## FINE! Food and Nutrition in the Early Childhood Education and Care

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## Introduction

"Our food should be our medicine and our medicine should be our food."

**Hippocrates** 

A quote, thousands of years old, sounds so modern and up to date.

What kind of food do we eat? Do we value the food we eat? How do we eat it? Do we know what kind of food to eat? Do we have time to prepare the food we eat? Do we ...

Food is a basic necessity for every living being. And we consume it every day. However, we, the humans, for a long time have forgotten its importance. We don't have time. We eat fast food. We want it fast and easy. We buy processed food. We want a better taste. We put artificial flavours. We want a better smell. We put more artificial flavours. We want a better look. We put other types of artificial flavours ...

So, what do we eat in the end? What do we buy in the end? Is it the food that gives us health? Is it the food that gives us nutrients? Is it the food that we should consume every day? Is it the food that should be our medicine?

Many people have forgotten the smell of the fresh fruit or vegetable taken directly from the tree. We buy them from the supermarket. Many people have forgotten the incomparable taste of the ripe fruit or vegetable. We pick them green, pack them, and transport them long distances, so to be able to buy them from the shop. We industrialized food production so much. That we even changed its taste, smell, the way it looks. Do our children today know the real taste and smell of food products that we ate, as we were children?

Thousands of years later, with an enormous amount of knowledge and research behind, we know how much valid Hippocrates's quote is today!

We are happy to have the opportunity within the "Fine! Food and Nutrition in Early Childhood Education and Care" project to be able to present you some key topics regarding this issue. We collected articles revealing various aspects of food. Some of the topics are:

- health, prevention of obesity and diseases;
- nutritional principles and biology elements;
- the importance of nutrition in childhood development;
- eating and feeding difficulties in children;
- food allergies and intolerance to food;
- food as a tool for inclusion and intercultural integration;
- nutrition and social inclusion of children in ECEC;
- regulations regarding food and food for ECEC;
- environmental impact of food, recycle and return of food leftover, prevention of food waste and leftover.

All the authors put many efforts to present the topics in the best possible way. It is a comprehensive collection from which various parties can benefit – experts working with children, parents, teachers, educators, decision-making bodies, policy makers, etc.

Let's together make the best possible, so the food we and our children eat "to be the safest and most powerful form of medicine, but not our slowest form of poison", as Ann Wigmore says.

Enjoy reading! Enjoy your food and eating! Use your food as medicine and stay healthy!

> Nadia Koltcheva, PhD Editor





## 1. ABOUT FINE! PROJECT: CONTEXT, OBJECTIVES, TARGET GROUP, ACTIONS

#### Context and objectives of the FINE! Project

The overall objective of the FINE! Project is to contribute to achieve the goals of EU food safety policy, Health 2020 Framework, European Food and Nutrition Action Plan 2015–WHO, Childhood Obesity Action Plan 2014, referring also to the UN 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development.

Good Nutrition is a focal point for the growth of children, especially in the 0/3 age range, is a key to sustainable development (Goal 2/2015 Sustainable Development Goals SDGs) and a key factor to an active and healthy life. Food and nutrition are important from many points of view:

- Health and prevention of diseases and obesity, connected with the cost reduction of medical expenses. Malnutrition as a serious public health problem and hinders the normal growth and development of children. The worst damages happen during pregnancy and early childhood-first 1000 days.
- Proper physical and mental development: malnutrition in early life negatively influences reasoning, visuospatial functions, IQ, language development, attention, learning, academic achievement.
- Prevention of obesity, a special form of malnutrition, which is growing: the number of overweight and obese children dramatically increasing. It was estimated in 2010 that 43 million children worldwide were overweight, and this number is expected to grow to 60 million by 2020. In the EU, overweight (including obesity) among children is about 23% for boys and 21% for girls (2010), between 1990 and 2010 increased by 39%. Obesity in early life has health consequences and influence young people's psychosocial development. Obesity costs national economies billions of Euros per year, including lost productivity and sick days. Strategies to address obesity across the social gradient, especially in low socioeconomic groups, are urgently required (WHO, Childhood Obesity Action Plan 2014).
- Reducing health inequities is a key strategic objective of Health 2020: there is a strong relationship between obesity and low socioeconomic status, and all children have the right to receive adequate nutrition in terms of nutritional elements and quality of food.
- Reducing Food Waste and Recycling: around 88 million tons 95–115 kg/year/person

   of food are wasted annually in the EU, the associated costs estimated is 143 billion
   Euros. It is an ethical and economic issue, but it also depletes the environment of
   limited natural resources. All actors in the food chain have a role in preventing and
   reducing food waste, and the EU food safety policy is looking for every opportunity to
   prevent food waste and strengthen the sustainability of food system (STREFOWA
   Handbook, 2019).
- Lunchtime as skills improvement: sharing food, eating together is an important social, relational intergenerational moment, an educational activity, especially developed in some EU countries.





• Food as an intercultural vehicle: knowing the food and traditions of other countries is a tool to increase the intercultural approach and integration, has a positive impact on children in present the diversity as an enriching value.

## The role of the Educational institutions

Childhood is an important period to instil a preference for healthy behaviour, to learn the life skills necessary to a healthy lifestyle. Schools clearly play a crucial and effective role: studies show that locally focussed actions targeting 0-12-year old children are effective in changing behaviour in the long run. Educational institutions bear a great responsibility in ensuring that children understand the importance of good nutrition and can benefit from it.

One of the priorities of Childhood Obesity Action Plan 2014 is that children's health is a priority at educational institutions.

- Educational institutions can provide healthy options and healthy food, focus should also be on making the school environment attractive to eat in. It is important and necessary that teachers, catering staff, school managers and health care providers cooperate to create a healthy school environment that promotes healthy eating and physical activity. Therefore, is important to provide nutritional training to school staff to provide healthy food choices and portion sizes.
- It is important to educate children and their families about nutrition and healthy lifestyle, including the importance of a sustainable diet: educational institutions have a key role in the education and support to families, including related issues with a specific focus on lower socio-economic groups.
- The reduction of food waste: educational institutions' canteens, 1 in 3 meals ends up in the dumpster: 20 to 50% of the prepared food is waste, depending on the menu, mostly vegetables, which children are not used to eating at home. Educational institutions could rethink their canteen models to reduce food waste and recycle the leftovers (i.e. in collaboration with local associations). They must also strive to offer healthy and appetizing food to the children so that eating it and eating at educational institutions is a moment of pleasure.

#### Target group/participants

The direct beneficiaries are nurseries and kindergarten, preschools, and their staff include managers, coordinators, educators and teachers, kitchen staff, support staff.

The project aims to:

- stimulate their awareness, discussion and knowledge on the above topics, the issues
  of nutrition and health of children, social and relational aspects related to food in
  childhood, the role of educational institutions for children's development and their
  successful lives, the respect for the environment,
- improve their knowledge and professional skills,
- motivate preschools managers to implement strategies to the modernization and improvement of the canteen system, food education, food waste prevention and recycling for children and families,



- build up a dialogue on healthy nutrition in early childhood education among organizations, decision-making bodies, beneficiaries included families,
- increase in the European dimension of each participant and partner organization; include to improve foreign language learning, especially for partner organizations and their workers who normally don't have the possibility of thinking at the European level,
- transfer of the learned knowledge within the organizations, to other members of staff,
- improvement of the system and organization within partner nurseries and kindergartens in preparing and distribution of meals,
- improvement of food waste reduction and food recycling system,
- increase in the offer of meals to children thanks to new recipes learned.

#### Actions

- 2 Transnational Project Meetings (Florence and Budapest);
- Observational criteria and guidelines for the exchange of good practices, presentation of different contexts;
- 5 Short-term joint staff training events in each partners countries, including study visits, best practices exchange on canteens models, diets, national/local policies, nutritional support strategies for disadvantaged children, prevention of food waste and recycling, trainings on the project topics and EU strategies and tools, debate, discussion, workshops in the kitchens, sharing and collection of healthy national recipes;
- Final publication, including training materials and recipe-book, in PDF, in English and in partners' language;
- Recipe Book in English and in partners' language;
- 10 dissemination events inside the partner preschool organizations;
- 5 dissemination events at a local level, involving stakeholders, professionals, public bodies, and decision-makers;
- 1 dissemination even in Hungary, at ELTE university involving teachers and students;
- 2 dissemination events at European level;
- Dissemination on FB page and project dedicate web page.



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### 2. ABOUT FINE! PROJECT: PARTNERS

The countries participating follow the chronology of the study visits and the topic of the project. Regarding the Recipe Book, the countries come after each other in alphabetic order.

#### 2.1. Galileo Progetti Nonprofit Ltd. – Budapest, Hungary

http://www.galileoprogetti.hu/presentation.html

Galileo Progetti was founded in 2009 by Italian and Hungarian partners, it is based in Budapest. The main objective of Galileo Progetti is the development of the social sector, the social economy, and the social inclusion, also through the exchange of good practices and experiences among European Union countries and by developing networking, European mobility and exchanges of experiences. Through its activities, Galileo Progetti aims to contribute to sustainable development within the European Union and in Hungary, also through the dissemination of models, methodologies, tools, with attention to the European experiences and policies. The overall objectives include social inclusion, inclusive and highquality early childhood education, employment, equal opportunities for disadvantaged people, fighting poverty, discrimination, and exclusion. Galileo Progetti also aims to develop the feeling of civic participation, European citizenship and the inclusion of people in disadvantaged situations and works with attention to the inclusion of people at risk of social exclusion or disadvantage, such as Roma minorities and migrants. Galileo works in partnership with private and public entities, involving in European experience organizations with and without experience at an international level, following its conviction that international experiences enhance personal and professional skills and knowledge, and have a very positive impact on the development of the quality of organizations at a local level. In addition, it has developed a vast and solid network at European level over the years, especially with social organization, training providers, preschools, and universities. Galileo is the only Hungarian member of ENSIE, the European Network of Social Integration Enterprises, who guarantees to Galileo the best connection with the EU and European policies, information on professional innovations, support and experience of a network of 21 countries, representing more than 3.150 Social Integration Enterprises. In the last years, Galileo Progetti has started collaborating with the European network EUROCHILD, International network of organisations and individuals working in and across Europe to promote the rights and well-being of children and young people, and ERIO, European Roma Information Office, all three network recognized and supported by the European Commission. Galileo Progetti collaborates with the Hungarian ELTE University, contributing to its European strategic plan by expanding the opportunities for international contacts for teachers and, above all, the contact between university and enterprises at the European level. Galileo Progetti has considerable experience in the promotion, coordination, management and participation in European projects, in particular in projects under Erasmus+ KA1 (KA1, EVS) and KA2 Strategic Partnerships, Leonardo da Vinci (Mobility, TOI, Partnerships), Europe for Citizens (Action 4 Active Memory), Progress, Central European Initiative, Erasmus Traineeship, European Solidarity Corps programmes. Galileo Progetti has experience - also gained in the field of European projects - in the general coordination of projects, administration, management of local and international networks, dissemination, evaluation and monitoring, internal and external communication, and problem-solving. One of the strengths of Galileo is the establishment of networks at European level, and the ability



to imagine integrated paths between different organizations active in the same area and to have a holistic view of needs and solutions.

#### 2.2. JEB Józsefvárosi Egyesített Bölcsődék – Budapest, Hungary

#### http://www.bolcsode-bp08.hu/en.html

Józsefvárosi Egyesített Bölcsődék (JEB) was founded in 1994 by the municipality of the VIII district of Budapest, a district in which the minority population is particularly relevant.

It consists of 7 nurseries operating in which work 158 persons, the number of children attending the nursery is around 420 children from 0 to 3 years of age.

JEB's nursery schools provide users with basic mandatory services, as established by the Local Public Administration, and additional services.

The educational mission of JEB is to promote the balanced psychophysical development of children aged 0-3 years, thanks to favourable environmental conditions, the specific training of the staff, offering to children the opportunity, feel comfortable, have a healthy lifestyle and adequate cognitive and social stimuli.

JEB works in collaboration with families, respecting their right to privacy, and engaging them in the education of children so that children become open to the world, independent, healthy and accept the fundamental rules of coexistence.

The JEB nurseries provide children's meal in 7 cooking kitchens in the nursery buildings.

At the head of each cooking kitchen, there is a food manager who controls the operation of the kitchen and is responsible for the safe preparation of the food, the staff is 2-3 people per kitchen (cook, kitchen assistant). The great advantage of cooking on site is that the prepared food is placed on the children's desk in the shortest time, excluding the possibility of over-infection, and the consistency and temperature of the food will not lose its enjoyment value.

We provide every child with the energy and nutrient-rich diet appropriate for its age, which accounts for 75% of the daily energy requirement. Because of this, we provide four meals a day, two main meals, and two snacks. Three of the four meals must be complete, which can be assured by proper protein intake in quality and quantity.

Our main concern is the diversity and the preservation of the seasonality.

We are gradually introducing the peculiarities of reform dining, in our everyday life. When preparing food, we pay close attention to the consistency according to the age group.

We consider our main child-nutrition task:

- the implementation of healthy and modern nutrition,
- to shape the taste and eating culture of children,
- and that we not only meet a basic need for nutrition but also strive for the health education of children.

The parents of our children also turned to the newly introduced foods with great interest and consensus, so we decided to share the new recipes with them. On the JEB's website, we have made available the descriptions of our newly prepared or well-loved foods for the month in question.



JEB also runs the Józsefvárosi Biztos Kezdet Gyerekház, which network works for the social integration of children 0-5 with socio-cultural disadvantages and their families.

#### 2.3. Arca Cooperative Sociale – Firenze, Italy

https://www.arcacoop.org/firenze/la-cooperativa-arca/2-coop/67-la-cooperativa-arcaeng.html

ARCA Social Cooperative is a non-profit organization established in 1983 based in Florence. From 1993 Arca is a Social Cooperativa type A – based on 381/92 National Law. ARCA deals with the management of social, welfare and educational services both designed and provided privately and in agreement with Public Administrations. It counts over 1250 workers, of which over 475 work in the field of early childhood.

Arca manages services for early childhood, under18, disabled people, elderly people, drug addicts, people with psychiatric discomfort and in disadvantaged situations or at risks of social exclusion in the Tuscany Region.

ARCA has a very solid local and regional network and collaborates with several public bodies, universities, schools and NGOs.

For years, it has expanded its dimension at European level, thanks to numerous European projects, and intends to continue in this direction offering opportunities for professional growth and participation at European level to its workers.

Since 1989, it has been managing early childhood services. Actually, it manages over 100 early childhood education services, mostly nursery but also kindergartens and institutions hosting children not living in their families.

ARCA has an internal kitchen in 12 nurseries, of which 3 only for children under 12 months.

In each of these nurseries are provided daily about 50 meals for children and about 12 for adults.

ARCA is promoting organic products and short supply chains (local products), also this is a request of the contracting public administrations.

All the menus are validated by ASL (the Local Health Authority) based on the indications of the LARN, inspired by the Mediterranean model for which cereals, legumes, vegetables and fruit are favoured, integrating them with protein foods such as meat, fish, eggs and cheese.

ARCA recognizes a great qualitative value in the service of internal schooling for educational services since the internal kitchen becomes an integral part of the service and represents an element of quality for the children who attend it and for their families. The cook plays a fundamental role, as a "food educator" in the development of moments dedicated to food, as educational moments, collaborating and integrating the work of the performers and educators present in the service.

In our work, we pay attention to the problems of food allergies and intolerances, and we are careful to respect those who belong to different cultures and religions or choices of a semi-vegetarian diet.

We support the value of breastfeeding and therefore procedures are provided for the conservation of breast milk to be administered during the day.





ARCA has developed a proper, modern and inclusive method of early childhood education, based on the development of the child's skills, on the involvement of educators and families, on differentiated and dynamic activities, with particular attention to the inclusion of children in a different way skilled at multiculturalism.

Arca chooses eco-friendly management, e.g. by using products with a low ecological impact, installation in its buildings of renewable energies systems and selective waste collection and removal of dangerous waste by certificated companies, reduction of waste.

#### 2.4. Centro Social Soutelo - Rio Tinto, Portugal

https://www.centrosocialsoutelo.org/

Centro Social de Soutelo is a non-governmental organization, founded in 1976 and it develops its activity, in Portugal, specifically in the Oporto district (Gondomar, Porto and Matosinhos), in the areas of early childhood /youth education, the elderly and social and community intervention.

CSS mission is "Meeting the legitimate needs and expectations of the community, promoting equality, participation, cooperation and solidarity". Thus, the Centro Social de Soutelo has as statutory purposes to support the family in the education and protection of children, promote the well-being of the elderly and respond to the needs of the community through typical social responses and social intervention projects.

We have 110 permanent workers in our organization, adding to this number several people who benefit from occupational programs to support the professional insertion and various professional and academic internships.

