

LVIV NATIONAL MEDICAL UNIVERSITY N.A. DANYLO HALYTSKY

Department of Physical Training and Sports Medicine

Approved at the methodical meeting of
the department of Physical training and sports medicine
Head of the department

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GUIDELINES

in the discipline

PHYSICAL REHABILITATION AND SPORTS MEDICINE

for 3th year students

training of specialists of the second (master's) level higher education in the
field of knowledge 22 "Health" specialty 221 "Dentistry" for independent work
in preparation for practical classes

Topic 3 *"General bases of application of means of physical rehabilitation in
dentistry. Application of medical massage in dentistry. "*

Methodical guidelines are made in accordance with the requirements of the curriculum in the discipline "Physical Rehabilitation and Sports Medicine", compiled to train specialists of the second (master's) level of higher education in the field of knowledge 22 "Health" specialty 221 "Dentistry".

According to the curriculum, the study of physical rehabilitation and sports medicine at the medical faculty is carried out in the 3d year of study.

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1. Scientific and methodological substantiation of the topic.

Physical rehabilitation (FR) - an independent medical discipline, which teaches scientifically grounded normalization of physical activity in complex treatment of diseases, prevention of their exacerbations and complications, restoration of the proper quality of life of the sick person. Physical activity is a biologically necessary component of life- which promotes the development of the child, expands and supports the development of the child optimal level of adult functionality inhibits involutionary processes, increases social significance personality limitation of physical activity during a certain illness to a degree facilitates the functioning of affected systems and organs, promotes economising their work, restores the processes of inhibition in the central nervous system. However, unwarranted hypokinesia of the patient throughout for a long time leads to a steady reduction of functioning life-saving body systems, relaxation of processes excitation of the central nervous system, deterioration of the course trophic processes, development of various hypokinetic complications.

Timely and individualized appointment of FR facilities can to help compensate for disturbed functions of the maxillofacial area and prevention of dystrophic complications in the acute period disease. In the recovery period by a gradual (adequate for the patient's body) increase the intensity and duration of the physical activity is restored function and structure morphofunctional complex of maxillofacial area. Possibility of scientifically grounded use of biological the essence of the means of the FR, their affordability and cheapness, unlike medicines, in the treatment of patients depends only on knowledge of doctors. Given this, the future doctor-dentist it is necessary to shape the motivation to timely, adequate and systematic appointment of FR patients for dental patients profile as a part of complex treatment.

2. Educational goal

2.1. The student should know:

- general concepts of rehabilitation and its main directions;
- general principles, stages and means of the FR;
- forms, methods, periods and methodical principles of exercise therapy;
- mechanisms of therapeutic action of the FR;
- classification of physical exercises;
- peculiarities of their use in the complex treatment of patients with dental surgery.
- clinical and functional justification for appointment means of FR for patients with a dental profile.
- assessment of the effectiveness of the procedure and the course of physical eagulation;

2.2. Be able:

- to justify and independently appoint the means of the FR in the composition complex treatment of patients with dental care, evaluation the effectiveness of their appointment.

2.3. Examine practical skills:

- to be able to determine periods with different diseases;
- be able to determine motor modes;
- be able to designate the forms of the FR;
- to be able to determine the methods of holding classes;
- be able to dose the duration and frequency of classes;

3. Tips for the student:

Medical-physical culture is a method of treatment that uses the means of physical culture with therapeutic and prophylactic the purpose for restoration of health and efficiency of the patient, prevention complications and consequences of the pathological process. Exercise therapy is an active functional therapy method because means of exercise therapy can increase the functional reserves of organs and systems, to increase the functional adaptation of the patient and to provide prevention of functional disorders.

Means of exercise therapy - this is primarily physical exercise, as well natural factors of nature and therapeutic massage. Among the physical exercises (FV) are all developing and special ones. General developing exercises are common effect, and special - selective influence taking into account the nature disease or injury.

