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SUPPORTING FAMILIES FOR **NURTURING CARE**

MODULE 3

NUTRITION FOR INFANTS AND YOUNG CHILDREN

The Module 3 ‘Nutrition for Infants and Young Children’ is intended to support home visitors and other health professionals in providing advice and support to parents and families on infant and young child nutrition. It includes three modules:

Module 3a ‘Breastfeeding’

Module 3b ‘Introducing Complementary Foods’

Module 3c ‘Nutrition of Children Aged 2-6 Years’

MODULE 3c.

NUTRITION OF CHILDREN AGED 2–6 YEARS

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KEY TAKEAWAYS - why is this topic important?

Adequate nutrition in early childhood is essential to ensure the growth, health and development of children to their full potential.

Inadequate nutrition can lead to obesity or, on the other extreme, to nutrient deficiencies that are detrimental to the child's growth and health.

Parents and caregivers have a primary role in early childhood healthy nutrition because they determine which food and drinks to buy, prepare and offer to their children.

Parents need help and support to make the proper food choices for the child and the whole family.

Surveys and reports from Europe and Central Asia indicate that a significant proportion of children do not receive adequate nutrition, with notable variations across subregions.

The most promising interventions for the prevention of obesity in children are those related to food choices and feeding children according to their needs.

LEARNING OUTCOMES

After completing this module, you should be able to:

- Understand the importance of nutrition as one of the five components of nurturing care.
- Make recommendations to parents on the choice of foods, preparation of meals and feeding the child.
- Advise parents on how to avoid the traps of poor nutrition.
- Help parents to overcome the most common hurdles.

Demonstrate the ability to connect information on nutrition for young children with key concepts from other modules relevant to visiting nurses, such as growth monitoring, responsive caregiving, health promotion, and family engagement.

Identify and access reliable sources of information on child nutrition to enhance professional knowledge and inform evidence-based practice in home visiting.

This module focuses on nutrition of children with no health issues. For recommendations and advice on the nutrition of children with food allergies or intolerance, chronic diseases, neurological disorders or congenital anomalies that impair feeding, please contact the appropriate specialists.

I THE IMPORTANCE OF NUTRITION TO A CHILD'S WELLBEING

The nutritional needs vary from one life stage to another, as every stage in life is specific.

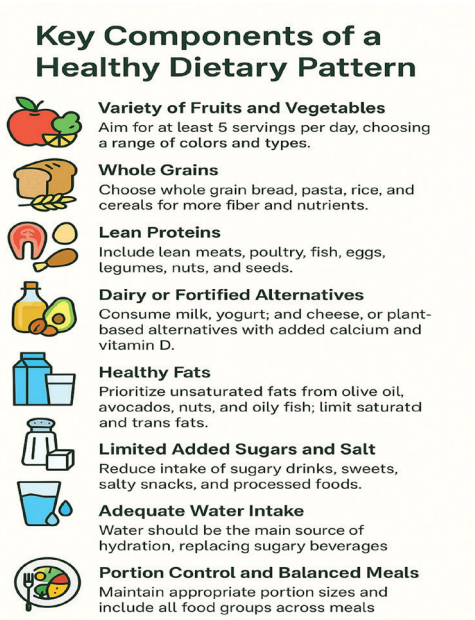
Adequate nutrition during early childhood is essential to ensure the growth, health and development of children to their full potential. Inadequate nutrition can lead to obesity, undernutrition and or nutrient deficiencies that impact the child's growth and health. Poor diets in early childhood might lead to an increased risk of chronic illnesses later in life, such as heart disease, type 2 diabetes, obesity, and some types of cancer. Optimal nutrition is particularly critical in the first two years of life for ensuring adequate growth and development. A well-nourished child feels better, looks better, enjoys life more, and lives longer. Parents and caregivers have the primary role in early childhood of providing healthy nutrition because they decide which food and drinks to buy, prepare and offer to their children. Providing the required amount of food from all five food groups and restricting foods that are high in saturated fats, added sugars and salt enables the child to attain proper growth and development. Continuity matters! What parents prioritize, determines the choice of foods later and establishes healthy habits early in life, which can have a lifelong positive impact in terms of health and disease prevention.

What are dietary patterns? Every single day, week, and year, every individual habitually consumes a combination of foods and drinks - that is their dietary pattern. A healthy dietary pattern entails the intake of nutrient-rich foods and drinks from all food groups, in the recommended serving size. Healthy dietary patterns are not only conducive to better health early in life, but also in the next life stage, and probably in the next generations as well. Once a healthy dietary pattern is established early in life and maintained, its impact on health is significant.

1. GROWTH AND DEVELOPMENT MILESTONES FOR CHILDREN AGED 2 TO 6 YEARS

Growth is a very complex process affected by numerous genetic and environmental factors. Optimal child growth is one of the most reliable indicators of good health, adequate nutrition and a favourable psychological and emotional environment.

The growth rate is at its fastest in the first three months after birth. From birth to age one, the velocity of growth and weight gain progressively and very rapidly declines. Nutrition and genetic factors (still insufficiently known) have a major influence on the velocity of growth in this period. Optimal growth requires optimal nutrition intake.



During the second year of life, on average, a child gains 2.5 kg of weight, and between three and seven years of age, 2-3 kg annually.

Stature is a good indicator of the nutritional status. During the second year of life, a child grows 12 cm, on average. From the age of three until the beginning of puberty, the growth rate is generally stable at 5–7.5 cm annually, for most children. The stature of healthy children constantly follows a certain curve ("the growth curve"). There are mild seasonal variations in the velocity of growth: the growth is slightly slower in the fall/winter period, and slightly faster in the spring/summer period.

The caloric needs from birth to the age of 15 years continuously decline, from 80-120 kcal/kg in the first year of life to 50 kcal/kg at age 15, in other words, the caloric needs decline by 10 kcal/kg every three years until the age of 15 years.

From the age of two (to four) a child needs about 1,300 calories per 24 hours for normal growth and weight gain. However, the caloric needs vary, depending on the daily activities, the child's build and metabolism, thus, some children eat more or, frequently, less than parents expect.

Additional resources
Annex 1: Monitoring a child's growth
WHO growth standards https://www.who.int/tools/child-growth-standards/standards

2. NUTRITION AS A COMPONENT OF NURTURING CARE

For optimal growth and development, children need:

- Adequate nutrition
- Good healthcare
- A safe and secure environment
- Opportunities for early learning
- Responsive caregiving

These are the five inter-related components of nurturing care that every child needs to grow, develop and reach their full potentials. Nutrition is one of the five pillars underpinning the child's well-being.

3. CONSEQUENCES OF INADEQATE NUTRITION

Every child has the right to adequate nutrition. Proper nutrition is also an investment into the future of the child and the entire nation. Healthy nutrition supports the child's growth, promotes brain development, strengthens the potential for learning, improves productivity at an adult age and paves the way for a more prosperous society.

Malnutrition in children can take several forms, and it typically falls into two main categories: undernutrition and overnutrition. Each category includes specific types of malnutrition that can significantly impact a child's growth, development, and overall health.

Undernutrition is the most common and dangerous form of malnutrition in children, especially in low-income countries. It includes:

Wasting (Acute Malnutrition)	Definition: Low weight for height. Cause: Usually due to a recent and severe lack of food or illness. Effect: Rapid weight loss, weakened immunity, and increased risk of death.
Stunting (Chronic Malnutrition)	Definition: Low height for age. Cause: Long-term insufficient nutrient intake and recurrent infections. Effect: Impaired growth and cognitive development.
Underweight	Definition: Low weight for age. Cause: A combination of wasting and stunting. Effect: A general indicator of a child's poor health or nutritional status.
Micronutrient Deficiencies (Hidden Hunger)	Definition: Lack of essential vitamins and minerals (like iron, iodine, vitamin A, zinc). Effect: Anemia, blindness, developmental delays, increased infection risk. Overnutrition is form of malnutrition that is becoming more common globally

Overweight and Obesity	Definition: Excess body weight for height. Cause: Excess calorie intake, poor diet quality, lack of physical activity. Effect: Increased risk of chronic diseases like type 2 diabetes, heart disease, and psychological issues.
Imbalanced Diets (Poor Quality Nutrition)	Definition: Diets high in calories but low in essential nutrients. Effect: Can coexist with obesity and still result in micronutrient deficiencies.

The WHO has reported that the increase in childhood obesity trends has been higher In the European region than in any other region!

Food choices and diet affect brain development and the learning capacity of children and youth. The optimal development of the brain requires a regular intake of nutrients such as iron, zinc, B12 and omega-3 fatty acids.[11] Dietary habits and nutritional status are associated with academic success, behaviour and self-confidence.[12] Poor dietary habits or lack of food in the first two decades of life are associated with a higher risk of heart disease, carcinoma, type 2 diabetes, and other chronic diseases later in life (WHO 2002).

4. HEALTH AND NUTRITION STATUS OF CHILDREN AGED 2 TO 6 IN SOUTHEAST EUROPE AND CENTRAL ASIA

The health and nutrition status of children aged 2 to 6 years in Southeast Europe and Central Asia reflects a region in transition—where progress in reducing undernutrition coexists with emerging challenges related to overnutrition and micronutrient deficiencies.

In Southeast Europe, including countries such as Serbia, Bosnia and Herzegovina, and North Macedonia, undernutrition rates among young children are relatively low compared to global averages. For example, regional stunting stands at around 17.5%, while wasting and underweight prevalence are approximately 4.87% and 4.95%, respectively (Popovic et al., 2022). However, overnutrition is becoming increasingly prevalent. Rising rates of obesity among children are largely attributed to unhealthy diets and sedentary lifestyles, calling for integrated preventive strategies (More information you can find in the Module 20: Healthy Weight, Physical Activity and Sedentary Time) . UNICEF reports that malnutrition in all its forms is undermining the development potential of children in the region (UNICEF, 2023a).

In Central Asia, countries such as Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan have made significant strides in combating undernutrition. The average prevalence of stunting among children under five is around 10%, with waste at just 2.3%, both below global averages (Global Nutrition Report, 2021). Nonetheless, challenges remain, particularly regarding micronutrient deficiencies. Anaemia, for instance, affects roughly 28.1% of women of reproductive age, influencing both maternal and child nutrition outcomes. Additionally, overweight among children under five is on the rise, with a reported prevalence of 5.6% (Global Nutrition Report, 2021).

These figures highlight the ongoing challenges related to inadequate complementary feeding, limited access to quality health services, and persistent inequalities. Improving the nutritional status of children requires a multisectoral approach, where health, education, and social protection systems work in synergy. Equipping visiting nurses with updated knowledge, tools, and referral pathways is essential to ensure children's right to optimal nutrition and healthy development.

II

WHAT A CHILD SHOULD EAT

1. NUTRIENTS AND MICRONUTRIENTS

Children require nutrient-dense foods—those rich in essential vitamins, minerals, and beneficial compounds—with minimal or no added sugars, salt, or saturated fats. Their diet should support healthy growth, development, and immune function.

Recommended Macronutrient Distribution

- Carbohydrates: 45–55% of total daily energy intake
- Proteins: 9–15%
- Fats: 35–40% (a higher proportion than recommended for adults)

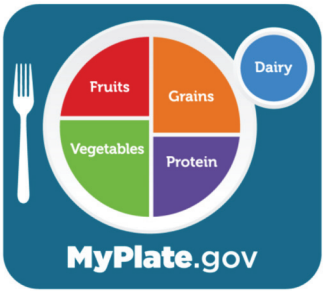
Key Nutritional Components

1. Carbohydrates	Carbohydrates are the primary source of energy and fibre for young children. They should be a staple in a preschool child's diet and sourced from whole grains, fruits, and vegetables.
2. Proteins	Proteins are vital for the growth, maintenance, and repair of body tissues, especially muscles and bones. Quality protein sources include lean meat, dairy, eggs, legumes, and fish.
3. Fats	Fats play a crucial role in brain development and energy storage. Children need a higher fat intake than adults, particularly sources rich in omega-3 fatty acids (e.g., fatty fish, flaxseeds, walnuts).
4. Vitamins and Minerals	These micronutrients support various metabolic processes vital for immunity, bone health, and overall development. Adequate intake is essential through a varied diet including fruits, vegetables, dairy, and fortified foods.
5. Phytonutrients	Found in colourful fruits and vegetables, these plant-based compounds help prevent chronic diseases and support cellular health. Regular intake is encouraged through a variety of fresh produce.
6. Dietary Fibre	Fibre supports digestion and gut health. It promotes the growth of beneficial gut bacteria and helps regulate stool formation. It is found in fruits, vegetables, legumes, and whole grains.
7. Probiotics	These are live beneficial bacteria found in fermented foods such as yoghurt, kefir, and some cheeses. They contribute to a healthy gut microbiome and enhance nutrient absorption.
8. Water	Adequate hydration is essential for all bodily functions. Water should be the primary beverage offered to children throughout the day.

2. FOOD GROUPS

A child's diet is considered well-balanced if their daily food intake comprises foods from all five food groups (dairy products; fruits; vegetables; grains; meat, fish, eggs), in the recommended amounts and proportions.

It is not uncommon for a child to persistently refuse some of the foods offered to them. It is important to know that no single food item is essential to the child's diet and that each food can be replaced with another one from the same group.



Composition of MyPlate for Children Aged 2–6 in Europe and Central Asia

- **Vegetables** (≈35%): Incorporate a variety of seasonal vegetables such as carrots, zucchini, spinach, and cabbage. Aim for diverse colors and textures to provide a range of nutrients.
- **Fruits** (≈15%): Include fresh fruits like apples, pears, berries, and plums. Limit fruit juices; opt for whole fruits to ensure fiber intake.
- **Grains** (≈25%): Prioritize whole grains such as whole wheat bread, buckwheat, oats, and barley. These provide essential fiber and energy.
- **Proteins** (≈15%): Offer lean meats (e.g., chicken, turkey), fish, eggs, legumes (like lentils and beans), and dairy products. These support muscle development and overall growth.
- **Dairy** (≈10%): Include milk, yogurt, or cheese to supply calcium and vitamin D, vital for bone health. Choose low-fat or full-fat options based on individual energy needs.

Beverages

- **Water**: Encourage regular water consumption throughout the day.
- **Milk**: Provide appropriate servings of milk, considering age and dietary needs.
- **Limit**: Avoid sugary drinks and limit fruit juices to occasional small servings.

Annex 2: Nutrients and micronutrients

Annex 3: Food groups and the food pyramid

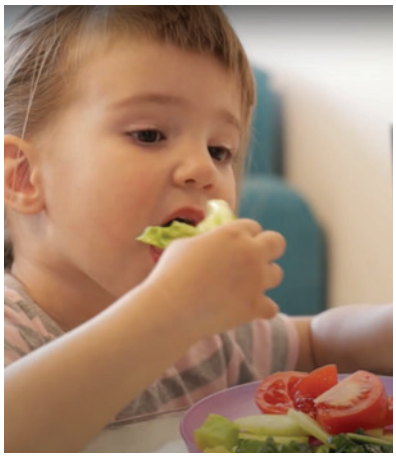
3. MEALS FOR A CHILD (INGREDIENTS, COMBINING FOODS)

A growing child should ideally eat three meals a day, of which at least two with the family (breakfast and dinner), plus 2-3 snacks.

Frequent meals are a solution for meeting the high nutrient and calorie needs during the period of rapid growth in childhood, otherwise compromised by the stomach's limited capacity. Meals should not be skipped (long gaps in between meals will deprive the child of the glucose required for the functioning of the brain and nervous system) or combined. Preferably, meals should be eaten at approximately the same time every day. It is recommended that at every meal the child should get food from all five food groups.

Breakfast should be eaten within the first hour of waking. It provides the energy required to start the day, and children who regularly eat breakfast at home will be less inclined to snack on foods offered at kiosks and bakeries.

The **other meals** should be eaten two to three hours apart. The last meal of the day should be taken at least one hour before bedtime.



Snacks should be offered between meals because just three meals per day are not sufficient to provide a young child with the calories and nutrients they need. Snacks are also convenient for introducing new foods, as the child is more likely to first accept them for a snack.

As the child grows, it strives for autonomy and independence, and this is often manifested as fussy eating, food jags or aversions to new food. It can be helpful if the child is offered the same food multiple times (even 8 to 10), in different forms or prepared in different ways. For example, a child that refuses cooked vegetables may accept them raw or cut into bite-sized pieces.

A 5-year-old already has fully formed dietary habits and clearly expresses their likes and dislikes about food. New ideas and ways of preparing food are the best way to add variety to a child's menu. Children like colourful, attractively served food.
To get more information look at the Annexes 4 to 7., and Annex 3 from Module Infant Nutrition Module

Annex 4: Grains in a child's diet
Annex 5: Soups in a child's diet
Annex 6: Vegetables in a child's diet
Annex 7: Healthy meals for children (planning a meal)
Safe preparation and preservation of food (Infant Nutrition Module, Annex 3)

4. FOOD QUANTITY

The quantity of food from all five food groups depends on the child's age, sex, height, weight, and physical activity intensity. Children who are taller for their age, more active or closer to their next birthday should get additional quantities of (healthy) food according to their choice, unless they are overweight. Sometimes children can experience an increase in appetite if they have not eaten sufficiently in the previous days because they were sick or for other reasons.

A serving size is a certain standard amount of food according to dietary recommendations and depends on the amount of nutrients in the food. It can be measured using different units - grams, pieces (one or a specified larger number), slices, cups, tablespoons, etc.