Early childhood and youth education are one of the core areas of intervention. We support 330 children and young people, in nursery, preschool and extra-school occupational responses. Our organization has a very significant experience in the intervention in this area, though it was originally created to provide early childhood education.

CSS also develops activities to support the elderly and dependents (120 people). Centro Social de Soutelo promotes community intervention projects, intervening in several relevant issues of the surrounding community (health, alcoholism and drug addiction, unemployment in socially vulnerable groups, poverty, and social exclusion) through the financing of various entities.

It also intervenes in 360 families in situations of economic and social vulnerability through our projects and protocols with Social Security, which include a large number of children, which are sometimes at nutritional risk, either because of the economic issue or because of the lack of skills of families in this area.

#### 2.5. Kindergarten 37 Valshebstvo – Sofia, Bulgaria

https://dg37sofia.com/The Kindergarten 37 "Valshebstvo" is a municipal kindergarten founded in 1977. It is in Sofia, the capital of Bulgaria. The kindergarten's personnel provide for more than 40 years of educational services and care for children in early and preschool years. Teachers, educators, and specialists follow national governmental educational programs, approved by the Ministry of Education and Science. They also provide various additional extracurricular activities, so children are able to develop their intellectual



potential (English, applied arts, folk dances, ballet, yoga, football, etc.). Various activities out of the kindergarten are organized (excursions, green school and white school, summer camps, etc.).

The kindergarten extends over an area of 8200 square meters of which 1555,25 sq. m. of built-up area and 6644,25 sq. m. yard and outside facilities. In 2018-2019, a new wing was built. Services and care for 319 children between 10 months and 6/7 years of age are provided. There are 2 nursery groups (children from 10 months until 3 years) and 9 kindergarten groups (children between 3-6/7 years of age). The kindergarten works with children on a five-day working week from 7:00 until 19.00 hours. 62 persons (preschool educators, music teacher, medical nurses, psychologist, speech therapist, special educator, kitchen staff, administrative and technical staff, etc.) work at the kindergarten.

The area for each nursery or kindergarten group consists of an entry area with individual wardrobes; a big playroom with corners for various play and educational activities, a sleeping room with individual beds for an afternoon nap; service areas (toilets, washing machine, etc.). Each kindergarten group has multimedia, interactive board, tablets, etc.

All the staff is highly qualified. There is a special focus on children's development. There are screening and assessment procedures. There is a team of specialists (psychologist, speech therapist, resource teacher) working with children with deficits or developmental disorders, consulting parents, etc.

The kindergarten collaborates with New Bulgarian University and Sofia University "St. K.Ohridski".

The specialists from the kindergarten have long-term experience in various projects both national and international. Some of them are "I Learn and Play Safe", "School Fruit", "Cup of Milk", "Happy and Healthy", "Green Magic", "Health Parade", "ICT in pre-school and school education", "Morning Fairy-tale", "Active inclusion in the system of pre-school education", FINE!, (2018-1-HU01-KA201-047760), READ, (2019-1-HU01-KA201-061099), EU-SELF, (2019-1-BG01-KA201-062593), etc.

#### 2.6. Kindergarten Srčeko – Vratišinec, Croatia

#### https://www.facebook.com/Dje%C4%8Dji-vrti%C4%87-Sr%C4%8Deko-2294448150608061

Kindergarten Srčeko is a private kindergarten and it was founded in 2004.

Kindergarten Srčeko operates in the municipality of Vratišinec, in Međimurje County. Vratišinec is a small village in which the population is around 1.400 persons.

The size of our activity is matched to the size of the country and its needs. Kindergarten Srčeko counts today 24 children, 2.5 educators who work with children and 1 cook.

Our mission is to support the psychophysical development of children, ensure their wellbeing and promote access for all children. To encourage the access of all children to early childhood education, since our village is economically very disadvantaged and poverty is widespread, the price for the frequency of our kindergarten is 30% smaller than in surrounding areas.

We aim to offer a high-quality service, for this we are committed to attentive planning, evaluation and self-evaluation of our work, regular training, and refresher courses for the improvement of workers' skills, strong and active collaboration with parents.





The goal of our program is to guarantee to the children the best environment where they can develop their potential, where they can satisfy their own interests and acquire skills and knowledge, how they can enable successful customization on the new conditions of life, growth and development in future.

Our professional philosophy is that every child has the right to develop compliant with their own options and abilities.

To achieve this goal, tracking and assessment of children development is regularly part of our daily activity, also to obtain information on indicators for our work with children in the future.

We provide lunch and every meal for all children.

Lunch (and every meal) is self-prepared in our kitchen by a professional cook lady.

We offer everyday snacks before breakfast, breakfast, fruity meals, lunch, and snacks in the afternoon.

The menu is prepared through standards and inputs of experts.

To guarantee to children healthy food, and to promote the local economy, we buy fruits, vegetables, and meat from local producers.

We also have our own garden where we have our own spices, tomatoes, carrots etc., and few trees of apple, pear, raspberries. In the past years, it was bigger, we also had potatoes. These biological fruits and vegetables, we are not treating anything at all.

Usually, we also have our own flower garden.

Our kindergarten contributes to the ecological disposal of organic waste: we compost eco waste in a dedicated part of our own garden.

To bring our children closer to nature, often we held some study visits with children on local farm goats, many orchards, hazelnut plantation, wine garden.

Our kindergarten is engaged in the territory also from a social point of view. We collaborate with the local Social Cooperative Humana Nova Čakovec that runs actions of clothes collection to help the poorest people. We bring clothes and all kinds of stuff there. Collaboration is mutual because Humana Nova supports the disadvantaged, low incomes families of our children, who are in a particularly difficult situation.



## **3. FINE! PROJECT METHODOLOGY AND TOOLS**

#### Methodology and tools

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During the implementation of the FINE! Project several different methodologies were used, integrating them, and obtaining interesting and enriching osmosis.

The use of different methodologies is strictly connected with the multiple objectives of the project, which include the acquisition and exchange of theoretical Know-How (for example on nutrition), and good practices exchange (for example on methods of providing meals in the preschools).

The different methodologies have been chosen to best meet the specific need and to make the activities various, interesting, stimulating and involving.

#### Short-term joint staff training events

The main activity is the implementation of Short-term joint staff training events, one in each partner country, lasting 5 days and involving participants from each partner organization, local stakeholders and professionals.

During the training, the host partner presented and shared national and local context and its good practices and experiences. The international participants compared and discussed them in working groups, identified best practices, innovations, and methodologies to enrich and complete their work system.

Participants had the possibility of deep sociological, medical, psychological, intercultural, and experiential aspects, and European policies. An important added value for the project was the interaction between people belonging to different professional areas related to the Early Education and Care system.

The trainings were held 1 in each involved country, following a similar model, developing specific topics in each event.

The international activities were held using different methodologies, paying attention to balancing theory and practices:

- theoretical training sessions held by experts,
- workshops in the kitchen,
- observation/job shadowing, especially the moments of children' lunch,
- preparation and sharing of observational criteria,
- presentation of the organizations and their good practices, following the OBSERVATION CRITERIA,
- visit the work environment of preschools,



- discussion between professionals: round tables, discussion in small groups, world café,
- exchange and collection of healthy, nutritious, palatable recipes,
- self-learning,
- team building, common activities, informal moments,
- exchange of experiences and comparison between professionals,
- workshop, simulation,
- role-play,
- meetings with local professionals.

Before the training, each delegation visiting the host country prepared itself on specific topics through self-learning in their own country, thanks to learning materials provided by partner organizations, such as the observational criteria, to improve knowledge and actively contribute to mutual learning and exchange of good practices during the training.

The OBSERVATION CRITERIA are a useful tool to present the best practices, including the relevant aspects related to both the host organization and the local and/or national context.

The document was helpful to allow a comparison between the services provided by partners, their experiences, good practices, criticisms, strategies, solutions, approach, regulations, training of/for the staff, practical aspects of everyday life at the preschools as a menu, diets, methodologies to manage children's meals, lunch spaces, professionals involved etc...

Before the trainings, each host partner prepared a VIDEO CLIP showing the activity of the kitchen in the institution in daily work: the life of food from the arrival at the institution (e.g. daily supply of fresh vegetables), food storage, processing and treatment of organic waste, distribution to children, lunchtime, and treatment of leftovers.

Always before the training, the workers of the project partner organizations were involved in self-learning sessions: during the preparation of the presentation of its own organization and its local context, the participants carry out research and analysis work useful for their daily work.

All the documents, presentations, slides were collected, systematized, and shared with partners (Google Drive), disseminated within the organizations and are now available in the present Project <u>FINAL PUBLICATION</u>, available in English and in partner languages.

Another important tool chooses to share both with professionals and with families the project results, is the RECIPE BOOK, in the language of partners: an international collection of healthy cooking recipes for children, available for professionals and families for free.



## Games, Role play - Training for eating piece food

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The purpose of the game is to make adults feel the emotions that children experience during their feeding. Adults should experience how a child who is not accustomed to this type of feeding because of his or her cultural differences.

#### Gameplay

Adults are sitting opposite each other because they will feed each other under constant control. Everyone gets 1 plastic cup of apple puree with raisins on the bottom. Don't mix up because it will be of special significance during the game.

#### Task 1

The cups should be kept at the height of the adult eye of the companion, and 1 spoonful of apple puree should be given from the top of the cup.

During the exercise, it is possible to feel what it feels like when the child does not know what he/she is eating. In many cases, the cutlery is not the right material or size for the child, which can cause bad stimuli, such as injuring the child's mouth.

In our nurseries, the educators show and taste the food at the height of the children.

#### Task 2

Those who are fed may open their eyes. Feeders give this couple a total of 3 spoons of apple puree. Surprisingly, one of the spoons is filled with raisins from the bottom of the cup. In this exercise, you will experience what your child will feel as they become accustomed to a piece of food. It is important to tell what is happening, when it comes to the piece of food, during the meal.

#### Task 3

The feeders stand up and start talking to the other feeder. Meanwhile, give 2 spoons of apple puree to your partner.

Swallowing is very difficult when feeding from above. In this case, a little sore throat is enough and we can no longer swallow the bite in an already difficult situation.

The purpose of the game was to allow everyone to experience cases where inadequate feeding of children could lead to miscarriage.

#### Szociopoly

Sociopoly is about the lives of poor families living in today's small Hungarian settlements. The inhabitants of the village, which the players find themselves in, are poor families who can only count on income from subsidies, casual or undeclared work.





Teams of 10 to 15 spectators (each representing a family) must live for one month. They are on the signboard for the day of the month, with actors in short scenes presenting the village's most prominent residents: the usury, the police, the mayor, who directly address viewers who have to make decisions about whether they want to work in black, pay or not the electricity bill, do they turn to usury for a loan?

In the game's constructed reality, everyone will be poor for an hour or two and experience the squeeze of exclusion on their own skin. Referees use the emotional energy of the game to help participants experience the stresses of day-to-day survival without work, money, and resources.

During the project, the professionals involved in the project took part in a board game made of the theatrical performance.

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## **4. PROFESSIONAL TOPICS**

## Health – Prevention of obesity and diseases related to the malnutrition

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Obesity, undernutrition, and climate change are causing a global health and ecological crisis that no country or continent is free from. Only through significant changes in attitudes, consumption and lifestyles in social, economic and individual life can we effectively counteract the acceleration and aggravation of processes. Health and education players must also play a key role in this change of approach.

Ensuring that children consume healthy diets is important for achieving the UN Sustainable Development Goals (SDGs) related to no hunger (SDG Goal 2), good health and well-being (SDG Goal 3), quality education (SDG Goal 4), no poverty (SDG Goal 1), economic growth (SDG Goal 8), and more (Sachs et al. 2019, UN, SDGs).

#### The importance of the first 1000 days of life

Of particular importance is the first 1000 days of life, when optimal nutrition and environmental influences during the critical period of individual development influence the health of the developing organism, which determines the quality of life in adult age.

The first 1,000 days of life - the time spanning roughly between conception and one's second birthday - is a unique period of opportunity when the foundations of optimum health, growth, and neurodevelopment across the lifespan are established.

This period harbours the greatest opportunity to provide optimal nutrition to ensure normal development and the time of greatest brain vulnerability to any nutrient deficit (Figure 1.).

While all nutrients are important for brain development and function, optimal overall brain development depends on providing enough key nutrients during specific sensitive time periods in these first 1,000 days. A critical nutrient at one period may have little or no effect in another epoch. The brain requires all nutrients for growth, certain nutrients, including protein, polyunsaturated fatty acids, iron, zinc, copper iodine, folate and vitamins A, B6 and B12 are particularly critical (Morriss et al., 2008, Schwarzenberg and Georgieff, 2018).



#### 'Sensitive periods' in early brain development



Graph developed by **Council for Early Child Development** (ref: Nash, 1997; *Early Years Study*, 1999; Shonkoff, 2000.)

#### **Figure 1.** Sensitive periods' in early brain development, Source: The Urban Child Institute <u>http://www.urbanchildinstitute.org</u>

A complex interplay between our genes and the environment shape our individual development. Countless factors including diet, exercise and environmental exposure are all elements of our lives that have been shown to play a role in switching genes "on" or "off" via epigenetics (Figure 2.).



**Figure 2.** Environmental factors affect epigenetics and metabolism and control disease predisposition in later life stages. Source: <u>https://www.frontiersin.org/articles/10.3389/fgene.2018.00361/full</u>

By the age of two, a child will be more than three times his birth weight. Over this time, his brain will grow 1g every day. Nutrition in early life impacts physical growth, cognitive development, immune maturation, development of digestive systems and development of healthy eating habits.



The Heckman Curve shows the rate of economic return on investment during different periods of lives. It shows the economic benefits of investing early and building skill upon skills to provide greater success to more children and greater productivity and reduce social spending for society (Figure 3.).



Source: James Heckman, Nobel Laureate in Economics



These early years are a window of opportunity for parents, caregivers, and communities: positive early experiences have a huge effect on children's chances for achievement, success, and happiness. Healthy neurodevelopment is dependent on socioeconomic, interpersonal and/or family, and nutritional factors.

#### Malnutrition

The definition of malnutrition includes both undernutrition (provision of inadequate amounts of macro- and/or micronutrients) and obesity (provision of excessive calories, often at the expense of other crucial nutrients). It is important to recognize that many nutrients exhibit a U-shaped risk curve, whereby inadequate or excessive amounts both place the individual at risk (Schwarzenberg and Georgieff, 2018). Each of these 2 forms of malnutrition affects neurodevelopment, and they may coexist in an individual (Figure 4.).



**Figure 4.** Malnutrition. WHO Global Nutrition Report, 2018 Source: <u>https://www.who.int/nutrition/globalnutritionreport/en/</u>



Macronutrient (protein, fat, glucose) sufficiency is essential for normal brain development. Early macronutrient undernutrition is associated with lower IQ scores, reduced school success, and more behavioural dysregulation (Grantham-McGregor, 1995). Exposure to undernutrition early in life followed by becoming overweight from childhood onwards increases the risk of a range of non-communicable diseases (NCDs) – making the double burden of malnutrition a key factor driving the emerging global epidemics of type 2 diabetes, high blood pressure, stroke, and cardiovascular disease (Figure 5.). Negative effects can also pass across generations – for example, the effect of maternal obesity on the likelihood of the child having obesity may be exacerbated if the mother was undernourished in early life (WHO, 2019a).



**Figure 5.** Malnutrition Source: <u>https://www.validnutrition.org/malnutrition-definition/</u>

Undernutrition and obesity can lead to effects across generations, as both maternal undernutrition and obesity are associated with poor health in offspring. However, because of the speed of change in food systems, more people are being exposed to both forms of malnutrition at different points in their lifetimes, which further increases harmful health effects.

Obesity is a complex problem, caused by many interconnected factors including genetics, our environment, and our access to, as well as affordability and awareness of healthier choices. Over the past century, our food systems and environments have shifted from a focus on seasonal, fresh and relatively calorie-poor staples with minimal processing or meat, to ones where junk foods and processed foods are ubiquitous, heavily advertised, hugely profitable and for many communities, arguably the only feasible "choice." As a result, poor nutrition is now the leading risk factor for disease (WHO, 2019).

According to Park et al. (2012) and Pulgaron (2013) childhood obesity is associated with immediate adverse consequences, such as psychological problems and lower educational attainment, and a higher risk for many harmful comorbidities later in life, such as type 2 diabetes mellitus, dyslipidemia, non-alcoholic fatty liver disease, hypertension, and coronary heart disease.





The prevalence of childhood overweight and obesity has increased in most countries in the last decades. The environment from conception to childhood could influence the child's future health. The first 1000 days of life start with a woman's pregnancy and offer a unique window of opportunity to contribute to obesity prevention (Mameli et al., 2016).

Severe obesity is a serious public health issue, which affects a large number of children in Europe. Because of the impact on educational, health, social care, and economic systems, obesity needs to be addressed via a range of approaches from early prevention of overweight and obesity to the treatment of those who need it (Spinelli et al, 2019).

