

**MINISTRY OF HEALTH OF UKRAINE
O.O. BOGOMOLETS NATIONAL MEDICAL UNIVERSITY**

METHODOLOGICAL GUIDELINES

for a practical class for students

Elective discipline

«BASICS OF HEALTHY CHILD CARE»

**Lesson topic: HOW TO INTRODUCE COMPLEMENTARY FOODS
CORRECTLY – HEALTHY AND TASTY**

Field of knowledge: I «Health Care and Social Welfare»

Specialty: I2 «Medicine»

Department of Pediatrics No. 2

Approved at the meeting of the Department of Pediatrics No. 2
of August 27, 2026, Minutes No. 1

Head of the Department,

Corresponding Member of the National Academy of Medical Sciences of Ukraine,

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Reviewed and approved:

Subject-specific Methodological Commission on Pediatric Disciplines

of August 28, 2026, Minutes No. 1

Head of the Subject-Specific Methodological Commission,

Professor

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Specific objectives:

1. Know the principles of rational introduction of complementary foods into the diet of a child under 1 year old.
2. Know the timing of introducing complementary foods into a child's diet.
3. Be able to analyze the diet of a child under 1 year old.

Learning outcomes

Integral competence: the ability to apply the rules of introducing complementary foods as a tool for the optimal development of all systems and organs of the child

General competencies:

- Ability for abstract thinking, analysis and synthesis
- Ability to learn and master modern knowledge
- Ability to apply knowledge in practical situations
- Knowledge and understanding of the subject area and understanding of professional activity
- Ability to adapt and act in a new situation
- Ability to work in a team
- Interpersonal skills
- Ability to search, process and analyze information from various sources
- Determination and persistence in the tasks set and responsibilities undertaken

Special professional competencies:

- Ability to collect medical information about a patient
- Ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and ethical responsibility
- Ability to assess the impact of the environment, socio-economic and biological determinants on the health of an individual, family, population

- Adherence to ethical principles when working with patients and their parents
- Maintaining professional and academic integrity
- The ability to make a daily diet for a healthy child of the first year of life when breastfeeding

Practical skills:

- Be able to create a daily diet for a healthy child of the first year of life when breastfeeding.
- Be able to evaluate medical history data indicating the quality of the child's nutrition, identify errors in the child's diet and correct them according to existing rules.

Teaching methods:

- verbal (explanation, conversation, discussion)
- visual (demonstration)
- practical (practical work)
- clinical case method
- problem-oriented method
- “business game” method

Assessment methods:

- testing of the initial level of knowledge
- individual oral questioning
- group interview/discussion
- monitoring the performance of practical tasks (communication)
- final assessment of the level of knowledge (tests, situational tasks)

Basic level of preparation:

Studying the discipline does not require basic special training. School knowledge of anatomy, biology, and basic life safety

Questions for the class:

1. Define the concept of complementary foods.
2. What are the timing of introducing complementary foods to children under 1 year old?
3. What does the timing of introducing complementary foods to children depend on?
4. What foods are considered complementary foods?
5. What products are corrective supplements?
6. Name the rules for introducing corrective supplements and complementary foods.
7. Alternative methods of introducing complementary foods.
8. The most common mistakes in introducing complementary foods by parents and medical staff.
9. How the introduction of complementary foods affects a child's physical and psychomotor development.
10. How to introduce complementary foods if a child refuses new foods?

Practical tasks:

1. Building trusting relationships when communicating between a medical professional and a child under 1 year old and their parents (legal representatives)
2. Greeting and obtaining permission to examine a primary school-age child
3. Assessing a child's readiness for introducing complementary foods into their diet
4. Story-role-playing games when communicating with parents of 1-year-old children
5. Set the timing of introducing complementary foods for the child individually
6. To investigate the impact of diet on the development of a child under 1 year of age.
7. Inform parents about possible mistakes in introducing complementary foods into the child's diet
8. Evaluate the diet of a child under 1 year old.

