

**ARTIFICIAL AND MIXED FEEDING OF INFANTS. FEEDING OF INFANTS AFTER  
INTRODUCTION OF SOLID FOODS. FEEDING OF THE HEALTHY CHILDREN  
AFTER 1 YEAR OLD.**

**Academic discipline «Pediatric Propedeutics»**

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

**ШТУЧНЕ ТА ЗМІШАНЕ ВИГОДОВУВАННЯ НЕМОВЛЯТ. ХАРЧУВАННЯ ДІТЕЙ  
СТАРШЕ ОДНОГО РОКУ**

**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  
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**Харків  
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Compiled by: Klymenko V.A.  
Sirenko T.V.  
Lupaltsova O.S.

Штучне та змішане вигодовування немовлят. Харчування дітей старше одного року: метод. вказ. до аудиторної роботи викладачів / упор. В.А.Клименко, Т.В. Сіренко, О.С.Лупальцова. – Харків, ХНМУ, 2016. – 12 с.

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Сіренко Т.В.  
Лупальцова О.С.

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

### **Contents**

The best food for a newborn and during the first year of child's life is the breastfeeding. Every year, the number of children, with mixed or artificial feeding, is increasing in the most developed countries, including the Ukraine. Despite all benefits to breastfeeding, it is necessary to transfer the child to a mixed or artificial feeding. The transition of the child to mixed or artificial feeding is a stressful situation, which is accompanied by a change of digestion, metabolism, intestinal microflora. The organisation of a correct mixed or an artificial feeding meets includes the needs of nutrients and energy, depending on the period of children's development. Therefore, it is important to have the knowledge of a mixed or artificial feeding, during first month of life and after the introduction of solid foods.

### **Specific goals:**

- To define modern aspects of mixed or artificial feeding infants.
- To organise the daily diet for children with the mixed or artificial feeding.
- To adjust the diet of children with the mixed or artificial artificial feeding and the introduction of solid foods.

### **To know:**

1. To define the modern aspects of mixed or artificial feeding.
2. To define the classification and characteristics of milk formulas.
3. To provide the correct technique of mixed or artificial feeding.
4. To define the needs in proteins, fats, carbohydrates and calories in children with mixed or artificial feeding.
5. To demonstrate the scheme of mixed and artificial feeding.

### **Be able to:**

1. To explain the definition of mixed or artificial feeding, the classification and characteristics of milk formulas.
2. To collect anamnesis of children with mixed or artificial feeding and evaluate it.

3. To calculate the amount of food per day for children with mixed and artificial feeding, according to the age.
4. To make a one-day menu for child with mixed and artificial feeding, taking into account the needs in food ingredients.
5. To evaluate the correct techniques and schemes of mixed and artificial feeding.
6. To demonstrate the methods of calculation for child of mixed or artificial feeding 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. «The artificial feeding of infants»- Appendix 1.
  - b. «The artificial feeding» - Appendix 2.
  - c. «The mixed feeding» - 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 topic	25	Quiz, discussion	Graphical structure of the topic, examples of the functional responsibilities of nurses.	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. 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

**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, evaluation training of mothers to artificial and mixed feeding, the correct technique of artificial and mixed feeding.

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

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

### **Situational tasks**

#### **Task №1**

The child, aged 1 month, had the weight at birth - 3000g, length - 50 cm. Currently, weight is 3100 g. The child feed seven times a day, every 3 hours with 6 hours of night break. The mother asked the doctor, due to the fact that the child became cranky and irritable, began to less frequently urinate. The mother did not pump enough breast milk. At the control measurements during the breastfeeding the mother produced about 50 ml of breast milk. Did the child get enough milk? Calculate the daily food plans for this child.

*Answer:* The correct weight of the child should be 3600. The calculation according to caloric method. The needs of energy in this age period are 130 kcal /kg/day, daily needs of energy are 468 kcal /day. The daily volume food = (aged caloric needs of child \* actual weight \*100)/ the caloric content of 1 liter of breast milk =  $130(\text{kcal/kg/day}) * 3,6(\text{kg}) * 100 / 70 = 668 \text{ml}$ . The daily food plans must include: a one-time amount of food - 83 ml (50 ml of breast milk and 33 ml of the milk adapted formula), 8 times a day.