The WHO European Region established in 2007 the Childhood Obesity Surveillance Initiative (COSI) study. The COSI collects high-quality data on the childhood obesity prevalence and energy-balance-related behaviours. These data enable countries to set national targets, monitor trends over time, make comparisons between countries, and over time, to evaluate the effectiveness of obesity prevention efforts. The aim of this work was to present the prevalence of severe obesity in school-aged children from 21 countries participating in COSI (Spinelli et al, 2019).

The recent study shows that the prevalence of severe obesity varied greatly among countries, with higher values in Southern Europe. According to the WHO definition, severe obesity ranged from 1.0% in Swedish and Moldovan children (95% CI 0.7–1.3 and 0.7–1.5, respectively) to 5.5% (95% CI 4.9–6.1) in Maltese children. In many countries, 1 in 4 obese children was severely obese. Severe obesity was more common among children whose mother's educational level was lower (Spinelli et al, 2019).



Figure 6. Prevalence of pre-obesity, obesity (not including severe obesity) and severe obesity Source: https://www.euro.who.int/\_\_data/assets/pdf\_file/0019/400654/COSI-Severe-Obesity-FS-ENG-LowRes.pdf





The reality, however, is that most of the world's population live in places where overweight and obesity kill more people than underweight. Obesity affects people of all ages, all geographies, and all socioeconomic backgrounds. The world will have more obese children and adolescents than underweight by 2022 (WHO, 2019b).

At the same time, in certain parts of the WHO European Region, there is a double burden of malnutrition, characterized by the coexistence of undernutrition (being underweight for one's age, too short for one's age (stunted), too thin for one's height (wasted), or deficient in vitamins and minerals (micronutrient malnutrition)), along with overweight, obesity, or noncommunicable diseases, within individuals, households, and populations, and across the life course (Kolčić, 2012).

#### Conclusion

The first 1000 days of life, when optimal nutrition and environmental influences during the critical period of individual development influence the health of the developing organism, which determines the quality of life in adult age.

Malnutrition – including undernutrition, overweight, obesity – can have major benefits for child health and well-being, but also for national health care services and economies. Malnutrition has long-term health and social consequences reaching into adulthood. According to the recent study of the Childhood Obesity Surveillance Initiative (COSI) shows that severe obesity is a serious public health issue in Europe (Spinelli et al. 2019, Williams et al. 2020). The results of the study also show that a large number of children in Europe suffer from overweight and obesity.

Ensuring that children consume healthy diets is important for achieving the UN Sustainable Development Goals (SDGs) related to no hunger (SDG Goal 2), good health and well-being (SDG Goal 3), quality education (SDG Goal 4), no poverty (SDG Goal 1), economic growth (SDG Goal 8), and more (Sachs et al. 2019, UN, SDGs).



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### Nutritional principles

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#### Presentation of Józsefvárosi Egyesített Bölcsődék - Judit Koscsóné Kolkopf

The Józsefvárosi Egyesített Bölcsődék (JEB) Budapest VIII. District Józsefváros operates under the auspices of the Local Government. Józsefváros is a centrally located district of Budapest, the capital of Hungary. This district is a student city, home to 14 universities.

73,000 people live in Józsefváros. The social composition of the population is rather heterogeneous. There is a high-level skilled and socio-cultural disadvantaged. The district is divided into 11 quarters. The architecture of the quarters is significantly different, featuring modern, historic architecture, but there is a slump of socially degraded housing stock. The population of neighbourhoods is considered to be a separate indicator in terms of housing status, educational attainment, and income.

The social situation of the families of the users of the nurseries is different. Considering the characteristics of the care area, JEB provides professionally thoughtful, high-quality compulsory and voluntary services that focus not only on children under the age of three but also on their surrounding families through various programs.

In 2019, in Józsefváros there will be 2,435 children aged 0-3. The JEB provides them with nursing care at 492 places under the Child Protection Law. JEB operates 7 member nurseries, which are located in different geographical locations of the district. Parents can send their children to the nursery closest to where they live.

197 professionals and technicians' workers work at the Józsefvárosi Egyesített Bölcsődék. The goal of all our employees is to keep children raised in our nurseries open to the world. They are independent, healthy and accept the basic rules of social coexistence.

#### JEB's public catering strategy – Dorottya Molnár-Kötél

The JEB has 7 member institutions and 7 kitchens in the nurseries. In these kitchens, meals are prepared for children, workers, and the elderly. Our kitchens are directly managed by the food managers. Our food managers have an extremely wide range of tasks every day. Eg: menu planning, ordering, storing, managing food, managing cooks, supervising safe cooking, observing/enforcing the HACCP system, monitoring children's meals.

#### The legal background of our catering:

Frasmus+



In Hungary, public catering is regulated by law: 37/2014 EMMI decree on nutrition requirements for public catering. This legislation covers all aspects of public catering, from staffing through the raw materials used to the quantities of food.

#### *Legislation for the age 0-3:*

- Whole milk or semi-skimmed milk can be given to them.
- Three portions of vegetables excluding potatoes or fruit, at least one portion of them in raw form.
- Two portions of cereal-based food, one portion of which must be wholemeal at least every two days.
- No fried food can be given.
- In the average of ten food days, the added sugar content may not exceed 10% of the total daily energy.
- Milk containing 4 litters of milk or an equivalent amount of calcium on average per 10 days of feeding.
- 1.5 g of salt per person per day (including the salt content of food).

#### Internal control of our catering system:

JEB has created its own internal regulations on nutrition, which is closely linked to health education. Our nutritionists are highly educated and have many years of experience in child nutrition. As part of our nutrition policy, children are provided with fresh vegetables or fruits for all meals, and they have been introduced to the use of reform ingredients for cooking (couscous, millet, oatmeal, bulgur, buckwheat), all to make them aware of the diversity of food. From their nursery diet, we banished the semi-finished and fast food. All dishes are prepared fresh in our kitchen. Our current menus are always prepared by our experts with high expertise. New foods appear every month, making the diet even more varied.

The success of our meals can also be measured by the fact that parents regularly visit our specialists and give positive feedback about the food. Encouraged by this, we compile each month a collection of recipes from the 'favourite' dishes and upload them to our website so that parents can prepare them at home. From these collections, a recipe book was published in both Hungarian and English languages.

#### The diet catering system in our nurseries

Food allergies are on the rise worldwide. There is also an increase in the number of people requiring diets due to food allergy in Hungarian catering. Providing more and more children with unique nutritional needs is also a big challenge in our nurseries.

The right therapy for children with food allergies is a well-designed diet. The point of this is to eliminate certain foods from the diet and, if necessary, replace them with dietary products. Regulation (EU) no 1169/2011 of the European Parliament and of the council, which states that the most common allergens should be indicated on food labels.

Our nurseries have the conditions for preparing dietary meals, so we can provide all the diets you require. An important aspect of dietary nutrition is to skip the ingredients as much as the diet requires.

It is imperative to provide a diet for children whose diet is prescribed by a specialist. The decree defines what kind of medical certificate we can accept.



The diet menu can only be prepared by a qualified dietitian. The preparation of the diet may be carried out by a diet cook or, under the supervision of a dietitian, by a generally qualified cook.

When purchasing raw materials, we purchase dietary products exclusively from reliable sources. It is important that you always check the labels every time you buy a well-known product because the manufacturers reserve the right to change the ingredients and the manufacturing technology.

Dietary foods are stored on a separate shelf, separate from other foods.

#### The cooking process:

Milk protein and egg allergy foods are cooked together with normal foods to the point where the allergenic raw material would come into the food. Here we must separate the food preparation process, and henceforth the preparation of the diet should be totally separate from the normal food.

When serving in the kitchen, place the diet food in a separate container with the name of the child. Care should be taken to avoid contamination of the food with allergenic substances during food delivery to the group or when serving the diet to a young child.

It is good for a child in need of diet to integrate into the community and to develop his / her psychosocial development if he or she can eat food like theirs with their peers. That is why our experts strive to make dietary foods look like normal foods. However, for this reason, everyone should be careful not to replace the diet with normal food or another diet.



Photo 1. Cooking workshop





Photos 2 and 3. Diet foods preparation

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## Nutrition from zero to three years: the choice of food, the Mediterranean Food Pyramid

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Paying attention from early childhood to children's eating habits is a necessary activity especially if it is also carried out in kindergarten. Therefore, proposing proper nutrition is particularly important to prevent overweight, obesity, risky behaviours, etc.

The infant, before being such, has already tasted the taste of certain foods, those that the mother took during pregnancy, since already in fetal life, man activates his sensory system. The mother's diet also influences the composition of amniotic fluid that offers the child olfactory and taste stimuli.

The child, therefore, appreciates flavours that belong to the "culture" of the mother. The human being can recognize five types of taste: sweet, bitter, salty, acidic and umami. Of these, the only taste of sweet is present since the neonatal age, while the attention to salty taste develops in later times. Bitter and acidic tastes develop in even more later times and are linked to a much more elaborate evolution.

The term "weaning", normally used to indicate the administration of the first gruel, means "removing a vezzo" because a "vezzo" can lead into a habit that is mostly harmful. The natural end, however, is the conquest of the ability to feed itself, moving from milk as the only food to other semi-solid and solid foods to an adult diet.

The introduction of new foods in this age group is appropriate to provide an adequate intake of energy, micro and macronutrients. The maturation of the nervous, gastroenteric and kidney systems gives the child the opportunity and the ability to receive solid foods with different nutrient density, consistency and mode of intake.

In childhood, the preference for a given food is directly proportional to the frequency of previous exposures to that food (a mechanism that is no longer present in adulthood): it is, therefore, appropriate to resubmit several times and patiently a food that had been initially refused and, after a time-varying from child to child, there will be a gradual acceptance of it.

Socialization helps the child to accept new (or generally unwelcome) food, helping to overcome the phenomenon of neophobia often present and proportional to age, sometimes interrupting the rejection of food by the child. In the second year of life, the child begins to manifest his preferences and his refusals, it is the period of the "no" that he learns to manage as a sign of strength and power towards adults.

The rejection of food can become a way of asserting one's personality, an effective way if worried adults always propose new foods in the hope, often vain, of meeting their demands. In the second year, the most important goal for him is the achievement of autonomy, even at the table.

The diet must allow a correct and balanced supply of nutrients to the body. The physiological functions of food can be listed in "energy function" that is to provide energy for the performance of physiological activities and is carried out by carbohydrates (glucides) and lipids; "plastic function" i.e. providing matter for the construction, maintenance and renewal



of tissues, is carried out by proteins, some lipid components and, to a secondary extent, by glucides.

Some minerals such as Ca, P, Mg, perform a plastic function as they are among the constituents of the skeleton and teeth; "regulatory function" to control and modulate the biochemical reactions that take place in the body, is carried out by vitamins and minerals but also by water and fibres.

In the 1-3 years age group, the main changes in nutrition relate to the progressive inclusion of all foods in the diet and the completion of their administration in solid form. As for the breakdown of meals, the child will be gradually accustomed to eating at regular intervals, with a food scan at 5 times of the day: breakfast, snack, lunch, snack and dinner.

In this way the child will learn the regular rhythm of meals and gain greater capacity for selfregulation than the continued availability of food. The frequent nutritional errors that are often detected are: breakfast not adequate; monotonous diet; incorrect energy breakdown in the day (too many snacks, energy intake at dinner major than at lunch); excessive intake of cured meats, meat, cheeses, sweets and sugary drinks, have a snack before going to bed, forcing children to eat when they are not hungry or feeling satiated.

On the contrary, healthy eating habits need to be established:

breakfast is the first meal of the day after fasting at night and should be nutritious and balanced. After the 1st year, everyone can take milk with biscuits or biscuits or milk and cereals (in which there are plant proteins that contribute to growth). In mid-morning it is best to avoid snacks using fruit instead. The snack may consist of milk and cereals or yoghurt or smoothie / fresh fruit extract.

For lunch and dinner, there must always be a first dish, perhaps alternating pasta with vegetables or a unique dish. Vegetables must always be present every day, cooked or raw. Small tips for healthy eating habits: eat breakfast, use small plates, and moderate portions.

Avoid using food as a reward or punishment. Avoid the use of sweetened drinks instead of water at meals. Avoid the use of fruit juices as fruit substitutes. Increase the use of fruits, vegetables and legumes in daily eating.

ENERGY REQUIREMENT IN THE FIRST THREE YEARS OF LIFE						
	0-1 age	1-2 age	2-3 age			
PROTEINS	10-12%	10-12%	10-12%			
LIPIDS	> 50%	30%	25-30%			
CARBS	40%	50%	55-60%			

#### Table 1. ENERGY REQUIREMENT IN THE FIRST THREE YEARS OF LIFE



#### The Mediterranean Food Pyramid (Tuscany): a very old story...

"... A good state of health requires a good knowledge of the primary constitution of man and the powers of various foods, from natural to those derived from human masters. But nutrition alone is not enough for a good state of health. There must be physical activity, the effects of which must be recognized. The body gets sick when you have deficiencies in nutrition or exercise..."

#### (Hippocrates, 480 BC)

"... vegetables, especially herbs, including aromatic ones, are to be preferred as the main foods of every day, consuming the seeds. Cereals (wheat, barley, oats in the form of herbal flour) and legumes (chickpeas, lentils, green beans) are naturally recommended. Fish should be preferred among animal foods.

Among the terrestrial animal, meats are allowed those of lean animals. Get a lot of gym. It is worth the fruits and wine and the fish sauce..."

(Galen 170-180 A.D. "Around diets for business".)

From early childhood to adolescence, proper **PHYSICAL ACTIVITY**, ensures the maintenance of adequate body weight, the proper development of organs and apparatuses, promotes harmonic growth of the body, prevents important pathologies, develops strength, agility, resistance and much more.

In addition to the purely physical sphere, motor activity plays a decisive role in psychological, educational and social terms. In younger children, being and playing among others teaches sociability, loyalty, friendship, respect for rules and acceptance of defeats: all fundamental aspects in the process of growth.

A very important aspect is the **CONVIVIALITY** understood as the pleasure of "stay at the table with others". The convivial meal is the one in which one confronts, savouring tastes and foods that have a history and a symbolic meaning, linked to the local traditions of the society of belonging and that are handed down from generation to generation. Conviviality as sharing of food promotes dialogue, reflection, and the pleasure of sociality.

**AQUA** is important because any chemical reaction within our organism takes place in the water. Not drinking enough involves a state of dehydration and can lead to a whole range of consequences, which depend on the degree of dehydration and the age of those who dehydrate. And the smaller a child is, the more he can dehydrate: under the year, 24 hours of dehydration are enough to achieve a condition that is not compatible with life... (takes at least 90 ml per kilo of weight).

**CEREALS** are an important nutritional intake of carbohydrates and while they represent only 1% of the human body, they are the most important nutritional principle of our diet as they cover 40 to 70% of the calorie requirement. The consumption of whole grains is very useful because they are rich in all the substances contained before the milling.

Avoid consuming refined grains if possible: the flour "00" widespread in supermarkets and also used in household uses, is obtained through the industrial grinding of the grain of wheat that involves the elimination of the germ (the nutrient heart of the grain that contains amino acids, acids fats, mineral salts, B vitamins and vitamin E) and bran (the outermost part, particularly rich in fibres). All this leads to an impoverishment of the raw material, from this grinding you get a refined flour that is maintained for a long time but is terribly depleted and rich in sugars.





**FRUIT and VEGETABLES** have content of vitamins, mineral salts, fibres, water, very important for the body and necessary especially in this phase of growth.

**LEGUMES** used as food, fresh or dry represent the 2nd most important family in human nutrition after cereals. They contain protein (twice as many cereals), carbohydrates, vitamins especially of group B, fats, fibres, mineral salts.

**WHITE MEAT** (preferably from non-intensive farms) They are those of young animals that in adulthood would be considered red (calf, lamb, pig), in addition to those of rabbit, chicken, turkey.

**FISH** whose composition is quite like that of meat and whose main differences relate to the characteristics of proteins, the different quality of fats, in particular the presence of polyunsaturated fatty acids (omega 3).

**EGGS**: An egg with an average weight of 55 grams provides about 70 kcal with the content of vitamins (group A, D), group B (B1, B2, B12, PP) and discrete dose of vitamin E, mineral salts (calcium and iron amounts comparable to those provided by meat but not bioavailable, a protein whose biological value is among the highest ever, fats, and substances with excellent antioxidant properties (lutein and zeaxananin).

**MILK**: composition of water (86-88%), fats (3 - 5%), sugars (4 - 5%), protein (3 - 4%), kcal/100 (60/65), vitamins (A, D, E, B1, B2, B12, Pantothenic Ac., PP, C), mineral salts (Ca, P, K, Na, Cl).

