

Physical education and health

(elective course)

*Methodical instructions for self-studying of 2nd year students of the specialty
221 "Dentistry"*

MINISTRY OF HEALTH OF UKRAINE

Kharkiv National Medical University

Department of Physical Education and Health

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Approved by
the Academic Council of KhNMU
Protocol No.

**Kharkiv
KhNMU**

2021

Physical education elective course: Methodical instructions for self-studying of 2nd year students of the specialty 221 “Dentistry”/ Shuteev Vyacheslav, Lapko Svitlana, Lenska Olha and others - Kharkiv: KhNMU, 2021 .-21 p.

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**Topic 1. Dependence of strength on working conditions.
The nature of power efforts. The magnitude of the force.
Classification of the main types of strength abilities (12 hours)**

The relevance of the topic. Physical exercise aimed at developing strength helps to improve the movements required in the further professional and applied training of medical students.

The purpose of the lesson. The use of various sets of exercises aimed at developing strength.

Exercises for self-study in preparation for the lesson

Theoretical questions

1. What is strength?
2. The magnitude of the force.
3. Power abilities and their classification
4. The nature of strength efforts.

TEST TASKS

1. Strength is:

- A. *Ability to overcome external resistance or hinder **
- B. *Physical property of a person, which is given to him/ her from birth*
- C. *Human ability to contract muscles*
- D. *Endurance*

2. What are the conditions under which muscles provide strength?

- A. *With a change of its length*
- B. *Static*
- C. *With muscle contraction**
- D. *Eccentric*

3. Types of strength efforts

- A. *monotonous strength*
- B. *abrupt strength*
- C. *strength proper **
- D. *All answers are correct*

4. Exercise to develop strength

- A. *stretching*
- B. *cycling*
- C. *athletics*
- D. *lifting weights**

5. Methods of strength development

- A. *interval* C. *one-repetition* *
B. *continuous* D. *intensive*

6. Strength is developed with the help of:

- A. *Exercises with a small number of repetitions* *
B. *tedious workouts*
C. *cyclic exercises*
D. *proper nutrition*

7. In what mode of operation can strength be manifested?

- A. *isometric and isotonic* *
B. *spontaneous and arbitrary*
C. *eccentric and centric*
D. *kinesthetic and tactile*

8. In what mode of operation is the maximum strength shown?

- A. *activity of all motor units* * C. *general endurance*
B. *moderate intensity* D. *special endurance*

9. The explosive strength of a person is:

- A. *shows maximum effort in a short time* *
B. *high speed*
C. *resistance counteraction in voluntary muscle tension*
D. *muscle restraint*

10. Under what conditions do muscles get strength:

- A. *without changing its length* *
B. *performing combined work*
C. *at the pilometric voltage mode*
D. *with auxotonic voltage mode*

Recommended Reading

Basic Literature

11. "Теория и методика физического воспитания"/ Под. ред. Ашмарина Б.А. - М., 1990.
12. Вайцеховский С.М. Книга тренера М., "Физкультура и спорт", 1971.
13. Ведмеденко Б.Ф. Теоретичні основи і практика виховання молоді засобами фізичної культури. —Київ, 1993.

4. Гогін О.В. Легка атлетика: Курс лекцій / Харківський державний пед.агогічний університет ім. Г.С. Сковороди . - Харків: "ОВС", 2001. - 112 с.
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7. Зимкин И.В. Физиологическая характеристика силы, быстроты и выносливости. Ф. И С., 1956 г.
8. Матвеев Л.П. Теория и методика физической культуры. - М.: Физкультура и спорт, 1991. - 181с.
9. Теория и методика физического воспитания. Учебник для высших учебных заведений физического воспитания и спорта. Под ред. Круцевич Т.Ю. Олимпийская литература, Том 1- К.: 2003. - 423с.

Supplementary literature

1. Худолій О.М. Загальні основи теорії та методики фізичного виховання: Навч.посібник.-Харків: «ОВС», 2007.- 406с.:іл.
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Information resources

- 1.https://students.lnu.edu.ua/sport/wpcontent/uploads/2015/04/lections_kurs.pdf
- 2.<https://vseosvita.ua/library/instrukcia-tehniki-bezpeki-pid-cas-zanat-z-fizicnoi-kulturi-30763.html>
3. <https://studfile.net/preview/5461978/page:49/>

Topic 2. Speed as a complex motor quality. Elementary forms of manifestation of speed in various combinations and in conjunction with other physical qualities and technical skills (12 hours)

The relevance of the topic. Speed is a person's ability to respond urgently to stimuli and to a high speed of movements performed in the absence of significant external resistance. The prerequisite for the development of the speed of complex reactions is the mastery of a wide range of motor skills and abilities (motor components), with which these reactions are associated. The development of the speed of complex reactions is provided primarily by teaching variable motor skills.

