

**ANATOMO-PHYSIOLOGICAL PECULIARITIES, METHODS
OF EVALUATION OF THE RESPIRATORY SYSTEM IN
CHILDREN**

Academic discipline «Pediatric Propedeutics»

Teacher's guide for the 3rd year

English medium students

**АНАТОМО-ФІЗІОЛОГІЧНІ ОСОБЛИВОСТІ, МЕТОДИ
ОБСТЕЖЕННЯ СИСТЕМИ ДИХАННЯ У ДІТЕЙ**

З дисципліни «Пропедевтика педіатрії»

*Методичні розробки для викладачів до аудиторної роботи
студентів 3-го курсу медичного факультету*

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

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Затверджено
Вченою радою ХНМУ
Протокол № від

Харків
ХНМУ
2016

Anatomo-physiological peculiarities, methods of evaluation of the respiratory system in children: teacher's guide for the 3rd year English medium students / compiled by: V.A., Klymenko T.V. Sirenko, O.M. Plakhotna, H.S. Sivoplyas-Romanova– Kharkiv: KhNMU, 2016. – 16 p.

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Анатомо-фізіологічні особливості, методи обстеження системи дихання у дітей: метод. розр. для викладачів до аудит. роботи студентів 3 курсу медичних факультетів / упор. В.А.Клименко, Т.В. Сіренко, О.М. Плахотна, Г.С. Сивопляс-Романова. – Харків, ХНМУ, 2016. – 16 с.

Упорядники: Клименко В.А.
Сіренко Т.В.
Плахотна О.М.
Сивопляс-Романова Г.С.

Amount of educational hours: self-dependent work – 4;
practical training – 4.

Contents

Embryogenesis of the respiratory system. Critical period of development. Morpho-functional characteristic of the respiratory system. The respiratory system's parts: the upper respiratory tract, the lower respiratory tract. Functions of the respiratory system: respiratory function, gas exchange and nonrespiratory functions of lungs – hormone, regulation of blood reology, water metabolism, termoregulation, etc. The main regularity of morpho-functional development on tissue and organ levels is permanent growth and development. Growth and development in intrauterin period, term of surfactant maturity, adaptation of function of the respiratory system in postnatal period, completion of tissue maturity to 7-12 years. Peculiarity of formation of congenital pathology. Tissue reconstruction in postnatal period. Correlation morphological structure and pathology. Peculiarities of external breathing.

The main clinical and paraclinical methods of investigation: interrogation, inspection, palpation, percussion (comparative, topographical), auscultation, counting respiratory rate movements, clinical investigation of nose, throat secret, sputum, pleurisy exudates, bacteriological and virusological investigation of the same materials, roentgenological methods of investigation of lungs, paranasal sinuses, bronchoscopy, bronchography, investigation of function of external breathing, routine methods of sick child investigation (blood count, urinalyses, etc.). The role of respiratory system examination in Pediatrics practice.

Specific goals

- to collect anamnesis of a patient with diseases of the respiratory system.
- to perform an objective examination of the respiratory system taking into account the child's age characteristics.
- to interpret the result of examination.

To know:

1. Peculiarities of embryogenesis of the respiratory system.
2. Abnormalities of the respiratory system development.
3. Anatomical and physiological peculiarities of the respiratory system in children.
4. Methods of respiratory clinical examination of children (interrogation visual inspection, palpation, comparative and topographic percussion, auscultation of the lungs).

Be able to:

1. to collect anamnesis of a patient with diseases of the respiratory system.
2. to perform an objective examination of the respiratory system taking into account the child's age characteristics.
3. to interpret the results of examination.

Providing an initial level of knowledge-abilities

To apply the materials of the guidelines for independent extra-curricular activities of students to the topic 10.

Materials needed for methodological support:

1. Case history of children with the respiratory system diseases, tables, slides.

The technological card of the lesson

№	Stage of the lesson	Study time (min)	Tutorials		Place of the lesson
			Learning tools	Equipment	
1.	Determination of the initial level of knowledge	20	Testing	Tests	Classroom
2.	Determination of the main positions of the topic	25	Quiz, discussion	Graphical structure of the topic, case history of childrens with the respiratory system diseases.	Classroom
3.	Break	10			
4.	Solution for the training tasks of the topic	45	Independent work of a student under the guidance of a teacher - training of practical skills	Premises and equipment of the hospital	Departments of the hospital
5.	Break	30			
6.	Solution for the training tasks of the topic	45	Independent work of a student under the guidance of a teacher - training of practical skills.	Premises and equipment of the hospital	Departments of the hospital
7.	Break	10			
8.	Determination of the output level of skills readiness.	20	Checking of the practical skills of a student while work in the departments.	Premises and equipment of the hospital	Departments of the hospital