**YOGURT** is the product obtained from milk fermentation with: Streptococcus thermophilus and Lactobacillus delbrueckii subsp. Bulgarians and must contain live ferments, in large numbers, until the expiry. Compared to milk contains Ac. (derived from lactose), minus 30-40 % of lactose, peptides and amino acids. Unchanged the content in salts, less the number of vitamins. Its nutritional interest is due to the presence of microorganisms capable of inhibiting the neurological lychee flora (batteriocine), stimulating or inhibiting gastrointestinal mobility, reduce enzymes in the transformation of procarcinogen substances into carcinogens, encourage the activity of vitamins B and C, improve the absorption of Ca, Fe, and P, in addition having a lower content of LACTOSE may be recommended to intolerant to this carbohydrate.

**RED MEATS** are to be consumed in moderation (no intensive farms) are distinguished in meats from equines or cattle and are generally meats of adult animals (beef, pig etc.), or in black meats generally from a game such as the wild boar. The content of proteins with a high biological value, however inferior to eggs and milk, are easily digestible foods.

BUTTER High fat (82-90%), Water (16%), Non-fat Dairy Extract (2%)



#### THE NEW FOOD PYRAMID therefore recommends:

- Daily exercise.
- Moderate total consumption of calories and special attention to:
  - Healthy fats (mono and polyunsaturated) (extra virgin olive oil, omega 3/6).
  - Carbohydrates from wheat, oats, and wholegrain rice.
  - Fruits and vegetables in abundance.
  - Balance in the amount of protein (legumes, fish, white meats, eggs).
  - Reduced consumption of red meat, wheat and rice.
  - Reduced consumption of red meat, butter, refined cereals, sugar.
  - Beware of trans-saturated fats because they promote the increase of LDL cholesterol and slow down metabolism.



Figure 1. Daily physical activity, conviviality, abundant water intake

Sourse: LINEE GUIDA per una sana alimentazione. Revisione, 2018. https://www.crea.gov.it/documents/59764/0/LINEE-GUIDA+DEFINITIVO+%281%29.pdf/3c13ff3d-74dc-88d7-0985-4678aec18537?t=1579191262173

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## Food as a tool for inclusion and intercultural integration. Food as a social event. Meal as a moment of socialization, sharing and reciprocal improvement

#### Alessandra Lotti a.lotti@arcacoop.it Educator Fiordaliso nursery (ARCA Cooperativa Sociale)

#### **Educational lunch in ARCA's nursery**

The lunch is a moment full of emotional and relational significance. In fact, the meal is not just nourishment, but it also characterises a special occasion for meeting, discussion, learning, socialisation and exchange.

Therefore, special care shall be reserved for the organisation of this moment, involving the children since the preparation of the table, encouraging the older ones to serve themselves or with an adult's help, promoting in this way the acquisition of more autonomy.

During the lunch, the educators interact with the single child, respecting and recognizing his rhythms and his personal competences, helping him when there is the necessity and sustaining at the same time the intimacy and the relation with the small group with which he shares the table, thanks to the spontaneous conversations, linked to the experience' socialisation.

Fiordaliso nursery welcomes 40 kids from 6 months to 3 years old. The nursery is composed of two class groups: the blue class (from 6 months to 2,5 years) and the yellow class (from 2 to 3 years old).

The nursery has a kitchen inside, managed by a Cook.

The working team has started a project (a few years ago), designed with the pedagogical coordinators, to offer to the children the opportunity to be active protagonists in the nursery life and to help them to gain confidence in themselves and in their abilities.

In that way, children become aware of what they will eat that morning: a calendar indicates the cook of the day and a pot boils at the sound of a song:

"Boil, boil pots, my baby's food... Boil a little more... who knows what I'll eat"

Erasmus+





**Photo 1.** The calendar that shows "the cook" of the day through personal signs chosen by kids. The cook of the day will open the pot to look inside the ingredient of the meal of the day.

The parents were involved to set up the "pot corner" and a sign says who will be the waiter for the day. In Turn is a word at first incomprehensible for everyone: though slowly the children learn to wait for their moment:

- to receive the glass and the plate of fruit or pasta,
- to wear the apron,
- to go to the kitchen with the cart to the cook,
- to set their own table.

Erasmus+







**Photos 2, 3 and 4.** The lunch panel with the aprons, the "chef of the day" and "the waiter of the day".

#### The right to be Autonomous

Little by little, the boys and girls learn to use the water from the jug by themselves, the cheese from the cheese bowl, the pasta and the vegetables from the tray with ladles... up to the use of a special knife without a blade, to cut the omelette or cheese.

At the end of lunch, the teacher proposes to children also "the reorder": they fold the bib; all the dishes and utensils used are placed on the cart; the cook brings the cart back to the kitchen.

Everything is because is not just what you eat but HOW YOU EAT. You are at the table because it is nice to talk with your classmates and the educator.



Lunch becomes an important opportunity to play and stimulate curiosity aroused by food. The little ones manipulate, taste and mess meanwhile the older ones observe, evaluate, ponder the consistency of food, water, and the use of dishes.

During lunchtime, children go to the bathroom by themselves without fear of being alone and everyone is given the time to be able to do it by himself without being judged: you are helped when needed.

In the nursery, **autonomy** must be a crescendo:

I will not leave you alone, I will not replace you, but I will stand by you, sometimes even with a simple glance, you can offer strength, courage, and determination to DO!

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Erasmus+



### Nutrition and social inclusion of children in ECEC and their families

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#### Introduction

Early childhood nutrition has a high impact on the future health condition of the child as well in the development of healthy eating habits, which is not exhausted in childhood but extends throughout the life cycle, with significant expression in the development of chronic diseases such as diabetes or hypertension.

In Portugal, 29.6% of children aged 6 to 9 years are overweight. This value is even more significant in the age group from 1 to 3 years of age, reaching 32.6% of children.

In 2012, an investigation – Study of the Food Pattern and Childhood Growth – was carried out in Portugal. The main patterns of infant feeding in Portugal were found to be: excessive dairy consumption, low vegetable intake other than soups (90% of children ingested daily soup, but not vegetables as a side dish), regular consumption of sugary drinks and sugary processed products; Excessive use of processed sweet and salty snacks, protein intake four times higher than recommended, intake of excessive portions in relation to nutritional needs, excessive intake of salt.

Families with less economic resources and more exposed to social vulnerability factors tend to introduce earlier foods with higher caloric density and lower nutritional wealth. This information remains current and is consistent with the data in the World Childhood Report, released by UNICEF in October 2019. This report shows that one-third of children under 5 worldwide is malnutrition, which results in growth failure, underweight or overweight. Two-thirds of this group is still at risk of malnutrition and hidden hunger because their diet does not guarantee the necessary nutritional support to maintain a positive state of health.

Child nutrition is a topic that cannot be separated from the social and economic context of each country. Access to food and the human right to adequate nutrition are conditioned by these factors. Despite existing national and European policies, poverty and social exclusion continue to affect a significant number of people, especially vulnerable groups such as children, women, and the elderly.

In this way, considering this framing, the objectives of the FINE! Project and the European, national, and local context, the short-term joint staff training that was hosted by Centro Social de Soutelo, in October 2019 aimed to promote the reflection on the topic of "nutrition and social inclusion". The training focused on the exploitation of some concepts like "social equity", "human right to food" and provided a conceptual framing of these ideas, but also a characterization of the local context in the municipality of Gondomar. Besides this, there were study field visits to three projects that implement a social intervention through food and nutrition and that aim to fight poverty and hunger; promote equitable access to food resources and avoid food waste, with the ultimate aim of contributing to the promotion of access to food for all.





Photo 1. Visit to the Fine! Delegation to CSS Kitchen

#### 1. "Nutrition: an issue of social equity" (Speaker: Dr Sara Rocha, ACTUAR)

ACTUAR is a Portuguese non-profit organization, with NGO status, founded in 2007. Its mission is to contribute to the promotion of development especially in rural areas and vulnerability situations. It also works in defence of human rights and the promotion of sustainable and fair food systems. Through strategic partnerships with several national and international organizations and institutions, they seek to work in a network to answer current challenges to food sustainability, to fight poverty and eliminate all forms of social exclusion and inequality and guaranteeing the Human Right to Adequate Food and Nutrition. ACTUAR develops activity in different areas: Technical assistance; facilitation of networks of civil society organizations; exchanges of knowledge, advocacy; training and capacity building, applied research, formulation, management and evaluation of projects and programs.

This lecture assumed a very important role in the framing of the activities of the training course, providing a description of the status of this problem worldwide and in a national context. It also enlightened the concept of "human right to food", that is described as the "inherent human right of all persons to have regular, permanent and unrestricted access, whether directly or through financial purchases, to safe and healthy food, in adequate and sufficient quantity and quality, commensurate with the cultural traditions of their people and ensure a life free from fear, dignified and full in the physical and mental, individual and collective dimensions". Access to proper food promotes human dignity and inclusion in society.





Figure 1. Extract from Actuar Presentation

# 2. "Social+: a local program" – Gondomar City Council (Speaker: Dra. Joana Costa, Chief of the Division of Social Development of the Gondomar Municipality)

Gondomar City Council is the entity with competence for managing the territory of Gondomar Municipality. It is from its responsibility in the terms of the law to promote and protect the proper interest of the populations in matters as equipment, energy, transport and communications, education, heritage, culture, science, leisure, sport, health, social work, housing, environment and other areas that are related to the territory management and promotion of its development.

Social + is a program promoted by the Gondomar City Council to fight poverty and social exclusion of vulnerable families living in the municipality for at least 6 months. It aims to respond to emergent needs through social and financial support in areas like health, housing, and food. One of the actions of this program is "+Food", a local program that supports families with monthly support in the form of a card or voucher that can be exchanged for food at the local stores that joined the program. Networking small local businesses such as fruit shops, butchers, fishmongers and grocery stores where families can exchange their vouchers is also a way to promote the local economy. Families can exchange their vouchers for foods of their choice, although there are some restrictions (e.g. families cannot buy alcoholic beverages with this financial support). In 2019, the program reached 239 families and it represented a monthly investment of 6.750 euros. The program is a local complement of other programs/responses and it does not replace them.

#### 3. Banco Alimentar Contra a Fome (Food Bank) – Porto Delegation

Banco Alimentar Contra a Fome is a non-profit Portuguese organization that aims to fight food waste and simultaneously support people that are in economic and social vulnerability. It is member of the European Federation of Food Banks. Its action is supported by social civil donations, patronage, and volunteering. Through the year, the food bank collects nonperishable and perishable foods that are given to organizations that work with disadvantaged people. The organizations prepare meals that are distributed to their beneficiaries (e.g. organizations that support the homeless) or distribute the food to people that are proven to be in need or poverty. There are two major biannual campaigns in May



and December that occur in the supermarkets all over the country. Volunteers appeal to customers to give non-perishable foods.

Volunteers collect, transport and organize the donations in the food bank local facilities. Through the year, this organization also works with food companies, supermarkets, local markets of fresh foods collecting all the surplus of foods that are not consumed or sold to customers. They play a major role in supporting local organizations in their intervention with vulnerable families. In 2017, the Porto food bank supported 69.000 people, through 410 organizations and collected 3834 tons of food.



Photo 2. Visit to the Fine! Delegation to Food Bank

#### 4. Fruta Feia – Porto Delegation

Fruta Feia is a Portuguese Cooperative that has a national scoop through several delegations/distribution points. Fruta Feia promotes the change of the market trend to standardize food and to waste "ugly" fruits and vegetables. This project aims to fight the market inefficiency by changing consumption patterns. It's a market that values farmers and consumers and also that prevents food waste and resources wasted in their production. They also develop educational projects with children.





#### Photo 3. Visit to Fruta Feia Distribution Point

#### 5. Refood – Porto – Foz do Douro

Refood is a non-profit organization whose activity is based on volunteering and that aims to reduce food waste and hunger in local communities. This organization was founded in 2011 in Lisbon and spread its activity all over the country. Nowadays, there are 51 delegations of this project. Its action tries to resolve the problem of "food rescue" in the commercial consumer environment. Each delegation has a group of volunteers that collect food that would be wasted if not reused (e.g. surplus foods from restaurants). The food is prepared in portions and distributed to people that are in need of supporting them to have a nutritious diet. Refood Foz do Douro is an Oporto Delegation that has been operating since 2014. Refood Foz do Douro operates 6 days per week and supports an average of 50 families.

#### Conclusions

The short-term joint staff training held by Centro Social de Soutelo aimed to promote the reflection about nutrition as a tool of social inclusion, but also to share inspirational practices. We believe that this training course raised awareness on this topic and promoted the acquisition of new concepts and ideas on the topic. Through the training, it was very clear that the civil society intervention assumes a very important role in the promotion of access to food and proper nutrition, side by side with governmental and European policies, but also of the role of the educational structure in providing support and training to vulnerable families.





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# Pre-schools as providers of Training and Education for families, with attention to vulnerable groups

#### Practices in partner organizations

Kindergarten №37 "Valshebstvo" – Sofia, Bulgaria Kindergarten Srčeko - Vratišinec, Croatia JEB Józsefvárosi Egyesített Bölcsődék – Budapest, Hungary Arca Cooperative Sociale – Firenze, Italy Centro Social de Soutelo – Rio Tinto, Portugal

Malnutrition is a shared concern worldwide and it is important to make all generations aware of this issue.

As educational and training agents, the following institutions present strategies used in order to educate and motivate all the intervening parties (school, family, community) to work in the same direction, to provide a rich, nutritious, appealing and diversified food to all children as this is the basis for healthy development.

#### Kindergarten №37 "Valshebstvo" – Sofia, Bulgaria

Kindergarten №37 "Valshebstvo" is a municipal kindergarten, opened in 1977. It provides educational services and care for children in early and preschool years. It is located on the territory of Vitosha district, Sofia Municipality, Pavlovo, 1, Belmeken Street.

Every year in Kindergarten №37 "Valshebstvo" parents, teachers and children participate in a cooking workshop. It strengthens the children's knowledge about healthy eating.

Every year we organize joint sports activities for children, parents and teachers. Our aim is to provoke and motivate children and their families' interest in various physical activities and healthy lifestyle. In addition, we want to stimulate the interest of families in active participation and cooperation in daily kindergarten's activities.

During the 2018-2019 academic year, the children by each kindergarten group prepared an alphabet picture book, in which for each letter of the Bulgarian alphabet children put a picture of a fruit or a vegetable and a short description of its benefits for our health like vitamins, minerals, etc. Examples for the letter "B" and the letter "T".

Figure 1-2. Examples for the letter "B" and the letter "T" from the alphabet picture book













Photo 1 & 3. Photos from Fruit and Vegetable Workshops with children and parents in kindergarten №37 "Valshebstvo"





Photo 2. Photo from annual celebration in the kindergarten №37 "Valshebstvo", performed by children for the parents

During the same academic year, the annual celebration of Group III "Winnie the Pooh" was dedicated to healthy eating. Under the motto: "Growing up healthy and strong!", the children involved their parents in the wonderful world of health. With many songs and games, children showed why taking care of their health is so important.

#### Kindergarten Srčeko - Vratišinec, Croatia

Kindergarten Srčeko works with a goal to develop mutual support with parents for the welfare of the children, which includes the curriculum of modern preschool education. We are extended hand to a family are we are motivated to develop and encourage good cooperation with parents to immediate children's environment. By improving cooperation, the quality of kindergarten' grows, and children can develop their natural potentials for growth, development and learning. Family and kindergarten are important factors in education and are crucial for proper psychophysical and psychosocial development. That's why we encourage and develop cooperation with parents through:

- daily communication,
- parents meeting with educators and external professional associates,
- through volunteering of parents in groups with the goal of socializing with parents,
- parent counselling, individual meetings with educators,
- workshops for parents and children,
- common meetings and celebrations of holidays, birthdays,
- children's events for parents, families and relatives,
- "travelling notebook" of children`s experiences,
- collecting ideas, opinions through surveys,
- common work on humanitarian and eco projects,
- departures to the parents` workplace or presentations of certain occupations when they come to the kindergarten,
- common trips of parents, children and educators,
- organizing common family sports events.

All these activities define our organization as children's second home.



Photo 4.5 Workshops for parents and children



#### JEB Józsefvárosi Egyesített Bölcsődék – Budapest, Hungary

Józsefvárosi Egyesített Bölcsődék provides daycare for young children from 20 weeks to 3 years of age. JEB consists of 7 nurseries. These nurseries provide users with basic mandatory services, as established by the Local Public Administration, and additional services.

The educational mission of JEB is to promote the balanced psychophysical development of children aged 0-3 years.

JEB works in collaboration with families, respecting their right to privacy, and engaging them in the education of children so that children become open to the world, independent, healthy and accept the fundamental rules of coexistence.

In our nurseries, we try to ensure, that nutrition is not only about meeting basic needs, but also about health education. In order to create a healthy lifestyle, we try to inform and educate parents, even the most vulnerable groups about the latest recommendations, and make our recipes available to them.

