryotherapy.

The main climatic regions of Ukraine, climatic resorts of the world. Climatotherapy. Hydrotherapy (showers, medicines, contrast baths, etc.). Mineral

waters (for internal and external use), balneotherapy (radon, hydrogen sulfide, iodobromine, nitrogen, silica, iron, carbon dioxide baths). Heat treatment (paraffin therapy, ozokeritotherapy, naphthalene therapy, clay therapy, psammotherapy), cryotherapy (local and general). Peloidotherapy (silt, peat, sapropel, volcanic, hydrothermal mud).

Physical and chemical effects. Physiological and therapeutic mechanisms of action. Methods of application in adults and children. Indications and contraindications taking into account age restrictions and features.

A list of basic recommended literature

Main literature sources:

- 1) Physiotherapy and medical rehabilitation: reference book. In 2 volumes / V.M. Zaporozhan, I.P. Shmakova, V.V. Kenz [a.o.]; edited by V.M. Zaporozhan. - Odesa: Odesa gov. med. univ., 2010.- T. 1. Physical, healing and preventive factors, appliances and methods.-88 p.
- 2) Pshetakovsky I.L. Ways of health, life quality and active longevity / I.L. Pshetakovsky, I.P. Shmakova. - Odesa: Astroprint, 2013.-250 p.
- 3) Basics of physical rehabilitation: textbook for university students / O.K. Marchenko. – K.: Olimp. lit., 2012. – 528 p.
- 4) Physical rehabilitation, sports medicine: textbook for students of higher medical education establishments / V.V. Abramov, V.V. Klapchuk, O.B. Nehanevych [a.o.]: edited by prof. V.V. Abramov and docent O.L. Smyrnova. – Dnipro, Zhurfond., 2014. – 456 p.: ill. 79.
- 5) R.L. Braddom. Physical Medicine and Rehabilitation / R.L. Braddom. – England: Elsevier Science, 2011. – 1536 p.
- 6) Independent physical education lessons. Teaching manual / O.G. Yushkovska, T.U. Kruzevych, V.U. Seredovska, G.V. Bezverhnya. – Odesa: Odesa National Medical university – 302 p. – (medical student library).
- 7) Sports medicine: A textbook for students of higher sport and physical education educational establishments./ L.Y-G. Shakhlina, B.G. Kogan, T.A. Tereshchenko, V.P. Tyshchenko, S.M. Futorny; edited by L.Y-G. Shakhlina. – Kyiv: Scientific thought, 2016. – 452 p.: ill.

Additional literature sources:

- 1) Gutenbrunner C., Tederko P., Grabljevc K., Nugraha B., Responding to the World Health Organization Global Disability Action Plan in Ukraine: developing a National Disability, Health and Rehabilitation Plan J Rehabil

Med.-2018(50),-P.338-341

- 2) European Physical and Rehabilitation Medicine Bodies Alliance. White Book on Physical and Rehabilitation Medicine in Europe. Eur J Phys Rehabil Med 2018. - Vol.54(2). – P.125-321.
- 3) A position paper on physical & rehabilitation medicine programmes in post-acute settings / Ward A., Gutenbrunner C., Giustini A., Delarque A., FialkaMoser V., Kiekens C., Berteau M., Christodoulou N. // J Rehabil Med 2012; (44): 289–298.
- 4) Ukrainian journal of physical and rehabilitative medicine. №1-2 (04) 2019; «White Book for physical and rehabilitative medicine in Europe»
- 5) Physical rehabilitation of ischemic heart disease patients. Yushkovska O.G. Monograph /Odesa National medical university – Odesa: – 2010. – 224 p.
- 6) Physical rehabilitation: methodological recommendations to practical lessons for fourth-year students of medical department) /O.G. Yushkovska, N.N. Kukhar, A.L. Plakyda – Odesa: «Polygraph», 2016. – 160 p.
- 7) DeLisa's. Physical Medicine and Rehabilitation / DeLisa's. – Lippincott Williams & Wilkins; Fifth, North Am, 2010. – 2432 p.
- 8) WHO World Report on Disability [Internet]. WHO. [cited 2014 Nov 8]. Available from: http://www.who.int/disabilities/world_report/2011/en/
- 9) WHO WHO global disability action plan 2014-2021 [Internet]. WHO. [cited 2014 Oct 21]. Available from: <http://www.who.int/disabilities/actionplan/en/>
- 10) World Health Organization. Rehabilitation 2030: a call for action: Meeting report [Internet]. WHO; 2017. Available from:<http://www.who.int/disabilities/care/rehab-2030/en/>

Information sources:

- 1) <https://www.moz.gov.ua/mkf>
- 2) <https://www.msp.gov.ua/files/5.pdf>
- 3) http://utfrm.com.ua/news_275/
- 4) <https://www.president.gov.ua/documents/6782015-19605>
- 5) <https://zakon.rada.gov.ua/laws/show/2961-15>

ASSESSMENT

Different forms of curricular control are used in the educational process: oral, written, combined, testing, practical skills, etc. The results of students' academic performance are presented in the form of assessment on a national scale ("excellent", "good", "satisfactory", "unsatisfactory"), multi-point scale and ECTS rating scale and have standardized generalized criteria for knowledge assessment.

Assessment of current learning activities is standardized.

The student's current educational activity is assessed on a 4-point (traditional) scale. At the end of the course, the current performance is calculated as the average score of all grades obtained by the student on a traditional scale, rounded to 2 (two) decimal places. Conversion from the traditional discipline grade into 200-point is performed by the information and computing center of the university by "Contingent" program by the formula:

(current average grade point / average grade point in academic discipline) x 40.

Final control

A test is taken upon completion of the study of the discipline, and a grade is given on a 2-point scale ("passed" or "not passed").

Assessment of students' individual work

Control and assessment of ISW performance is carried out during practical classes and final control.

THE COURSE POLICY

Deadline and re-taking of a test

The deadline for working off missed classes, passing works and practical skills is the day of credit.

The retaking of unsatisfactory results of the rating and credit takes place according to an individual schedule, in accordance with the recommendations of the dean's office and the capabilities of the department.

- class attendance should be regular and timely;
- active participation in the educational process is recommended as well as the implementation of the required minimum of educational work;
- missed classes are worked off at the scheduled time.

Academic Integrity Policy:

- individual performance of educational tasks, tasks of current and final control of training outcomes (for persons with special educational needs this requirement is applied taking into account their individual needs and opportunities);
- reference to sources of information in case of using the ideas, elaborations, statements, information;
- compliance with the law on copyright and related rights;
- providing reliable information on the results of one's own (scientific, creative) activities, used study methods and sources of information.

It is unacceptable in educational activities:

- to use family or business connections to obtain a positive or higher grade in any form of control over learning outcomes or research preferences;

- to use of prohibited auxiliary materials or technical means (cheat notes, compendia, headphones, telephones, smartphones, tablet PC, etc.) during assessment;
- to take the procedures of control of training outcomes by fictitious persons.

For non-observance of academic integrity, students may be subject to the following academic accountability:

- reduction of results of assessment of control work, examination, credit, etc.;
- re-taking the assessment (module test, exam, test, etc.);
- application of additional control measures (additional individual tasks, module tests, tests, etc.).

Attendance and late attendance policy:

- class attendance should be regular and timely;
- absence from the study is worked off at designated time.

Mobile Policy:

- the use of mobile devices is possible to optimize the academic activities;
- the use of devices for solving personal problems during classes does not meet the standards of behavior;

Classroom behavior:

- it is recommended to be closely involved in the educational process, demonstrate polite behavior in classrooms and clinical units, implement a necessary list of educational work.