Instead of complicated recommendations, using the size of the child's hand as a guide is an easy way to measure food portions:

- a fist corresponds to the recommended amount of carbohydrates and fruit,
- a palm is the measure for meat and
- the volume of cupped handsis the measure for vegetables.

The meal or portion size is the amount of food that the child eats (it can be smaller or bigger than the serving size). The recommended serving size and number of portions in one day, determined by the age and other characteristics of the child, help parents to ensure that the child is getting an optimal quantity of food.[15,16,17,18]

Parents will notice that at age two, the toddler's appetite and interest in food decreases; the child is no longer growing at such incredible speed as in the first year of life. At this age, the toddler's appetite is volatile, and so is their daily food intake; we therefore **advise parents to consider the child's weekly food intake, rather than the daily intake**. If a child sometimes just pecks at their food, they will typically make up for it at the next mealtime or the day after. A child that eats less than the recommended portions should have more frequent meals (and vice-versa). In the second year, the serving size should be increased to three-quarters of a cup or a whole 250 ml cup per meal. An appropriate serving size for children 2 to 3 years of age is about one-half an adult serving.

The principles of healthy nutrition of children are the same worldwide. However, when it comes to daily food intake, various national recommendations differ by methodology (the serving size is calculated per day or per meal, the number of servings, the serving size in grams/cups), and often by the recommended number of servings from each food group. For the purposes of this text, we opted for the Australian guidelines,15 which offer a bigger variety of foods from each group and seem to facilitate counselling of parents on how to provide a varied diet at every meal in the quantities the child needs.

https://www.brightfutures.org/nutrition/pdf/ec.pdf
https://www.dchealthcheck.net/resources/pediatric

Recommended number of servings

For children 2 to 3 years old: 4 servings of grains, 1 serving of fruit, 2 1/2 servings of vegetables, 1 1/2 servings of milk and dairy products, 1 serving of proteins and 1 serving of fats.

For children 4 to 6 old: 4 servings of grains, 1 1/2 servings of fruit, 4 1/2 servings of vegetables, 1 1/2 to 2 servings of milk and dairy products, 1 serving of proteins and 1 serving of fa

Serving size

Grains - 1 serving	- 1 slice of bread (40 g) - Half a medium-sized tortilla (40 g) - 1/2 cup cooked rice, pasta, quinoa or polenta (75-120 g) - 1/2 cup oatmeal (120 g) - 2/3 cup wheat cereals (no added sugar) (30 g) - 1/4 cup muesli - 3 crackers (35 gr)
Vegetables - 1 serving (75 g)	- 1/2 medium-sized potato or corn - 1/2 cup cooked vegetables (broccoli, spinach, carrot, pumpkin) - 1 cup leafy greens, cooked or raw chopped - 1/2 cup of cooked beans or lentils
Fruit - 1 serving (150 g)	- 1 medium-sized fruit (apple, banana, orange or pear) - 2 small fruits (plum, kiwi, apricot) - 1 slice of a larger fruit (melon, watermelon) - 1 cup of chopped fruit or canned fruit or compote without added sugar - Occasionally - 1/2 cup (125 ml) fresh squeezed juice without added sugar - Occasionally - dried fruits: 4 dried apricots or 1 tablespoon of raisins
Milk and dairy products - 1 portion:	- 1 cup of milk (250 ml) - 1 cup (250 ml) of soy or rice “milk” (fortified with calcium - a minimum 100 mg of calcium per 100 ml) - 2 pieces of cheese (80 g) - a 4x3x2 cm cube (40 g) - 3/4 of a yoghurt cup (of 200 g) - 1/2 cup of cream cheese (120 g)
Meat, eggs, fish, legumes - 1 portion:	- 65 g of cooked beef, veal, pork (90-100 g of raw meat) - 80 g of cooked chicken or turkey (100 g of raw meat) - 100 g of cooked fish (fillets) (120 g of raw fish) - 170 g of tofu - 2 large eggs (120 g) - 1 cup of cooked lentils, beans or chickpeas - 1 1/2 teaspoon of tahini, stone fruit paste or spread (not the whole fruit to avoid choking risks)
Healthy fats - 1 serving	- 1-2 teaspoons (5-10 g) of olive oil or other vegetable oil - 1-2 teaspoons of stone fruit paste or spread - 1 tablespoon (20 g) of avocado

Add to the food during cooking or roasting, or as a spread or salad dressing.

Limit the amount of "sometimes foods" (cakes, cookies, chips, lollypops, fried or fast foods) These foods contain large amounts of saturated fats and transfats, salts and sugar and few ingredients of nutritive value.

When giving the child sweets, we need to limit their amount (for instance, an ice cream half the size of the child's fist, a small 150 ml cup of smoothie, a piece of chocolate the size of the child's finger). Parents are inclined to give the child much larger quantities of unhealthy foods (a whole bag of chips or candies).

5. IS THE CHILD EATING ENOUGH, TOO LITTLE OR TOO MUCH?

Offering meals and snacks at regular times (without salty snack foods or sugary drinks in between), is conducive to a healthier appetite at mealtimes. Sufficient time should be set aside for the meal (20–30 minutes) and the child should not be rushed; it takes at least 20 minutes for us to register that the stomach is full. The appetite is also affected by the intensity of the child's physical activities: at times, the child eats more than usual to make up for a lower food intake in the days before.

What would you recommend to parents who are concerned about the amount of food their child is eating?

What you can advice parents

If they are concerned the child might be overeating

- Serve smaller portions of food; if the child finishes quickly and you see that it wasn't enough, offer a small extra amount. This will provide time for the satiety signal to reach the brain.
- If the child doesn't eat part of their meal (usually vegetables), it is their choice; do not add the foods they like (e.g., meat) to compensate for that.
- Serve the meal on a smaller plate (children's dining set). That way, the child will get the recommended amount of food and a full plate.
- Turn off the television, tablets and mobile phones so that the child can focus on the meal.

If they are concerned their child is not eating enough or does not have appetite

- Offer meals at about the same time each day; it makes it more likely that the child will be hungry at mealtime.
- Cut back on snacks; frequent or excessive snacking will reduce hunger at mealtimes.
- Avoid offering alternatives if the child doesn't eat the meal; the child may only have a temporary slump in appetite and will make up for it at the next mealtime or the next day.

If these strategies are not working you can make a referral and ask parents to consult their pediatritian.

Self-assessment

Using Food Intake Recommendations to Support Healthy Eating

Reflect on the following questions to better understand how information on recommended food intake can support parents in promoting their child's health:

1. **Why is it important for parents to understand the recommended serving sizes and food amounts for their child's age?** Consider how this knowledge helps ensure balanced nutrition, prevents under- or overfeeding, and supports healthy growth and development.

2. **Where should parents seek reliable information about dietary recommendations for children?** Reflect on the value of trusted sources such as healthcare professionals, official dietary guidelines, and evidence-based nutrition resources.

3. **Why does the way food is presented matter to children?** Think about how attractive, age-appropriate presentation can encourage children to try new foods and eat a more varied diet.

4. **Is it necessary for parents to track daily intake against recommendations?** Explore the balance between informed awareness and flexibility, and how consistency over time matters more than daily precision.

5. **How can parents recognise if their child is well-nourished?** Reflect on signs such as steady growth, energy levels, appetite, physical development, and feedback from health check-ups.

6. **What steps can parents take if they notice their child isn't getting enough variety or quantity from all five food groups?** Consider practical actions such as adjusting meal plans, involving children in food choices, and seeking guidance from a health professional if needed.

Proposed answers:

1. Knowing age-appropriate serving sizes helps parents ensure their child receives the right balance of nutrients to support growth, development, and overall health. It also helps prevent undernutrition or overfeeding, which can lead to health issues such as poor growth or childhood obesity.
2. Parents can use visual representation of the size of the meal on the plate by using the size of the child's hand as a guide. Serving size charts can be helpful for parents, but they can also be overwhelming; they are needed when a child has a feeding problem or when parents have concerns. Parents should also consult with:
   - Home visitor
   - Paediatricians or family doctors
   - Registered dietitians or nutritionists
3. Young children are more likely to try and accept foods that are visually appealing and served in appropriate portions. Using colourful ingredients, fun shapes, and child-sized utensils can make mealtimes more engaging and enjoyable, especially when introducing new foods.
4. NO, tracking food intake strictly every day isn't necessary. Children's appetites naturally vary. Instead, parents should look at overall eating patterns over the course of a week to assess whether their child is generally eating a balanced diet.
5. The best way is to look at the child's food intake in the previous 7 days. This helps parents determine whether the child received the recommended foods from all five food groups and how much food and drinks they consumed that are not healthy and are not recommended as part of the daily diet. Signs of good nutrition include: Consistent growth along their

expected growth curve, good energy levels and activity, healthy skin, hair, and digestion, regular eating patterns and appetite, positive feedback during routine health check-ups.

6. Parents can gradually introduce missing food groups in familiar dishes or snacks gradually introduce changes and expand the child's menu; healthy snacks are a way to do that.

Parents are best placed to understand their child's needs and appetite, as well as their family's food preferences and preparation habits. Still, research shows that most parents offer children significantly larger portions than appropriate for their age according to recommendations, and that a significant share of parents worry whether the child is eating enough[18].

Recommendations on the number and size of servings from different food groups can often seem complex to parents. Health practitioners play a key role in "translating" these guidelines into practical, easy-to-follow advice by offering concrete examples of meals. If parents are uncertain whether their child is eating well or showing signs of nutritional imbalance, these recommendations can be used as a helpful checklist to compare with the child's current intake.

It is important to strike the right balance between providing parents with essential information about their child's nutrition and overwhelming them with too much—whether from expert sources or unreliable information found online.

6. UNDERREPRESENTED FOOD GROUPS

Many nutritious foods are often overlooked in family diets, not because they're unhealthy, but because parents may be unfamiliar with them or didn't grow up eating them. At the same time, some families follow food trends, favouring imported or expensive items while underestimating traditional, local foods that have long supported healthy diets.

Parents often believe that the most expensive food is the best, but many affordable, underused foods are highly nutritious and suitable for both children and adults. In fact, some of the healthiest foods are also the cheapest.

Legumes (beans, peas, lentils, chickpeas, broad beans) are low in fat and rich in minerals, vitamins, and fibre. When combined with grains, they can fully replace animal proteins—even in a child's diet.

Whole grains like millet, barley, and oats can be prepared in many ways and paired with legumes, vegetables, or meat for healthy meals.

Other valuable and often underused foods include:

- Wild greens and plants (e.g. nettles, dandelion, wild fruits)
- Winter vegetables high in vitamin C (e.g. beets, carrots, sauerkraut)
- Seeds (sesame, flax, sunflower, pumpkin) and peanuts, which are rich in healthy fats and calcium
- Herbs (parsley, dill, basil, oregano) enhance flavour and reduce salt use

Introducing these foods gradually with the support from fathers can improve child's and family nutrition without increasing food costs.

7. FOOD FROM DIVERSE REGIONS AND OTHER CLIMATES

Supermarkets and farmers' markets offer an ever-increasing supply of food from different parts of the world. There is a large selection of seasonal fruits and vegetables that were previously only available in this region at a particular time of the year that are now grown in green-houses and are available all year round. Parents are ready to spend a significant amount of money for these fruits and vegetables, so that the child gets a high-quality, varied diet. Fresh strawberries, blueberries and grapes in the winter season, and cherry tomatoes available all year round on the store shelves are tempting.

When we advise parents about healthy eating for children, we should always give priority to seasonal local food to take advantage of the benefits of the foods that each season gives us.

It is important to advise parents on the benefits of choosing seasonal, locally sourced foods for their children and the whole family, while also helping them navigate the trend of introducing foods from other regions. Over generations, our bodies have adapted to the traditional foods of our local environment. While there is value in trying and incorporating new foods (such as quinoa), these should not be the first foods introduced to young children, nor should they become the mainstay of their diet.

Additionally, imported foods may carry risks such as contamination or chemical treatments used to preserve freshness or speed up ripening.

8. A VEGETARIAN/VEGAN DIET

A vegetarian diet is a diet that consists of grains, fruits, vegetables, legumes, nuts, and seeds, and excludes foods of animal origin. There are several types of vegetarian diets depending on the type of foods included: lacto-vegetarian, lacto-ovo-vegeterian, and vegan. A vegetarian diet requires very careful planning,[19] in other words, the food must include all essential nutrients (proteins, calcium, iron, omega-3 fatty acids, vitamin B12,[20] zinc) that children on a regular diet regime receive from foods of animal origin. The same principles of healthy eating apply to children on a vegetarian diet - they should get nutrients from all five food groups (protein, grains, fruits, vegetables and milk/dairy products or their substitutes).

The dietary protein requirements for these children are slightly higher than for children who eat everything, because of the difference in the composition of amino-acids and the utilization of proteins of plant origin.

Parents of children who are on some type of vegetarian diet should consult a paedriatrician/nutritionist to check whether the child needs iron, vitamin B12 or other supplements and in what form and quantity.[21]

A poorly planned vegetarian diet can have long-term consequences on growth and development.

More information you can find in Annex 8.

Additional resources

1. Annex 8: Guidelines for healthy vegetarian diets for children
2. Overview of the Complementary Feeding and Diets of Young Children in Europe and Central Asia Region
3. https://www.brightfutures.org/nutrition/pdf/ec.pdf

III HEALTHY DRINKING HABITS FOR CHILDREN

Case Study: Observing a Child's Drinking Habits During a Home Visit

During a routine home visit, a home visitor observed a 2-year-old boy playing actively in the living room. On the table nearby was a half-empty bottle of sweetened iced tea, which the child occasionally sipped from. The home visitor gently asked about the child's fluid intake, and the mother explained that he enjoyed the taste and often refused plain water. She believed the drink was a lighter alternative to fizzy drinks and didn't consider it harmful.

She also mentioned that her son rarely asks for water and sometimes complains of being tired or dizzy after playing, especially on warm days. There was no water bottle in sight, and the mother admitted they often forget to bring one when going out.

The home visitor observed the child's active play, the household's drinking habits, and the potential for inadequate hydration. She decided to talk with mother about this later in the conversation, once more trust and rapport were established.

What should home visitor tell the mother?

Potential advice that home visitor could give:

The home visitor took this opportunity to discuss hydration needs in early childhood. She explained that children, especially toddlers, are more prone to dehydration due to their higher fluid turnover. While sweetened drinks may seem harmless, they are high in sugar, contribute to poor eating habits, and increase the risk of obesity and dental caries. They also reduce the child's appetite for nutritious foods.

She advised the mother that:

- *At this age, children need about 4 cups (1 litre) of fluids daily, primarily from water and milk.*
- *Toddlers often don't ask for water until they're already mildly dehydrated.*
- *Water should be readily available in a visible, child-friendly cup or bottle throughout the day.*
- *Flavoured water can be made at home using fresh fruit or herbs to make it more appealing.*
- *Milk (up to 500 ml daily) is a good source of hydration and nutrients, but plant-based drinks are not a substitute at this age.*
- *Sweetened beverages, juices, and teas should be avoided, and water should be encouraged as the main drink.*

The home visitor suggested creating a fun "water-only" bottle for the child, placing it within reach, and modelling water-drinking as a family habit. The mother agreed to try gradually replacing the iced tea with water and explore flavouring it with fruits to make the transition easier.

Compare your answers with our suggestions. Is there a significant difference? Read the following text to expand your knowledge.

1. WHAT AND HOW MUCH SHOULD A CHILD DRINK?

Most of our body weight is made up of water - up to 70 percent of an infant's weight, and about 60 percent of an adult's weight, depending on the sex and physical build.

Water helps regulate our metabolic rates, bodily temperature and flush out toxins. Proper hydration is important for the concentration and for maintaining an optimal body weight. It decreases the risk of chronic diseases and urinary infections and regulates problems with the stool (constipation).

Children's higher body water content, along with their higher metabolic rates and higher ratio of body surface area to body mass index relative to adults contribute to their higher turnover of fluids and solute. Hence, to maintain an optimal fluid balance, children require a proportionally greater intake of water than adults and are more susceptible to dehydration, which can happen very quickly.

It is therefore crucial that the child replace lost fluids, and this is particularly important for children who are active, as well as on hot days, when they perspire more. Special care should be taken if the child has diarrhoea, vomiting or fever. In this case, the child loses large amounts of fluids that need to be replaced.

Children often ignore thirst because they are so engrossed in play. Once they realize they are thirsty, they have already reached a moderate level of dehydration, which leads to physical discomfort. Probably they will ask for water only when they start feeling fatigue and dizziness, while parents are sometimes not able to explain why the child feels tired.

ADVICE FOR PARENTS

- Teach your child to drink water regularly, especially if you are not spending the whole day with them and cannot monitor their water intake.
- Encourage the child to be responsive to their body's needs (my lips are dry, so I should drink some water; I have been running a lot, so I should drink some water, etc.)
- Toddlers cannot tell you when they are thirsty, so you should offer them water whenever you drink it, preferably every hour.
- All household members should drink water as their main source of fluid intake.
- Toddlers should have a water bottle or glass in a visible place and within reach, whereas older children should be taught how to pour water from the tap.
- Bring a water bottle with you when you leave the house with your child.

Trick your child into enjoying drinking water. Stories about how water is important for our body are of no interest to children and they do not understand them, so think of fun ways to get them to drink more water.