9.	Determination of the output level of knowledge and skills readiness.	15	Solving and discussion of situational assignments Checking entries in the diary of practical training	Situational tasks	Classroom
10.	Summation of the lesson. Assignment to the next lesson.	10	Quiz, discussion		Classroom

The estimated basis of the action in performance of the learning objectives of the topic (sections 4, 6):

1. Self classroom work in the departments for children of different age - medical history, characteristics of clinical methods of the respiratory system examination, interrogation, examination, palpation, percussion, auscultation.
2. Determination of the pathological changes of the respiratory system.

Assignments for testing the final level of knowledge

Situational tasks

Task 1

A premature newborn was born at age of gestation 35 week with mass 2300g. Now the age of the newborn is 3 week. Breathing is irregular, 30 – 34/min. What must the respiratory rate be normal in this child?

Answer – 40 -60 .

Task 2

A 1 – month – old child admitted to an infant department of a hospital with expiratory type of the dyspnoea, not productive cough, moist bilateral rales. Affection of which part of the respiratory system is more typical for this manifestation?

Answer – small bronchi and bronchioles

Task 3

What is the peculiarity of the nasal cavity in children of 1 year old?

Answer: Well develop cavernous tissue of submucosa.

Task 4

7-month-old baby has the inspiratory dyspnoea, buking cough, body temperature

is 36,6⁰C. Which part of the respiratory system is affected?

Answer: the upper respiratory tract, the larynx.

Task 5

A 4 – month – old child was examined by a student. It was found: difficulty in the nose breathings, the barrel – shaped chest, the horizontal direction of ribs, weak their excursion, the respiratory rate is 64/min, box type of sound of percussion, puerile type of breathing during auscultation. Which symptom are pathological?

Answer: the difficulty in the nose breath, the rate of the breathing is big.

Task 6

A 6 – month – old child was examined by a student. It was found: the barrel – shaped chest, the horizontal direction of ribs, the weak their excursion, respiratory rate is 36/min, box type of sound during percussion, harsh type of breathing during auscultation. Which symptom is pathological?

Answer: harsh type of breathing.

Task 7

Child is 3-month-old. The physical and mental development is good. From the first days of life he had noisy breathing to increase during crying. The result of the inspection: expiratory dyspnoea, rough noisy breathing. What is the most likely cause of this condition?

Answer: the congenital stridor, softness resistance of the epiglottis cartilage.

The **maximum number of points** which may be consequently obtained by students is 200 points; this includes 120 points for current educational activity and 80 points for the final lesson.

Current educational activity of students is controlled during practical classes according to specific goals in the course of each practical class as well as during self-training in the hospital department. It is recommended to apply the following means of diagnostics of the students' level of readiness: control of practical skills, solving cases and test control of theoretical knowledge.

The current assessment of students on respective topics is conducted in the traditional 4-point grade scale ("excellent", "good", "satisfactory" and "unsatisfactory") with further conversion into a multiscore scale.

The grade "Excellent" is given when the student knows the program in toto, illustrating the answers with various examples; gives clear and comprehensive answers without any hints; delivers the material without any inaccuracies or errors; performs practical tasks of a different degree of complexity.

The grade "Good" is given when the student knows the whole program and understands it well, gives correct, consistent and structured but not completely comprehensive answers to questions, although he is able to answer additional questions without mistakes; solves all cases and performs practical tasks experiencing difficulties only in the most complex situations.

The grade "Satisfactory" is given to the student based on his satisfactory level of knowledge and understanding of the entire subject. The student is able to solve modified tasks with the help of hints; solves cases and applies practical skills experiencing difficulties in simple cases; is unable to deliver a consistent answer, but answers direct questions correctly.

The mark "Unsatisfactory" is given when the student's knowledge and skills do not meet the requirements of the grade "satisfactory".

Given the number of practical classes the grades are converted into the multiscore scale as follows:

The mark "Excellent" – 72-80 scores

The mark "Good" – 60-71 scores

The mark "Satisfactory" – 50-59 scores

The mark "Unsatisfactory" – 0 scores

Для нотатків

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Навчальне видання

**Анатомо-фізіологічні особливості, методи обстеження системи
дихання у дітей**

Упорядники: Клименко Вікторія Анатоліївна
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Відповідальний за випуск: Клименко В.А.

Комп'ютерна верстка

Ум. друк. арк. ____ . Тираж ____ прим. Зам. № ____ .