The purpose of the lesson. The use of various sets of exercises aimed at developing speed.

Exercises for self-study in preparation for the lesson Theoretical questions

1. What is speed?
2. The magnitude of the speed.
3. Speed abilities and their classification.
4. The nature of speed efforts.

TEST TASKS

1. Speed is required for:

- | | |
|-----------------------------------|---------------------------------|
| <i>A. To develop rapidity</i> | <i>C. For life</i> |
| <i>B. As a physical quality *</i> | <i>D. For physical activity</i> |

2. Speed is:

- A. ability of a person to urgently respond to stimuli and to a high speed of movement*
- B. complex motor quality **
- C. a person's ability to overcome or counteract external resistance due to muscle activity.*
- D. cyclic exercise*

3. The main component of agility is:

- A. strength exercises*
- B. coordination abilities **
- C. exercises to relax muscles, ligaments, tendons*
- D. speed*

4. Agility is expressed:

- A. in the ability to quickly master new movements **
- B. ability to perform large amplitude movements*
- C. the ability to achieve high joint mobility as a result of external forces.*
- D. cyclic exercises*

5. Simple motor reactions are:

- A. most movements for training purposes*
- B. speed increase*
- C. movement responses to known signals that appear suddenly **
- D. coordination abilities*

6. Physical exercises are:

- A. *types of motor actions aimed at the formation of motor skills and abilities **
- B. *types of motor actions aimed at morphological and functional changes in the body*
- C. *motor actions (including their totality) are aimed at the implementation of physical education tasks*
- D. *types of motor actions aimed at changing the forms of physique and the development of physical qualities*

7. Physical qualities are:

- A. *individual characteristics that determine the level of human motor skills **
- B. *the complex of various manifestations of a person in a certain motor activity*
- C. *congenital morphofunctional qualities, which make the physical activity possible of a person who has received its full manifestation in purposeful motor activity*
- D. *the complex of abilities of those involved in physical culture and sports, expressed in specific results*

8. An athlete's speed qualities characterize the ability to:

- A. *perform various (varied) movements in a minimum period of time **
- B. *performing specific movements*
- C. *create conditions for an objective assessment of the athlete's condition in the process of stage, current and operational control*
- D. *all answers are correct*

9. Methods for the development of speed:

- A. *interval*
- B. *continuous*
- C. *one-repetition*
- D. *intensive**

10. Under what conditions do muscles show speed:

- A. *with a change of its length*
- B. *static*
- C. *with muscle contraction **
- D. *eccentric*

Recommended Reading Basic Literature

- 11. "Теория и методика физического воспитания"/ Под. ред. Ашмарина Б.А. - М., 1990.
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1. https://students.lnu.edu.ua/sport/wp-content/uploads/2015/04/lectons_kurs.pdf
2. <https://vseosvita.ua/library/instrukcia-tehniki-bezpeki-pid-cas-zanat-z-fizicnoi-kulturi-30763.html>

Topic 3. The importance of physical endurance in human life. General and special endurance. Endurance level (12 hours)

The relevance of the topic. Endurance is the most important physical quality, reflects the general level of human performance and will prove to be both in sports and in everyday life. Endurance needs to be developed in order to be able to endure any physical activity for a long time, in general, so as not to get tired as long as possible. Endurance is like a habit - a habit of the body up to a certain amount of stress.

The purpose of the lesson. The use of various sets of exercises aimed at development of endurance.

Exercises for self-study in preparation for the lesson

Theoretical questions

1. What is endurance?
2. General and special endurance.
3. The level of endurance.
4. The value of endurance.

TEST TASKS

1. Endurance is the ability of:
A. human to perform the exercise with maximum effort
B. the body resists external environmental influences
C. the body recovers quickly after exercise
*D. the body to resist fatigue **

2. What are the types of endurance?
*A. General, special** *C. General, specific*
B. General, common *D. Power, special*

3. What types of endurance are distinguished according to the general characteristics of muscle activity?
A. progressive *C. dynamical **
B. supporting *D. general*

4. What are the methods for studying endurance?
A. dynamical *C. static*
*B. continuous ** *D. mixed*

5. Endurance develops with the help of:
*A. cyclic exercises **
B. exhausting workouts
C. proper nutrition
D. self-confidence

6. Special endurance characterizes:
*A. the ability to perform certain physical work in a given mode **
B. muscle work
C. The presence of deviations from the norm
D. Feeling unwell