- Get an interesting glass and explain it is especially for water, so that they will enjoy drinking from it.
- Make flavoured water of their choice together every day: Add a few fresh or frozen raspberries or strawberries, slices of orange, tangerine or lemons (without the peel), a sprig of fresh mint or lemon balm (that you grow yourself on your terrace) to a water jug and keep it in the fridge.

2. HOW MUCH SHOULD A CHILD DRINK?

The child gets approximately 80% of the required daily fluid intake through drinks, and about 20% through foods (soups, fruits and vegetables with a high-water content).

Their needs depend on the age, number of meals, quantity and type of solid food:

- By the end of the first year 240 ml per day (one cup).For proper hydration, children aged 1–3 years need approximately 4 cups (of 200 ml) per day, i.e., about 1 litre in total with food intake, including water and milk.
- At the age of 4-8 years, children need about 5 cups per day, i.e., 1.1 to 1.3 litres.[22]

These are the recommended daily intakes, but they may vary from day to day, depending on how active the child is, on the external temperature and on whether the child is ill (fever, diarrhea, vomiting).

3. WHAT SHOULD A CHILD DRINK?

Water is the healthiest (and cheapest) drink for children! Water is the only calorie-free fluid and is the best replacement for the body fluid loss.

What kind of water is best for children? A one-year-old child can drink water from the tap that does not need to be boiled first. Tap water is bacteriologically safe but may contain chemical impurities or a lot of scale.

To improve the quality of drinking water, you can use different filters for home use; you should choose those that remove impurities from the water and retain minerals.

Parents also often use bottled water for drinking; non-carbonated water with a low mineral content is recommended for children. Bear in mind that plastic packaging contains harmful substances (primarily bisphenols) and that the constant use of bottled water (especially plastic bottles that are reused) leads to the accumulation of these substances in the body and harmful effects on health. In addition, plastic packaging pollutes the environment, which is also an important lesson for children!

Milk. From the age of 6 months, children who are not being breastfed can drink pasteurized whole cow's milk. After the age of two, the child may drink low-fat milk with 2% fat content instead of whole milk. The amount should be limited to about 500 ml per day. In the second year of life, the child needs milk of animal origin; plant-based drinks such as rice or almond milk are not adequate substitutes.

4. WHAT A CHILD SHOULDN'T DRINK

Fruit juices sweetened carbonated and non-carbonated drinks, flavoured water or milk; milk shakes are best avoided. All these beverages contain a lot of sugar and increase the risk of obesity,23,24,25 and dental caries. These drinks give the child a feeling of satiety so they will eat less of the healthy foods. Getting used to sugary beverages early in life creates a life-long bad habit because it increases the predisposition to consume these beverages later in life, whilst decreasing the intake of nutrient-dense foods or liquids that the child needs.

An excessive intake of sugary beverages is one of the main "culprits" for the excessive calorie intake and obesity among children!

Fruit juices. Fruit juices should not be given to children in the first year of life. Natural fruit juices also contain a significant amount of sugar, without the fiber that the child needs.

In the second year, preference should be given to the whole fruit, and the quantity of freshly squeezed juices should be limited to 120 ml per day. Older children should also limit their intake of fruit juices to a cup per day. Juice can be mixed with water or ice, and fruits and vegetables can be combined; it is better to use a blender than a juicer, because that way the fiber remain in the drink.

Many "fruit" juices contain a minimal amount of fruit and parents should be aware that these drinks mainly consist of water and added sugar. Store-bought juices also contain various E additives! Even juices labelled as 100% fruit juices contain less fiber. It is better to eat the whole fruit, rather than fruit in the form of fruit juice.

Energy drinks contain caffeine and should not be given to children. Neither should drinks like coffee and tea (which are natural sources of caffeine). The potentially harmful effects of caffeine as a stimulant and the safe amount for this age group are unknown. Caffeine reduces the absorption of calcium and can affect a child's sleep and behaviour.

In some countries in the region, it is not uncommon for adults to give even young children a sip of alcoholic drinks (children are always curious and want to try what the adults are having). It is important to draw parents' attention to the fact that alcohol is toxic to small children even in minimal amounts. Alcohol consumption among school-aged children is very widespread, and perhaps this is the right time for parents to point out the harmful effects of alcohol on the body (of course, leading by example, which is crucial)!

IV SHARING FAMILY MEALS

1. FAMILY MEALS ARE MUCH MORE THAN JUST FEEDING THE CHILD

In the hectic everyday life of the family, there is less and less time for preparing food and sharing meals. The time and effort invested in regular shared meals pays off many times over and are worth the effort. A child can learn a lot about food during shared meals; watching adults will encourage the child to try some new foods, which can be especially important for picky/fussy children.

Preferably, family members should eat together with the child whenever possible; the child thus acquires healthy eating habits and becomes an equal member of the family. Children should learn that a family meal is a pleasant social event and should feel that they are an equal member of the family.

Family meals are the ideal time for socializing, bonding and communication. Children and teenagers who have regular family meals are better behaved in many ways, which contributes to their mental and physical health and school performance.

At the age of two, a child has sufficiently developed motor skills to be able to eat without help and they should be allowed to do that. At this age, children define what they like and what they do not like, which can be very demanding, and often dawdle over a meal.

At the age of three, the child already deftly uses a spoon and fork, asks for his favourite foods (often sweets) and may request the same food for several days in a row.

Ways to make family meals more enjoyable – what to advice parents

It would be good to...	Because
Switch off the television, put away tablets and phones.	So that family members share quality time with the children and other household members at mealtimes.
Allow enough time for a meal, at least 30 minutes.	To provide enough time for a child that eats at a slower pace, to try out new food and acquire good habits.
Involve all household members in the preparation of meals (even small children can contribute according to their abilities).	Children are more likely to eat the food you serve if they are involved in its preparation and serving.
Use the family mealtime to talk and interact.	So that the child will experience family meals as enjoyable occasions for connecting.
Praise and reward the child's good table manners, politeness and willingness to try out new foods.	We are all more inclined to criticize bad behaviour than praise good behaviour.
Do not use food as punishment or reward.	If you praise your child for eating everything, you are telling them that they should eat to please you or perhaps to get candy as a reward, not because they are hungry.

TABLE MANNERS

Family meals are a good time for a child to learn table manners. Learning table manners helps children develop respectful and positive mealtime behaviours, supports their social skills, and encourages mindful eating. Good habits formed early—such as sitting at the table, using utensils properly, waiting their turn, and engaging politely in conversation—foster a sense of routine, cooperation, and confidence in social settings, both at home and in the wider community. Teaching children table manners requires adults to be patient, consistent, and willing to model positive mealtime behaviour.

Advising parents on how to teach a child good table manners

- *The ideal age for children to start learning table manners is between 2 and 4 years.*
- *Around the age of two, begin teaching simple polite expressions such as "please", "thank you", and "enjoy your meal". Children are more likely to adopt these phrases if they regularly hear adults using them.*
- *Praise and encouragement are especially effective at this age—acknowledge your child's efforts and good behaviour during meals.*
- *If the child displays inappropriate behaviour and does not respond to a calm reminder, use a brief consequence, such as asking them to leave the table or removing their chair for a few minutes. This gentle but clear response helps reinforce appropriate mealtime behaviour.*

ENCOURAGING THE CHILD TO EAT INDEPENDENTLY

This is a very important step, not only in the development of the child's independence and self-confidence, but also in the development of fine motor skills. Patience is needed if the child smears his face and clothes and scatters food around (parents often lose patience, pick up the spoon and end up feeding the child). When children eat alone, they are in sync with their own regulation of satiety, which is extremely important for proper nutrition and regulation of appetite and body weight later in life!

Children love to eat from their own plate, and using children's dishware will also make it easier to determine the portion size appropriate for the child.

Age Group	Focus	Practical Tips for Parents
2–3 years	*Learning through imitation and play*	• Use child-sized utensils and serve soft, easy-to-grasp foods • Expect mess; it's part of learning • Eat together—children imitate adult behaviour • Encourage simple phrases ("more please", "all done") • Let them try feeding themselves without taking over • Praise effort, not perfection

4–5 years	*Building skills and confidence*	• Encourage use of cutlery and open cups • Offer simple choices (e.g. apple or banana) • Involve them in food prep (e.g. stirring, setting the table) • Reinforce basic table manners • Keep mealtimes calm and screen-free
6 years	*Strengthening routine and responsibility*	• Support consistent, independent eating habits • Let them serve small portions themselves • Encourage cleaning up after meals • Talk simply about nutrition and healthy choices • Maintain regular family meals

Regardless of age it is important to encourage children to talk about their day, for example, "Tell me one interesting thing that happened in kindergarten today", or everyone should tell something good and something bad that happened to them during the day; if the child does not want to share anything, do not force them, sometimes the child is content just being together with the family and listening to the conversation.

2. RESPONSIVE FEEDING - NUTRITION ACCORDING TO THE CHILD'S NEEDS

Feeding in response to the needs of the child, in other words "on demand" (active/responsive feeding), is a reciprocal process that involves:

- the child sending cues of hunger and fullness,
- the parent reading these cues, interpreting them correctly and responding to them adequately - the child seeing that the parents are receptive to the cues, and that their response is predictable.

This creates a foundation of mutual trust that supports the child's development and helps to create routines.

Most children are much better than adults at sensing hunger and fullness. For many of us, these physiological needs are "distorted" because of drastic diets, excessive eating or poor stress management. The responsibility of the parents or the child's caregiver is to prepare high-quality food, and the child will decide whether and how much to eat.[27]

How a child eats shapes their lifelong relationship with food. Learning to feed a child in response to their cues and needs is essential during the first three years—and continues to matter well beyond early childhood.[26]

Think and consider

Division of Responsibility in Feeding

What is a parent's responsibility when it comes to child nutrition?
What is a child's responsibility when it comes to food?

Parents determine:

1. What the child eats
2. When the child eats
3. Where the child eats
4. Who feeds the child or oversees feeding

Parents should know:

1. What a child eats: a varied diet from all five food groups.
2. When the child eats – try to keep meals and snacks scheduled around the same time each day (breakfast, snack, lunch, snack, dinner); the child needs habits and routines, it gives them a sense of security.
3. Where the child eats - at the table, younger children in a highchair and older children in a chair; whenever possible, bring the family together at mealtime.
4. Who feeds the child or oversees feeding - always think about the safety of the child; an adult should always be with the child when the child is eating (this task must not be left to older children).

Respect the need of the child to decide what, when and how much to eat - no single food is essential. Consider what the child has eaten over a longer period (a week or a month), not just a couple of days.

The child decides:

1. Whether or not to eat the food on offer
2. How much to eat
3. How to eat

You should explain to the parents:

1. Whether or not children eat the food offered to them –child's "no" should be taken as "not now"; keep offering (even up to ten times) the foods they don't want to eat, in some other form, mixed with another food that they like, and serve it creatively; arm yourself with patience and understanding.
2. How much the child eats - put less food on the place, and add extra amounts if needed; do not force the child to eat everything and "clean the plate";
3. How the child eats - let toddlers eat with their hands and teach the older child to use cutlery; a little bit of a mess (on the plate) and staining (their clothes) should be permitted.

Long-term positive effects on health

In the prevention of obesity in children under the age of two, the most promising interventions are those related to the choice of foods and responsive feeding, first and foremost those that teach parents how to read hunger and fullness cues and that advise them not use food as a reward or punishment.

If children do not acquire healthy eating habits and accept different types of foods in early childhood, later they will be more likely to eat just one type of food, which can affect their health: not enough vegetables, lack of vitamins, oligoelemenats and antioxidants, excessive intake of empty calories, risk of obesity and chronic non-infectious diseases.

Many parents complain that their children refuse healthy foods and only want pasta and sweets. The problem is that by the time they are two or three years old, these children have already experienced disregard for their needs and body cues many times. They were told many times what they should or should not do when it comes to food. Many parents will not allow their child to know what it means to be hungry. If they judge that it has been a long time since the last meal, they will offer the child some meat and vegetables, and if the child refuses to eat, they will give them something else, just to make sure they eat something (instead of letting the child go hungry and letting them heed their hunger signals). Any well-intentioned persuasion or bribery to take another bite sends the child the message that they should not trust their body. If adults do not accustom children to foods that are full of flavour enhancers (store-bought snack foods), children will eat when hungry and stop when full.

Additional resources
Supporting Families for Nurturing Care - Module 16 Responsive feeding

3. THE CHILD'S SAFETY AT MEALTIMES

Children younger than five, and especially children below the age of three, are in a high-risk category for choking and suffocation (a bite can go into the airways and make breathing difficult or impossible). That is why special attention must be paid to the safety of the child while eating.

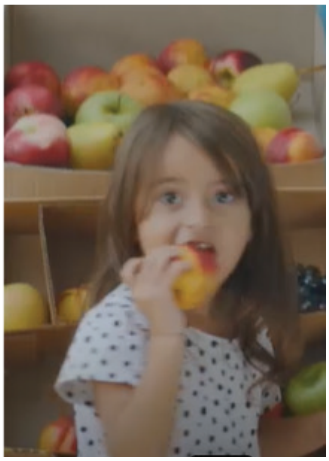
Children should always be supervised by an adult when eating. If the child is sitting upright at the table, is focused on eating and is not distracted, the risk of choking on food is not higher than in adults. If the child is allowed to run around while eating or is rushed to finish eating, the risks of choking on food increase.

Small children should not be allowed to eat in the car; if choking or suffocation occurs, parents may not be able to immediately help the child while driving.

Food should be eaten in small bites, which are easy to chew. Children should not be given popcorn, peanuts, hard candies, chips, whole grapes, raisins, or berries. Hard vegetables or fruits (carrots, apples) should be boiled, chopped or grated. Chop up hard pieces of meat. Slice food hot dogs and sausages into smaller bits, not into rounds that a child may try to swallow whole. Remove the bones from meat or fish. Care should be taken that the food is not too hot.

Additional resources
Annex on Safe Preparation and Preservation of Food (in the Infant Nutrition Module)

V HEALTHY EATING HABITS



A child's eating habits are shaped by family routines and the surrounding environment. Buying, preparing, and sharing meals offer valuable opportunities for parents and caregivers to model healthy behaviours. When nutritious food and drinks are a normal part of daily life, children naturally adopt these habits. If you want your child to enjoy vegetables, the whole family should eat them regularly—without making it a big deal.

THE CONCEPT OF "PARENT-KEEPER"

If parents do not allow candy, snack foods and other foods of little or no nutritional value in their homes, then children will not have any opportunities to consume these. Parents decide which foods and drinks enter the home, even for adolescents. Parents cannot control the food children eat out of home but should be responsible for the food at home.

Parents need to understand that children learn by watching, not just by listening, so setting a good example is one of the most powerful ways to influence their eating habits. Supporting a healthy diet for a child is also a chance for the whole family to reflect on their own food choices and make positive changes together. Starting with small, manageable steps can help build lasting routines, and even minor changes can lead to meaningful improvements in your family's overall health.

TIPS FOR PARENTS TO ENCOURAGE HEALTHY EATING HABITS IN CHILDREN

Besides already mentioned importance of shared family meals without distraction and child's participation in preparation of the meals parents can also:

- Have a bowl of fresh fruit in a visible place, within the child's reach; they can offer children fruit if they are still hungry after a meal.
- Keep healthy foods in the fridge and pantry and leave the unhealthy ones on the supermarket shelves.
- Try to have healthy snacks on hand - the child will eat them in the absence of the other, less healthy ones (a bowl of fruit, fresh vegetables stick in the refrigerator).
- Compromise on desserts: fruit is the healthiest option as a dessert after a meal, but parents can also prepare home-made cakes made from healthy ingredients for their child, e.g., home-made banana bread. "Real" sweets (chocolate and cakes) should be saved for special occasions, such as birthdays and other celebrations.
- Try fruits and vegetables of different colours, flavours and textures. The greater the variety of the food offered, the greater the chances that the child will discover something they really like.
- Read children's books that have good messages about food, show them pictures of fruits and vegetables when they are learning about colours, shapes etc..
- Play farmers' market with the child, let them feed the dolls, draw the foods they know or would like for lunch tomorrow.

1. DOING GROCERY SHOPPING, MAKING A MEAL PLAN AND GROCERY LIST TOGETHER

From an early age, children should learn where food comes from and how it is prepared. Involving them in everyday activities like buying, storing, and cooking food helps them see food as more than just something that appears on their plate. It allows them to explore the variety of foods available and understand what makes up a healthy diet. These experiences are important for developing lasting healthy habits that will carry into adulthood.

Parents can support this learning by talking with their children about where fruits and vegetables grow, what it means for food to be seasonal, how to recognise fresh versus wilted produce, and where everyday foods like honey, milk, meat, and eggs come from. These simple conversations can spark curiosity and build a strong foundation for healthy, informed eating.

2. PREPARING FOOD TOGETHER

Wise parents encourage their children to participate in food preparation, from selecting the ingredients to preparing the meal. Active participation encourages good behaviours and gives children the confidence to make healthy food choices outside the home.

Even young children can help prepare the meal, e.g., wash fruits or vegetables, mix a salad, participate in setting and decorating the table.

Older children and teenagers can actively participate in the cooking and baking process. They love to discover and try new recipes and should be supported in this.

Sometimes, in the rush of everyday life, parents might feel that children make a mess in the kitchen, and that cleaning up after the kids takes too much of their time. However, the benefits far exceed these challenges; cooking food together can be the best part of the day and leaves lasting childhood memories!

