

**BREASTFEEDING OF INFANTS**

**Academic discipline «Pediatric Propedeutics»**

*Teacher's guide for the 3<sup>rd</sup> year*

*English medium students*

**ПРИРОДНЕ ВИГОДОВУВАННЯ НЕМОВЛЯТ**

**З дисципліни «Пропедевтика педіатрії»**

**МЕТОДИЧНІ РОЗРОБКИ**

**ДО АУДИТОРНОЇ РОБОТИ ВИКЛАДАЧІВ**

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ**  
**Харківський національний медичний університет**

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Затверджено  
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**Харків**  
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Sirenko T.V.  
Lupaltsova O.S.

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Сіренко Т.В.  
Лупальцова О.С.

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

### **Contents**

Many researchers of the epidemiology of breastfeeding in developed countries and in developing countries have observed that breastfeeding performs a wide range of vital functions and regulated of development and differentiation. Breast milk provides many health benefits and it is the ideal first food for infants. In addition to providing the absolute best nutrition for a growing body, breastmilk supplies the factors needed to develop the immune system and protect the child against infectious disease. However, there is the particularity of nutrition according the age which provides the normal functioning of all organs and systems. In the second half of the first year after birth, children with breastfeeding require some qualitative changes in the diet, such as increase of the protein and minerals, and should be introduced to appropriate the solid foods. The knowledge of main principles of breastfeeding and introduction of solid foods is important for organization of feeding as for full-term and pre-term infants.

### **Specific goals**

- To define modern aspects of breastfeeding of infants.
- To expect and prepare the daily diet for children with breastfeeding.
- To adjust the daily regime of feeding for children older than one year.

### **To know:**

1. The modern aspects of breastfeeding of infants.
2. To identify the benefits of breastfeeding for newborn.
3. To define the quantitative and qualitative composition and the immunological role of a breast milk.
4. To demonstrate the calculating of volum of milk for infants using volumetric feeding method.
5. To provide the correct technique of breastfeeding.
6. To define main difficulties in breastfeeding, prevention of hypogalactia and mastitis.

7. To define the needs of child with breastfeeding in proteins, fats, carbohydrates and calories.
8. To define needs in proteins, fats, carbohydrates and calories in child which had the introduction of solid foods.

**Be able to:**

1. To collect anamnesis of infants and evaluate it.
2. To calculate the amount of food per day for child, according to the age.
3. To make a one-day menu for child one year with breastfeeding, taking into account the needs in food ingredients.
4. To evaluate the correct techniques of breastfeeding.
5. Issues of prevention of hypogalactia and mastitis.
6. To demonstrate the methods of calculation for child with introduction of solid foods, taking into account the needs in food ingredients.

**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:**

1. Case history of childrens with breastfeeding and after introduction of solid foods.
2. Graphical patterns of individual issues of the theme:
  - a.«Natural feeding of infants»- Appendix 1.
  - b."Breastfeeding of infants " - Appendix 2.
  - c."Breastfeeding of infants after the introduction of solid foods " - Appendix
- 3.

**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 initial level of knowledge	20	Testing	Tests	Classroom
2.	Determination of the main positions of the	25	Quiz, discussion	Graphical structure of the topic, case history	Classroom

	topic			of childrens with breastfeeding and after introduction of solid foods.	
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. Completion of the diary of practical training.	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
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**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 young children and pathology of newborn - medical history, characteristics of pregnancy and childbirth, evaluation according to Apgar score, terms of applying to the chest, evaluation training of mothers to breast-feeding, the correct technique of breastfeeding.

2. Familiarity with the control weighting and evaluating of feeding effectiveness.

### **Assignments for testing the final level of knowledge**

#### **Situational tasks**

##### **Task №1**

The child, aged 8 month, had the weight at birth - 3500g, length - 50 cm. Currently, weight is 9000g, length is 50cm. The psychomotor development appropriate to the age. The daily ration is:

	Amount	protein	fat	carbohydrates	calories
Breast milk	400,0	5,6	14,0	30,0	276,0
5% semolina porridge	150,0	5,6	8,9	24,5	205,0
Apple puree	50,0	0,2	—	5,8	24,0
Meaty broth	50,0	0,3	—	0,5	4,0
Vegetable puree	120,0	2,3	3,6	20,3	127,0
Forcemeat	30,0	5,3	1,0	—	31,0
Cheese	25,0	3,0	2,1	0,8	35,0
Kefir	150,0	4,2	5,3	5,8	93,0
Cookies	15,0	1,4	1,4	10,2	62,0
Fish Oil	10,0	—	10,0	—	90,0
In all	1000,0	27,7	46,4	99,0	947,0

Questions: 1. What weight should be in this child? 2. What criteria should evaluate the effectiveness of breastfeeding? 3. Assess the effectiveness of the daily diet.

*Answer:*

1. Using formula: Body weight =  $3500 + (800 * 6) + (400 * 2) = 9100$
2. The weight of child is 9 kg, according to percentile table for boys, aged 8 months between 25 and 75 ranking (8,4-9,6 kg); It is mean about the weight of child appropriate to the age.
3. This daily food plans for child is effectively to age.