For example, we invite parents for a free lecture, which is given by a JEB's dietitian. For this occasion, we prepare with a Power point presentation. The main topics are healthy nutrition and the various foods and diets, which are necessary for the proper development of children.

Due to the Covid-19 pandemic in 2020, the nurseries were temporarily closing down. During this time came the idea that in the XXI century we can share information online. We used the most popular social networking site (Facebook) and we uploaded in a closed group "Nursery in your home" some recommendations and recipes. This group has been so successful, that even though the nurseries have already opened, fresh content is still posted on the site.



Figure 3. Recipe for the families in Facebook



Although it is not a direct method of education, but we believe, that sometimes "recipes of the month" page on our website is helpful. This contains those recipes, which were most loved by children in the given month. There was a lot of positive feedback on the site, so the JEB management decided to issue a recipe book from the description of the selected foods, to give parents direction about healthy child nutrition.

#### Arca Cooperative Sociale – Firenze, Italy

ARCA Social Cooperative is a non-profit organization in Florence that deals with the management of social, welfare and educational services in Tuscany.

The private services relating to the Childhood Area, divided mainly by age group are: Nursery; Play area; Center 1-6; Kindergarten. Within these services, Arca offers various projects and activities for children and their families.

Undoubtedly, one of the cornerstones of Arca Infanzia's work is the importance it attaches to the relationship with the families. Parents are in fact involved in multiple activities during the educational year. This is the direction of some communication strategies, widespread in nurseries, which concern the feeding of the child, right from the first approach with parents.

In the first assembly, at the beginning of the school year, together with information about the service, the nursery menu is presented and distributed to everyone. The cooks are available to parents for any clarification and information, giving priority to communicate with the parents of younger children.

During the year, in the meetings with the parents of their section, it is customary for the educators to show video recordings of the moment of the meal, in the more general presentation of the daily experiences of the children. Parents often marvel at the autonomy of their children and the serenity and pleasure with which they eat.

From these daily experiences, from the requests of parents who often go to the cook and ask how they can prepare a dish, or ask for advice on what they can cook, sometimes both meetings in the kitchen with cooks and meetings with nutritionists specialized in early childhood are offered. Providing solutions to mothers involves them and pushes them to enter another way of eating. In this way, the culture of the nest is transferred to food.

Sometimes a small vegetable garden is also made in the garden of the nest (created with the collaboration of families). Here the children will sow and plant some foods directly, take care of them, watch them grow and finally harvest them. In this way, every child can understand where food comes from and take care of it day after day.





Photo 6,7,8,9,10,11. Activities for children in the nurser



#### Centro Social de Soutelo - Rio Tinto, Portugal

Centro Social de Soutelo is an institution that provides care and education to children from 4 months to 15 years old from various social and economic backgrounds. We believe that creating healthy eating habits is the foundation in children's development. We also consider cooperation between family and school to be very important, so that children will grow physically, cognitively and emotionally in a healthy and balanced way.

Therefore, and in order to raise families' awareness on this issue, we organized lectures with paediatricians and nutritionists for parents, professionals and the community. We occasionally share articles related to the theme, to help and encourage families to find strategies that facilitate this process.

Being a school open to the community, families can participate in classroom activities by sharing recipes and cooking together with the children and their educators and still participate in a mealtime. We organized cooking workshops for parents.

Another strategy used to involve families is the daily sharing of images about the activities carried out with the children in the classroom. From food exploration and tasting. Visits to farms to learn and experience the origin of food and the production process. Cooking activities with the preparation of simple dishes (soup, bread, cookies, fruit salad, fruit jams, fruit juices...) In addition, the most important of all is the social moments of meal experienced daily between children and professionals and in their homes with their families.









Photo 12,13, 14,15 Food exploration and tasting



### *Eat Your Vegetables! The Importance of Nutrition in Childhood Development*

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> "Vegetables who doesn't eat He will not grow big He will not have pink cheeks Everyone will beat him." Form Bulgarian Children's Song

There are many cute and funny children's songs and rimes regarding eating and especially eating vegetables and fruits. Many parents use them encouraging their children to consume veggies. And many parents face difficulties making their children eat healthy food, try various nutritious products, or even to eat enough food of any kind. Is this really so important? Do parents and kindergarten professionals should worry too much if a child does not want to eat vegetables? Do they need to provide nutritious food and be careful with the children's diet? We will try to find some answers summarising scientific pieces of evidence regarding nutrition and its impact on children's physical and psychological development.

#### **Childhood development**

In the last decades, there is a boom of knowledge raise regarding human development and in particular the early stages of development – the prenatal period and the early and preschool years. Experts and researchers tend to discover more and more about the various mechanisms and processes underlying the miracle of growth and development. It is still known the great significance of the first periods of the human development for the whole subsequent development through the life-span. The human life starts with the merging of the two cells but plenty of factors, both biological and environmental, influence the reveal of the biologically predisposed program, the formation of the body and the psychological functions.

Bronfenbrenner's Bioecological Theory is one paradigm that provides an overview of this complexity. According to Bronfenbrenner, human development occurs due to so-called "proximal processes", the development processes of systematic interaction between person and environment. Those processes are numerous. They are very dynamic and intense, especially in the first developmental periods. Several interacting systems impact the development of the child. Black et.al. (2017) present a life course conceptual framework of



early childhood development that relies on Bronfenbrenner's developmental principals. According to them: "Multiple factors influence the acquisition of competencies, including health, nutrition, security and safety, responsive caregiving, and early learning; these domains interact with each other and can be mutually reinforcing through the process of development. All are necessary for nurturing care and occur through bi-directional interactions, initiated by both children and caregivers, and sustained by their environments."

#### Nutrition as a factor

Black et.al. (2017) clearly identify nutrition as one of the main factors that influence a child's development. It has been shown to have a substantial influence on long-term health and development. In the last decades, we have also plenty of research and information regarding healthy eating and lifestyle, organic food, nutrients, supplements, intakes, etc. We have more and more pieces of evidence regarding the influence of nutrition throughout the life-span but with crucial, irreversible consequences especially in the first periods of life (early and preschool years). United Nations Children's Fund (UNICEF) and World Health Organization (WHO) since years have campaigns dedicated to the first 1000 days (begin at conception and end at the start of the third postnatal year) and are trying to raise the awareness regarding the importance of nutrition for the sure early start, the unique window of opportunity.

The influence of nutrition starts also since conception, even before that. The prenatal period is a very crucial period from human development - the foundations of the whole body and body functions that this individual will have until the rest of his/her life. The fetus development is dependent on his/her mother's nutrition. The healthy and optimal development of the individual starts even before his/her conception and depends on the mother's health and nutrition at that time. For example, an undernourished mother during pregnancy will send a signal to her fetus that the environment outside might be harsh and the fetus will respond to this signal by reducing body size and altering metabolism for survival after birth (Barker, 2004). The fetus will then reduce its insulin secretion and increase peripheral insulin resistance, directing more glucose to the vital organs, including the brain and the heart, and less to insulin-dependent tissues (Barker, 2004). Such type of influences definitely has long-term effects on human beings. And many such types of influences are already known.

Developmental psychologists split childhood development into domains. We will review them together. On the one hand side, we mustn't forget that they are interconnected, on the other – it is difficult to split them. Many studies find positive and or negative effects usually in two or three of them. All the domains contribute to long-term childhood development, health status and learning. Better learning leads to school performance and school achievement. Better education is linked to better jobs, higher income, higher socio-economic status, better health care access and housing, better lifestyle, nutrition, and physical activity (Nurliyana et al., 2016). In short - overall well-being throughout life (Figure 1.).





**Figure 1.** Conceptual model of childhood developmental interactions and domains, (Adapted from Engle, et al., 2007)

# Nutrition and children's development - brain development, cognitive development, social and emotional development

Nutrition plays an important role in both prenatal and postnatal periods of childhood development. These are also critical periods of brain formation. Handa et.al. (2010) define nutrition as "probably the single greatest environmental factor that plays an important role in the maturation and development of the Central Nervous System (CNS)". The brain is the first organ to appear. It develops at a very rapid pace. At birth, it is almost a quarter from the adults' brain size. By the end of the first year, the brain size is almost 60 % of the adults' one. It will serve as a foundation for the development of cognitive, motor and socio-emotional skills throughout life. "Nutrient inadequacy during these periods may compromise the structural development of the brain" (Benton, 2008). Brain development lays the foundation for the further proper child's psychological functions development, i.e. his/her motor, cognitive, language, social and emotional domains.

It is not just the food! It is very much also the quality of the food! Schwarzenberg and Georgieff (2018) point out key nutrients that support neurodevelopment – omega-3 fatty acids, protein, glucose, zinc, iron, choline, folate, iodine, vitamins A, D, K, B6, B12, etc. Failure to provide key nutrients during the critical periods of brain development may result in lifelong deficits in brain function and may have serious consequences on early child's development. Many comparative reports (Nyaradi et. al., 2013; Prado & Dewey, 2015; Britto et. al., 2017) summarise findings from numerous studies for the impact on macro- and micronutrients on child's health and development. Early macronutrient undernutrition is associated with lower IQ scores, reduced school success, and more behavioural dysregulation (Grantham-McGregor, 1995).

Nyaradi et. al. (2013) report numerous epidemiological studies in different countries (Avon Longitudinal Study of Parents and Children, UK; Project Viva, USA; Danish National Birth Cohort Study; two studies of Inuit children in Arctic Quebec, Canada), that show a positive association between maternal fish intake (which is a rich source of omega-3 fatty acids)



during pregnancy and cognitive development in children. They find out statistical differences in various aspects of children's cognitive development (for ex. recognition memory, visual attention, hand and eye coordination, locomotor, social, speech and hearing performance, practical reasoning, etc.). There are also intervention studies of polyunsaturated fatty acids supplementation during pregnancy. So far, however, the results are conflicting. There are studies that report improved cognitive development but there are also studies in which significant differences are reported for children at the first months or couple of years of their life but not at a later stage when they are 7 years of age. Some possible explanations are connected with the influence by various other factors (parental warmth, quality of the care, social stimulation, other nutrients taken, diet as a whole, illnesses, etc.), sensitivity and the type of assessment measures used in the research.

A special focus is the docosahexaenoic acid (DHA), type of omega-3 fatty acid. This is the component that is believed to be one of the main reasons due to which breast milk may improve the children's cognitive performance. There are consistent research results showing that the blood levels of DHA in formula-fed infants are lower than in breastfed infants (Nyaradi et. al., 2013). This topic has generated a great deal of scientific interest. Nevertheless, many conditional factors have influence but supplementation with higher doses and longer durations of DHA achieve a positive outcome in children's cognitive development.

Of interest is also the association between vitamin B12, folic acid, choline metabolism, and cognitive development. The metabolism of folate, choline and vitamin B12 is interconnected. They play an important role in many biological mechanisms. It is well known that folic acid deficiency between 21 and 28 days after conception, when the neural tube closes, predisposes the foetus to a congenital malformation, called a neural tube defect. Louwman et. al. (2000) studied the long-term effects of vitamin B12 deficiency. They compared children on a vegetarian diet by the age of 6 years of age, who might be more exposed to vitamin B12 deficiency and non-vegetarian ones (Animal products are the main source of vitamin B12.). They have assessed those children as adolescents. The vegetarian children had lower levels of fluid intelligence, spatial ability and short-term memory (even with currently normal vitamin B12 status) than the non-vegetarians. There are many studies and yet controversial findings. The impact of vitamin B12, folate and choline on children's cognitive development still needs a lot of investigation.

Over the past decades, a considerable number of studies has been published on the connection between iron deficiency/iron anaemia and cognitive development in children. Nyaradi et al. (2013) present findings that severe maternal iron deficiency during pregnancy may lead to newborn iron deficiency and associated long-term cognitive deficits. There are plenty of studies and iron deficiency is a well-researched one but still, there is a lack of epidemiological evidence or data from well-designed intervention trials demonstrating the impact of maternal iron supplementation on the cognitive development of healthy children. Grantham-McGregor & Ani (2001) reviewed a range of longitudinal studies and reported that anaemic infants had poorer cognitive and school performance in the long term. The effect of iron deficiency anaemia (IDA) on cognitive development could be mediated by poorer orientation or engagement and socioemotional functions (Nyaradi, et al., 2013). According to some studies (Nurliyana, et al., 2016), iron supplementation improves psychomotor development at 12 months and mental development and IQ but at the same time, some review of studies (Grantham-McGregor & Ani, 2001) conclude that short-term iron treatment trials in anaemic children did not show benefits in cognitive development but provide evidence that older anaemic children benefit from iron treatments. In any case, if an





iron deficiency occurs in very early life, the damage may be irreversible, and it may not be possible to reverse this damage with iron treatment (Grantham-McGregor & Ani, 2001). Studies also provide findings that supplemental iron in infancy increases adaptive behaviour at 10 years of age (Liu & Raine, 2016).

lodine deficiency is another critical micronutrient. Its relationship to cognitive development is extensively researched. It is well known today that iodine deficiency leads to cretinism in the child. The clinical manifestation of cretinism depends on the severity of iodine deficiency; the features may include mental retardation, speech and hearing impairment, upper motor neuron and extrapyramidal lesions. Mild to moderate postnatal chronic iodine deficiency is associated with reduced performance on IQ tests (Britto et.al., 2017). An earlier review and meta-analysis of 18 studies found a 13.5 point difference in IQ between iodine sufficient and iodine-deficient children (Britto et.al., 2017). A number of observational studies from iodine sufficient or mildly iodine-deficient areas of USA, Russia, The Netherlands, Italy and Spain have shown a significant association between mild maternal thyroid deficiency and cognitive impairment in children (Nyaradi et al., 2013). Although iodine supplementation is critical for severely iodine-deficient pregnant women, there is no general consensus about the effectiveness of iodine supplementation during pregnancy in countries with mild iodine deficiency.

It is believed that zinc is a vital nutrient for the brain, with important structural and functional roles (Nyaradi, et al., 2013). Zinc supplementation has a positive effect on the immune status of infants and may prevent congenital malformations (Shah & Sachdev, 2006). Similarly, to the above-mentioned nutrients, the relationship between maternal zinc status and the child's cognitive development has not been fully investigated and the findings we have been controversial. Nyaradi, et al. (2013) describes studies which associate low maternal zinc intake with lower levels of focused attention in newborns, but also placebo-controlled randomized trials where the placebo group children have higher results than the zinc supplemented group. The findings do not consistently show a positive relationship between maternal zinc status and cognitive development of children.

Overall, the reviewed nutrients have their influence on the child's development, but, as we see, the findings are still not sufficient and also very controversial. On one hand-side, it is important to study them separately and to try to identify their influence, on the other hand, nutrients in our body do not work in isolation. Nutrients interact with each other. That is why for some researchers (Benton, 2008; Nyaradi, et al., 2013) it is important to investigate the association between multiple mineral and vitamins and children's development. Nyaradi, et al., (2013) summarize findings from systematic studies and meta-analysis that state evidence that multiple-micronutrient supplementation might positively influence certain aspects of brain development in children and may result in higher fluid intelligence.

The research evidence from studies suggests that macronutrients, micronutrients, or vitamins and minerals play an important role in the children's development. However, the results are inconclusive. As we mentioned in the beginning, there are plenty of both biological and environmental factors that influence development. Prado and Dewey (2015) propose a hypothetical scenario of a child's experience as a mediator between nutritional status and motor, cognitive, and socioemotional development. They also point out factors that must be taken into consideration when discussing such type of influences: the amount and quality of stimulation the child receives from the environment, the timing of nutrient deprivation, the degree of nutrient deficiency.



According to Prado and Dewey (2015), the parallel influences of nutrient deficiency and stimulation from the environment on brain development may operate in several ways: additive effects, interacting effects, and mediating effects. Both nutrient deficiency and child's experience in the environment may have independent additive effects on brain development. Studies show that nutritional supplementation and psychosocial stimulation together result in greater improvements in child development than either intervention alone (Grantham-McGregor & Ani, 2001). Nutrient deficiency or intervention may affect some children but not others, depending on the amount and quality of stimulation they receive. Improving nutritional status may actually improve children's experiences and the stimulation they receive from the environment. According to Figure 2. the nutrition status affects physical growth and physical activity, which may, in turn, influence brain development through two pathways. The first pathway is through caregiver behaviour and interactions with the child, the second is through the child's interactions with the environment.



**Figure 2.** Hypothetical scenario – a child's experience as a mediator between nutritional status and motor, cognitive, and socioemotional development (Prado, & Dewey, 2015).

#### **Children's Diet**

What do children eat? This is the next, very important question that researchers pose when writing about nutrition and its influence.

The focus of nutrition after birth is milk-feeding. According to WHO's infant feeding recommendation in the Global strategy on infant and young child feeding (WHA55 A55/15, paragraph 10): "Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers. As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health."