Food should remain one of life's greatest pleasures, but that pleasure should be derived from the rituals of meal preparation and serving, rather than from the type and (excessive!) amount of food we eat.

3. THE ROLE OF FATHERS IN ADOPTING HEALTHY EATING BEHAVIOURS

Fathers play an important role in modelling healthy lifestyles, as in all other aspects of parenting.

Both research and practice have shown that father involvement during pregnancy and after childbirth, benefits the expectant mother's health, in terms of eating healthier, being more physically active, avoiding harmful behaviours, such as smoking and alcohol and having regular check-ups. The father is also a key provider of support to the mother during breastfeeding, especially in case of difficulties and barriers.

An interesting study found that family members, including fathers, believe that fathers are less interested in healthy eating for the children and the family. [28] Fathers often have poorer dietary habits than mothers and other

family members; mothers are more proactive in selecting healthy foods, and fathers just go along. Fathers are less skilled at cooking, and when they cook, they opt for quick, less healthy meals. Fathers focus more on whether the child has eaten, rather than on whether the food is healthy. Of course, children quickly spot these differences and take advantage of them. When grocery shopping, fathers tend to choose less healthy products. Generally, the family believes that taking care of health and nutrition is the responsibility of the mother.

In practice we see that fathers are increasingly more involved in raising children and take an equal share in household duties, nevertheless, it is important that mothers and fathers join forces to create a healthy family environment when it comes to nutrition. This is especially important in view of the significant increase in the prevalence of obesity in children. Medical practitioners should use family visits and preventive examinations as an opportunity to discuss healthy nutrition for the child and family with both parents.

Additional resources
Supporting Families for Nurturing care resource modules:
Module 5: Engaging Fathers
Module 16: Responsive feeding
Avaiable on: https://www.issa.nl/content/supporting-for-families-nurturing-care

4. THE IMPORTANCE OF NUTRITION FOR DENTAL HEALTH

Caring for baby teeth is essential for the health and appearance of permanent teeth. Without proper prevention, issues like cavities and gum disease can lead to tooth loss, poor nutrition, and overall health problems.

Dental caries is one of the most common diseases in children and youngsters. Today, we know that caries is an infectious disease that results from the interaction of three factors: Microorganisms (Streptococcus mutans), substrate (fermentable carbohydrates – sugar and starch) and sensitive tooth surfaces.[29] Most children acquire this bacterial infection by age two, often through shared utensils or food. Acidic foods and drinks can also cause dental erosion, weakening teeth and increasing the risk of cavities.

Three key elements for dental health are proper oral hygiene, regular dental check-ups and a good diet.30 A healthy diet is the first step for maintaining dental health. It starts already with good nutrition during pregnancy. The next important link is breastfeeding. In addition to all the invaluable nutritional advantages of mother's milk, the very act of suckling is important, because it activates all the baby's facial muscles, thus promoting the proper development of jaw muscles and alignment.

As mentioned earlier, children should get used to eating nutritious meals at set times, with only healthy snacks in between. Sweets and sugary drinks—especially sticky treats like lollipops, caramels, and chocolate—should be avoided, as they cling to teeth and promote acid that damages enamel. Frequent snacking also weakens saliva's natural protective role, increasing the risk of cavities. Tooth-friendly foods support mineralisation and include those rich in calcium, phosphates, and protein—such as milk and other dairy products.

TIPS FOR PARENTS ON DENTAL CARE OF CHILDREN AGED 2 – 5

- Brush your child's teeth twice a day using a small amount of fluoride toothpaste.
- Supervise brushing to ensure proper technique and prevent swallowing or overuse of toothpaste.
- Offer water and semi-skimmed milk as the main drinks.
- Limit juice, sweetened beverages, and sodas.
- If sweets are given, serve them at the end of a meal—not between meals.
- Discourage frequent snacking; when needed, offer healthy snacks.
- Schedule regular dental check-ups for preventive care.

VI HOW TO OVERCOME UNHEALTHY EATING HABITS

UNDERSTANDING MODERN DIET CHALLENGES

When we talk about the quality of food, we have to consider three elements: the nutritional composition, the substances it contains (pesticides, additives) and the method of preparation, which can significantly change the composition and quality of the food.

Children's diets are increasingly shaped by the global shift from traditional, home-prepared foods to ultra-processed, packaged products. This "nutrition transition" is especially common in lower-income families, where heavily processed foods are often cheaper and more accessible than fresh, nutrient-rich options. Unfortunately, these foods tend to be high in sugar, salt, and unhealthy fats, and low in fibre, vitamins, and minerals—posing serious risks to children's health.

WHAT ARE PROCESSED AND ULTRA-PROCESSED FOODS?

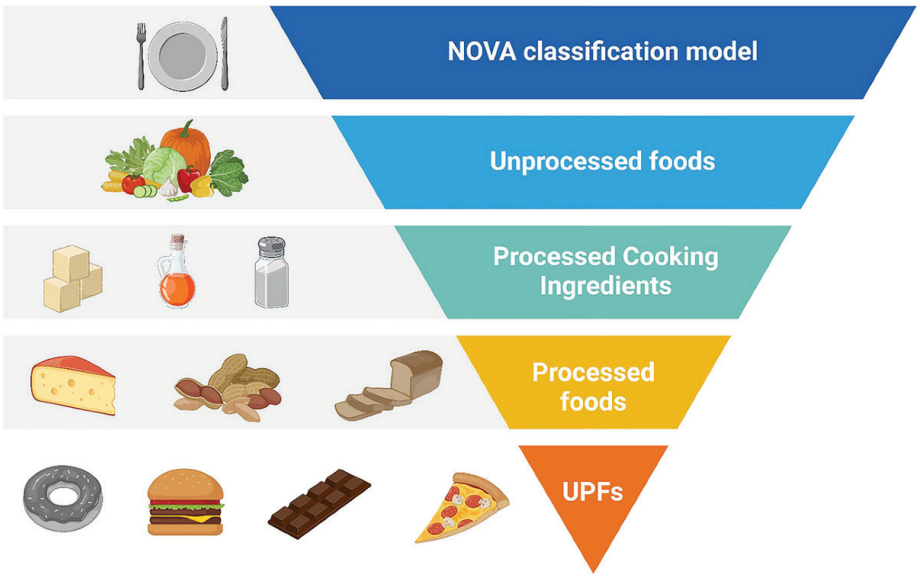
Processed foods are those that have undergone industrial processing and are altered from their original form to enhance taste, shelf life, or convenience. Ultra-processed foods—like packaged snacks, sugary drinks, frozen meals, and processed meats—undergo extensive industrial processing and contain little or no whole food. They are designed to be cheap, highly palatable, and easy to market, especially for children.

Classification of foods according to the NOVA system (designed by Center for Epidemiological Studies in Health and Nutrition, School of Public Health, University of Sao Paulo, Brazil) designed to make it easier to distinguish between minimally processed foods, which are not harmful to health, and ultra-processed ones, which are.

NOVA has classified food into four categories or groups, based on the number of processing procedures the foods has undergone.

- Unprocessed/Minimally Processed (e.g. fruits, milk, rice)
- Processed Culinary Ingredients (e.g. oil, salt, sugar)
- Processed Foods (e.g. canned beans, cheese, bread)
- Ultra-Processed Foods (e.g. chips, soda, sausages) fall in the fourth "notorious" category.

This group of food items includes sweetened drinks, sweet and salty snacks, meat products, frozen meals, etc., in other words, items that contain minimal nutritional ingredients.



Source of the image: Vallianou, Natalia & al. (2025). Ultra-Processed Foods and Childhood Obesity: Current evidence and perspectives. Current Nutrition Reports. 14. 10.1007/s13668-024-00596-y.

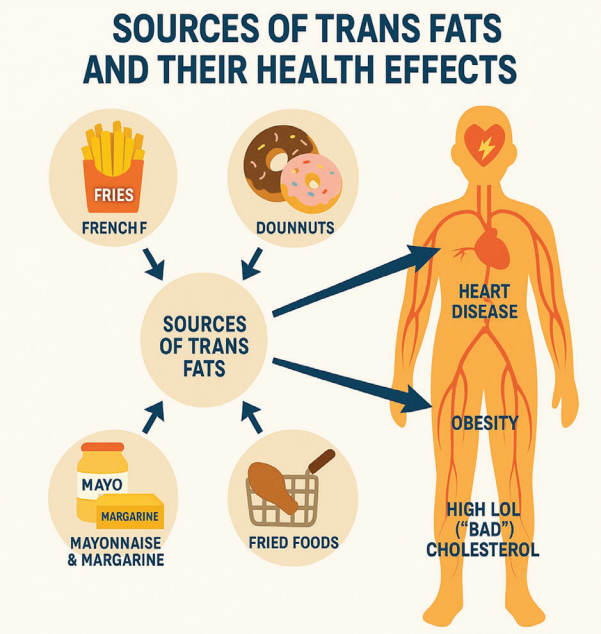
Industrial sweets and salty snack foods are not natural foods, and their flavour is the result of added flavour enhancers designed to disrupt children's natural sense of taste. When commercial snack foods are introduced early in children's lives, only to be subsequently forbidden to them, children conclude that there are two types of food, one is good for you but unpalatable, and the other on is bad for you but tasty.

WHY ULTRA-PROCESSED FOODS ARE HARMFUL

Studies link high consumption of ultra-processed foods to obesity, heart and cerebrovascular diseases, type 2 diabetes, and breast cancer. These foods are rich in salt and sugar and lack essential nutrients such as fibre, vitamins, and phytonutrients.[31]

TRANS FATS – A HIDDEN DANGER

Trans fats, commonly found in fried foods, margarine, and processed snacks, interfere with (prevent) the absorption of healthy fats (omega-3 and omega-6) and raise the risk of impaired insulin resistance and cardiovascular disease. Additioanly, trans fats also lead to an imbalance in the ratio of HDL to LDL cholesterol (plasma transport lipoproteins - the ratio between "good" and "bad" cholesterol) and thus actively contribute to the development of atherosclerosis.



Small amounts of trans fatty acids can be naturally present in food (e.g., in milk or meat of ruminant animals, i.e., beef and lamb), but they are mostly produced in the process of partial or complete hydrogenation of vegetable oils in industrial food production. Junk foods, such as fries, chips, mayonnaise, candies, doughnuts, deep-fried meat and foods prepared in deep fat friers where the same oil is used several times, have the biggest amount of trans fats.

1. DAILY FOOD BALANCE

Healthy Eating in Balance: The 90/10 Rule

The 90/10 rule is a lifestyle approach; 90% of what children eat should be clean, healthy foods or drinks and the other 10% can be whatever thay want. And parents should not worry or feel guilty.

2. "SOMETIMES FOODS"

These foods are called "discretionary choices" (non-essential foods) because they are not essential in the diet of the child or other family members. These foods are high in calories, saturated fats, sugar and salt or alcohol:

- sweets (cookies, cakes, desserts),
- cured meats and sausages,
- ice cream, creams and confectionery products (chocolate and similar),
- pastries,
- fast food (hamburgers, fries, deep-fried food),
- crisps and other salty snack foods,
- butter and cooking cream,
- sweetened beverages and fruit juices.

Unfortunately, both adults and children find unhealthy foods tastier! Although this is not recommended in the daily diet, we can occasionally "treat" ourselves and our little ones to this food, on special occasions, not too often and in small quantities only.

TIPS FOR PARENTS

How to help children strike a balance in the choice of "sometimes foods"

- Save "sometimes foods" for special occasions.
- Teach children to stop eating when they feel full.
- Try not to label foods as "bad" or "good", instead, focus on all the benefits of a healthy diet.
- Do not dwell on how delicious the "sometimes food" is.
- Do not use this type of food as a reward or "bribe" for good behaviour.

Try not to be too restrictive, otherwise the "forbidden" foods will be even more appealing and will become an even greater challenge. Stick to the 90%/10% rule MEALS OUTSIDE HOME.

THE BENEFITS OF HOME-COOKED MEALS:

	Home-Cooked	Restaurant/Fast Food
Lower salt & sugar	✓	✗
More veg & fruit	✓	✗
Right portion sizes	✓	✗
Affordable	✓	✗
Teaches good habits	✓	✗

In addition, when food is prepared at home, following their parents' example, children learn to make appropriate food choices and to try out different types of food.

TIPS FOR PARENTS

- If you know that you will be out of the house when the child is hungry (after kindergarten or sports, during outdoor play), prepare a healthy snack (fruit, cheese, vegetable sticks). Bring some water, it is a healthier and cheaper choice than store-bought juices and drinks.
- If the child goes to the daycare centre or kindergarten, it is a good opportunity for them to eat with other children and try new foods and flavours. If the child is not willing to eat food at the kindergarten, try to find a solution together with the teachers.
- In the restaurant, help the child to choose a healthier combination: if they order a hamburger, suggest that they ask for a salad instead of fries. Often the children's menu includes fried food or has no salad, so you can share a healthy portion or ask for a half portion. Portions in restaurants are often oversized; explain to the child that they do not have to eat everything.
- If they want a dessert, suggest that they share it with someone. Encourage the child by personal example to skip sugary drinks (juices, shakes).

3. WHAT WE INGEST WITH FOOD (ADDITIVES, PESTICIDES)

ADDITIVES

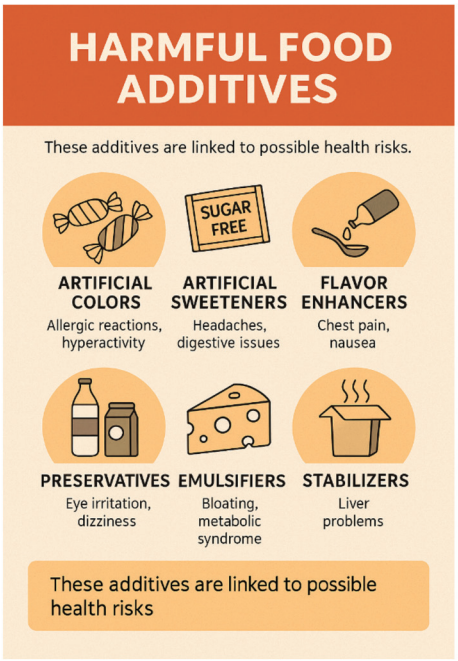
Additives are substances that are added to food to give them a thick, powdery, or solid consistency. They enhance the smell and taste of food and give it a creamy or other quality. Every day, more and more substances are added to industrial food (and cosmetics) that have different "enhancing" roles. In addition to being cheap and profitable additions to products that save on raw materials, some additives can completely replace natural ingredients.

Over time, it has been established that additives are not suitable for the human body. These substances can cause allergies, nausea, flatulence, and in the worst case even diseases, mainly in children and the elderly.[32]

Therefore, it is not recommended to buy food for children under the age of three, because their liver detoxification system is not yet sufficiently developed.

Artificial colours, sweeteners, most flavours, chemical preservatives, synthetic antioxidants, emulsifiers and stabilizers are prohibited in baby food and human milk substitutes.[33]

However, despite the fact that only safe additives with known chemical and physical properties are generally used, residues (metabolites) used to fatten animals and accelerate body weight gain as much as possible, can still be found in children's food, These are usually residues of antibiotics and hormones that present a human health risk even in minimal quantities.



TIPS FOR PARENTS

it is important to know what you are eating and what you are serving to your family

- Pay special attention to foods that are not recommended for children and that can damage their fragile immune system. - Many additives in processed food can cause allergies, and some of them even asthma.
- Take your time to read the labels, because this is the only way you can be sure that you and your family will not ingest substances with your food that can be harmful to you.
- Keep in mind that all processed foods, sweets, snacks and all packaged products with a longer shelf life contain additives.
- Remember the most dangerous additives and what they can cause and simply do not take food that contains these.
- The harmful effects of additives on health are usually not manifested immediately, but after long-term daily consumption of foods and drinks that contain them and depend on the amount we ingest.

PESTICIDES

Pesticides enable higher yields, lower product prices and more cost-effective fruit and vegetable production. Despite some of their benefits, if their use in plant protection is excessive and improper, their presence in foods will have long-term negative effects on human health that are manifested only after years of consumption. It is impossible to avoid pesticide residues in crops, or foods of animal origin, the consumption of which leads to health problems of both animals and humans.

According to the European Food Safety Authority (EFSA), certain foods consistently show higher levels of pesticide residues. Annual monitoring across EU countries highlights the following:

- Fruits: Apples, strawberries, grapes, peaches, pears
- Vegetables: Celery, spinach, lettuce, bell peppers, cucumbers
- Grains: Wheat, rice, oats (generally within legal limits)

EFSA's 2021 report found that 96.1% of the 87,863 food samples tested across Europe were within legal safety limits, though many contained multiple residues.

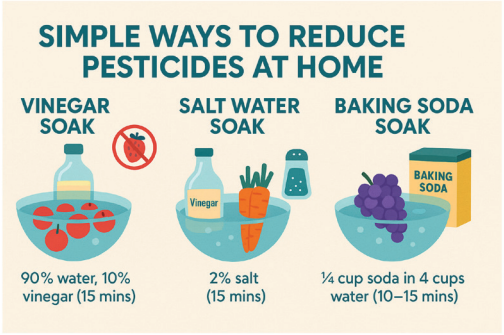
Pesticide use in Southeast Europe and Central Asia varies across countries, influenced by agricultural practices, regulatory frameworks, and economic factors. Countries like Serbia, Bulgaria, and Romania have seen increased

pesticide usage due to intensified agricultural activities. However, comprehensive data on pesticide residues in food within this region is limited. In Central Asia, countries such as Kazakhstan, Uzbekistan, and Kyrgyzstan rely heavily on agriculture, leading to significant pesticide application. However, data on pesticide residues in food from this region is scarce.

