**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**
**k.b.s., associate prof. Kunynets O.B.** _____
**Protocol № 18 from 16.05 2023**

# GUIDELINES

in the discipline

# PHYSICAL REHABILITATION AND SPORTS MEDICINE

for 4th year students

training of specialists of the second (master's) level higher education in the field of knowledge 22 "Health" specialty 222 "Medicine" for independent work in preparation for practical classes

**Topic 12** *"Features of the physical education of infants. Physical rehabilitation of sick infants."*

LVIV-2023

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 222 "Medicine".

According to the curriculum, the study of physical rehabilitation and sports medicine at the medical faculty is carried out in the 4th year of study. The program is designed for 75 hours, of which 30 classroom hours (practical classes), 8 hours - lectures and 37 hours of independent work of students (IWS).

Methodical recommendations prepared by assistant of the department of physical education and sports medicine Marusiak S.V., Candidate of Medical Sciences, associate professor of the department of physical education and sports medicine Maglovana G.M..

According to the general wording of the head of the Department of Physical Education and Sports Medicine, Candidate of Biological Sciences, Associate Professor O.B. Kunynets.

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**Relevance of the topic**: Physiological development of the child is impossible without motor activity. Sick children with disabilities can not develop normally and lag behind their peers.

In childhood exercise has the most pronounced tonic effect, the best trophic and compensatory effect.

**2. Class duration:** 2 hours.

**3. Learning goal:**

**To know:**

1. Physiological features of the child's body. Features of physical education of infants and children.
2. Tasks and features of methods of therapeutic gymnastics in children with acute pneumonia.
3. Tasks and features of methods of therapeutic gymnastics in children with rachitis andmalnutrition.

**To be able:**

To master an individual approach to each child taking into account the age of the child,to be able to combine physical exercises of the general action and special character.

**4. Basic knowledge, skills, abilities necessary for studying the topic (interdisciplinary integration).**

*Anatomy, physiology*: anatomical and physiological features of organs and systems of the child's body.

*Pathological anatomy, pathological physiology:* anatomical and physiological disorders in child's diseases.

**5. Student advice.**

**5.1. Questions for self-control:**

1. Chronic recurrent bronchitis. Indications. Task of exercise.
2. Motor modes that are prescribed to children with acute pneumonia.
3. Acute pneumonia in children of preschool and school age. Indications. Task of exercise.
4. Chronic recurrent bronchitis. Indications. Task of exercise. Means.

5. Inflammation of the lungs, task of exercise.

6. Contraindications for exercise therapy for children with diseases of the respiratory system.

7. The task of exercise for children with malnutrition

8. Contraindications for therapeutic exercise in children with rachitis.

9. Indications, tasks of exercise, methods of treatment of children with pyelonephritis.

## 5.2. Topic content

***Basic principles of application of facilities of physical rehabilitation are in pediatrics***

Therapeutic exercise for sick young children

*Contraindications:*

- Heavy overall child
- Toxicoses
- High body temperature
- Diseases of blood
- Acute gastro-intestinal disorders
- Heart disease with symptoms of decompensation
- Inflammatory processes in the skin

***Rachitis***

Children under 2 months and older are more often ill. The main characteristic feature is changes in phosphorus-calcium metabolism. The musculoskeletal system is deformed. The muscular system is more affected due to insufficient of phosphorus compounds in the muscles, calcium metabolism is disturbed. Clinically: muscle involvement, bloating, restlessness, restless sleep, sweating. Respiratory function is disturbed due to hypotension of the respiratory muscles, the chest is deformed. There are three degrees of rachitis: I – easy degree, II- disease of moderate severity, III – severe degree. Along of the organization of proper fedding, children are prescribed vitamins D and C, UV irradiation, coniferous-salt baths, with a water temperature 36-37 C for 5-10 minutes every other day. Apply rubbing with salt water, showering, air-sun baths after feeding, therapeutic gymnastics and massage procedures. Massage improves methabolic processes, prevents disease progression, increases blood circulation, stimulates recovery processes in muscles.

*The task of exercise during the height of the disease:*

- Normalization of basic nervous processes
- Improvement of metabolic

- Restoration of dysfunction of the respiratory and circulatory
- Preventing deformation possible musculoskeletal system.

*The task of exercise during reconvalescence:*

- Elimination of muscular hypotonia
- Leveling violations of psychomotor development
- Recover lost or delayed motor skills
- Correction of deformities of the musculoskeletal system.

*Fixed assets:* massage, passive exercise, stimulation. To correct deformities of the skeleton-teaching on the abdomen.

*Tasks during exercise residual effects:*

- Normalization function of organs and systems
- Normalization of psychomotor development
- Correction of deformities of the musculoskeletal system
- Increased non-specific defenses.

*Fixed assets:* massage, exercise, passive exercise with elements of movements,corrective exercise, salt-pine baths (from 6 months).

***Hypotrophy***

The disease is characterized by exhaustion of the organism, thinning of the subcutaneous fat layer, dysfunction of the gastrointestinal tract.