There are many invaluable effects of breastfeeding on child's development. Breastfeeding is associated with healthier body composition. It has both clear short-term benefits for child health (reducing mortality and morbidity from infectious diseases, encouraging healthy food preferences, and promoting the establishment of the healthy gut microbiome (Goldsmith,



et. al., 2015), etc.), and long-term as well (flavour acceptance and preference and subsequently food choice in later life (Trabulsi & Mennella, 2012); increased child intelligence, educational attainment, and income at the age of 30 years (Victora, et al., 2015). Breastfeeding also enhances maternal-infant bonding, which is associated with improved maternal care and enhanced emotional development in the infant (Engle & Huffman, 2010).



A review of 17 observational studies of breastfeeding presents evidence that optimal breastfeeding supports improved performance in intelligence tests in childhood and adolescence, demonstrating an intelligence quotient (IQ) increase (Horta et. al., 2015). Children who had been breastfed for at least 12 months were more likely to have lower fat mass at the age of 4 years than non-breastfed children (Robinson et. al., 2009). According to A. Lucas (2005), breast-fed infants have a lower risk of obesity, hypercholesterolemia, high blood pressures, cardiovascular diseases, type 2 diabetes in adulthood.

At a later stage, what is important is the quality of the diet that is provided for the child. Fruits and vegetables are a great deal of it. Their consumption is also explored for its impact on academic performance. Research of this type is still limited, but Carroll (2014) reports several studies that have shown consistent associations between fruit and vegetable intake and better academic performance. According to a study with elementary school students, "students with higher fruit and vegetable intake were less likely to fail the literary assessment than were students with lower intake" (Carroll, 2014). She also provides a model for a possible relationship between those variables (Figure 3.). The exact relationship between fruit and vegetable intake and academic performance is still unknown. A potential explanation is that nutrients in fruits and vegetables help protect the body from infection and/or reduce the risk of nutrient deficiencies.

Recent studies (Spencer, et. al., 2017; Miller, et. al. 2017) put very high importance on fruits and vegetables intake not only at the early stages of human development but also later in life. Consumption of fruits and vegetables high in polyphenolic compounds that have potent antioxidant and anti-inflammatory activities can prevent and even reverse age-related cognitive deficits by lowering oxidative stress and inflammation.

#### Conclusion

Nutrition is one of many factors that affect the development of the brain and childhood development as a whole. Plenty of research has been done and still many researchers put a lot of efforts in revealing the undergoing mechanisms. Findings regarding many of the nutrients, we have summarised, are controversial or not inconclusive. But there are a variety of ongoing known and unknown factors. Despite the challenges and all the complexity of the matter, the identification of the role of nutrition in childhood development is of great importance. It is a factor that might be modified in order to optimise childhood development. With this regard, intervention programs that target nutrition deficiency supplementations are in focus. Some researchers (Nurliyana et al., 2016; Hurley et. al., 2016; Britto et. al., 2017; Engle & Huffman, 2010) go further and link nutrition intervention programs with early child development programs. They report much more effective long-term benefits for children's health and their psychosocial and intellectual development.

Jianghong Liu, commenting on her research in Science Daily (2016), said: "The bigger message is give children good nutrition early on. Not only will it enhance cognitive function but, importantly, promote good social behaviour. It's never too late to provide good nutrients!" Her colleague Adrian Raine added: "And it's never too early!"

So, take care of your children to eat their vegetables. But please, not just that, provide a stimulating environment and most importantly, love them!



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Erasmus+



### Eating and Feeding Difficulties in Young Children

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> "When I was in kindergarten, I didn't like the food that was served. I hated mealtime but for my mom, it was the most important! Now I am in 4th grade and she keeps asking what/how much I eat while I'm away at school. It's annoying!"

> > a 10 year-old boy

#### Introduction

Behavioural eating and feeding difficulties in young children constitute a wide spectrum, ranging from mild issues that do not involve major health menace, to severe issues such as malnutrition, the need for enteral feedings, and long-term multimodal therapy. Due to the high prevalence and the significance of early detection, prevention, and treatment of feeding difficulties and disorders, this article reviews some definitions (medical and psychological), basic information about types, environmental factors, and interventions (e.g. ways to support a child with feeding difficulties at home and kindergarten).

# Feeding vs. Eating: is there a difference and are they more than the amount and kinds of food offered?

When a child refuses to eat a certain food group or only eats a specific texture of food (for example), it can be difficult for parents/ teachers to determine whether it is a feeding or eating difficulties. The term "feeding" reflects the interaction (relation) that takes place between the parent (caregiver) and the child, and "eating" reflects the child's autonomous handling of food (e.g., reaching for food, opening the mouth, swallowing, chewing, etc.). These two kinds of problems fall under the same category in most of the medical classification (as disorders), and often have overlapping features. There are many commonalities between feeding and eating difficulties, and the destroyed relationship with food is the main one.

Feeding is an interactive process that depends on the abilities and characteristics of both parent and child. A young child is more dependent on the caregiver's attitudes and on the quality of their relationship in the development of his or her eating patterns. The process around the feeding (e.g. interactions, and feelings) and different models of communication used by parents, can support or hinder their children's healthy development and can affect parental satisfaction with parenting. The parents are the primary socializing agents of a child's eating style, the caregivers in the kindergarten are the second, and together they can play an important role in intentionally or unintentionally encouraging different eating



behaviours. Parenting feeding approaches may facilitate or impede the child's development of self-regulation of hunger and food preferences, e.g. feeding practices that encourage eating for soothing may promote a dysfunctional habit of eating in the absence of hunger. A positive feeding relationship is crucial for a child's proper nutrition and growth, and in addition, interactions related to feeding have a powerful impact on how children feel about themselves and the world. It is important to stress that not all feeding or eating problems are relational. The infant's or toddler's eating disturbance may be a reflection of his or her biological and psychological characteristics, or social circumstances, e.g. difficulties of regulation, temperament, difficulties in making changes and transitions, sensory overreactions, traumatic medical experiences. However, sometimes feeding or eating difficulties may be observed only in the context of a specific feeding relationship, as it reflects the disturbed dyadic or family relationship of which the eating problem is only one of its manifestations (or in the context of kindergarten and persons who are included in mealtime). Feeding interactions are influenced by the child's developmental stage and by the specific tasks required at each stage, and a parent may lack knowledge about normal childhood eating behaviour and skills and strategies available for applying healthy feeding behaviour. Parents can have unrealistic expectations about child's feeding preferences, possibilities, and habits, and that misunderstanding often introduces struggle not only into the feeding relationship but in the attachment process (or adaptation in kindergarten). A child's emotional state and a parent's eating experiences as a child also can contribute to this combat.

#### **Difficulties or disorders**

It is not easy to know when a child (infant, toddler) experiences temporary difficulties (challenges) and when these difficulties become a disorder, especially in the period of early development. Mental health challenges and disorders have many different signs and symptoms and can look differently in different children. Parents and teachers need to know the main differences between difficulty and a disorder in order to know when it would be relevant to refer to a professional.

A difficulty is generally temporary and is frequently related to specific situations, context, or stressors (e.g., a separation, a family status change, a medical problem, a transition- from family to kindergarten, a specific developmental period, environmental changes, etc.). The difficulty may be a delay in terms of cognitive, emotional and social development, but in addition, problems of sleeping, eating, and/or feeding behaviour, can be observed. When the signs are recognized early enough and the children get professional help (could be only family consultations or changes of daily routines), full recovery without any long-term consequences is possible.

If we are thinking about difficulty (not disorder) we usually expect a good response to the intervention but if despite the support, the difficulties persist, it is possible to suppose that this is a disorder (multidisciplinary team involving a range of mental health professionals can evaluate it). The disorder is a condition whose diagnostic criteria are established and are found in the medical classification systems. The disorder is persistent over time (at least 6 months) and interventions are more intensive, more frequent, and extended. The disorder alters the functioning of the child in daily life, affects all family members and other persons engaged with it (caregivers, teachers, etc.).





#### **Medical classifications**

The first 5 years of life are a time of enormous and dynamic growth and development. Early experiences determine the course of children's emotional, social and cognitive development, affecting learning and successful acquisition of skills, behaviour, and relationships, the adaptation, the ways in which children react and respond to the world around them for the rest of their lives, their wellbeing. Infants and toddlers can have mental health and developmental difficulties or disorders that affect daily functioning and whole development (e.g. feeding and eating problems). If these disorders (or challenges) are correctly identified using diagnostic criteria relevant to infant and early childhood development and experiences, they can be effectively treated. The attempts to classify feeding and eating disorders in young children have varied widely- from those proposing many different types of disorders to those that group them by emphasizing common features. We are presenting briefly three classifications, important for an infant's mental health.

Over the last decades, much progress has been made to describe, analyse and categorize mental health disorders specific to young children with the development of Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (DC:0–3), and now DC:0–5<sup>™</sup>: Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood. DC: 0–5 defines three main categories of eating disorders, based on the child's observable eating behaviours: overeating disorder, undereating disorder, and atypical eating disorders.

Although the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM) and World Health Organization's International Classification of Diseases (ICD) are comparable classification systems for older children and adults, they are most often applied in the mental health area, including for young children with eating problems. The most recent editions of the DSM (DSM-5) and the ICD (from January 1, 2022, all countries should apply ICD-11, but at the moment they use ICD-10) have made some attempt to be more developmentally sensitive, but it still does not sufficiently capture the range of disorders typical for the period of infancy and early childhood.

Table 1. Feeding and eating disorder	- crosswalk from DC: 0-5™	to DSM-5, ICD-10 and
ICD-11		

DC:0-5™	DSM-5	ICD-10	ICD-11
Overeating Disorder	Unspecified Feeding or Eating Disorder	Overeating Associated with Other Psychological Disturbances	Feeding or eating disorders, unspecified
Undereating Disorder	Unspecified Feeding or Eating Disorder	Other Eating Disorders	Avoidant-restrictive food intake disorder
Pica	Pica	Pica of Infancy and Childhood	Pica
Rumination	Rumination Disorder	Feeding Disorders of Infancy and Early Childhood / Rumination Disorder of Infancy	Rumination- regurgitation disorder
Hoarding	Other Specified Feeding and Eating	Feeding Disorders of Infancy and Early Childhood	Other specified feeding or eating



Disorder	disorders

In DSM-5 authors grouped eating disorders in a single category - Avoidant/Restrictive Food Intake Disorder (ARFID) - that covers infants through adults. They emphasize commonalities across developmental periods, with core features of eating/feeding disturbance not accounted for by food unavailability, cultural norms (also religious practices), or other eating disorders that involve weight loss, nutritional deficiency, dependence on a feeding tube, or dietary supplements (American Psychiatric Association, 2013).

A new section within ICD-11 combines feeding issues most notable in childhood along with eating disorders and emphasizes the connection of these conditions across the lifespan.

#### Some feeding and eating difficulties and disorders

Problems of eating and feeding are one of the most common reasons for referral to paediatric and infant mental health consultations. An article authored by researchers from the University of Maryland School of Medicine reports that 25 percent of all children, and as many as 80 percent of children with developmental disabilities, present with a feeding disorder of some kind (Manikam, & Perman, 2000).

#### Overeating

Each child is different, with different temperaments, appetite, and different rates of metabolism and growth. To make matters more complicated, an individual child's interest in eating may vary from meal to meal, day to day, week to week, month to month, year to year. Usually, parents complain about their toddler's picky eating, but some children eat everything and much more amount than others. Parents' awareness of the potentially pathological significance of overeating is less than that for undereating disorders. There are few data about overeating behaviours among very young children despite rising concern about obesity generally. The prevalence of overeating in this developmental period is unknown (most data is about children in school-age). Some children show a preoccupation with food (verbally but not only) at the expense of other developmentally appropriate activities. They usually actively search for food and become nervous (e.g. destructive, fretful) at efforts to refuse or redirect them. This could treat as a difficult behaviour if it is an isolated behaviour and if it reflects some changes in daily routine or caregivers. But it could be a clinical condition that warrants diagnostic and therapeutic intervention. We must know that overfeeding is quite common under age 2 years, and especially during the first year of life, often as a result of the parent's use of food as a pacifier. Parents or caregivers often attribute the hunger in response to the infant's crying or distressed behaviour, and very soon food becomes a source of comfort, substitute for attention, or cure for boredom (emotional eating). Emotional eating can lead to overeating because it isn't usually about a need for nutrients or calories. When the child's food preoccupation is associated with distress and impaired functioning there, without food scarcity, this is a disorder.

There is evidence of a strong genetic component in the regulation of appetite and food preferences during the early years of life (Scaglioni, Arrizza, Vecchi, & Tedeschi, 2011), but the adults have the main role in forming children's eating models. Risk factors are a chronic misreading of infant feeding cues, excessive control over what and how much children eat (e.g. restriction of food, the pressure to eat more or only "healthy food"), instrumental feeding or "emotional regulated" feeding, using food as a reward or punishment, etc. The attachment and the attunement between caregivers and children (especially on the level of



temperament) is a core protective factor. Attachment is the emotional bond between parents and children, and the attunement is the way caregivers "tune in" to a child's needs, work to understand their thoughts, and respond to how they are feeling and behaving. Both attachment and attunement are important to the way a child views the world, feels safe and forms relationships with others throughout life. The significant long-term consequences of overeating in early childhood, including obesity, lack of participation in age-appropriate social activities, and ultimately, peer rejection, or victimization, have been reported.

There are no specific guidelines for the treatment of overeating disorder in early childhood, but the interventions must be based on the early diagnosis and on the correctly identified contributing factors.

Psychoeducational practices focused on parent's knowledge about child development and age-appropriate activities and strategies for eating, playing and stimulation, are the first therapeutic step. When the main problem is the relationship, the focus of the intervention must be the relationship rather than the child's overeating behaviour. If the problem persists in different contexts (at home, at kindergarten), adults must work together in a similar way and with the same demands. Focusing on food and weight makes the child unhappy and makes the child want to eat more.

#### Poor eating or undereating

Parents of young children are often concerned that their children do not eat enough and this is the common reason for referral to the clinicians. Caregivers usually describe delay or lack of eating skills, slow eating, a decrease in appetite, difficulty with some fluids or food, reluctance or refusal to eat some food (taste, texture, temperature, colour), and fear of vomiting and choking. This atypical feeding and eating patterns are very common among children with neurodevelopmental disorders, such as Autism Spectrum Disorder (ASD), and could not be treated in isolation. However, when young children consistently eat less than expected for their age and exhibit maladaptive eating behaviours, professional help is obligatory, and the first step is appropriate investigations and diagnosing. Some children may have a "disordered" model of eating but maintain a healthy weight. Unsuccessful transition to solids food is a common undereating difficulty and sometimes it could prolong to the school-age (some infants start being selective at this transitional moment- around 9 mounts). Prolonged breast or bottle feeding, and failure to taste new textures, are other associated problems. Some children exhibit an aversion to specific smells, textures, and other sensory food characteristics. However, an eating problem may develop if a parent or caregiver tries to coerce the child to eat or shows too much concern about the child's appetite or eating habits. The extra attention children with an eating problem receive when parents coax and threaten may inadvertently reward and thus reinforce the child's tendency to refuse to eat. Some children may even respond to parental attempts at force-feeding by vomiting. Undereating may be a symptom of adjustment reaction, depression, posttraumatic stress disorder, or reactive attachment disorder, rather than a diagnosis in itself (Keren, 2016).

There are some pieces of evidence that undereating difficulties affect future eating behaviours. McDermott and colleagues (McDermott, et.al. 2010) have found that around 40% of the irregular eaters at 5 years of age were still irregular eaters at 14 years. Selective eating often improves spontaneously when parents stop reacting to the child's eating behaviour, but sometimes this pattern remains into adulthood. Furthermore, excessive and unfounded maternal concern about child undereating may detract the mother's cognitive and emotional energy from more salient issues affecting child health and development



(Brown, et.al, 2016). The treatment should be by a multidisciplinary team, including psychoeducational, behavioural, and/or psychotherapeutic interventions for the child, family, and other caregivers. Collaboration between family and kindergarten staff is essential. Sometimes hospitalization is necessary. Medications are rarely administered.

#### Some Atypical Eating Disorders

Studies of atypical eating behaviours at an early age, such as pica, rumination, hoarding, and pouching, are rare and their prevalence and prospective are unclear.

**Pica**: Pica is when a child eats or wants to eat something that is not food. Pica is a "feeding disorder" that can occur at any age and this is different from the curiosity of young children to taste everything (this way of exploring the world is associated with difficult behaviour but this is temporary and the manifestation changes over time). Diagnostic criteria for pica specify a minimum age of 2 years. Children with pica may crave and eat many non-food substances, such as clay, dirt, sand, stones and pebbles, hairs, chalk, paper, soap, etc. Pica does not involve general aversion to food. Nutrient deficiencies have been reported in some cases. This atypical eating behaviour is more common in children with diagnoses of intellectual disability and ASD, but not is their core features. Treatment of pica is specific for each case and varies from behavioural to relationship-focused approaches.