How to wash fruits and vegetables

Experts say that there are several different ways to properly clean fruits and vegetables and reduce the amount of pesticide on them:

1. **Vinegar.** Ordinary vinegar has been shown to be very effective in cleaning fruit. This solution consists of 90% water and 10% vinegar, soak the fruit in it for 15 minutes, and then rinse it. This method can be applied to most fruits, except for berries, which have porous skin and acquire a vinegary taste. For berries, use lemon juice instead of vinegar.
2. **Salt water.** This solution consists of 98% water and 2% salt. Soak fruit in it for 15 minutes, then rinse it and thus most of the pesticides will be removed from the skin (traces remaining inside the fruit cannot be removed).
3. **Soda.** Soda is especially good for cleaning citrus fruits because it can remove the fat on the surface of the peel. The solution consists of four cups of water and one quarter cup of baking soda. The fruit is soaked in this mixture for 10 to 15 minutes and then rinsed with cold water.



PLASTICS

Plastic is ubiquitous in our lives, and about 40 percent of plastic is single use. A special problem is the use of plastic containers for storing, or heating and reheating food. About 60 of additives are added to plastic during production, to give it flexibility, resistance to temperature, strength, colour, etc.

Bisphenol particles from plastic bottles or cans get into the human body through foods and drinks. Research has shown that hot water can release bisphenol particles from plastic containers; these particles can also get into food from cans covered with a plastic layer. Bisphenols can cause hormonal disorders; bisphenol A (BPA) can cause developmental problems in infants.35 This is why, in 2011, the European Union banned baby bottles containing bisphenol. When heated, plastic also releases phthalates, which disrupt the natural endocrine processes in the body.

How to advice parents to protect children:

Avoid:

- Reused plastic bottles
- Heating food in plastic
- Plastic containers without a recycling label

Safe Choices:

- Bisphenols (BPA) -free labelled products (e.g. children's cutlery and food storage containers)
- Glass containers
- Stainless steel bottles

Additional resources
Annex 9: Labels and food labelling

VII HEALTHY LIFESTYLES - PHYSICAL ACTIVITY

The foundations of lifelong health are laid down in early childhood. This is an opportunity for the entire family to change their lifestyle and adopt healthy behaviours! Along with diet, exercise is a building block for the child's good health. Habits laid down in the early years can affect physical activity throughout life.

Early childhood is a period of intense physical and cognitive growth and development. Being physically active contributes to the child's good health, not only physical, but also mental, emotional and social.

Physical activity:

- helps prevent weight gain as well as maintain good health,
- promotes muscle and bone growth,
- promotes brain development and improves learning,
- boosts motor coordination,
- improves sleep quality,
- promotes social interactions and development of social skills.

While being active, children exercise and improve their motor skills. Mastering motor skills gives the child joy and a sense of accomplishment. When they engage in group physical activities, children learn how to design fun games together. Physical activity in childhood affects the child's overall health and wellbeing and is a predictor of physical activity in adulthood.

It is natural for a child to play and be active. Children are most active when they are playing with other children. Children learn through activities, as they explore and experiment, through trial and error. That is why sitting still for too long is not natural for a child.

1. TYPE AND INTENSITY OF PHYSICAL ACTIVITY

While we are at rest, our body burns a certain amount of energy to meet its basal metabolic needs. Physical activity is any activity that burns more energy than resting. Light physical activity is any activity that requires 1.5 to 4 times more energy than resting; for small children, this could be a walk, a bath or other activities that do not leave the child breathless and sweating. Moderate physical activity burns 4-7 and vigorous exercise 7 times more energy than resting.

It is recommended that children aged 1 to 5 years should have at least 180 minutes of physical activity a day, of which, from the age of 3, at least 60 minutes of vigorous physical activity.36

"Screen time" refers to the sedentary activities spent in front of the television, computer and mobile devices. When sitting, the body burns slightly more energy than when we are not active at all. For children, this is the time they spend in strollers, highchairs, car safety seats, or in carriers on their parents' backs. This also includes the time when children sit still when their parent reads to them.

A child learns by imitating adults. Physical activity, outdoor activities and other activities together with the family will encourage the child to accept exercise as part of their daily routine.

Additional resources
Supporting Families for Nurturing Care resource modules: *Module 20: Healthy Weight, Physical Activity and Sedentary Time*

VIII PARENTS' MOST FREQUENT CHILD NUTRITION CONCERNS

Feeding problems are common in the development of a child.37 Children want to become independent, seek their own identity within the family, have the right to make their own choices and test their parent's boundaries. Mealtimes can become much more enjoyable if parents recognize and respect these needs, which requires a lot of time and patience.

The incidence of feeding problems in children is assessed differently, depending on the research methodology.38 According to some studies, one of ten children, as reported by parents, has some kind of feeding problem, while the parents of one in four children are concerned that their child has a feeding problem. Most of these children have normal growth (according to the WHO child growth curves). Concern about a child's growth, even when unfounded, disrupts the relationship with the child in terms of feeding, as parents unconsciously take control of the amount of food the child eats to ensure optimal growth and weight gain.

Self-assessment
Does the child have any feeding difficulties?

1. What kind of information do you need to support and inform parents?
2. How will you assess if the child has a feeding problem?
3. What kind of advice will you give to parents?

1. **What kind of information do you need?** You may use the Questionnaire on nutrition of children aged 1-6 years (See Annex 10: Questionnaire on nutrition of children aged 1-6 years) . The Questionnaire is a tool that provides a good starting point for recognizing possible problems in the child's nutrition and will help you assess what additional information you need to collect and what kind of advice to give to parents.

2. **How will you assess if the child has a feeding problem?**
   12- to 24-month-old child:
   - Does not accept foods of different textures and foods that the family eats every day, including iron-rich foods.
   - Drinks more than 750 ml of milk (cow's or goat's) and more than 175 ml of juice per day.
   - Did not transition from a bottle to a cup at 18 months.
   - Gets liquids other than water from a bottle at night.
   - Gets semi-skimmed or skimmed milk (1-2 % of milk fat) or plant-based beverages (soy, rice, almond) as the main source of milk.
   - Consumes drinks with added sugar, artificial sweeteners or caffeine.
   - Gets raw unpasteurized milk.
   - Is left unattended while eating.
   - The child is being forced to eat.

   2 to 6-year-old child:
   - Consumes drinks with added sugar, artificial sweeteners or caffeine.
   - The child is being forced to eat.
   - Never or seldom eats with the family.
   - Has no fixed mealtimes.
   - Gets drinks of plant origin (rice, almond) as the main source of milk, with the exception of fortified soy milk.
   - Gets raw unpasteurized milk.

- Drinks excessive quantities of milk, which reduces the absorption of iron.
- Gets vitamins/minerals through supplements rather than through a varied diet.

If the child is generally healthy, is growing well and has enough energy to play, learn and explore, they are probably eating enough. Parents should seek the help of a paediatrician or nutritionist if the child eats only a very small range of foods or won't eat any of the foods from one of the five food groups or if the child consistently refuses food. Keep in mind indic=vidual differences among children. Parents should also seek advise from health professionals when they are concerned about their child's growth or overall nutrition. If you cannot provide answers make referrals, connect them with peadiatritians or nutritionists. You can also use Bebbo or any other source of reliable information so they can inform themselves.

INTRODUCE BEBBO DURING YOUR VISITS AND CHECK-UPS —WALKING PARENTS THROUGH ITS KEY FEATURES (GROWTH TRACKING, IMMUNIZATION REMINDERS, FEEDING TIPS)—TO REINFORCE HEALTH EDUCATION AND SUPPORT.

3. What kind of advice will you give to parents?

Suggested answers - advice for all parents and all age groups

- It is common for toddlers to eat very small amounts of food, be fussy or not eat at all. Your task is to give toddlers healthy food and let them decide how much food they want to eat.
- Try to create a positive eating environment, keep offering new foods and follow your toddler's lead.
- Use mealtimes as a social family occasion, to laugh and talk with your child.
- Set a good example for your child - eat healthy food and snacks.
- Do not use food as punishment or reward. Never praise a child for eating everything; children should eat because they are hungry and not to please you or to get candy.
- Tolerate the mess your child makes while trying to eat independently.
- Do not get into fights with the child over food; this way you will avoid "power struggles" in the short term and eating problems in the long run. You will not help yourself or your child by using force, yelling and constantly nagging. You need to set clear boundaries, control the situation, not the child.

As mentioned previously, to provide even more tips and advices you can encourage parents to download and actively use UNICEF's free and innovative parenting app, Bebbo, which features over 100 articles on nutrition—including healthy, tasty recipes to prepare and enjoy with their child. The app also offers tools for growth monitoring, vaccination reminders, health tracking, play & learning activities, parental support, and much more. Once installed, Bebbo can work entirely offline.

Downloading and Setup

Where to get it: Available free on Google Play and the App Store

First-time setup: On opening, parents enter:

Their name and their child's name

Child's birth date (including prematurity status)

Parent's relationship to the child

Multiple profiles: Option to have additional children (up to six years old)

! All personal details remain on the device and are used only to deliver age-appropriate content and activate the app's tools.

Additional resources
Annex 10: Bebbo parenting application

Case Study: Dimitri*

Dimitri is an active 2-year-old boy who sleeps well and enjoys running around. In the past three months, a babysitter has been looking after him at home on weekdays. Ever since, Dimitri has experienced a loss of appetite and is reluctant to try new foods. At home he refuses to sit in the highchair and mealtimes have become quite chaotic.

At the preventive paediatric check-up, Dimitri's weight was measured at 13.6 kg and his height was 91.5 cm. The parents asked for advice on how to encourage Dimitri to eat the foods he needs for growth and development and how to make meals more enjoyable.

1. What initial information have you gathered?

2. What are the parents' nutrition concerns?

3. What interview questions would you ask to gather essential information?

4. What additional screenings and assessments would you conduct?

5. What kind of advice would you provide to the parents and other caregivers?

1. What initial information have you gathered?

- 2-year-old boy
- Weight 13.5 kg, height 91.5 cm
- Energetic
- Acquiring age-appropriate motor skills (running and chasing)
- A babysitter looks after him at home during the week
- In the past three months, since he has been in the care of the babysitter, his appetite has decreased, and he is reluctant to try new foods
- At home, he refuses to sit in his highchair and mealtimes have become quite chaotic.

2. **What are the parents' nutrition concerns?**
   - How to persuade Dimitri to eat the food he needs?
   - How to make mealtimes more enjoyable for the family?

3. **What interview questions would you ask to gather essential information? (Keep in mind that you should ask open ended questions** (*More information you can find in Module 10: Caring and Empowering - Enhancing Communication Skills for Home Visitors*).
   - What concerns, if any, do you have about your child's eating habits or growth?
   - How would you describe your child's appetite and interest in food throughout the day?
   - Can you tell me about how your child eats at home?
   - What are mealtimes like in your home? How do you and your child share meals or snacks together?
   - How does you child eat when you're not present? Are there any concerns?
   - Have there been any changes in your child's meal schedule or feeding routines when cared for by a babysitter?
   - How would you describe your communication with your babysitter? Have you had the chance to observe or discuss how they feed your child?
   - What challenges, if any, do you face in accessing fresh food for preparing meals during the week?

4. **What additional screenings and assessments would you conduct?**
   - Measure and plot weight-for-age on the growth chart: at the 75th percentile.
   - Measure and plot stature-for-age on the growth chart: between 50th and 75th percentiles.
   - Plot the weight-for-height on the growht chart: between the 50th and 75th percentile.
   - Evaluate the child's eating skills, including chewing and swallowing.
   - Screen the child for anaemia, if risk factors are present, such as a diet low in iron-rich foods.

5. **Suggested advice to parents and other caregivers**
   - Emphasize to parents that children need healthy meals and snacks at scheduled times throughout the day to help them achieve nutritional balance.
   - Emphasize that children eat better when an adult is nearby, particularly when they share meals with them.
   - Encourage parents to give the child opportunities to develop his eating skills by offering a variety of foods.
   - Tell parents that children are unpredictable in the amounts and types of foods they eat, from meal to meal and from day to day. Reassure parents by telling them that children usually eat enough to satisfy their nutritional needs.
   - Reassure parents that food jags in children are common. In such situations, smaller servings of the favoured food can be offered, along with other foods to ensure that the child eats a variety of foods.
   - Advise parents to instruct the people who spend time with the child how to feed the child.

* Source: Adapted from Bright Futures in Practice: Nutrition—Infancy Case Study
https://www.dchealthcheck.net/resources/pediatric/NutritionCaseStudy.pdf

Additional resources
Annex 11: Questionnaire on nutrition of children aged 1-6 years

1. THE CHILD EATS VERY LITTLE TO NOTHING

It is common for children to eat very small amounts of food, to be picky or refuse food. A child's appetite varies, depending on the growth phase and level of physical activity. As growth significantly slows after the first year, the child needs less food.

The child's stomach is small and cannot hold large quantities of food; that is why the child needs frequent meals (three meals and two snacks).

Young children are curious; they are always on the move and are quickly distracted from food. Children want to push boundaries and prove that they are independent.

Advice for parents on how to cope with their child's unstable appetite

- If your child eats very little during the mealtime, offer more frequent nutritious snacks.
- Do not give the child sweets, salty snack foods and juices that will curb their appetite for healthy foods.
- If your child will not eat or will not eat whole meals, you could try reducing the amount you are offering; it is common for children of this age to eat very small amounts of foods.
- Do not force the child to "clean the plate"; this can make meals stressful. Instead, reward the child for a spoonful of food or some water they took. Between meals, offer the child healthy snacks, such as fruit and vegetables.
- Prepare and offer the child healthy foods and try not to worry when they sometimes eat very little. The child will certainly not be hungry; children can judge very well how much is enough for them.
- Look at the bigger picture – if the child ate very little yesterday, it may be hungry tomorrow.
- Do not worry about what or how much the child has eaten in one day, look at what they have eaten over a week.

2. PICKY EATERS

Once they realize that they are taking control of what they eat, children often have trouble accepting the food offered to them: they only choose one type of food for all meals, and after a while, they switch to another. This phase usually does not last long and will not harm the child's health.[39] Nevertheless, food jags, or even food aversions, can sometimes last longer and can affect the child's nutritional status.[40]

Advice that can help parents to overcome the problem

- Be patient and continue to offer a variety of foods but allow the child to make their own choices. Often, children will not eat vegetables and will rather eat bread, biscuits and cakes. Carbohydrates from sweets give us quick energy, so kids like to eat them.
- Try to avoid foods with empty calories and make sure you give the child plenty of healthy foods for meals. When you discover which food the child particularly likes, the risk is that you will prepare and offer it to them constantly. A child needs a variety of foods to get all the nutrients required for optimal growth and development. It is therefore important that you be persistent and continue to offer the child a variety of foods. At each family meal, serve food from all five food groups.

Advice for introducing new foods

Pleasant setting

- Make family mealtimes enjoyable; share meals whenever you can.
- Show the child how much you enjoy the food you have prepared.
- Involve the child in preparing and serving meals.

- Offer new foods when you are relaxed and not in a hurry, when the child is not tired or distracted by something.
- Restrict the feeding time to 20 minutes. If the child has not eaten their food, take it away and do not offer them other food or snacks.
- Do not punish your child for refusing to try out new foods. This could lead to the child associating new foods with a negative experience.
- Do not use bribes to get the child to eat healthy foods; the child will become more interested in the reward rather than in the food.
- Do not punish the child for refusing to eat certain foods, this will only lead to a negative attitude towards food and make things worse.

Serving new foods

- Be persistent in offering new foods. It can take between 10-15 offerings before a child is willing to try and starts liking a new food.
- Children should eat the same food as the other household members; so, they will have the opportunity to try different foods and accept new flavours and textures of food.
- Offer the new foods together with foods that the child knows and likes.
- Try to serve the food attractively (food can be served to children in countless interesting ways).
- If the child refuses a certain food, offer it again in a week.

Support your child's food coices and independance

Allow the child to choose between 2-3 healthy foods.

Let the child participate in food preparation (they can choose a recipe, bring food from the refrigerator, wash fruits and vegetables, mix a salad); the child will be proud to help and will be more willing to try the food that they helped prepare

Be a role model for your child, show them that you are ready to try out new foods and that you enjoy it. Healthy foods at the family dining table and a pleasant setting that encourages a positive attitude to healthy food is the best starting point that you can provide for your child.

3. MESSY EATERS

Independent feeding is a normal stage in the child's development. Children first try to use a spoon or pick up food with their fingers, later, they learn how to use spoons, forks and cups. It takes a lot of time, practice and muscle coordination for a child to be able to eat independently, so getting dirty and messy while eating is to be expected.

Food can be used for teaching children about colours, shapes, textures. Children love to explore and experiment, and food is ideal for that. Food can be mashed, mixed, stacked, thrown, etc. If that bothers you, set some simple rules when it comes to playing with food. As soon as the child finishes the meal, put away the leftovers. Tolerate the mess your child makes while trying to eat without help.

It is important for parents to know:

- Making a mess while eating is a normal stage in a child's development.
- When eating independently, children develop fine motor skills and dexterity, learns about food and the world around them.
- It is helpful to set some simple rules when it comes to playing with food: As soon as the child finishes the meal, the leftovers should be put away.