7. What test is used to determine endurance?

A. Romberg Test

C. Cooper test *

B. Bondarevsky's Method

D. Yarotsky's method

8. Types of endurance (specify 2 correct answers):

A. purposeful

C. special*

B. general *

D. conditional

9. Types of special endurance (specify 2 correct answers)

A. high-speed*

C. static *

B. leading

D. basic

10. Physical exercise to develop general endurance:

A. cycling *

C. box

B. weightlifting

D. Flexibility exercises

Recommended Reading

Basic Literature

1. Верхошанский Ю.В. Основы специальной физической подготовки спортсменов.-М.:Физкультура и спорт, 1988.-С.111-123.
2. Ильин П.Е. Психомоторная организация человека: Учебник для вузов.-СПб:Питер,2003.-384 с.
- 3.Платонов В.М.,Булатова М.М. Фізична підготовка спортсмена.-К.:Олімпійська література, 1995.-С.237-274.
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- 5.Теория и методика физического воспитания. Общие основы теории и методики физического воспитания: Учебник в 2-х томах / под. редакцией Т.Ю.Круцевич.-Том 1.-К.:Олимпийская литература,2003.-С.222-245.
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Information resources

1. <https://studfile.net/preview/5282931/page:2/>
2. http://dspace.zsmu.edu.ua/bitstream/123456789/13049/1/%D0%A1%D0%A0%D0%A1%20E2%84%9610_%D0%A2%D0%9C%D0%A4%D0%92.pdf

Topic 5. Equilibrium. Sense of rhythm. Orientation in space. Factors contributing to the development of coordination qualities (10 hours)

The relevance of the topic. The word “equilibrium” is of Latin origin. It means consistency, unification, ordering. With regard to human motor activity, it is used to determine the degree of coordination of its actions with the real requirements of the environment. For example, having slipped, one person uses compensatory movements to restore balance, while the other falls. One of them has a higher level of coordination of movements, and, consequently, more developed coordination abilities.

The purpose of the lesson. The use of various sets of exercises aimed at developing balance.

Exercises for self-study in preparation for the lesson Theoretical questions

1. The concept of equilibrium. The ability to maintain balance.
2. Sense of rhythm.
3. Ability to spatial orientation.

4. Coordination of movements. Factors conditioning the manifestation of coordination qualities.

TEST TASKS

1. Equilibrium is:

- A. *The ability to dance well*
- C. *The ability of animals to jump high*
- C. *Ability to fall on a rink*
- D. *The ability of a person to rationally coordinate the movements of body links when solving specific motor tasks. **

2. Types of coordination abilities:

- A. *Ability to maintain balance*
- B. *Feeling of rhythm*
- C. *Ability to voluntary muscle relaxation*
- D. *All of the above mentioned**

3. The most famous method for assessing equilibrium

- A. *the Beilstein test*
- C. *The Romberg test **
- B. *the Ruffier functional test*
- D. *Vieta's Formulas*

4. Each deviation of the body from the optimal position should be accompanied by:

- A. *efforts to restore it **
- B. *stomach pain*
- C. *weakness*
- D. *suppression of all body functions*

5. The sense of rhythm as the ability to accurately reproduce the parameters of movements largely determines the effectiveness of various motor actions.

- A. *spatial*
- C. *power*
- B. *temporary*
- D. *all of the above mentioned **

6. The effectiveness of developing a sense of rhythm depends on

- A. *activity of mobilizing spiritual processes*
- B. *activity of mobilization of mental processes **
- C. *activity of mobilization of social processes*
- D. *activity mobilization physical process*

7. The following methodological techniques contribute to an increase in the effectiveness of performing exercises to develop the ability to voluntary muscle relaxation:

- A. *Formation in those who are engaged in attitudes to the need for muscle relaxation and a quick transition from tension to relaxation;*
- B. *Performing exercises in different functional states with a mindset for muscle relaxation;*
- C. *Systematic control of facial muscle relaxation, which helps to reduce overall skeletal muscle tension.*
- D. *all of the above mentioned **

8. The coordination of movements is:

- A. *the ability to walk attractively*
- B. *the ability to swim*
- C. *the ability for rational manifestation of physical qualities and restructuring of motor actions in specific conditions on the basis of the existing stock of motor skills and abilities. **
- D. *the ability for rational manifestation of mental qualities and restructuring of motor actions in specific conditions on the basis of the existing stock of motor skills and abilities.*

9. The most important factors that determine the level of manifestation of coordination abilities include:

- A. *Motor memory **
- B. *Sensory memory*
- C. *Long memory*
- D. *Short-term memory*