According to the specifics of muscle contraction, distinguish dynamic isotonic reduction) and static (isometric contraction) PV. By activity can be active and passive. With the help of playback, ideomotor performs in minds exercises. Implicit execution of motor acts causes not only weaknesses reduction of the corresponding muscles, but also improvement of blood supply, increasing trophic processes, lowering the threshold of excitability.

Allocate corrective exercises aimed at relaxation and muscle tension, balance, rhythmoplastic and reflex.

Breathing exercises can be grouped as follows: "local" for increasing the volume of ventilation function of individual parts of the lungs, with respiratory resistance to strengthen the respiratory muscles, to increase mobility of the chest and diaphragm, with reproduction of sounds, drainage with a metered respiratory delay and with volitional control breath.

Exercise therapy includes exercises involving the use of gymnastics and shells (gymnastic sticks, balls, dumbbells, etc.).

Principles of using FR facilities in the warehouse complex treatment of patients with dental profile

Timeliness

Adequacy or individualization of physical activity in accordance with the clinical manifestations of the disease, physical preparedness of the patient, his gender and age
Gradual increase in the intensity and duration of physical loads
Systematic performance of physical exercises
Visibility of the session - showing the physical exercises confirms explanation.

Periods of use of means FR

In surgery

Preoperative - with planned operations
Early postoperative - up to 4 days after surgery
Late postoperative - from the 5th to the 10th day after the operation
Remote postoperative - after discharging from hospital to recovery, and for impossibility – compensation functional disorders of the maxillofacial area

In traumatology

First immobilization
Second immobilization (from the 3rd week - after weakening intermaxillary fixation or change of two-jaw splint on the tire, which is removed)
The third - after the removal of immobilization (postimmobilization)

In therapy

The first (inductive, acute) - expressed morphological and functional disorders of maxillofacial area
The second (basic, functional, retention, recovery) - less pronounced morphological and expressed, as before, functional violation
Third (Final, Training, Recovery, Completion, recovery) - residual manifestations of the sea.

Tools FR. Driving regimes

In the hospital
Bed - the patient needs a permanent medical aid supervision and self-help
Semi-floor, or ward - the patient needs to constant medical supervision, but he can serve himself
Free - the patient does not need constant medical supervision and can serve itself

In ambulatory (sanatorium and resort) conditions

The patient - the condition of the patient requires strict regulation intensity and duration of physical activity
Happy - training - the condition of the patient needs to be strict regulation of duration not regulated by intensity physical activity (elements of sports games, etc.)
Training - the condition of a patient allows inclusion in classes sports games without strict regulation of intensity and duration occupation; the intensity of the load is due to the technicality and endurance of the patient and his partners in the game, duration - the rules the chosen game

Physical Exercise (Appendix 1.2)

Means of quenching -(adapt the body to short cold effects)

The air

- stay naked in the air at a temperature of 18 ° C;
- start with 3 minutes gradually increasing to 20 min. daily

The sun

- Being bare under direct sunlight or in the shade trees from 8-9 to 11 o'clock;
- starting from 5-6 minutes, gradually increasing to 20 minutes; after each 6 days break for 1 day, and after 25-30 days - longer break;
- Avoid overheating the head, covering it with a hat, umbrella and the like;
- pour the body with water at a temperature of 35-37 ° C after a solar bath in shade;
- Do not take sunbaths on an empty stomach, before 1.5 hours.

after going

- do not eat immediately after sunbathing;
- Remember that burns often occur on wet skin

Water

Wiping dipped in water and knitted towel • start with temperature 35 ° C, decreasing every 2-3 days at 1 ° C to 16-18 ° C within 5 minutes; the procedure of rubbing - the upper, lower limbs, chest, stomach, back

Bathing in open water

- start with 3 minutes at an air temperature not lower than 26 ° C and water – not below 22 ° C; not earlier than in 1,5-2 hours. after eating;
- move in water during bathing.