4. THE CHILD CANNOT SIT STILL AT THE TABLE WHILE EATING

Children at this age are curious which makes them eager to move around. Other things and activities are more interesting than food. Children eat quickly: in 10 minutes they can eat all the nutritious ingredients in a meal. Think ahead - first give the child the most nutrient-rich foods prepared for a meaL

5. EVENING MEALS ARE OFTEN A REAL DISASTER

As a result of intenL.se growth spurts, fatigue from daily activities and changes in sleeping patterns, in the evening, the child can suddenly become tired, grumpy and end up eating poorly for dinner. If the child is too tired and not in the mood for dinner, plan a heftier breakfast and lunch and a healthy snack earlier in the afternoon.

Case Study: Milan*

nutrition. His parents are concerned that Milan has a medical problem as he has a poor appetite and will only eat mashed foods. Often at dinner time he refuses to eat anything. He drinks 5-6 bottles of cow's milk per day. Milan is typically developing, and growth is currently tracking along the 25th percentile on the WHO growth charts.

What are the key elements of your assessment of Milan's feeding difficulty?

1. How do the parents perceive Milan's feeding problem?
   - Milan's parents report that feeding began at around 9 months when he was admitted to hospital for severe gastroenteritis.
   - During this admission he lost a significant amount of weight, and it took a lot of effort for this to be regained. This was especially concerning as he has always been smaller than his peers.
   - After his stay in the hospital, Milan seemed to prefer his bottle and mashed foods. Parents were happy with this as they could feed Milan and be sure he ate everything. It was also less messy. However, mealtimes now take forever, sometimes over 40 minutes. He has lost all interest in self-feeding. He is reported to eat better at childcare where he will attempt finger foods.
   - Parents are not concerned about other aspects of Milan's development. He enjoys messy play at childcare.
   - Both parents are frustrated with feeding but are reassured by the fact that "at least he drinks his milk."
2. Information about Milan's medical, developmental, growth and social history:
   - Apart from the gastroenteritis, Milan has been healthy until now.
   - He has achieved all developmental milestones as expected for his age.
   - Plotting his weight and length measurements on the growth chart shows that Milan did lose weight while unwell. However, weight has been regained, and growth is now tracking as previously along the 25th percentile.
   - He is an only child who lives with both his parents. His father works full-time and mother part-time. Milan goes to kindergarten.
3. Milan's dietary assessment:
   Milan's daily diet consists of 5-6 bottles of cow's milk with small amounts of a variety of mashed foods.
   - Comparing Milan's estimated requirements for energy to his intake shows that milk is meeting approximately 85% of his requirements reducing appetite for other foods.

4. Mealtime observation of the interaction between Milan and his parents:
   - During the interview, Milan was frequently prompted by his parents to drink milk, even though he was playing happily and did not indicate that he was hungry.

What do you consider has contributed to the development and maintenance of Milan's feeding difficulties?

What strengths can you identify that will support Milan and his parents to manage the feeding difficulties?

Social and emotional development: The parents' concerns about Milan's growth led to a disruption in the responsive feeding interactions. Parents feel the need to control feeding; cues to hunger and satiety are overridden. Need for feeding independence in not recognized or supported by the parents.

Meals: Continued use of bottles of milk to support growth is inadvertently reinforcing the problem. High milk consumption is reducing appetite for other foods. Feeding tasks are not being shared by Milan and his parents. Past history of weight loss due to gastrointestinal problems has been linked by parents to the onset of feeding difficulties.

Motor and sensory development show no deviation. It is more likely that preference for liquid and mashed foods is due to lack of experience with other types of food rather than a chewing and swallowing problem.

Communication and cognitive development also show no deviation. Milan likes to copy his peers at childcare, he quickly fit into the group and is willing to try other foods when milk is not available.

Advice for parents based on an analysis of the factors that contributed to Milan's feeding problems and identified strengths

1. The first step would be for Milan's parents to get information about the expected diet and feeding habits at his age and growth characteristics.

- What are Milan's food needs? Too much milk decreases his appetite for other foods and prevents him from developing the skills needed to consume solid foods; bottles are not suitable for feeding a child of that age.
- Achieving typical growth - parents' unrealistic expectations regarding Milan's growth contributed to the problem.

2. Help parents recognize the changes that are needed in Milan's diet and make a list of steps to take. Once the priority goals are set, they should be ranked from the simplest to the most complex. Starts with steps that parents are ready to take and that they believe they can achieve. With the support of the nurse, parents will pick strategies that will help them reach their goals and empower them for the following, more complex phase.

- Gradually reduce the amount of milk - the first step would be for Milan to get the milk from the bottle only when he wakes in the morning and before bedtime and offer him just water from a cup during the day. Once he gets used to these changes, the morning bottle should be discontinued, and finally the evening one too. The goal is to limit the daily intake of milk to 500 ml. Milan should be offered a variety of foods with different textures and encouraged to feed himself.
- Ease the parents' concerns, redefine their role and Milan's role in his diet.

The parents' role:

- Provide regular meals and snacks and offer Milan new foods of different textures in combination with the foods he is already used to.

- Give Milan the opportunity to explore new foods, even if messy and food is not eaten
- Allow Milan to feed himself.
- Limit mealtimes to 20-30 minutes.
- Determine the beginning and end of meal and snack times and in between give Milan only water.

Milan's role:

- Allow Milan to feed himself.
- Determines when he has had enough (without parents forcing him to eat more).
- Uses the mealtime to interact and spend quality time with his parents.
- Builds on his strengths (he has shown at childcare that he is more interested in food and self-feeding when milk is not available).

With reduction in milk intake and consistent implementation of agreed strategies Milan should show significant improvement in his eating over the next few months, as he progresses towards becoming a fully independent feeder.

Possible barriers to improvement of Milan's feeding

- Parents do not agree with strategies e.g., may not want Milan to 'give up' the bottle.
- Parents do not believe that strategies will work perhaps because of their overriding concern that Milan's growth will slow if milk is reduced or their continued belief that there is a medical cause for Milan's feeding problems.
- Difficulty implementing agreed strategies consistently.
- Personal or cultural beliefs about feeding children e.g., belief that parent is responsible for all aspects of feeding or letting a child go hungry is not good parenting. Differing beliefs and expectations of others involved in Milan's care such as grandparents or extended family could be impacting consistent implementation of chosen strategies.

Options for overcoming barriers

- Modify strategies, aim for strategies to be implemented in smaller steps.
- Tactfully challenge parents beliefs to create a shift in thinking. Depending on the issue, consider asking "What do you think would happen if..." or "What would need to change for mealtimes to become enjoyable for you and Milan?"
- Re-assess possible contributors to Milan's feeding difficulties. Additional medical screenings might be necessary to reassure parents that there are no medical issues contributing to Milan's feeding difficulties.

* Source: https://www.rch.org.au/feedingdifficulties/casescenarios/

Childhood is a time for learning. Children who grow up in families that enjoy a variety of healthy foods from all five food groups are more likely to make healthy food choices later. Parents can improve the health of their children and the whole family by:

- choosing healthy food daily,
- allow free choice of foods on special occasions,
- provide a variety of types and colours of fresh seasonal fruits and vegetables,
- use low-fat milk, yogurt and cheeses (for children older than two years),
- consume cereals and whole grain bread (half of the daily intake of cereals),
- drink water instead of sweetened juices and drinks,
- eat a healthy breakfast every day,
- learn how food is grown and where it comes from,
- try new foods and recipes,
- involve children in food preparation,
- turn off the television and computers during meals,
- wash hands before cooking and eating.

IX LITERATURE AND ADDITIONAL RESOURCES

BASIC LITERATURE

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ADDITIONAL RESOURCES

Early childhood: A period of boundless possibilities. Patronage department's training modules https://www.unicef.org/serbia/podrska-porodicama-za-podsticajnu-negu-dece-ranog-uzrasta

Poster "10 steps of responsible feeding" https://www.unicef.org/serbia/sites/unicef.org.serbia/files/2018-07/10-koraka-do-odgovornog-hranjenja.pdf

raisingchildren.net.au – The Australian Parenting Website

ANNEXES

X

ANNEX 1: MONITORING A CHILD'S GROWTH

Optimal child growth is one of the most reliable indicators of good health, adequate nutrition and a favourable psychological and emotional environment.

The following are the best indicators of growth monitoring in children:

- Body length and height
- Body mass/weight
- Body mass-to-height ratio
- Body mass index

In addition to these indicators, the following are also used to monitor physical growth:

- Head circumference
- Deciduous and permanent teeth eruption times
- Puberty, i.e., development of secondary sexual characteristics

The new WHO growth standards (https://www.who.int/tools/child-growth-standards) are used to monitor the growth of children aged 0-5 years. The new standards are in use since 2006, and many coutries adapted them to their needs.

The growth charts and tables for children of both sexes are expressed as the Z-score (the standard deviations score) or as percentiles.

These curves/tables show the statistical distribution of some characteristic of children of a certain age and sex (in this case, height, weight, head circumference, etc.). The fiftieth percentile indicates the arithmetic mean (the largest number of children will have these values). Values below the 3rd percentile (-2 SD) or above the 95th percentile (+2 SD) are considered pathological. The Z-score shows how much a given value differs from the standard: all children whose height is below average have a negative z-score, and all children whose height is above average have a positive z-score. The same applies to other anthropometric indicators.

Length/height-for-age

This is the linear growth indicator. If the child's length or height is between -2 SD and -3 SD (standard deviations by age and sex), we are talking about moderate stunting, and if it is below -3 SD, it is severe stunting. Values above +3 SD indicate excessive length/height-for-age

According to the recommended methodology, if the child is less than two years old, we measure length, if more than two years old, we measure height. The accuracy of the height measurement depends on the skills of the person performing the measurement and on the precision of the height meter (stadiometer).

When measuring height, untrained people can make a mistake of up to 2 cm. This does not mean that parents cannot have their own height meter at home and measure the child's height; this is an essential part of every child's growing up experience and a wonderful childhood memory, but one should keep in mind that this type of measurement can be inaccurate.

Weight-for-age

This indicator is used to assess whether a child is underweight, but it cannot be used to diagnose a child as overweight or obese. As the body height of healthy children of the same age and sex varies widely, when assessing a child's nutritional status based on body weight, height/length must also be considered - the ratio

of body weight to height (weight-for-height) must be calculated and evaluated) and body mass index-for-age (BMI). A child may underweight simply because they are petite, which does not mean they are undernourished.

Body mass index-for-length/height

The BMI-for-length/height is plotted on the appropriate tables/charts based on the measured length/height and weight and compared with the sex and age-appropriate standards. Children whose weight-for-height score is between -2 and -3 SD are considered moderately wasted, and below -3 SD as severely wasted. The most common causes of wasting are acute recent illnesses or poor nutrition and chronic illnesses. This indicator is also useful for assessing overweight children. According to the WHO criteria, children with a body mass index between +2 and +3 SD for the appropriate age and sex are considered as overweight and children over +3 SD as obese. This indicator may be used to assess the nutritional status of children of all ages.

Body mass index-for-age

This indicator is like the previous one as it is also calculated based on the child's measured length/height and weight, and the tables show very similar results. Body mass index (BMI) is particularly useful in the detection/screening of overweight and obesity, as it has a good degree of correlation with more accurate methods of measuring total body fat levels.

The BMI is calculated by dividing a person's weight in kilograms by the square of their height in meters:

BMI = body mass (kg) / height (m^2)

This indicator is also used to assess the nutritional status of children above the age of 6 years.

For children aged 2 to 6 years, BMI is age- and sex-specific and must be interpreted using WHO growth charts or Z-score tables, as children grow and develop at different rates.

ANNEX 2: NUTRIENTS AND MICRONUTRIENTS

Children need nutrient-dense foods to provide them with the vitamins, minerals and other compounds that their body needs for good health, with little or no added sugars, salt or saturated fats.

Our body needs *energy* for metabolism and physiological processes, heat production and muscle activity. Children need additional energy for growth and recovery after illness. Even during growth spurts, most of the energy is required to sustain normal body functions. Energy needs depend on the age, sex, size of the child and intensity of physical activity.

Carbohydrates should account for 45-55 percent, proteins 9-15 percent and fats 35-40 percent of the total caloric intake in a child's diet.

Carbohydrates, as a source of energy and fiber, should be a staple in a pre-school child's diet. The body uses simple sugars that are easily utilized (sugar from fruits, honey, foods with added sugar) as a quick source of energy. As a long-term source of energy, the body uses complex sugars, which are found in cereals and flour products, corn, potatoes, and legumes. Whole grains have a low glycemic index and provide the child with long-lasting energy and a feeling of satiety. Indigestible sugars help maintain normal blood sugar and cholesterol levels and aid digestion.

Proteins are essential for the maintenance, growth and repair of body tissues (especially for bone mass). A combination of proteins from plant and animal sources is crucial for introducing high-quality proteins, i.e., essential amino acids, into the body: meat, cheese, eggs, plant foods (beans, lentils, cereals).

Fats play a significant role in a child's diet, and account for a higher share in their total calorie intake than in adults. Fats are necessary for proper hormonal development, cell structure, blood vessel health, neuromuscular transmission, and enable smooth enzyme activity and the utilization of fat-soluble vitamins. Fats increase the liquid and calorie content of food and make it taste better. Dietary fats are classified according to their structure into saturated and unsaturated (monounsaturated and polyunsaturated) fatty acids. Saturated and trans fatty acids increase the level of LDL cholesterol and thus the risk of cardiovascular diseases, while polyunsaturated fatty acids have the opposite effect. The process of arteriosclerosis begins at an early age, so fat intake is of great importance for health from early childhood.

It is recommended to introduce olive and other vegetable oils into the diet because they are rich in unsaturated fatty acids, and to avoid fats of animal origin, such as butter and lard.

Omega-3 and omega-6 fatty acids

Omega-3 (DHA) and omega-6 fatty acids (arachidonic acids) are especially quickly incorporated in nervous tissue during the brain's growth spurt, which occurs in the third trimester of pregnancy and in the first two years after birth. DHA acid is also essential for the development and maturation of the retina and good vision. Breast milk has a high concentration of DHA, about 0.32% of total milk fat. It is estimated that the baby receives about 60 mg per day during the first six months, at an average intake of 750 ml of milk per day.

The best sources of omega-3 fatty acids are fish (especially oily fish from cold waters), fish oil, algae and milk. The body can synthesize DHA in small amounts from another omega-3 fatty acid, alpha-linolenic acid (ALA), which is an essential fatty acid found in flaxseeds, walnuts, and canola.

Omega-6 fatty acids are necessary for the synthesis of cell membranes and substances required for numerous metabolic processes in the body. The recommended daily intake of linoleic acid is usually expressed as a percentage of the total daily energy intake, up to 5% (some recommendations say that 2% is sufficient for adults and 1% for children). Foods that contain omega-6 fatty acids are vegetable oils (sunflower, pumpkin, corn), seeds and nuts. We also get them through industrially processed bakery products, eggs, meat and meat products.

In connection with the intake of omega-6 fatty acids, the upper limit of the desirable intake is often set at 10% of the daily energy requirement. On a conventional diet based on vegetable oils we generally get more than the recommended amount; high intake of omega-6 fatty acids can induce oxidative stress and inflammatory processes in the body; excess intake tips the omega-6 to omega-3 ratio. A healthy ratio of omega-6 to omega-3 fatty acids is extremely important for the cardiovascular system, joints, insulin balance, skin metabolism and even gene expression. At the beginning of civilization, human beings evolved on a diet with a higher intake of omega-3 fatty acids and a lower intake of omega-6 fatty acids. However, in the evolutionary process this ratio was reversed, and today omega-6 fatty acids are more prevalent in our diet. While the by-products of the breakdown of omega-6 acids promote inflammatory processes, the growth of tumor cells, and blood coagulation, omega-3 acids do the exact opposite. The recommendation of the World Health Organization is that the ratio of omega-3 to omega-6 fatty acids introduced through food should be between 1:3 and 1:5.

Vitamins

Vitamins and minerals are micronutrients, i.e., microelements, which are essential, in the appropriate amounts and form, for the preservation of health and growth. They participate in many important metabolic processes in the body. Our skin, muscles, nervous and immune systems also depend on vitamins. During major developmental and growth spurts, the child needs vitamin C, all vitamins of the B group, vitamins D and E. Even a minor vitamin deficiency in the body can lead to health symptoms and disorders.

If the child eats plenty of fresh fruit, vegetables and grains at this age, they will not need vitamin supplements. Vitamins from food are more easily absorbed and are combined with beneficial nutrients.

Recommendations for preparation

- Vitamins are vulnerable to prolonged storage and long cooking in a lot of water.
- Fruits and vegetables should be washed whole, gently and should not be kept in water for a long time; they should be cut after washing and should not be left cut for a long time before use.
- Orange and green leafy vegetables should be prepared with a little amount of fat and oil should be added to the salad so that the vitamins can be absorbed.

Calcium is essential for healthy bones and teeth. The best source of calcium are milk and dairy products (cheese, yogurt). Dairy products such as cream, butter and cream cheese are not a good source of calcium other foods rich in calcium are sardines (canned small fish with bones), green leafy vegetables, legumes, stone fruits, sesame (best as tahini, i.e., sesame paste). If a child refuses milk, replace milk with other dairy products and foods rich in calcium; also, milk can be added to other foods. Children with an allergy to cow's milk or with an alternative diet (vegan or vegetarian diet) need foods fortified with calcium (soy or rice milk). Sometimes these children need calcium supplementation, according to the doctor's advice. There is no evidence that calcium supplementation has a positive effect on bones in children who get the recommended intake for their age through diet.