**Rumination**: Children with this disorder regurgitate repeatedly the food following feeding or eating- food comes back into the mouth after they swallow it. It is not due to nausea or vomiting. The child may be diagnosed with rumination disorder if he/she regurgitate the food often for a month or more. People of any age including infants and children can have this disorder. In infants and toddlers, it is a rare and serious condition with the potentially fatal course (due to malnutrition). Neglect, lack of stimulation, and severely destroyed parent-child relationship are contributed to this disorder.

**Hoarding:** storing food in unusual places (e.g., under a mattress, pillow, etc.). The disorder has not been described in children less than 2 years old. The child may be overweight or underweight, depending on what he/she does with the hidden food.

#### Mealtime- Home and Kindergarten

Some parents and teachers report that children are "difficult to handle" in mealtime (information from personal communication, team or family consultation, training) and they are concerned for children's and family/group wellbeing during this period of the day (*"Dinnertime is brutal for our family- not only for her."* - Mother of 4 years old girl with feeding difficulties).

Both the nature and quality of the relationship between the adult (parent, teacher/educator, or other) and the children and the structure and the meal settings are significantly impacted by the family/institutional rules. Sometimes the rules are missing or they are unstable and ambiguous and the children could not follow them. The mealtime in the family setting usually is related to communication ("*We tried to share our daily experience and to motivate them to taste different food. Of course, we try to practice basic table manners. Not successful...* " - Father, of 5 years old twins). In the kindergarten, the staff closely monitor what/how much children eat (as is required by regulation but not only) and how they behave - the conversation is not tolerated or is forbidden ("*The parents generally request more information about the food than about the new skills, cognition or emotional states of their child. I think that this demand somehow affects my professional attitude - I started to focus more on the food quantity than of eating process."- Teacher in kindergarten). These* 





different requirements are confusing for children (especially in the nursery) and some of them are not so suitable for young children- they could not adapt to these new expectations- they need more emotional (personal) support then the kindergarten staff typically offer (the main reason is the ratio of children - staff in the mealtime). If the child has some eating or feeding difficulties, the situation is harder for all participants.

#### Conclusion

Young children with eating and feeding disturbance, have a variety of presentations, histories, risk, and protective factors. This makes the referrals to the most appropriate care providers a really challenging. Depending on which factors are thought to be driving these difficulties, children's' needs differ and the support must be personalized, but always to be included and the family.

Few practitioners (in educational, social, and healthcare system) have specialized in identification, assessment, and treatment of eating and feeding difficulties in young children, and it often requires collaboration among numerous different providers in various institutions (locations). Parents are always the connection between them, and they tolerate a great burden. Understanding these sufferings is necessary in order to provide an appropriate attitude and care.

Incorporating this new old problem (Eating and Feeding Difficulties in Young Children) in a good way into the everyday practice of the teachers and the other specialists in kindergarten has not been easy because they are unaware of its importance or have not yet embraced it. But it is something we cannot afford to ignore. It is for the wellbeing of our children. A potential solution for dealing with this situation is the integration of knowledge, skills, and responsibilities of teachers, psychologists, medical professionals, and parents, to encourage information sharing and partnership.

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Erasmus+



### Food allergies and intolerance to food in preschool children



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Adverse reactions to food:

- food intolerance
- nutritive allergies

# Food intolerance, non-immunological or non-allergic (does not belong to nutritional allergies) can be:

- chemical origin (additives, preservatives, dyes...)
- due to enzyme deficiency (lactose deficiency...)
- Due to the action of pharmacologically active substances (tyramine in cheese or wine, nitrite sin dried meat products...).
- due to biological toxins in food (botulism, staphylococcal toxins...).
- psychological aversion to a certain type of food.

Nutritional allergy is a pathological, immune-mediated response to a common, harmless food ingredient.

An allergen is a food protein that causes sensitization and leads to an allergic reaction after re-contact.

#### **Prevalence:**

6-8% of children under 3 years of age have a nutritional allergy (milk, eggs, peanuts ...) and

2-3% of adults (peanuts, nuts, shellfish, fish...).

In the period from 1998-2008.was registered an increase of food allergies of 18 % and 2441 infant had 1/5 adverse food reaction 6% nutritional allergy and 15% of other types of food intolerance.

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Based on data obtained from studies in the United States, an increase in the incidence of anaphylactic reactions caused by food has been observed:

- in recent years, about 50,000 / year

-1999 - 30000 / year.

At least 200 people die each year from an anaphylactic reaction to food.

The digestive system is the largest immune organ in the human body. It has the largest surface area exposed to environmental antigens (250-300 m<sup>2</sup>).

During one day, the intestinal mucosa is in contact with more antigen than the immune system throughout life (1 year more than 1 t of different antigen).

#### Pathogenesis

Oral protein intake stimulates a mucosal immune response as opposed to the same antigen being given parenterally there would be a systemic immune response.

The immune system of the mucosa differs, among other things, from the systemic one, which is dominated by suppression of the active immune response.

This involves the intestinal barrier: 1 layer of epithelial cells tightly connected (limits, but does not exclude the entry of antigen), a thick layer of mucus and saprophytic bacteria (biofilm-biologically active complex), enzymes, bile salts, different pH, peristaltic bowel movement. They aim to destroy and expel pathogenic substances, and on the other hand to show antigen to the mucous immune system.

The efficiency of the mucous barrier is reduced:

- In infections as well as the LV period of the connection between the epithelium are less solid (possibility of penetration of macromolecules to the lamina propria which can lead to an active response).
- In newborn child and infants (decreased enzyme activity, secretory immunoglobulin E system is not mature until 4 years).

#### **Oral tolerance**

Lack of immune response to antigen foods is entered into the digestive system.

When protein food come into contact with the surface of the intestine is processed by different cells:

T-lymphocytes-most importantly. The way in which antigen presents cells process and represent antigen depends on genetic factors, intestinal flora, a dose of antigen and digestive processes.

The exact mechanism for systemic tolerance has not yet been precisely explained.

Possible T lymphocytes cooperate with an antigen, which is presented on intraepithelial cells, which activate regulatory (suppressor) T lymphocytes.

SAPROFITIC INTESTINAL FLORA plays a significant role in shaping the mucosal immune response.


Intestinal flora has a useful role: it helps digestion, stimulates the growth of epithelial cells and their differentiation; produces the necessary vitamins, helps shape the immune response.

Factors that alter the intestinal flora: antibiotics, diet, caesarean delivery, living in highly hygienic conditions, loading the intestinal wall with numerous allergens during early development, after acute gastroenterocolitis (increased permeability) may affect the predisposition to develop allergies or chronic inflammatory bowel disease.

#### FOOD AS ALLERGEN

It is a consequence of the stability of proteins to enzymatic or thermal degradation.

200 proteins that have the role of allergens are described. 8 proteins are the cause of 90% of allergic reactions: milk, eggs, soy, gluten, peanuts, bone, fruits, fish, shellfish.

Earlier, it was thought that about 80% of children with allergies to cow's milk protein "outgrow" by the age of 4, new studies indicate that allergies to cow milk protein or eggs persist longer (cow milk protein-immunoglobulin E mediated: up to 4 years. 19%, up to 8 years 42%, up to 12 years 64% and up to 16 years 79% \*).

Patients with persistent nutritional allergy more frequent allergic comorbidities: asthma and allergic rhinitis.

#### Risk factors for the development of (nutritional) allergies:

- Hereditary risk factors: 20-40% if one parent, brother or sister has atopy;
- 50-80% if both parents or 1 parent + 1 sibling. The risk is higher if the mother is atopic.
- Environmental factors: environmental pollution, small families, hygienic conditionsexposure to microbes, natural nutrition and infant nutrition.

#### **Division of nutritional allergies:**

1. Immunoglobulin E mediated (fast 1h after food ingestion),

2. Mixed immunoglobulin E / non-immunoglobulin E mediated (delayed several hours after ingestion),

3. Non-immunoglobulin E mediated / cell-mediated: late (12h to several days).

The clinical picture depends on: of the affected organ system (digestive system, skin, respiratory system) type of allergic reaction and age of the child.

#### Clinical manifestations of GIT in nutritional allergies:

ORAL ALLERGY SYNDROME - present in 40% of patients with pollen allergy (especially birch, pollen, weeds and grasses. It manifests suddenly (itching, tingling, tickling, swelling of the lips, tongue, palate, throat, feeling of impassability of the throat, occasional itching of the ears). Symptoms short-lived after ingestion of fresh fruits and vegetables. Allergic to ragweed can develop oral allergy syndrome after eating fresh bananas and watermelons. Allergic to birch pollen can develop oral allergy syndrome after eating raw carrots, potatoes, celery, apples, hazelnuts, kiwi (cooked YES).





#### Clinical manifestations of GIT in nutritional allergies IgE / non-IgE:

ALLERGIC EOSINOPHILIC ESOPHAGITIS -chronic esophagitis with or without reflux K, reflux. Clinical picture: disease vomiting, food refusal, abdominal pain, irritability, sleep disturbance...

ALLERGIC EOSINOPHIL GASTRITIS - Vomiting, postprandial pain, anorexia, early feeling of satiety, hematemesis, stunted growth, 50% have atopy.

Clinical manifestations on:

- SKIN:

- immunoglobulin E: atopic dermatitis, urticaria, angioedema.
- non-immunoglobulin E: atopic dermatitis, contact dermatitis, vasculitis.

#### - RESPIRATORY:

- immunoglobulin E: rhinitis, cough, asthma, laryngeal edema, chronic otitis media,
- Non-immunoglobulin E: chronic lung disease (Heiner's syndrome), hypersensitivity pneumonitis.

#### - SYSTEMIC:

- immunoglobulin E: anaphylaxis.
- Non-immunoglobulin E: postprandial effort induced.

- RARE:

• non-immunoglobulin E: headache, irritability, drowsiness, arthropathy, nephropathy, thrombocytopenia.

#### **Diagnosis of nutritional allergies:**

#### HISTORY AND PHYSICAL EXAMINATION!

#### HISTORY MUST INCLUDE:

- Description of symptoms
- Reproducibility
- Time from ingestion to the onset
- Frequency of symptoms
- Amount of food necessary for the onset of symptoms
- Associated factors (physical activity)
- Taking medication
- Diary



#### **Diagnostic tests:**

Elimination diet- elimination of one or more foods from the diet (elimination length depends on the type of symptoms). Positive  $\rightarrow$  provocation test.

Oral provocation test- with a gradual increase in the amount of food containing the suspected allergen (observation for several hours or days depending on the type of reaction).

Other provocation tests:

- Gastroscopic provocation test: edema, redness, bleeding at posit occurs on the mucosa at the site of application test.
- Provocation test via nasoduodenal probe with ultrasound monitoring: the wall thickens in the area of the duodenum and jejunum, changes in peristalsis are monitored.
- Colonoscopic provocation test.

#### **Treatment of nutritional allergies**

- Acute condition: adrenaline, corticosteroids, antihistamines.
- Elimination diet avoid possible nutritional deficiency, education on early recognition and treatment in case of accidental exposure, the problem of marking the composition of ready-made foods.
- Those who have food allergies with asthma or anaphylaxis carry adrenaline.
- Immunomodulatory therapy in the testing phase. So far, oral desensitization has not been fully investigated.

#### Prevention of allergies in children

- An elimination diet (avoidance of food allergens) during pregnancy is not recommended.
- Exclusive breastfeeding, frequency of severe clinical picture of allergies, diseases, and the risk of atopy
- Elimination of breastfeeding allergens-not yet confirmed.
- Hydrolyzed formulas (infant formulas).
- Introduction of supplementation (DO NOT start before 17 weeks and DO NOT delay after 26 weeks of life). Gradual introduction.

#### Prevention of allergies in children

- Probiotics have a positive effect (in allergic children the level of saprophytic bacteria such as bifidobacteria and pathogens Staphilocock Aureus, Clostridium difficcile has been observed compared to those without allergies).
- Polyunsaturated fatty acids; ω3 polyunsaturated fatty acids possible positive effect.
- Avoid exposure to smoky rooms.
- There is no confirmation that avoiding pets (dogs, cats ...) can prevent the development of allergies, in those who have developed allergies. Manifestations are recommended.



#### Forecast of nutritional allergies

- Allergy to fruits, vegetables and cereals (short-term 6-12 months).
- Allergy to milk, soy, gluten, eggs- most often passes to school age.
- Allergy to peanuts, shellfish, fish, nuts often lifelong.

Some recent examinations show a longer persistence.

#### Conclusion

Increase in nutritional allergies (severe forms: anaphylaxis ...) and prolonged persistence. For diagnosis, precise anamnestic data with additional examinations are extremely important. The basis of treatment is an elimination diet. The importance of prevention is significant.

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# Regulations For Nutrition In Early And Preschool Childhood. The Situation In Bulgaria

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Nutrition legislation aims for all European citizens to have access to safe and nutritious food. A series of incidents associated with food in the late 90s drew attention to the need for establishment of common principles and requirements in nutrition legislation for food and nutrition at an EU level. In 2002, the European Parliament and Council adopted Regulation (EC) № 178/2002, defining the common principles and requirements for nutrition legislation (General regulation on food law). General regulation is the basis of the food and nutrition law. It sets out a thorough and coherent framework for the development of food and nutrition law, both at an EU and at national level. For this purpose, it lays down the general principles, requirements, and procedures, underlying food and nutrition safety decision-making, including all stages of production and distribution of food and nutrition.

On the other hand, in addition to provision, quality, and food safety, healthy nutrition in early childhood in the foundation of children's proper physical and mental development. In is necessary for requirements regarding the balanced intake of important nutrients for the child's body to be regulated, in order to properly develop them and ensure their health status. Unfortunately, disorders associated with malnutrition and obesity are increasingly occurring in early childhood. Therefore, the formation of healthy eating habits needs to be a subject of joint efforts of parents and kindergartens' and schools' staff.

The European food framework consists of normative documents, classified in general as:

REGULATIONS - Regulations are generally applicable and, are mandatory in their entirety, and are directly applicable in all European Union (EU) member countries. The regulations aim to ensure equable application of EU law in all EU countries.

DIRECTIVES – Directives are a part of EU secondary legislation. The directives set targets that need to be achieved by the member countries within a deadline. This time frame allows the national governments to adapt the local legislation to the new regulations. However, it is up to each country to develop its own laws to determine how the apply these rules.

The above normative documents form the following;

- Horizontal legislation it is a package of normative documents, valid for all members of the European Union (EU). Within the horizontal legislation are the common regulations that structure the general European framework in food management (*cited in part 1 of Annex №1 of the article*). The goal is to shape the main policies concerning food management, namely the free movement of food within the EU, food safety, labelling; GMOs, on-time incidents notifications, food waste management, additives and chemicals in food, etc.
- 2. Vertical legislation it is a package of normative documents, the purpose of which is to ensure equable standards regarding the product safety and quality within the EU, based on scientific knowledge, technological experience, risk assessment, and





analysis of discrepancies, so that clear rules can be written for individual food groups, the usage of additives, the application of claims on labels, etc.

Three main normative documents are developed in the Nation legislation of the Republic of Bulgaria that have no equivalent in the EC legislation and which directly concern the nutrition of children in kindergartens. The regulations address three key aspects related to quality, safe and healthy nutrition of children in kindergartens. These normative documents correspond to the food legislation of the EC and national normative documents, but aim at explicit documentation and implementation of norms, ensuring the three most important aspects of the child's nutrition are met, those are:

- Food safety and quality;
- Healthy nutrition for children 3 7 years old;
- Adequacy in the construction of children's kitchens and the health requirements for them;

Compliance with all three Regulations described in the article, as well as with the food legislation in its entirety, is achieved through the development and implementation of an adequate *Food Safety Management System (FSMS)* in kindergartens. The requirement for development and implementation of FSMS is regulated by: REGULATION (EC) № 852/2004 OF THE EUROPEAN PARLIAMENT AND COUNCIL from 29<sup>th</sup> April 2004 on the hygiene of food and the General Food law of the Republic of Bulgaria.

FSMS is developed on a basis of normative requirements, the team's technological experience and scientific knowledge directly related to risk management in the kindergartens' kitchens. The structure of FSMS is shown on the below graph 1:



Graph 1. Structure of the Food Safety Management System (FSMS);

FSMS is an actual tool for the management of the process and the food quality and safety in the kindergartens' kitchens. The proper and applicable elaboration of FSMS to the activities of each kindergarten's kitchen and its real application of the written through FSMS norms



ensure the produced products by the kindergarten (quality and safety) and lower the risk of unwanted contamination. If discrepancies during the work process in the kitchens occur, they can be adequately managed with transparency and can be used for analysis and risk elimination.