#### **Task №2**

The child with artificial feeding, aged 6 months, have weight 6000g. Weight at birth was 3200 g, length - 49 cm. Is it the normal weight indicator? Calculate the daily food plans for this child.

*Answer:* The correct weight of the child should be 7850. The needs of protein are 23.5 g, the needs of fat are 50.1 g, carbohydrates- 94 g, needs of energy of this child 863 kcal per day, using caloric method. Feeding the milk adapted formula should be 2 times a day, in volume - 150 ml, 5% semolina porridge - 1 times a day, in volume - 150 ml, vegetable soup-1 times a day, in volume - 150 ml, vegetable puree - 1 times a day, in volume - 150 ml.

### **Task № 3.**

The child, aged 15 days, had the weight at birth - 3100g and breastfeeding during first 15 days after birth. The mother has hypogalactia. Calculate the daily food plans for this child and correct weight of this child.

*Answer:* The correct weight of the child should be 3400. The daily volume food should be 680 ml. The needs of protein are 8.5 g, the needs of fat are 23.8 g, carbohydrates- 47.6 g, needs of energy of this child 428 kcal per day, using caloric method. Feeding the milk adapted formula should be 8 times a day, in volume - 85 ml.

### **Task № 4.**

The child with artificial feeding, aged 2 months, have weight 4900g. Weight at birth was 3500 g. Calculate the daily food plans for this child.

*Answer:* The daily volume food should be 875 ml. Feeding the milk adapted formula should be 7 times a day, in volume - 130 ml.

### **Task № 5.**

The child with artificial feeding, aged 4,5 months, have weight 6300g. Weight at birth was 3000 g. Calculate the daily food plans for this child.

*Answer:* The daily volume food should be 1000 ml. Feeding the milk adapted formula should be 6 times a day, in volume - 170 ml.

### **Task № 6.**

The child with artificial feeding, aged 7,5 months, have weight 8300g. Weight at birth was 3100 g. Calculate the daily food plans for this child.

*Answer:* The daily volume food should be 1000 ml. Feeding the milk adapted formula should be 5 times a day, in volume - 200 ml.

### **Task № 7.**

The child with artificial feeding, aged 4 months, have weight 7800g. Weight at birth was 3300 g, length - 50 cm. The child have the feeding of 5% semolina porridge – 4 times a day, in volume - 200 ml and kefir – 1 times a day, in volume - 200 ml. Is it correct diet? Calculate the daily food plans for this child.

*Answer:* It is not correct diet. The child must have the feeding the milk adapted formula. Feeding the milk adapted formula should be 6 times a day, in volume - 160 ml.

### **Task № 8.**

The child with artificial feeding, aged 8 months, have weight 9000g. Weight at birth was 3400 g. Calculate the daily food plans for this child.



*Answer:* After introduction of complementary foods the feeding of the child must include the milk adapted formula 2 times a day, in volume – 200 ml.

#### **Task № 9.**

The child with mixed feeding, aged 6 days, had the weight at birth - 3100g, length - 50 cm. During the breastfeeding the mother usually produce about 35 ml of breast milk. Calculate the daily food plans for this child. Does the child get enough milk?

*Answer:* The calculation according to caloric method. The needs of energy in this age period are 80 kcal /kg/day, daily needs of energy are 240 kcal /day. The daily volume food = (aged caloric needs of child \* actual weight \*100)/ the caloric content of 1 liter of breast milk =  $80(\text{kcal/kg/day}) * 3,1(\text{kg}) * 100 / 70 = 342 \text{ml}$ . The daily food plans must include: a one-time amount of food - 44 ml (35 ml of breast milk, 9 ml of the milk adapted formula), 8 times a day.

#### **Task № 10.**

The child with artificial feeding, aged 3 months, have weight 5000g. Weight at birth was 3400 g, length - 50 cm. Is it the normal weight indicator? Calculate the daily food plans for this child.

*Answer:* The correct weight of the child should be 5600. The daily volume food, using volume method, should be 933 ml, using caloric method -960 ml. The needs of protein are 14 g, the needs of fat are 39.2 g, carbohydrates- 67.2 g, needs of energy of this child 672 kcal per day, using caloric method. Feeding the milk adapted formula should be 6 times a day (after 3.5 hours), in volume - 160 ml.

#### **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**

**Штучне та змішане вигодовування немовлят. Харчування дітей старше одного року**

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Комп'ютерна верстка

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

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