Winzenberg T, Shaw K, Fryer J, Jones G. Effects of calcium supplementation on bone density in healthy children: meta-analysis of randomised controlled trials. BMJ. 2006; 333(7572):775. doi:10.1136/bmj.38950.561400.55

Iron

Iron requirements peak in childhood and during major growth spurts in adolescence. Iron deficiency affects the immune system and leads to anaemia and decline in cognitive and learning abilities.

The best sources of iron are foods of animal origin (meat, egg yolk). Bioavailability of food iron of plant origin (green leafy vegetables, peas, beans, lentils) is lower. It is better absorbed together with vitamin C. To prevent iron deficiency, iron-fortified foods are recommended until the age of 18 months (cereals, milk porridge).

Zinc is required for growth and development and for optimal immune system and cognitive functions. Meat, fish and whole grain products, legumes and stone fruits provide the most zinc.

Sodium is a mineral that our body needs to function normally, but in small amounts. We consume far too much sodium with food than our body needs; high intake of salt in childhood leads to poor dietary habits and contributes to the onset of hypertension. Most sodium intake comes from processed foods. Adding extra salt to food after cooking should be avoided. The amount of salt should be just enough to make the meal tastier. Salt

for human consumption contains added iodine because iodized salt ensures the intake of this important trace element, so a moderate amount of salt in our diet is necessary and useful.

Fibers are the parts of plant foods that the human body cannot digest, but that does not mean that they are unnecessary and useless. On the contrary! Fibrer promote the growth of beneficial gut bacteria, regulate digestion and stool. They provide a feeling of fullness and promote weight loss in overweight people. Fibrer also reduce the risk of some types of cancer, lower bad cholesterol levels thus protecting our blood vessels. A diet rich in fibre has an overall positive effect on our body because foods rich in fibre (fruits, especially the skin, vegetables, legumes, whole grain products) are also rich in vitamins and minerals. An excessive intake of fiber-rich foods can lead to side effects in children: bloating, diarrhea and other gastrointestinal problems. A high intake of "bulky" foods rich in fiber can make a child feel full, sometimes to the detriment of sufficient intake of essential nutrients. It is best to follow the advice on the recommended food servings from all food groups and create a balance between foods rich in fiber (fruits and vegetables, whole grains, legumes) and foods with a low or no fibre content (milk and dairy products, meat, fish, eggs). As the child grows, the share of whole-grain bread and cereals should be gradually increased.

Slavin JL. Position of the American Dietetic Association: health implications of dietary fiber. J Am Diet Assoc. 2008 Oct;108(10):1716-31. doi: 10.1016/j.jada.2008.08.007. Erratum in: J Am Diet Assoc. 2009 Feb;109(2):350. PMID: 18953766.

Probiotics are live, beneficial bacteria commonly found in some fermented foods or added to certain food products (yogurt, keffir). Taken through food, they promote a healthy balance of gut bacteria and are beneficial for health. Diet, stress and the use of antibiotics can disrupt this balance.

Antioxidants are natural substances in food that protect our cells from damage. Vitamins C and E, beta-carotene and selenium are essential for the proper functioning of the immune system and protection against diseases, especially in children. We get antioxidants from brightly coloured fruits and vegetables (spinach, carrots, tomatoes, berries); they are also found in tea, cocoa, and dark chocolate.

Many antioxidants are found just below the skin, so peeling fruits and vegetables is to be avoided, whenever possible. In cereals, they are found just below the surface of the grain, which is why eating whole grain products is healthiest.

Water

To ensure normal body functions, we need to maintain adequate fluid intake. The best drink is water; sodas, juices and other store-bought drinks contain a lot of sugar or artificial sweeteners, and various other additives that are harmful to the body, as well as a lot of calories. The healthy habit of drinking fluids throughout the day, before they feel thirsty, should be instilled in children.

ANNEX 3: FOOD GROUPS AND THE FOOD PYRAMID

A healthy daily balanced diet should be made up of foods from all food groups that are appropriate to the child's age, in the recommended proportions.

Minimum Dietary Diversity (MDD) is a UNICEF-defined indicator of infant and young child feeding, measuring the proportion of children aged 6–23 months who consumed foods from at least five of eight food groups in the past 24 hours. These groups are breast milk; grains, roots, and tubers; legumes and nuts; dairy; flesh foods; eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables.

MDD is a proxy for dietary adequacy and is used globally to monitor child nutrition. Children consuming fewer than five food groups are at an increased risk of micronutrient deficiencies.

While MDD is officially applied to children under two, the same principles are relevant for children aged 2–6 years. Although not formally defined by UNICEF for this age group, dietary diversity remains essential and is guided by national food-based dietary recommendations.

For preschool-aged children, a diverse diet should include at least five of the following eight groups daily:

Fruits (e.g. bananas, apples, citrus)

Vegetables (e.g. spinach, carrots, broccoli)

Grains, roots, tubers (e.g. bread, rice, potatoes)

Legumes, nuts, seeds (e.g. beans, lentils, nut butters)

Dairy (e.g. milk, yoghurt, cheese)

Eggs

Flesh foods (e.g. meat, fish, poultry, liver)

Healthy fats and oils (e.g. olive oil, avocado, oily fish)

This adapted MDD-style checklist helps ensure nutrient-rich meals to support healthy growth and development in early childhood.

GRAINS ANDAIN PRODUCTS

Grains are a primary source of energy, B vitamins, iron, and dietary fibre, all essential for children's growth and development.

Common examples: bread, pasta, rice, muesli, semolina, polenta, and cornflakes.

Whole grains (e.g. barley, buckwheat, quinoa, brown rice) retain the bran and germ, preserving essential nutrients.

For children aged 3–4 years, whole grains should comprise no more than 50% of total grain intake, as excessive fibre can interfere with the absorption of minerals such as calcium, iron, and zinc, and may cause gastrointestinal discomfort.

Grains can be served as part of the main meals or combined with milk, yoghurt, or fruit for snacks.

Practical tip: Add fresh fruit to muesli or cornflakes to enhance vitamin C intake and iron absorption.

MILK AND DAIRY PRODUCTS

Milk and dairy are excellent sources of calcium, high-quality protein, vitamin B12, and riboflavin, all critical for skeletal development and immune function.

Whole milk (3.2% fat) is recommended up to age 2 for brain development. From age 2, semi-skimmed milk (1–2.8% fat) can be introduced.

Be cautious with low-fat or flavoured products which may contain added sugars and artificial flavours that offer no nutritional value.

Fermented dairy products such as yoghurt, kefir, and cheese are recommended as they contain probiotics that support gut health and enhance nutrient absorption.

MEAT, FISH, EGGS, AND LEGUMES

This group provides essential proteins, iron, zinc, and B vitamins needed for muscle development, brain function, and immunity.

Meat:

Prioritise lean meats (poultry without skin, veal, lamb).

Limit fatty meats like pork or beef to once a week due to high saturated fat content.

Avoid processed and cured meats (e.g. sausages, ham, salami) as they contain high levels of salt, preservatives, nitrates, and additives linked to long-term health risks and impaired development.

Fish:

Rich in omega-3 fatty acids, vital for brain and vision development.

Offer low-mercury fish (e.g. salmon, sardines, herring) twice a week.

Avoid high-mercury fish such as tuna, swordfish, and shark, particularly in children and pregnant women.

Eggs:

Egg yolks provide iron, phospholipids, and lecithin, while egg whites are a source of high-quality protein.

Serve well-cooked eggs to reduce the risk of salmonella infection.

Legumes:

Include beans, lentils, chickpeas, and soy products.

Provide plant-based proteins, fibre, iron, calcium, and magnesium.

Combined with grains, they can fully replace animal proteins.

Legumes should contribute to no more than 15% of total daily caloric intake.

VEGETABLES

Vegetables supply fibre, vitamins (especially vitamin C and beta-carotene), minerals, and disease-preventing phytochemicals.

Choose fresh, seasonal vegetables or lightly cook them to retain nutrients.

Green leafy vegetables (e.g. spinach, chard, kale) enhance immunity, detoxification, and wound healing.

Regular intake supports digestive health and reduces infection recovery time in children.

Encourage variety using the “eat the rainbow” approach to ensure broad nutrient intake.

FRUITS AND NUTS

Fruits are rich in vitamin C, potassium, natural sugars, and antioxidants that help build strong immune systems and reduce inflammation.

Children should consume a variety of fruits daily, including citrus, apples, bananas, and especially berries (minimum 30g/day), which are high in antioxidants.

Nuts and seeds provide healthy fats essential for brain development, particularly omega-3 and omega-6 fatty acids.

Recommended: ~20g/day of almonds, walnuts, or hazelnuts (in age-safe forms like pastes or finely ground).

Avoid whole nuts in young children due to choking risk.

PHYTOCHEMICALS AND PLANT PIGMENTS

Found naturally in fruits and vegetables, phytochemicals such as flavonoids, carotenoids, and polyphenols play a key role in preventing chronic disease, supporting detoxification, and enhancing cell repair.

A single serving of vegetables can contain over 100 different beneficial compounds.

Encourage children to eat a variety of colours daily:

Green (spinach, kiwi),

Orange/yellow (carrot, pumpkin),

Red (tomato, strawberry),

White/brown (potato, onion, banana).

FROZEN, CANNED, AND PROCESSED PRODUCE

Frozen fruits and vegetables are often frozen soon after harvest, retaining most nutrients and offering a convenient, year-round alternative to fresh.

Canned produce can also be nutritious but check for added sugar or salt.

Both forms count equally in daily intake recommendations.

Juices and dried fruits are less nutritious than whole fruits, contributing limited fibre and more concentrated sugars. Limit one portion daily and pair with fresh produce.

The food pyramid is a good visual representation of how to eat a healthy diet.

The five food groups plus fats and oils are represented by the vertical bars in the colours of the rainbow on the pyramid:

Orange - grains

Green - vegetables

Red - fruit

Yellow - fats and oils

Blue - milk and dairy products

Purple - meat, legumes, fish and stone fruits

Source: children's food pyramid - Search Images

The United States Department of Agriculture (USDA) revised the food pyramid in 2005 in an endeavour to illustrate better how people can be healthy. There is also a special version of the pyramid intended for children. Spot the little girl climbing the stairs up the pyramid. It is a way to emphasize the importance of daily physical activity. In brief: play as much as you can, it is healthy. The stairs also remind us that changes in the direction of improving health should be gradual. Step by step.

WHAT DOES THE CHILDREN'S FOOD PYRAMID TELL US?

Note the other messages that we get from the food pyramid.

Eat a variety of foods. A balanced diet includes foods from all food groups. In other words, eat a colourful diet every day.

Eat smaller amounts of food from one food group and bigger amounts of food from other food groups. You will notice that the bars representing meat and protein (purple) and fats (yellow) are narrower than the others. That is because you need less of these foods compared to fruits, vegetables, grains, and dairy products.

Also, you will notice that the bars taper towards the top of the pyramid. This tells us that even in healthy groups, not all foods from one group are equally valuable. For instance, an apple pie will be in the narrower part of the bar because it has a lot of added sugar, and a whole fresh apple will be at the bottom, in the wide part of the strip because you can eat more of it as part of a healthy diet.

ANNEX 4: GRAINS IN THE CHILD'S DIET

Tips for parents to introduce healthy grains into the diet of children and families

Try introducing as many different types of grains, prepared in as many ways as possible into the menu for the child and the whole family. Let the child taste natural food flavours from an early age, without additives. Whenever you can, use whole grain bread. White bread not only lacks fibre, vitamins and other beneficial ingredients, but also often contains additives. Instead of the tempting candy on the grocery store shelves, offer your child boiled wheat with a little honey, fresh fruit, walnuts or other stone fruits for dessert. Brown rice is one of the most nutritious grains. It is low in fat and high in protein and vitamins B, phosphorus, zinc and magnesium.

Corn in the baby's and child's diet

Corn contains a large amount of starch and less protein than other grains. The protein found in corn is different from wheat gluten. It is a good source of vitamin C and folates (folic acid) niacin and thiamine, magnesium and potassium, as well as fibre. It contains a small amount of sodium and fat, and no cholesterol.

Millet for babies and children

It is an excellent source of magnesium, and contains a lot of calcium, phosphorus, manganese, zinc and vitamin B. It is the greatest source of iron of all grains, apart from quinoa. It is gluten-free. It can be added to salads, soups and breakfast.

Buckwheat in the child's diet

Rich in proteins, vitamins B, calcium, magnesium, phosphorus and iron. Although buckwheat is not actually a grain, it is frequently classified in this food group, as it is a kernel that is milled into flour. it is used as flour or as cooked groats (as a side dish) or in fillings for stuffed cabbage rolls and moussaka.

Oats - a nutritious grain

Oats are one of the most nutritious grains. Oats are a good source of beta-glucans and lowers blood cholesterol levels. In addition, they contain B vitamins, vitamin E, copper, iron, zinc, magnesium and phosphorus. Add it to salads and stews or use it as a filling for meat pies.

Barley in the child's diet

A grain rich in minerals: potassium, phosphorus, magnesium, iron, zinc and selenium. A staple in the diet of athletes. What makes barley special is that 35% of its content are unsaturated fatty acids. It benefits our body the most when eaten for breakfast, either cooked or in the form of cereals. You can add it to stews and salads.

Quinoa

Quinoa is a 7000-year-old plant, which is why it is also called the "ancient seed", and today it has become one of the most popular healthy foods. Quinoa is a pseudo-grain, but we treat it as a grain because it is prepared in the same way. From the nutritional aspect, it is treated as a whole grain, meaning that it is all edible and no part of it is removed. Whole grains are healthy because they contain important vitamins, minerals and fibre. Quinoa seeds are gluten free, very rich in protein and contain all 9 essential amino acids. This makes quinoa the perfect food for vegetarians, as it is an excellent substitute for meat. It also contains a lot of iron and magnesium and antioxidants. Quinoa flour can be used for baking bread or cakes, as a substitute for regular flour. It is healthiest when used as a whole grain; it cooks easily and quickly and can be eaten in savoury dishes (as a side dish, addition to soups and salads) or sweet dishes (porridge with additions of fruit, seeds).

Breakfast cereals and muesli

Processed breakfast cereals with added aromas, sugars and bits of dry fruit are not a friend to your child's health. Ordinary cereal flakes that you can combine with pieces of dried fruit, nuts, fresh fruit to create a delicious breakfast, are a healthier choice for your little ones!

ANNEX 5: SOUPS IN THE CHILD'S DIET

You can find more recipies on UNICEF's Bebbo App

- Soups and stews are healthy, affordable, easy to prepare, and great for family meals.
- A warm bowl of soup encourages shared mealtimes and reduces screen-time eating.
- Make meals fun for children by offering:
  - Bread, toast, or bruschetta to dip
  - Croutons, cheese, sour cream, or yoghurt for mixing
- Encourage independent eating—even if it gets messy!

Choosing and Preparing Ingredients

- Use fresh, seasonal, and ideally organic foods.
- Avoid shrivelled or old vegetables—nutritional value is lost.
- Properly packaged and stored food helps preserve quality.
- Frozen vegetables are a good alternative if stored and used correctly.
- Follow safe defrosting guidelines for meat and frozen veggies.

Cooking Tips

- Nutrient retention depends on minimal soaking and short cooking times.
- Wash leafy and root vegetables well—preferably with hot water.
- Use clean utensils and surfaces; avoid mixing raw and cooked foods.
- Cook hard vegetables first (carrots, celery), add softer ones later (broccoli, spinach).
- Limit salt—children quickly develop salty preferences.
- Use herbs and spices (parsley, dill, basil, cumin, ginger) for flavour; adults can add pepper after cooking.

Storing Soups and Stews

- Do not leave cooked food out for more than 2 hours.
- Refrigerate once cooled and consume within 24 hours.
- For longer storage:
  - Freeze immediately after cooling
  - Label containers with the date
  - Use it within 4 months

ANNEX 6: VEGETABLES IN THE CHILD'S DIET

You can find more recipies on UNICEF's Bebbo App

- Vegetables provide **energy, fibre, vitamins, antioxidants, and water**—essential for healthy growth.
- A **varied vegetable intake** supports immunity, metabolism, detoxification, and long-term health.
- **"Eat the rainbow"** encourages diversity in vegetable colours and nutrients:
  - **Green**: spinach, peas, broccoli
  - **Red**: tomatoes, peppers
  - **Yellow/Orange**: carrots, pumpkin, corn
  - **Purple**: beetroot, red cabbage
  - **White**: potato, cauliflower, onion
- Children aged 1–3 years should eat 2.5 servings/day; aged 4–6 years, 4.5 servings/day.

Encouraging Children to Eat Vegetables – Tips for parents

- **Start early** and offer variety; combine bitter greens with familiar veggies (e.g. carrots, potatoes).
- **Be patient** can take up to 10 exposures for acceptance.
- **Praise gently**, without making vegetables the centre of attention.
- **Avoid punishment**, pressure, or forcing prolonged mealtimes.
- **Don't bribe** with treats—it promotes poor eating habits and associates healthy food with negativity.
- **Model healthy eating**—children mimic your behaviour at the table.
- Offer **vegetables as snacks** (e.g. carrot sticks with yoghurt or hummus).
- **Involve children** in selecting and preparing vegetables—they're more likely to eat what they help make.

