

**PHYSICAL DEVELOPMENT OF A CHILD AND
ANTHROPOMETRY. PHYSICAL DEVELOPMENT
ASSESSMENT**

Academic discipline «Pediatric Propedeutics»

*Teacher's guide for the 3rd year
English medium students*

**ФІЗИЧНИЙ РОЗВИТОК ДИТИНИ ТА АНТРОПОМЕТРІЯ.
ОЦІНКА ФІЗИЧНОГО РОЗВИТКУ.**

З дисципліни «Пропедевтика педіатрії»

*Методичні розробки
до аудиторної роботи викладачів*

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

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Затверджено
Вченою радою ХНМУ
Протокол № від

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Physical development of children, anthropometry, assessment of the physical development: methodical recommendations for teachers' classwork/ compiled by.: V.A., Klymenko T.V. Sirenko, K.O. Yanovska– Kharkiv: KhNMU, 2016. – 16 p.

Compiled by: Klymenko V.A.
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Yanovska K.O.

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Упорядники: Клименко В.А.
Сіренко Т.В.
Яновська К.О.

Amount of educational hours: self-dependent work – 1;
practical training – 4.

Content

Age-specific characteristics of human physical development constitute an impartment parameter which allows assessing a normal development of the body and determining deviations from the normal range.

Physical development is variable and depends on certain factors. First of all, it depends on the gestation and delivery course and mother's state of health. After the birth, the physical development of a child is affected by endogenous (intrinsic) and exogenous (extrinsic) factors. Endogenous endocrine glands have an influence on children's development. In the earliest period of childhood, thymus has the main influence, thyroid gland after the end of the first year of life, hypophysis starting from the third year of life. Exogenous factors are conditions of life and development of the child, hygienic state of environment where the child develops, nutrition, different acute diseases.

The main parameters used for the assessment of the physical development of children of early and preschool age are height, body weight, chest circumference, head circumference as well as lipopexia state, skin and mucous state.

The main method used for the study of the physical development is an anthropometric method; that is measurements of the body (linear, superficial, volumetric and weighting).

Specific goals

1. - Conception of the physical development, its meaning and assessments.
2. Conception of the acceleration of children's development.
3. Main hypothesis and mechanisms of acceleration.
4. Anthropometric methods.

5. Methods of children's physical development.
 6. Semiotics of children's physical development.
 7. Physical education.

To know: How to assess the physical development of children of different age, to understand to reasons of the pathology of physical development.

Be able to:

1. Measurement of the main body parameters (weight, height, head, chest, hip, calf, shoulder circumferences, body mass index).
2. Calculation of anthropometric indexes.
3. Calculation of appropriate parameters of the physical development according to the empirical equations, sygmal and empirical tables, alignment charts.
4. Assessment of the physical development based on the received data.

Providing an initial level of knowledge-abilities

To apply the materials of the guidelines for independent extra-curricular activities of students to the subject 1.

Materials needed for methodological support:

The technological card of the lesson

№	Step of the lesson	Study time (min)	Tutorials		Place of the lesson
			Learning tools	Equipment	
1.	Determination of the	20	Testing	Tests	Classroom

	initial level of knowledge				
2.	Determination of the main positions of the topic	25	Quiz, discussion	Graphical structure of the topic, case history of childrens with breastfeeding and after introduction of solid foods.	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	Premises and equipment of the hospital	Departments of the hospital

			of a teacher - training of practical skills. Completion of the diary of practical training.		
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	Situational tasks	Classroom

			diary of practical training		
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:

1. Study the medical history of the child. Anthropometric measurements assessments using nomograms and centile tables.
2. Self-study in the Hospital departments – make a child’s weight measurements, measure height, head circumference, chest circumference, assess his physical development.

Tasks for the final knowledge assessment.

Situational tasks:

Task 1. A child was born with 3500 g birth weight, 50 cm. Assess physical development of the neonatal.

Standard of answer: Physical development of a child – average.

Task 2. A child was born with 3400 g birth weight, 52 cm. Head circumference – 33 cm, chest circumference – 32cm. Currently the child is 1 year old. Weight – 10 kg, height – 75 cm, head circumference – 50cm, frontal fontanelle – 2x2 cm. What physical parameters are abnormal? What conclusions can we make in the particular case?