9. Answer parents' questions regarding the individual introduction of complementary foods to the child.
10. Analysis of situational tasks for drawing up a diet for children under 1 year old.

Topic content and materials for use during the practical class

Complementary foods are foods that are introduced to supplement breast milk (milk formula in the case of artificial feeding) to a child in the first year of life.

Before introducing complementary foods, you need to make sure your child is ready for it.

ESPGHAN experts recommend individual indications and timing for introducing complementary foods at 17-26 weeks in order to build food tolerance

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Introducing complementary foods before 4 months of age can be harmful and have the following undesirable consequences:

- introducing solid foods before the infant has the oral skills to swallow them safely can lead to aspiration;
- insufficient or excessive intake of energy, nutrients, and increased renal solute load;
- in some studies, early initiation of solid foods is associated with an increased risk of obesity;
- feeding cereals to infants at high risk of developing type 1 diabetes before 3 months of age may increase the risk of developing islet cell antibodies;
- increased incidence of acute gastroenteritis and upper respiratory tract infections;
- impaired bioavailability of iron and zinc from breast milk;
- replacement of milk with other less nutritious products (inadequate breast milk substitutes).

Late introduction of complementary foods after 6 months of age leads to the risk of malnutrition, iron deficiency, and may increase the risk of food allergies, particularly to peanuts and cow's milk. Delaying the introduction of complementary foods can negatively affect the child's perception of new tastes and textures of food. Deficiency of zinc, protein, iron, and vitamins B and D, which in turn suppresses growth and subsequent nutritional problems.

Signs that your baby is ready for complementary foods:

- adequate trunk control (ability to support oneself on straight arms while lying on the stomach, ability to sit with support or independently);
- has good control of the head and neck;
- ability to push mashed food with the tongue to the back of the throat for swallowing;
- extinction of the extrusion reflex (its presence makes spoon feeding difficult and demotivating for both the caregiver and the infant);
- preparation for a variety of food consistencies by putting hands in the mouth, raising toys to the mouth, and exploring options for moving objects in the oral cavity;
- ability to indicate a desire for food (opens mouth and leans forward, emotional signs of interest) and satiety (leans back, turns away, emotionally responds);
- shows a desire to participate in family meals and attempts to grasp food to put it in the mouth.

Rules for introducing complementary foods:

- It is better to introduce the first complementary food in the morning to monitor the child's reaction;
- the child is active and hungry, but calm and not tired;
- the child should be in an upright position;
- if the child refuses, you need to try later or the next day;
- if there are signs of allergy or intolerance – we refuse this product for a certain period;

- each subsequent product must be single-component;
- give mixed food dishes only when the child has already become familiar with them separately;
- It is not advisable to introduce new products 3 days before and after vaccinations.

The American Academy of Pediatrics Committee on Nutrition recommends offering babies cereals and pureed meat first, as they contain iron and zinc, which are often lacking in the diet at this age.

Products that are not recommended:

- tea, coffee, sweetened drinks and juices;
- undiluted cow's milk for children under 12 months (factor in the development of iron deficiency anemia), rice, almond, coconut milk;
- salt, sugar, spices;
- vegetarian diets.

However, there is no scientific evidence of the benefits of introducing complementary foods in a specific sequence.

Meat in the diet is a source of protein, iron, zinc and vitamin B12, nutrients for children that are often at risk of deficiency among many populations, including in high-income countries.

The bioavailability of these nutrients is also higher - the absorption of heme iron from animal products is twice as high as that of non-heme iron from plant products.

Mono-grain cereals for babies are a good choice for first feedings because they provide extra energy and contain iron.

Baby cereals can be prepared by adding breast milk, formula, or water. Cereals should be offered from a spoon, and should not be fed from a bottle, unless there is individual medical advice. Spoon feeding improves oral motor skills, which can affect speech development.

Vegetables and Fruit

Fruit and vegetables can be offered to babies at least once a day from the start

of complementary foods. Variety is key; there is insufficient evidence to suggest that vegetables should be offered more or less often than fruits.