Serving Tips

- Offer **small amounts** of new vegetables alongside familiar foods.
- Try **different preparations:**
  - Raw, grated, or roasted
  - Blended in soups, stews, or sauces
  - Mixed into pasta or pizza
  - Grilled with herbs for flavour

A diverse, enjoyable approach helps children build lifelong healthy eating habits.

The good news is that there is no single vegetable that the child cannot do without!

ANNEX 7: HEALTHY MEALS FOR KIDS

Healthy Meals for Children – Key Guidelines

Balanced Diet

- Include food from all five food groups daily.
- Each meal should combine at least three food groups.

Breakfast

- Provides essential energy for learning and play.
- Ideal combinations: whole grains + dairy + fruit or protein.
- Avoid: processed meats, hot dogs, pâtés, sweet pastries, and bakery products.

Suggestions:

- Oatmeal or homemade muesli with fruit and milk/yoghurt
- Polenta with cheese or yoghurt
- Eggs (boiled, scrambled, in spreads)
- Sardine spread with cream cheese and herbs on wholegrain bread

Tips:

- Prep simple meals on weekdays (e.g. overnight oats, bread + yoghurt).
- Encourage children to customise their breakfast (e.g. fruit toppings).

Lunch

- Should include carbohydrates, protein, and vegetables.
- Start with a soup or stew to encourage vegetable intake.

Key Points:

- Meat isn't needed daily; include fish (1–2 times/week) and legumes (e.g. beans, lentils, chickpeas).
- Fresh vegetable salads should be served daily with lemon and oil.
- Avoid pickles as a vegetable replacement (except sauerkraut).

Dinner

- Should follow similar guidelines as lunch.
- Avoid sugary or low-nutrition foods like biscuits or pastries.
- Serve at least one hour before bedtime.
- If appetite is low, offer a nutritious afternoon snack.

Snacks

- Provide 1–2 snacks daily, depending on the child's age and activity.
- Align snack content with what the child ate or missed in other meals.

Healthy options:

- Fresh seasonal fruit (washed thoroughly) or low-sugar compote
- Nuts (if no allergies), preferably as a spread
- Veggie sticks with homemade hummus or dips
- Homemade fruit yoghurt
- Pudding from rice, millet, or quinoa (no added sugar)
- Homemade muffins, oat biscuits, or waffles (low sugar, no additives)

Avoid:

- Bakery goods, sweets, processed juices, and snacks with additives

Fibre Intake Caution

- Too much fibre can cause bloating and poor nutrient absorption.
- Balance high-fibre foods (vegetables, whole grains, legumes) with low-fibre ones (dairy, meat, eggs).
- Gradually the whole grains increase as the child grows.

ANNEX 8: A VEGETARIAN DIET FOR CHILDREN

A vegetarian diet is a diet that consists of grains, fruits, vegetables, legumes, nuts, and seeds, and excludes foods of animal origin. There are several types of vegetarian foods and diets, depending on the foods included:

- **a lacto-vegetarian diet** excludes meat, fish, poultry, eggs, but includes dairy products (cheese, yogurt, milk, butter),
- **an ovo-vegetarian diet** excludes meat, sea food, poultry and dairy products, but includes eggs,
- **a lacto-ovo-vegetarian** diet excludes meat, poultry and fish, but includes dairy products and eggs,
- **a vegan diet** excludes meat, poultry, fish, eggs and dairy products as well as all foods that contain any of these products.

Breastfeeding is considered the best food for newborns and infants; breast milk provides all the essential nutrients that an infant needs in the first 6 months of life. The breast milk of vegetarian mothers contains everything the infant needs for optimal growth and development, provided that the mother is well-nourished. Vitamin B12, which is absent in a vegetarian diet, passes into breast milk if the mother takes yeast or supplements of this vitamin. Mothers on a vegetarian diet tend to breastfeed their children longer.

If the mother is not breastfeeding, soy-based infant formulas are the alternative for feeding infants in the first year of life for vegetarian families. These formulas contain vitamin D. It is recommended that iron be added to them unless they are already fortified with iron. Pure soy or rice milk cannot replace infant formulas or breastfeeding in this period because they do not contain the required amount of protein, fat and carbohydrates, nor do they have enough vitamins and minerals that the child needs in the first year of life.

Planning a vegetarian diet

A vegetarian diet requires very careful planning, in other words, the food must include all essential nutrients (proteins, calcium, iron, omega-3 fatty acids, vitamin B12,20 zinc) that children on a regular diet regime receive from foods of animal origin. The same principles of healthy eating for children also apply to children on a vegetarian diet - they should get nutrients from all five food groups (protein, grains, fruits, vegetables and milk/dairy products or substitutes).

The dietary protein requirements for children on a vegetarian diet are slightly higher than for children who eat everything, because of the difference in the composition of amino-acids and the utilization of proteins of plant origin. Breast milk provides sufficient protein to meet an infant's needs. However, at the age of one year, when toddlers eat more solid foods than milk, their protein needs are greater than the needs of toddlers who eat animal proteins. Instead of 13-16 grams per kilogram of body weight, the child will need 18-19 grams. This difference can easily be compensated with a cup of soy milk, which contains six grams of protein, while a half cup of tofu (soybean cheese) contains five grams of protein.

Proteins must be combined, especially when the child is very small. Every person prefers certain foods, and toddlers on a vegetarian diet are no exception. Encouraging children to eat a vegetarian diet does not mean convincing them to like all plant-based foods. Like children who eat foods of animal origin, vegetarian children can be fussy too, in fact, this is a common occurrence in the second and third year of life.

A poorly planned vegetarian diet can have long-term consequences on growth and development.

How do children on a vegetarian diet get all essential nutrients:

- they get proteins from soy and legumes,
- the best sources of calcium for children who do not consume milk and dairy products are tofu, green leafy vegetables (kale), stone fruits, seeds and foods fortified in calcium (cereals, soy milk and bread),
- they get iron from soy, beans, tofu, cereals, egg yolks; the infant needs iron-fortified cereals or an iron supplement (1 mg/kg weight),

- omega-3 fatty acids from flaxseeds, chia seeds, walnuts and soy products,
- zinc from almonds, peanut butter, mushrooms, whole grains,
- vitamin B12 from milk and eggs; vegan children need a supplement of this vitamin in breakfast cereals, plant-based milk-like drinks and soy products (check the label)!

A well-balanced vegetarian diet with green leafy vegetables, legumes and whole grains need not, by definition, be low in calcium and protein. However, grains, stone fruits and soybeans must be added. Having rice as a staple may lead to iron deficiency anaemia.

Fat and energy balance

Children of all ages need a certain amount of fat in their diet, for energy, and for brain and retina development. In this regard, a diet that is mainly based on carbohydrates and low in proteins (bread, potatoes, rice, fruit, etc.) has its inherent risks.

The main risk associated with a vegetarian diet is the low caloric intake. If it is poorly "designed", it is too "bulky" and does not contain sufficient fat and calories, which are needed for the rapid growth and development of infants and toddlers. This is not a problem while the baby is nursing. Breast milk provides 54 percent of energy from fat and contains about 175 calories per cup. However, when the baby starts taking solid food and less milk, it is important to choose food that provides the right balance of fat, energy, and nutrients.

Potential problems

- The first potential problem associated with a vegetarian diet is the lack of calcium, iron and protein.
- Another problem is related to the low-calorie intake and high intake of fibres. Fats supply the body with the highest calorie intake, especially in children up to the age of five. With this in mind, you should use full-fat dairy products and ensure a sufficient intake of omega-3 fatty acids.
- Iron deficiency can be a particular problem because plant foods contain only non-heme iron that has a much lower bioavailability than heme iron.
- Vitamin B12 is found only in foods of animal origin.

ANNEX 9: LABELS AND FOOD LABELLING

All industrially processed foods must have a label. Exceptions are fresh fruits and vegetables, fresh bakery products, nuts, legumes, fresh meat and fish.

By reading food labels we learn about:

- Nutritional information, including a table with the breakdown of the number of calories (in calories or kJ), fat, carbohydrates, protein, fibre and sodium.
- Additives the food contains.
- Whether the product contains any allergenic ingredients.;
- Whot the producer is.
- Expiry date - use by...(for perishable food items, such as meat, fish or dairy products that may not be sold after that date) or best before date... (refers to the date after which the product is still safe to eat but may not be at its best).

Comparing the nutritional information of different products helps us make a healthier choice - the best choice is the food that has the least saturated fat, salt and sugar, and the most fibre.

Nutri-Score is an innovative nutritional labelling system that shows the nutritional value of products in a very simple and concise way using five colours and five letters. The Nutri-Score system is based on a scientific algorithm that considers nutrients that are desirable in a balanced diet (such as fibre, protein, fruits and vegetables) and nutrients that should be limited (such as calories, saturated fat, sugar and salt). 'A' is a preferable score and 'E' is a detrimental score.

Allergenic foods

Nine foods are responsible for 90% of all food allergies - *peanuts, nuts, cow's milk, fish, shellfish, eggs, soy, sesame and wheat*. If a product contains any of these foods, this must be indicated on the label, even when they are present in a minimal amount.

Nutritional statements on the package or in an advertisement for a certain product can mislead customers, so you should look at the ingredients label on the back of the package.

Food additives

Food additives are substances that have no nutritional value (so-called E additives). They are added to food in small quantities to extend shelf life and improve taste, smell, appearance and texture. In the European Union, food additives are regulated under Regulation (EC) No 1333/2008, which ensures that only additives proven to be safe and necessary are authorised for use in food products.

E-numbers are part of the system of food and drink additives approved by the European Union (EU). E-numbers do not have to be listed on the product and producers can list additives using their names rather than numbers.

Special attention should be paid to potentially or proven harmful additives, which are usually marked in red on the labels and are prohibited for use in many countries. The possible correlation between ADHD syndrome in children and the consumption of additives found in sweets, soft drinks and other foods, is cause for concern (E102, E104, E211).

E Numbers to Use with Caution

E Number	Name	Function	Potential Health Effects
E102	Tartrazine	Yellow dye	May cause hyperactivity in children; banned in some countries.
E104	Quinoline Yellow	Yellow dye	Linked to hyperactivity; banned in several countries.
E110	Sunset Yellow FCF	Orange dye	Associated with allergic reactions and hyperactivity.
E122	Carmoisine	Red dye	May cause allergic reactions; linked to hyperactivity.
E124	Ponceau 4R	Red dye	Potential allergen; linked to hyperactivity.
E129	Allura Red AC	Red dye	May cause allergic reactions; linked to hyperactivity.
E211	Sodium Benzoate	Preservative	May cause hyperactivity in children, potential allergen.
E220–E228	Sulfites	Preservatives	It can trigger asthma attacks and allergic reactions.
E249–E252	Nitrates/Nitrites	Preservatives	Linked to the formation of potentially carcinogenic nitrosamines.
E320	Butylated Hydroxyanisole (BHA)	Antioxidant	Potential carcinogen may cause allergic reactions.
E321	Butylated Hydroxytoluene (BHT)	Antioxidant	Potential carcinogen may cause allergic reactions.
E951	Aspartame	Artificial sweetener	Linked to headaches and other health issues in sensitive individuals.
E621	Monosodium Glutamate (MSG)	Flavor enhancer	May cause headaches, nausea, and other symptoms in sensitive individuals.

Generally Considered Safe E Numbers

These additives are naturally derived or have been evaluated and deemed safe for consumption within established limits.

E Number	Name	Function	Notes
E100	Curcumin	Colour	Derived from turmeric; natural colouring agent.
E101	Riboflavin (Vitamin B2)	Colour	Essential vitamin; naturally occurring.
E160a	Beta-carotene	Colour	Found in carrots; a precursor to vitamin A.
E300	Ascorbic acid (Vitamin C)	Antioxidant	Common antioxidant; naturally present in fruits.
E322	Lecithins	Emulsifier	Sourced from soy or eggs; aids in blending ingredients.
E330	Citric acid	Preservative	Naturally found in citrus fruits; used to preserve and add tartness.
E406	Agar	Gelling agent	Extracted from seaweed; used in desserts and jellies.
E410	Locust bean gum	Thickener	Derived from carob seeds; used to thicken products.
E440	Pectin	Gelling agent	Found in fruits; commonly used in jams and jellies.

ANNEX 10: BEBBO PARENTING APPLICATION

UNICEF's innovative and free parenting app, Bebbo, is designed as caregivers' digital companion, offering evidence-based guidance from pregnancy through the child's first six years. Once downloaded, it works entirely offline, delivering personalized tools, reminders and age-appropriate content tailored to each child's individual profile. To ensure privacy, all personal data entered by users remains on their phone and is not transferred to any server.

In 2025, Bebbo has been localised and adapted for:

- Albania, Belarus, Bulgaria, Greece, Ecuador (as Wawamor), Kosovo* (as Foleja), Kyrgyzstan, Moldova, Montenegro, North Macedonia, Romania, Serbia, Slovakia, Tajikistan, Türkiye (as Merhaba Bebek), Ukraine and Uzbekistan
- International versions in English and Russian

Personalised Tools and Trackers

Based on the information provided, Bebbo configures:

- Health check-up tracker to log routine visits
- Vaccination reminder aligned with national immunization calendars
- Growth & development monitor with growth charts and milestone alerts
- Age-appropriate articles and games

For example, new parents will see breastfeeding tips and bonding activities, whereas parents of three- to six-year-olds will get early-learning ideas and routine-building guidance.

Nutrition Library

Bebbo has over 100 articles on child nutrition.

Recipes & meal tips for healthy food and drinks that families can enjoy together.

Searchable content and an integrated chatbot to answer parents' questions in real time.

Additional Topics Covered

Bebbo's rich advice library also includes:

- Vaccine information and schedules
- Common childhood illnesses and when to seek help
- Parenting knowledge for fathers as well as mothers
- Parenting children with disabilities
- Parental mental health and self-care tips
- Caregiving and guiding child's behaviour tips
- Advice on play and learning activities and developmental games
- Pregnancy, preparing for a new baby and sibling bondin

ANNEX 10: BEBBO PARENTING APPLICATION

QUESTIONNAIRE ON NUTRITION OF CHILDREN AGED 1-6 YEARS*

The Questionnaire is a tool that provides a good starting point for recognizing feeding difficulties in children and helps to assess what additional information you need and how to advise parents.

It is recommended that parents fill out the questionnaire before talking to a healthcare practitioner. You can also use it as a checklist, in other words, as a reminder about which aspects of the child's diet you should discuss with the parents.

1. How would you describe your child's appetite?
❑ good
❑ fair
❑ poor

2. How many days per week does your family eat meals together? _____

3. How would you describe mealtimes with your child?
❑ always pleasant
❑ usually pleasant
❑ sometimes pleasant
❑ never pleasant

4. How many meals does your child eat per day?_____ How many snacks?_____

5. Which of these foods did your child eat or drink last week? (Check all)
❑ Tomato
❑ Other vegetables: _____

Grains
❑ Pastries
❑ Bread
❑ Cereals
❑ Crackers
❑ Muffins
❑ Pasta/rice
❑ Tortillas
❑ Other grains: _____

Vegetables
❑ Broccoli
❑ Carrots
❑ Corn
❑ Peas
❑ Green salad
❑ Leafy vegetables (spinach, chard)
❑ Potato
❑ Bell peppers

Fruit
❑ Apples/juice
❑ Bananas
❑ Grapes
❑ Blueberries
❑ Melons
❑ Oranges/juice
❑ Peaches
❑ Pears
❑ Other fruits/juice: _____

Milk and dairy products
❑ Reduced-fat milk up to 2% of fat
❑ Whole milk
❑ Flavoured milk
❑ Cheese
❑ Ice cream
❑ Yogurt
❑ Other milk and milk products _____

Meat, eggs, legumes
❑ Beef/hamburger
❑ Chicken, turkey
❑ Cold cuts/deli meats
❑ Beans, lentils
❑ Eggs
❑ Fish
❑ Peanut/almond butter
❑ Hummus
❑ Pork
❑ Sausage/bacon
❑ Hot dogs, salami
❑ Other types of meat or meat substitutes: _____

Fats and sweets
❑ Cakes
❑ Chocolate
❑ Chips
❑ French fries
❑ Cookies

❑ Doughnuts
❑ Pies, burek
❑ Bakery products
❑ Fruit-flavoured sweetened drinks
❑ Soft drinks

* Adapted from *Bright futures – Nutrition* Questionnaire on nutrition of children ages 1 to 10.

6. Does your child under 5 eat any of these foods? (*Check all that apply*)
❑ Hot dogs
❑ Seeds (flax, sunflower, pumpkin)
❑ Stone fruits
❑ Peanut butter
❑ Popcorn
❑ Chips and pretzels
❑ Raisins
❑ Raw celery or carrots
❑ Hard or chewy candy
❑ Whole grapes

7. How much juice does your child drink per day? _____ How much sweetened beverage?_____

8. Does your child take a bottle to bed at night or carry a bottle around during the day?
❑ Yes ❑ No

9. Did you have any physical activity last week (e.g., walking, riding a bike)?
❑ Yes ❑ No
If yes, on how many days and for how many hours per day?
_____

10. Does your child spend more than 2 hours per day watching television or playing computer games?
❑ Yes ❑ No
If yes, how many hours per day? _____

11. Does your family watch television during meals?
❑ Yes ❑ No

12. Do you have any concerns or questions about feeding your child or how your child is growing? Do you have any concerns or questions about your child's weight?
_____