Standard of answer: weight and height of the child are normal for his age. The head circumference is 5cm more than average; suspected case of hydrocephalus.

Task 3. A 7 year old boy. Weight – 25kg, height – 117cm. Weight at birth – 3000g, height – 49cm. Calculate the weight and height parameters, assess the physical development.

Standard of answer: the physical development of the child is normal for his age and gender.

Task 4. Parents note that their 1 year old child have a 14 kg weight and 72cm height. Weight at birth – 3.1kg, height – 51cm. Calculate the weight and height parameters, assess the physical development.

Standard of answer: the weight of the child is 29% more than average norm, that is the evidence of paratrophia.

Task 5. A 2 years old girl, height – 80cm. Assess the height with the help of centile tables.

Standard of answer: The height of the girl is above average. (75-97 centile)

Task 6. A 1 year old boy, weight – 11kg. Mother notes that his head is too big. Head measurements has shown that head circumference – 51cm, (head circumference at birth – 3cm). What parameters of head circumference are normal? What tolerance in measurements is normal? What pathology is suspected?

Standard of answer: 45 – 47cm. Hydrocephalus.

Task 7. A 14 years old boy. Height – 170cm, weight – 64kg. Centile assessment: of a height – 97 centile, of a weight – 90 centile. How can we call this type of the somatic growth?

Standard of answer: Macrosomatic.

Task 8. A 6 month age child. Weight at birth – 3000g, gained 4500g in weight. Height – 65 cm. Assess his physical development.

Standard of answer: the physical development of the child is normal for his age.

Task 9. A 9 months age boy, had a shigellosis 2 months ago, lost in weight. Currently weight – 7500g, (weight at birth – 3100g).

Calculate a weight deficit. What was the cause for this condition?

Standard of answer: the weight deficit – 16%, that meets the case of first-degree hypotrophy. Infectious disease precipitated the hypotrophy.

Task 10. A 1 month old child, weight at birth – 4000g, height – 55cm. Current weight 5200g, height – 58cm. Naturally feeding. Assess the weight and height of the child.

Standard of answer: Appropriate weight $4800 \pm 10\%$. Height – normal. The child has a liability to a paratrophia.

Points that student can get for the work

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

List of learning literature:

Basic literature:

1. Propaedeutics of Pediatrics: Manual for foreign students / V. A. Fjoklin, V. A. Klymenko, O. M. Plakhotna, T. V. Sirenko, A. I. Kojemiaka, O. V. Sharikadze. – Kharkiv: 2010. – 356 p.
2. Kapitan T. Propaedeutics of children diseases and nursing of the child / T. Kapitan. – The state cartographical factory, 2006. – 734p.
3. Мазурин А.В., Воронцов И.М. Пропедевтика детских болезней. – СПб.: Фолиант, 2000. – 928с.
4. Наказ МОЗ України №149 від 20.03.2008 «Про затвердження Клінічного протоколу медичного догляду за здоровою дитиною віком до 3 років».

5. Ріст і розвиток людини: навчальний посібник / Під ред. проф. Ю.М.Нечитайла. – Чернівці: БДМА, 2003. – II вид., пер. – 56 с., іл.
6. Чеботарьова В.Д., Майданник В.Г. Пропедевтична педіатрія. – К., 1999. – 578с.

Additional:

1. Nelson textbook of pediatrics.—19th ed./ [edited by] Robert M. Kliegman... [at. ol], p. SM
2. Ghai O.P. Essential pediatrics (fourth edition). – New Delhi, India: Interpint, 1996.—476 p.
3. Gupte S. The short textbook of pediatrics, 8th edition. – New Deli, India.: Iaypee Brthe others. Medical publishers (P) hTD, 1998. – 617 p.
4. Bickley L.S., Hockelman R.A. Physical examination and History Taking. – Philadelphia, New York, Baltimor.: Lippincott, 1999. – 789 p.

Для нотатків

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Навчальне видання

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Сіренко Тетяна Вадимівна
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Відповідальний за випуск: Клименко В.А.

Комп'ютерна верстка

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