Mechanisms of curative action of means FR

Toning (stimulating):

- Stimulation of blood and lymph circulation of working muscles and all the body as a whole;
- Stimulation of motor-evacuation and acid-forming functions of the digestive tract;
- stimulation of hemopoiesis; fibrinolytic blood activity;
- stimulation of the adrenal cortex; increase in insulin levels;
- increased metabolism;
- stimulation of the child's psychomotor development

Trophic:

- strengthening of regeneration and repair processes;
- accelerated resorption of the inflammatory exsudate;
- enhancement of oxidation-reducing processes without compulsory change blood supply;
- prevention of atrophic and degenerative processes;
- Restructuring of primary bone corn;
- increased calcium intake in the bones;
- Stimulation of growth with underdevelopment or delay in it excessive jaw development

Compensatory (temporary or permanent replacement lost function):

- inclusion of extracardiac factors of the blood circulation (muscular pump, suction action of the chest and abdominal cavity, position body)
- compensation for violations of the function of chewing, swallowing, and speech for account of undamaged tissues

Renewal (normalization and improvement of excited functions):

- Restoration of the excited function of mimic, chewing muscles, muscles tongue, soft palate, volume of movements in the temporo-mandibular joint;
- normalization of force, tonus of chewing, mimic and skeletal muscles;
- restoration of physical capacity;
- normalization of the mobility of the nervous processes;
- normalization of trophic musculoskeletal system;
- normalization of blood circulation in the Filatov's stalk;
- normalization of jaw position;
- restoration of the nasal type of respiration, chewing, and speech.

Forms of the appointment of the FR

Independent classes for individual tasks before the mirror

Therapeutic exercises for mimic and chewing muscles

Dosed walking:

- Slow - 80-99 steps / min
- Moderate - 100-110 steps / min
- Fast - 111-120 steps / min
- Running-> 120 steps / min

Metered climb (terrenkur) - dosed walking with gradual ascent and descent on special routes: 1st route - lifting angle 0-5 ° - 500 m; 2nd route - the ascent of the 5- 10 ° - 1000 m; 3rd route - lifting angle 10-15 ° - 2000 m; 4th route - the lifting angle is 15-20 ° - 3000-5000 m

Dosage swimming (with a certain intensity and duration)

Gymnastics in the water

Mechanotherapy for chewing muscles

Games:

- small mobility - in place (sitting, lying, rarely - standing);
- average mobility - without running;
- high mobility - using running;
- sports

Massage of maxillofacial area (see topic 2)

Methods of conducting physical exercises

Individual - a methodologist, the instructor deals with a separate sick in the ward

Small group - methodologist, instructor deals with 3-5 patients in the ward

Group - a methodologist, the instructor deals with a group of patients in the hall

Groups are formed for:

- a nosological feature;
- functional homogeneity;
- sometimes by gender and age (especially in childhood)

Consultative - the patients are engaged independently after advisory recommendations of a methodologist, a doctor

Duration, multiplicity of classes

At bed mode: 10-15 minutes 3-5 times a day, daily

At the chamber mode: 15-20 min 2-3 times a day on a daily basis

When in free mode: 30-40 min 1-2 times a day, daily

At sparing, benign training and training modes: 30-40 min. not less than 3 times a week

8. Dosage of physical exercises of local influence in patients dental profile

When bed mode: repeat every exercise 4-5 times asleep, at least 5 times a day, daily

In chamber mode: every exercise is repeated 5-6 times every day

In free mode: every exercise is repeated 10-15 times every day

At sparing, benign training and training regimes: repeat every exercise 10-15 times in a row daily

8.1. Features of performing special exercises

Perform in front of the mirror in a sitting position

Carrying out heat treatments and massage before performing exercises (reduces muscle tension)

Exercise for the muscles of the neck and shoulder girdle before performing special exercises (creates a favorable one physiological background for performing special exercises)

Alternation of relaxation and stretching of muscles (previous relaxation of the muscles gives maximum stretching and reduces fatigue muscles)

9. Methods and criteria for evaluating the effectiveness of the conducted complex treatment

9.1. Gnatodinamometry - determines the amount of chewing gum pressure on various teeth of the tooth row and in the whole of the tooth row (in kg). Positive dynamics is characterized by an increase in chewing pressure