### **Task №2**

The girl, aged 4 days, was born from first pregnancy with normal parturition. The estimation according to Apgar scores was 9 points, weight at birth was 3500 g. Determine the feeding regime, using volume method.

*Answer:* Using Volume method: Volume = 4 (days) \* 80 = 320 ml (per day). The daily food plans must include: a one-time amount of food =  $320 : 8 = 40$  ml, 8 times

### **Task №3**

To calculate amount the milk (ml) per one feeding, considering the stomach capacity of the newborn aged 7 days. The child was born from second pregnancy with normal parturition. The estimation according to Apgar scores was 9 points, weight at birth was 3700 g.

*Answer:* Using volume method: Volume for one feeding =  $3 \text{ ml} * 7 \text{ days} * 3,7 \text{ kg} \approx 67$  ml per one feeding.

### **Task №4**

The child, aged 6 days, was born from first pregnancy with normal parturition, with weight at birth – 3000 g. What is amount the milk per one daily feeding, using formula Tour?

*Answer:* Volume = 6 (days) \* 70 = 420 ml, 8 times per day, 50 ml per one feeding.

### **Task №5**

The girl, aged 2 days, was born from first pregnancy with normal parturition. The estimation according to Apgar scores was 8 points, weight at birth was 3700 g. Determine the feeding regime, using Zaitseva formula?

*Answer:* Volume = body weight (g) \* 2% \* n (days) =  $3700 * 2\% * n = 148$  (ml/day), 8 times per day, 18,5 ml per one feeding.

### **Task №6**

The police delivered a child, aged 10 days, without parents to the hospital, which was found in the park. Body weight baby was 4000g. Using volumetric Heubner's - Cherni's method define the daily volume of breast milk. How often should a child eat?

*Answer:* Volume = body weight (g) \*1/5= 4000\*1/5=800 (ml/day). Feeding should be from 7 to 10 times per day.

**Task № 7.**

Calculate the daily food plans for the child with breastfeeding, aged 8 month, with 8500g of body weight. What are the needs of proteins, fats, carbohydrates and calories per day?

*Answer:*

1) The daily ration is:

6-00	Breast milk	200,0
10-00	5% semolina porridge	150,0
	Apple puree	50,0
	Fish Oil	5 ml
14-00	Meaty broth	50,0
	Vegetable puree	120,0
	Forcemeat	30,0
18-00	Kefir	150,0
	Cheese	25,0
	Cookies	12
22-00	Breast milk	200,0

2) The energy needs include proteins 25,5 g/day (based 3-3,5 g/kg), fats 46,7 g/day (based 5,5-6,0 g/kg), carbohydrates 102 g/day (based 12-14 g/kg) and calories 935 kcal (based 110 kcal/kg) per day.

**Task № 8.**

The child with breastfeeding, aged 7 month, had the weight at birth 3100g. What the correct weight of child should be in this age period? To calculate the daily food plans for the child. What are the needs of energy per day?

*Answer:*

1. The correct weight of the child, aged 7 month, should be 8300 g;
2. The daily ration is:

6-00	Breast milk	170-180
10-00	Vegetable puree	170,0
	Forcemeat	20,0
14-00	Breast milk	170,0
18-00	10% of rice porridge	180,0
	The grated apple	

22-00	Breast milk	180,0
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3. The energy needs include calories 913 kcal (based 110 kcal/kg) per day.

#### **Task № 9.**

During consultation in the outpatient mother had the appeal to the doctor asking if there are indications for the introduction of solid foods in her child? The child with breastfeeding, aged 5 month, increased the body weight as compared at birth in 2 times. The mother has the sufficient lactation. What are rules of introduction of solid foods?

*Answer:*

1. Doctor should recommend the introduction of solids at 6 months of age.
2. The rules of introduction of solid foods:
  - a. Never add solid foods to the bottle of formula. Always feed solids with a small teaspoon.
  - b. Start a new food with about 1 teaspoonful, and each time you offer it, increase the amount as tolerated, never forcing.
  - c. Start with one new food at a time and observe for a reaction, (diarrhea, rash, vomiting) for 3 – 5 days before starting another food.
  - d. Omit that food from the diet if a reaction occurs.
  - e. Do not use dinners or combination foods initially.
  - f. Do not add sugar or salt to child's food, and never use honey under one year of age.

#### **Task № 10.**

The child was born with estimation according to Apgar scores 4 points in the first minutes and 6 points in 5 minutes. Can medical stuffs put the newborn to the breast for breastfeeding?

*Answer:* Skin to skin contact should be after after stabilization of child. The feeding of expressed breast milk must be 8 times per day, 10 ml per one feeding.

#### **Distribution points that can receive the student**

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**

**Навчальне видання**

**Природне вигодовування немовлят**

Упорядники: Клименко Вікторія Анатоліївна  
Сіренко Тетяна Вадимівна  
Лупальцова Ольга Сергіївна

Відповідальний за випуск: Клименко В.А.

Комп'ютерна верстка

Ум. друк. арк. \_\_\_\_ . Тираж \_\_\_\_ прим. Зам. № \_\_\_\_ .

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