10. The ability to control the temporal, spatial and power parameters of movements is actively growing

- A. *from 2 to 5 and from 15 to 18 years old **
- B. *from 10 to 11 and from 12 to 15 years old*
- C. *from 18 to 21 and from 23 to 42 years old*
- D. *from 8 to 9 and from 10 to 11 years old*

Recommended Reading Basic Literature

1. *Верхошанский Ю.В. Основы специальной физической подготовки спортсменов.-М.:Физкультура и спорт, 1988.-С.111-123.*

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Supplementary literature

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Topic 6. Determinants of agility. Physiological bases of agility. Methodological techniques for the development of agility. Load parameters used in the development of agility (12 hours)

The relevance of the topic. Physical exercise aimed at developing strength helps to improve movement. Agility is a person's ability to quickly master new movements and rebuild motor activity in accordance with the requirements of the environment; it changes dramatically. It is better to train agility at the beginning of the lesson. The methods of agility development are aimed at: students' adequate perception of their movements, equipping with knowledge about rational ways of motor actions fulfillment, formation of the ability to evaluate their movements.

The purpose of the lesson. The use of various sets of exercises aimed at agility.

Exercises for self-study in preparation for the lesson

Theoretical questions

1. Exercises for the improving of agility.
2. Selective and forced improvement of the vestibular and motor analyzers.
3. Improvement of skills and abilities to the correct position of the body, head and limbs.

TEST TASKS

- 1.** Do sports games affect agility development?

*A. yes **

B. maybe

C. no

D. sometimes

- 2.** What are the motor qualities that are developed by means of athletics?

*A. Speed, endurance, agility, flexibility, strength **

B. Speed, endurance, agility, courage, strength

C. wit, endurance, agility, flexibility, strength

D. All answers are correct

- 3.** What is the name of the set of measures aimed at ensuring safety during exercise?

A. attention

B. grouping

C. insurance

*D. an explanation **

- 4.** Duration of agility exercises:

A. 5 min

B. 10 min

C. 7 min

*D. 2-3 min **

- 5.** For the development and improvement of agility and coordination abilities, it is recommended

*A. Perform simultaneously with the improvement of the technique of methods of physical influence, self-defense skills and tactics of their application **

V. Vilsche to train

C. Pay more attention to individual exercises

D. Do individual exercises

- 6.** For the development of dexterity and coordination skills are used

*A. Difficult, unconventional exercises **

B. Simple exercises

C. Sports games

D. Combinations of exercises

7. To increase coordination abilities, exercises are used, the complexity of the movements of which is:

- A. 75-90% of the maximum level. *
- B. 50-70% of the maximum level.
- C. 30-50% of the maximum level
- D. 20-30% of the maximum level

8. The high level of agility and coordination abilities allows faster

- A. master new techniques of physical influence *
- B. have high level of training
- C. do exercises
- D. orienting in life

9. The main component of agility:

- A. accurate sense of distance
- B. speed perception
- C. good coordination
- D. speed

10. Improving coordination skills consists in:

- A. accumulated large number of motor skills *
- B. working out the ways of their operational combination into complex motor actions
- C. number of repetitions
- D. repetition rates

Recommended Reading Basic Literature

1. Верхошанский Ю.В. Основы специальной физической подготовки спортсменов.-М.:Физкультура и спорт, 1988.-С.111-123.
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2. Худолій О.М. Основи науково-дослідної роботи у фізичному вихованні. Харків "ОВС", 2005р.

Information resources

1. <https://studfile.net/preview/5282931/page:2/>
2. http://dspace.zsmu.edu.ua/bitstream/123456789/13049/1/%D0%A1%D0%A0%D0%A1%20%E2%84%9610_%D0%A2%D0%9C%D0%A4%D0%92.pdf

Educational publication

Physical education and health
(elective course)

***Methodical instructions for self-studying of 2nd year students
of the specialty 221 "Dentistry"***

Compilers: Shuteev Vyacheslav
Lapko Svitlana
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Responsible for the issue of: D.S. Starodubtsev

Editor E.Ye. Deprinda
Proofreader EV Rubtsova
Computer typesetting O.Yu. Lavrinenko

A5 format. Mind. printing. arch. 1.8. Deputy № 21-34102.

**Editorial and Publishing Department of KhNMU, 4 Nauki Ave., Kharkiv,
61022
izdatknmurio@gmail.com**

Certificate of inclusion of the subject of publishing in the State Register of
Publishers, Manufacturers and Distributors of Publishing Products Series DK
№ 3242 dated 18.07.2008