Fruits and vegetables are important sources of vitamins, potassium, folate and dietary fibre. Acceptability of new foods increases with repeated exposure; it may take up to 15 times for a baby to accept a new food. Breastfeeding may facilitate the acceptance of solid foods due to the variety of tastes transmitted through breast milk. There is no evidence to limit the introduction of “out-of-season” or “exotic” vegetables and fruits.

Eggs

One gram of eggs contains the most choline, a critical nutrient for brain development, compared to other foods. They also provide a large proportion of the requirements for protein, selenium, vitamin B12, potassium and riboflavin.

Fatty fish and other seafood are good sources of polyunsaturated fatty acids, which are important for brain development. Like other food groups, legumes, nuts, and seeds are rich in protein, healthy fats, fiber, minerals such as magnesium, potassium, calcium, non-heme iron, zinc, B vitamins such as B1, B2, and B3, and vitamin E, all of which are important macronutrients that provide energy, protein, essential fats, and fiber.

Methods of introducing complementary foods:

1. Pediatric (puree complementary foods).
2. Pedagogical (self-feeding, BLW, baby-led weaning).

The main principles of the BLW method:

- Offer the same food that the whole family eats during joint meals.
- Adults choose what to offer from the food, but the child himself determines whether to try the food offered to him and in what quantity to eat.
- The child should independently take the food in his hands and direct it to his mouth, without the help of an adult.
- The method does not use “baby” food (homemade or commercially produced).
- The process of eating food should take place exclusively in an upright position in

a separate chair or on the lap of an adult.

- The goal is to present the child with the widest possible variety of food, which is designed for the child in such a way that the child can take the food in his hand and eat it independently.
- It is important to continue breastfeeding or formula feeding.
- Offer water from a cup.
- The general rule is to introduce foods to a child according to the BLW principle from 6 months, as it is unlikely that a younger baby will be able to manipulate food with his hands in an upright position.
- Avoid adding salt, sugar, adult foods with added salt and sugar, ready-made semi-finished products, etc.
- Avoid small and round products to reduce the risk of choking.
- Do not leave the child alone with food.
- Be sensitive to the child's signs of satiety and hunger.

Rules for transitioning to pieces:

1. Start each new stage with soft foods that can be easily crushed with the tongue or gums.
2. Be a role model. A visual depiction of the mother's chewing process will help simplify learning, because "copying" is one of the main skills of children.
3. Do not give food when the child is hungry, even an adult can choke if he is in a hurry.
4. Do not feed when the child no longer wants or cannot. This can lead to food being pressed and provoke the association "new texture - pressure, unpleasant sensations", causing aversion to solid food.
5. Do not start a new stage in a stressful situation (during illness, teething, moving, visiting).
6. Praise and support your child when they try to eat foods that require chewing and biting.
7. Do not push your child if they have not yet mastered the new texture.

8. Frequent regurgitation and vomiting can cause aversion to a new food serving option.
9. As you master each consistency, try a new one.
10. When offering a thicker consistency, the baby may choke, as he is still learning to regulate the amount of food he can chew and swallow at one time. You can start pureeing complementary foods, just like BLW, with several types of foods. It can be one, it can be two, or it can be three. For example:
Day 1: offer meat and vegetables.
Day 2: offer everything from day 1 and add whole grains/porridge and replace the vegetable with another.
Day 3: offer what the child ate on day 2, add fruit and replace the meat with another, and the vegetable too.

In nutrition, it is necessary to apply the rule of forming a healthy food plate:

Visually divide your plate into four parts. Fill your plate so that each part is occupied by a certain group of foods: protein foods, grains, fruits, and vegetables. Protein should occupy $\frac{1}{4}$ of the plate. Vegetables and fruits should occupy half of the plate. You should give preference to whole grain foods (barley, oatmeal, wheat, buckwheat, rice) and dishes made from them. The main drink is water.