9.2. Masticography - determines the biomechanics of chewing the apparatus:

- first phase - isoelectric line (before food in the mouth cavity);
- second phase - lifting of the curve (due to the opening of the mouth);
- third phase - reduction of the curve (due to closure of the mouth and chewing);
- Fourth phase - wave-like movements of the curve of full amplitude and frequencies that depend on the fullness of the chewing gum and consistency of food;
- positive dynamics is characterized by an increase in the amplitude and the frequency of wave-like curve movements, as well as the steeper downward movement the knee of the curve

9.3 Electromyography - determines the duration and amplitude bioelectric activity of chewing and mimic muscles:

- for chewing muscles, the duration of biopotential is normally 9- 10 ms and the amplitude does not exceed 3000 mV;
- For mimic muscles, the duration of the biopotential is normally 5-7 ms and the amplitude does not exceed 3000 mV;

- positive dynamics is characterized by an increase in the duration and the amplitudes of the biopotentials of the restored muscles

9.4. Christensen's test determines the effectiveness of chewing gum the apparatus:

- offer to take 5 g of nuts in the mouth and make 50 chewing gums;
- dry the lint at 100 ° C for 1 hour, sift the mass through a strainer with different sized holes;
- weigh the size of the sieved particles of the nuts and the remaining ones in a sieve, and by weight determine their ratio;
- Positive dynamics is characterized by an increase in the mass of sieved nuts

9.5 Rubinov's test determines the effectiveness of chewing gum the apparatus:

- offer to eat 0.8 g of hazelnuts and pick out the time of appearance swallowing reflex;
- positive dynamics is characterized by a reduction in the time of appearance swallow

Features of the use of therapeutic massage in dentistry

Massage is the most adequate physiological form of physical rehabilitation of passive influence on the human body. Timely individual appointment of massage in the complex treatment of patients with a dental profile can contribute to accelerating the resorption of inflammatory, post-traumatic and postoperative infiltration of facial tissues and prevents dystrophic complications.

The duration of the massage procedure should be 5-15 minutes and depends on the nature and stage of the disease. The frequency of massage - daily or 2-3 times a day and depends on: the nature and stage of the disease, age. The course of massage 5-20 procedures.

Contraindications to the appointment of massage

- acute period of the disease
- acute fever
- fungal and purulent skin diseases
- purulent processes, osteomyelitis
- infected wounds
- aneurysm of the vessels of the face

Therapeutic effect of massage

1. Stimulates the mechanoreceptors of the skin, normalizes the mobility of nerve processes.
2. Stimulates blood and lymph circulation.
3. Normalizes the tone and elasticity of facial and chewing muscles.
4. Normalizes the trophic of the ulcer-ligamentous apparatus, promotes the resorption of scars.

Stages of the procedure of therapeutic massage in dentistry

Preparatory

- for cleansing the skin from the fused epithelium
- to improve blood mobility, lymph

Detailed

- for individual parts of the face (upper, lower lip, etc.)

- use all massage techniques

Final

- to increase blood flow to the face
- use of vibration techniques (tapping)

Separate massage of gums is possible (stroking movements with the index finger from the neck to the apex of the roots of the teeth).

Cryomassage - rub in a circular or zigzag pouch filled with ice. Duration from 2-3 to 5 minutes.

4. Control issues:

1. Structure of LFD. Task and maintenance of medical control over persons engaged in physical culture and sports.
2. Tasks, organization and content of medical physical education.
3. Determine whether there is a contraindication to the appointment of funds medical physical education.
4. Determine the treatment period in which the patient is.
5. To formulate the general and special tasks that are necessary to solve the means of the FR in this situation
6. Specify the means of FR that can be used for solution of the tasks in this situation.
7. Specify the forms of physical culture. Specify features massage procedures.
8. Determine the forms of appointment of facilities of the FR.
9. What exercises are carried out.
10. Methods of carrying out exercises with the exercise of physical exercises.

5. Literature:

5.1. Basic:

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