*The task of exercise:*

- Improvement and normalization of nerve processes, metabolic functions of the digestive system, cardiovascular system, respiratory system
- Prevention of psychomotor retardation in development and its elimination
- Recovery and elimination of motor skills in case of violationI degree of exercise-15-18 min, active exercises with a small number of repetitions of exercises, passive, stroking massage trunk
- Second-degree duration of 15 min sessions. Reduces overall load
- Third degree-duration studies 5-8 minutes. Use stroking massage of the torso and theextremities, reflective exercises, teaching in the stomach.

***Inflammation of the lungs***

*The task of exercise:*

- Reflex increase of the respiratory muscles

- Removal of flatulence and improving intestines function
- Accelerate resolution inflammatory infiltrates
- Prevention of complications
- Sustaining the compensation of respiratory failure and a gradual recovery of respiratoryfunction
- First period-stroking massage, passive exercise for the arms and legs, reflective exercises.
- Second period-stroking massage of the extremities and trunk, passive exercises for the upper and lower extremities, reflective exercises
- Third-period exercise carried out intensively.

***Exercise therapy for children with diseases of the respiratory***

*Contraindications:*

- Acute inflammation with severe cough, severe intoxication
- Acute depletion of the patient, hemoptysis, respiratory failure
- Seizures of asthma
- Significant dysfunction of the cardiovascular system.

***Acute pneumonia in children of preschool and school age***

*Indications:*

Reduction or disappearance of symptoms of toxicity after lowering body temperature to normal.

*The task of exercise:*

- Acceleration resorption
- Promoting the removal of phlegm
- Acceleration of the nervous system
- Overcoming asthenic condition.

Methods of exercise therapy massage, passive exercise, breathing exercises.

***Acute bronchitis***

*Indications:* normalization of body temperature.

*The task of exercise:*

- Learning proper breathing
- Improvement of bronchial conductivity
- Reduction or elimination of changes in bronchial
- The acceleration of reparative processes.

*Methods:* static breathing exercises, drainage and general health exercises, massage of the chest.

***Chronic recurrent bronchitis***

*Indications:* remission phase

*The task of exercise:*

- learn to breathe correctly
- Improve bronchial conductance
- Prevent the worsening of the disease

*Means:* massage, exercises for the chest muscles and upper extremities, General heal thexercises and exercises applied nature.

***Asthma***

*Indications:* Between salable period in cases of non-remission, full remission.

*The task of exercise:*

- Reduction and elimination of bronchial spasm
- Improved function evacuation bronchial tree
- Optimization of external respiration.

*Means:* breathing exercises, static exercises, exercises with missiles, outdoor games.

***Rheumatism***

*Indications:* the tendency to reduce rheumatic process, reducing the limits of the heart

*Contraindications:* increased body temperature, increase in activity of rheumatic process.

*Tasks during exercise strict bed regime:*

- Facilitate the work of the hear
- Compensate circulatory failure
- Reduce the stagnation

*Target exercise during extended bed regime:*

- Improve pulmonary ventilation
- Unloading the heart muscle

*Target exercise during ward mode:*

- Sustaining the circulatory compensation
- Increased metabolism

*The task of exercise in their free time:*

Normalize the activity of the cardiovascular system.

***Gastritis***

*Indications:* chronic gastritis

*The task of exercise:*

- Reduction of inflammation
- Improvement of trophic gastrointestinal
- Restoration of disturbed functions of CNS.

*Methods:* General health exercises, coordination exercises, walking, static and dynamic breathing exercises

***Biliary dyskinesia***

*Indications:* sharp pain subsiding

*The task of exercise:*

- Special-increase blood circulation and trophic processes in the abdominal
- General-normalization of the functional state of central nervous system,elimination of neurotic disorders.

*Methods:* The position on the left side, diaphragmatic breathing exercises for abdominal muscles, outdoor games, massage.

***Pyelonephritis***

*Indications:* lower back pain and dysuria phenomena, the tendency to normalization of renal function

*The task of exercise:*

- stimulation and improvement of renal function
- Increased urination and facilitate the outflow of urine
- Reduction or elimination of the inflammatory process.

*Methods:* In the supine position, massage, exercises for back muscles, abdomen andpelvis.

***Wryneck***

*The task of exercise:*

- Improved blood and lymph circulation

- Reducing or eliminating muscles contracture
- Increase mobility and decrease tilt head

*Methods of exercise:* stroking massage the extremities and trunk, treatment provision.

***Flat foot***

*The task of exercise:*

- Strengthening muscles apparatus
- Improved muscle blood flow stop

*Methods:* The exercise aimed to correct deformities of the foot, walking on the sand on socks, massage

***Skin stiffnes***

The disease is characterized by redness, its constant humidity, itching. The child is restless. In combination with skin hygiene prescribe physiotherapy procedures on the affected areas (general or local UV irradiation begins with 0,5 biodoses and is adjusted to1,5-2 biodoses). Manganese, starch, tannin baths with a water temperature of 36-37 Cfor a 3-5 minutes a day, a course of 8-2 baths, air and sun baths, therapeutic gymnastics, massage of healthy tissues.

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