Introducing allergens into the diet:

There are 14 allergens recognized as the most common causes of food allergies and intolerances in Europe:

1. cow's milk
2. eggs
3. peanuts
4. soybeans
5. fish (e.g. perch, flounder, cod)
6. crustaceans (e.g. crab, lobster, shrimp)

7. tree nuts (e.g. almonds, walnuts, pecans, cashews, pistachios)
8. shellfish and products thereof (e.g. clams, oysters, scallops, snails and squid)
9. cereals containing gluten wheat, rye, barley, oats and products thereof
10. sesame
11. celery and products thereof
12. mustard and products thereof
13. sulfur dioxide and sulphites
14. lupin and products thereof

Allergen administration schedule:

Day 1: offer the allergen;

Day 2: eliminate allergen;

Day 3: offer the allergen in larger quantities.

Rules for introducing allergens:

1. New allergens and new products on the day of introduction and re-offering - we do not offer!
2. The break between new allergens can be 2-3 days, provided there is no significant reaction.
3. The norm of the allergen quantity is not mandatory! Even if the child took the allergen into his mouth and spat it out after a couple of seconds, the allergen molecules have already entered the body.

Situational tasks for independent work

Task 1

At the reception, a mother with a 9-month-old boy. The child is breastfed. At 6 months. The mother began to introduce cereals and vegetable puree into the diet, but he refuses to eat new foods, and eats breast milk with pleasure. What advice can be given to the mother.

Answer: Ask what vegetables and cereals the mother gave. If you don't like it, you can try fruit puree or alternative methods of introducing complementary foods.

Task 2

A mother and a 4-month-old girl came to the doctor for an appointment. The child is on artificial feeding, because the mother has agalactia. The girl eats formula very poorly and the parents have already tried 5 different formulas. She is not gaining enough weight. The mother asks if it is possible to introduce complementary foods into the diet of such a child.

Answer: You can try introducing solid foods at 4 months of age if your baby shows signs of readiness for solid foods. There is a chance that your baby will eat solid foods better than formula. In this case, it is advisable to start with cereals.

Task 3

The parents of an 11-month-old boy went to the family doctor. The parents are concerned that the child refuses to eat meat puree, although he previously ate it with pleasure. What advice can be given to the child's parents?

Answer: At this age, you can give your child meat not in the form of puree, but in the form of meatballs or cutlets, because the child already has teeth and can chew.

Task 4

Parents with a 6-month-old baby are at the appointment. The baby is breastfed and gaining weight well. Give the parents advice on introducing complementary foods into the diet.

Answer: the first should be introduced in the second feeding and start with only one type of vegetable: preferably cauliflower or broccoli, zucchini. Give puree of homogeneous consistency from 1 teaspoon, gradually increase the amount to 100 g over 5-7 days and supplement with breast milk after vegetable puree.

Task 5

Parents with a 7-month-old girl came to the doctor for an appointment. The girl is fed with Nutrilon milk formula 100 ml 5 times a day. She refuses to eat more of the

formula. Over the past month, she has gained 100 g in weight. What advice can you give parents regarding the child's diet?

Answer: You need to start introducing complementary foods into your diet. In this case, you need to introduce cereals into your diet.

Literature

Main:

1. Nelson Textbook of Pediatrics, 2-Volume set, 22-nd edition. By Robert M. Kliegman, Bonita M.D. Stanton, Joseph St. Geme and Nina F Schor. – Philadelphia, PA: Elsevier Inc., 2024 - 4472 p. ISBN-10: 032352950X ISBN-13: 978-0323529501
2. WHO Guideline for complementary feeding of infants and young children 6-23 months of age <https://www.who.int/publications/i/item/9789240081864>
3. World Health Organization (WHO) guideline on the complementary feeding of infants and young children aged 6–23 months 2023: A multisociety response. ESPGHAN Position Statement. DOI: 10.1002/jpn3.12248

Auxiliary:

1. Chub N. Tasty and useful. Everything about the culture of nutrition of children and parents. – Kharkiv: Osnova, 2022. – 143 p.
2. Repley D., Murkett T. BLW-complementary feeding. How to help your child love healthy food. Dnipro: Smaki, 2023. – 224 p.