In this article, the three national ordinances and the main applications that they regulate will be briefly reviewed. Moreover, normative documents from the national legislation and the common European framework regarding nutrition that relate directly to the management of the activities done in the kindergarten's kitchens will be mentioned.

**ORDINANCE** № 8 from 4<sup>th</sup> **December 2018** for the specified requirement for food safety and quality in kindergartens, school canteens, food establishments on school property, and food for organized events for children and students.

#### I. STRUCTURE OF THE NORMATIVE DOCUMENT

The Ordinance is structured in two chapters.

**CHAPTER I** describes the Ordinance application and introduces main principles from the management of food quality and nutrition, valid for each **business operator**.

The term 'business operator' is introduced via art.9 of the Food Act (FFA) and is applicable to all food producers, processors, and/or distributors. By this definition, establishments for children that have built-in kitchens used to prepare food are considered business operations and are required to align their activities with FFA and as well with all normative documents related to national food legislation and EU legislation.

**CHAPTER II** is divided into ten sections describing the specified requirements for different food groups: meat and meat products, milk and dairy, fish, fishery and other seafood, eggs, oils and fats, cereals and cereal-based foods, potatoes, root vegetables and legumes, fruits, vegetables and their products, nuts and oilseeds, sugar, sugar and chocolate products, honey, fruit and herbal teas, table salt;

#### II. GOAL AND SPECIFICS OF THE ORDINANCE

The goal of the Ordinance is to document main regulations and to define the normative documents that are valid for different food groups when managing their quality and safety in the kindergartens.

In **CHAPTER ONE** of the Ordinance the General Provisions are described which are valid for all business operators in the Food industry and are laying in the horizontal EU legislation.

The main regulations in the management of food quality and safety are:

- The food must be **safe for consumption** (art.2, art.7, art.9 of the Ordinance);
- The food must have **proven origin** which in a case of necessity can be always directly tracked down (art.3 and art.4 of the Ordinance);
- The food must be **transported as per the conditions corresponding to the product's requirements**, as part of ensuring food quality and safety (art.5 of the Ordinance);
- The food must be wrapped in strong packaging that is designed for contact with food, and that should hold the function of keeping safe the organoleptic, microbiological and physicochemical parameters of the food until its expiration date. The packaging must be whole and intact (art.6, para. (1) and (3) of the Ordinance);



- The food must be **labelled with regards to the requirements of the currently acting legislation** (art.6, para. (2) of the Ordinance);
- The food must be stored in the conditions required by the manufacturer, that is a **temperature cold chain for each product to be ensured** and all expiration dates to be monitored (art.8 of the Ordinance);
- The food must **NOT be produced by genetically modified organisms** (GMOs) as a result of recombinant DNA technologies and/or to consist of such ingredients, and it must **NOT be irradiated with ionizing radiation** for bactericidal effect (art.10 of the Ordinance).

**CHAPTER TWO** of the Ordinance reviews the food groups that are used in children's establishments and references the vertical food legislation, aimed at basic regulations for clear requirements for each food group in order to ensure its quality and safety.

The main purpose of Chapter Two is to document that only food, produced in accordance to the current legal regulations, the quality and safety of which is guaranteed, should be used in children's establishments by:

- 1. Food production in accordance with approved industry standards;
- 2. Food production in accordance with **approved technological documentation**, **based on risk analysis and experience of the business operation**;
- 3. Food production corresponding to norms determined in the current normative documents.

The Ordinance unambiguously defines the **rule that when there is an approved branch standard for the respective food group, in the kindergarten's kitchens the food is produced in accordance to the requirements of the branch standard and the usage of products produced by technology outside of the requirements of the approved standard is not allowed**. An example of this would be the production of Bulgarian yoghurt, for which there is an established standard, (Bulgarian Institute for Standardization – BIS, 12:2010); the production of 'white' bread (Approved Standard – AS, 02/2011 ); the production of lyutenitsa (BIS, 01/2011), etc.

All approved standards can be found in the official web site of the Bulgarian Food Safety Agency (Food Standards, 2020) (Graph 2):

🤝 Утвърдени стандарти "Стара планина"	IMPORTANT: Although there are approved standards
🌀 Стандарти за хляб и брашно "България"	according to ORDINANCE № 6 from 10 <sup>m</sup>
🌀 Браншови стандарт за лютеница	August 2011 for the healthy nutrition of children aged 3 - 7 years in kindergartens,
🌀 Български стандарти за млечни продукти	there are restrictions on the supply and
🧊 Доклади за изпълнение	<ul><li>consumption of certain products, such as:</li><li>Sausages;</li></ul>
Браншови стандарт (БС 01/2016) "Рафинирано слънчогледово масло	<ul> <li>Meat preparations (minced meat, kebabs, meatballs, sausages)</li> </ul>



Graph 2. Food standards, 2020, from the Bulgarian Food Safety Agency, Source: <a href="http://www.babh.government.bg/bg/Page/standards/index/standards/%D0%A1%D1%82%D0%B0%D0%B0%D0%B0%D1%80%D1%82%D0%B8%20%EF%BF%BD">http://www.babh.government.bg/bg/Page/standards/index/standards/%D0%A1%D1%82%D0%B0%D0%B0%D0%B0%D1%80%D1%82%D0%B8%20%EF%BF%BD</a>



When there is no written branch standard, the Ordinance allows the use of products produced according to approved technological documentation, it references, however, normative documents ensuring the quality and safety of the products from the group. The technological documentations in production is prepared based on risk assessment, scientific information, normative documents concerning the production, and on the basis of the technological experience of the team. The technological documentations are verified by the Competence country body BFSA (Bulgarian Food Safety Agency) and correspond to the current normative documentation for the respective food group.

The vertical legislation regarding the different food groups can be seen in part 2, Annex 1 of the article.

#### III. APPLICATION OF THE ORDINANCE

The application of this Ordinance, in its entirety, affects the development of the Public procurement for food supply in the kindergartens and more precisely, the documentation of criteria for each food group within the scope of the Public procurement. The Ordinance unambiguously defines the criteria, that each kindergarten food supplier must comply with in order to ensure the food's quality and safety offered in children's establishments.

The regulation regarding the Ordinance, which BFSA performs, is carried out in the kindergartens' kitchens and it is concerning:

- Verification of the origin of documents that are used when the products are delivered;
- Verification of products labelling, such as stock;
- Verification of the technological records ensuring traceability of the food produced in kindergartens, in order to prove the origin of the raw materials used in the production of culinary products;

Objective evidence for the food quality, safety, and compliance with the requirements of the Ordinance can be obtained only through laboratory analyses in an accredited laboratory (BDS EN ISO/IEC 17025:2018).

For this purpose, for the kindergartens, within the scope of FSMS, an internal monitoring program (IMP) can be prepared for analysis of different food risk groups (food that is not a subject of heat treatment on-site). Using the plan, random samples of products can be taken in order to check the quality and safety of the product for the program.

# **ORDINANCE** Nº 6 from 10<sup>th</sup> August 2011 for the healthy nutrition in children aged 3-7 in kindergartens

#### STRUCTURE OF THE NORMATIVE DOCUMENT

The Ordinance is structured into two sections:

- 1. The first section of the Ordinance "General positions", defines:
- The application of the Ordinance concerns the healthy organized nutrition of children aged 3-7 years;
- 2. Rules for achieving healthy nutrition by:
  - intake of nutritious and varied food;
    - sufficient intake of fruits and vegetables;
  - limiting the intake of fats, sugar, and salt;
  - sufficient intake of fluids;



• providing safe food, produced by using an established technology;

#### 3. Rules calculating the energy value of food

- one gram of protein delivers 4 kcal of energy;
- one gram of carbohydrates delivers 4 kcal of energy;
- one gram of fat delivers 9 kcal of energy.

4. Requirements for persons responsible for food preparation – at least one person with education or qualification in the field of food technology

2. The second section of the Ordinance deals with the specific food requirements, determining in general:

- 1. rules for menu development in kindergartens and requirements for providing a variety of meals in the kindergartens;
- 2. requirements for the average daily intake of energy, total protein, fats, and carbohydrates, minding the different ages of children;
- 3. requirements for the inclusion in the menu of the following food groups: cereals and/or potatoes, fruits and vegetables, milk and dairy products, meat and meat products, fish (excluding the supply of non-fish aquatic organisms), eggs, legumes (beans, lentils, chickpeas), water and beverages;
- 4. requirements regarding fat consumption, intake of free sugars (monosaccharides and disaccharides), and intake of table salt;
- 5. culinary technologies ensuring the preservation of nutrients in products, such as cooking, boiling, stewing, baking/roasting, and limiting culinary techniques, as a result of which harmful metabolites are formed, such as frying (ketones, lactones, etc.).

#### I. GOAL AND SPECIFICS OF THE ORDINANCE

1. The main goal of the Ordinance is to include the four main food groups in children's daily nutrition:



**Graph 3.** Main food groups, represented on the Food Pyramid, Source: National Center of Public Health and Analyses, https://ncpha.government.bg/bg/public-health-publications-menu/healthyeating-pyramid

• The second goal of the Ordinance is to balance the quantity and the type of these food groups in an appropriate way in order to provide the necessary nutrients on a daily basis in a way that meets the needs of a growing child in the different age groups. The Ordinance achieves this by defining the below unambiguously:





- the intake frequency of the different food groups;
- the intake quantity of the different food groups.

#### II. APPLICATION OF THE ORDINANCE

The application of the Ordinance is related to the preparation of the weekly menus, in compliance with the norms documented through it. The control over the implementation of this ordinance is performed by the Regional Health Inspectorate (RHI).

# **1**. The preparation of the menus in the kindergartens takes into consideration the stay of the children in the kindergarten, namely:

- "all-day weekly meal" seven-day five-course diet, that includes three main meals breakfast, lunch, and dinner, and two compulsory snacks – between breakfast and lunch, and between lunch and dinner;
- 'five-day four-course meal (excluding dinner)" a diet that is applicable Monday to Friday (excluding Saturday and Sunday) and includes two main meals – breakfast and lunch and two compulsory snacks – between breakfast and lunch, and between lunch and dinner;

To ensure varied and balanced nutrition it is recommended to plan weekly menus. This gives a better opportunity to provide a variety of food. Eating in a pleasant environment, without pacing and stress, helps to get pleasure from food, to take in its taste and aroma, and improves the absorption of nutrients.

# **ORDINANCE** Nº 26 from 18<sup>th</sup> November 2008 on the structure and operation of kindergartens and kindergartens' kitchens and the health requirements for them.

#### I. STRUCTURE OF THE NORMATIVE DOCUMENT

The requirements for the kindergartens' kitchens are set out in Chapter III of the Ordinance. Chapter III of the Ordinance is divided into two sections.

**SECTION I** of the Ordinance determines the requirements for the structure of the kindergartens' kitchens, namely:

- Categories of kindergartens' kitchens. Within the meaning of art.35 para. (1), it.3 kitchens to nurseries and nursery groups in kindergartens with a capacity of up to 300 servings per day, where children up to 3 years old are fed (organized contingent), are included in the scope of the Ordinance.
- Management and registration of the kindergartens' kitchens kitchens, nurseries, and nursery groups in kindergartens are managed by the Principle and must be registered under the General Food Law.
- General requirements for food and its management, also mentioned in *ORDINANCE № 8/ 2018*, described above.
- 1. **SECTION II** of the Ordinance determines the health requirements for kindergartens' kitchens:
- Requirements for the premises working and sanitary environments;
- Equipment for the kindergarten's kitchen;
- Requirements for employees in kindergartens' kitchens;



#### II. GOAL AND SPECIFICS OF THE ORDINANCE

The goal of the Ordinance is to define clearly documented rules regarding the organization of kindergartens' kitchens in order to provide food, in terms of:

- protection from unwanted cross-contamination by providing enough premises for processing and compliance with the stages of the culinary technological process;
- to ensure the proper storage of food in the kitchen;
- to ensure the correct culinary technological processing of food, by defining minimum requirements for the technological equipment in the kitchen;
- to define norms for hygiene in the kitchens and to the staff;

The legislature of the Republic of Bulgaria has laid down the foundations and provided guidance for achieving the three main aspects of childhood nutrition. In order to assure the activities of each kindergarten kitchen are in compliance with the requirements of the norm, and also to ensure efficiency and sustainability of the process, a team of specialists (technologists, nutritionists) is needed to develop the requirements and train the teams in the kindergartens. However, a lot of work is still needed to put into practice all of these regulations and requirements.

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- European e-Justice Portal, portal for electronic justice: https://e-justice.europa.eu/home.do?action=home&plang=en&init=true
- National Center of Public Health and Analyses, https://ncpha.government.bg/bg/public-health-publications-menu/healthyeatingpyramid
- ORDINANCE № 8 from 4<sup>th</sup> December 2018 for the specific requirements for the safety and quality of food offered in kindergartens, as school canteens and retail outlets on the schools' and kindergartens' premises, as well as food offered at organized events for children and students, as published in the Official Gazette issue 104 from 14<sup>th</sup> December 2018, enforced since 14<sup>th</sup> December 2018
- ORDINANCE № 6 from 10<sup>th</sup> August 2011 for the healthy nutrition of children aged 3 7 years in kindergartens, as published in the Official Gazette issue 65 from 23<sup>rd</sup> August 2011, enforced since 15<sup>th</sup> September 2011
- ORDINANCE № 26 from 18<sup>th</sup> November 2008 for the structure and activity of the nurseries and kindergartens' kitchens and the health requirements to them, as published in the Official Gazette issue 103 from the 2<sup>nd</sup> December 2008, and the requirements related to breastfeeding enforced since 1<sup>st</sup> September 2009, edited and added in issue 24 from 31<sup>st</sup> March 2009, edited and added in issue 36 from 10<sup>th</sup> May 2011, enforced since 10<sup>th</sup> May 2011





#### ANNEX 1.

#### Part 1 Normative documents, part of the horizontal legislation, concerning food

REGULATION (EC) № 178/2002 OF THE EUROPEAN PARLIAMENT AND COUNCIL HA EBPOПЕЙСКИЯ ПАРЛАМЕНТ И HA СЪВЕТА from the 28<sup>th</sup> January 2002 for the establishment of general principles and requirements in food legislation, in order to establish a European institution for food safety and for dividing procedures concerning food safety;

REGULATION (EC) № 852/2004 OF THE EUROPEAN PARLIAMENT AND COUNCIL from the 29<sup>th</sup> April 2004 regarding food hygiene;

REGULATION (EC) № 853/2004 OF THE EUROPEAN PARLIAMENT AND COUNCIL from the 29<sup>th</sup> April 2004 regarding a definition of specific hygiene rules for animal-sourced food;

REGULATION (EC) № 2073/2005 OF THE COMMISSION from the 15<sup>th</sup> November 2005 regarding the microbiological food criteria;

REGULATION (EC) № 1935/2004 OF THE EUROPEAN PARLIAMENT AND COUNCIL from 27<sup>th</sup> October 2004 regarding the materials and objects, meant for contact with food;

REGULATION (EC) № 1829/2003 OF THE EUROPEAN PARLIAMENT AND COUNCIL from 22<sup>nd</sup> September 2003 regarding the genetically modified foods and nutrients;

REGULATION (EC) № 834/2007 OF THE COUNCIL from 28<sup>th</sup> June 2007 regarding the biological production and labelling of organic products;

REGULATION (EC) № 1169/2011 OF THE EUROPEAN PARLIAMENT AND COUNCIL from 25<sup>m</sup> October 2011 regarding the presentation of information about food to consumers;

REGULATION (EC) № 1333/2008 OF THE EUROPEAN PARLIAMENT AND COUNCIL from the 16<sup>th</sup> December 2008 regarding the additives in food;

REGULATION (EC) № 1881/2006 OF THE COMMISSION from the 19<sup>th</sup> December 2006 regarding the definition of the maximum level for certain contaminants in food;

REGULATION (EC) № 1069/2009 OF THE EUROPEAN PARLIAMENT AND COUNCIL from 21<sup>st</sup> October 2009 regarding the establishment of health rules concerning animal by-products and derived products, not intended for human consumption;



# Environmental impact - recycle and return of food leftover in the economic circuit, prevention of food waste and leftover

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There is only one planet Earth, yet by 2050, the world will be consuming as if there were three.

The European Green Deal launched a concerted strategy for a climate-neutral, resourceefficient and competitive economy (COM(2019) 640 final).



Figure 1. European Green Deal (Source: COM(2019) 640 final)

The European Green Deal aims to protect, conserve and enhance the EU's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts.

To fulfil this ambition, the EU needs to accelerate the transition towards a regenerative growth model that gives back to the planet more than it takes, advance towards keeping its resource consumption within planetary boundaries, and therefore strive to reduce its





consumption footprint and double its circular material use rate in the coming decade (COM(2020) 98 final).

Today we live in a world of a linear economy based on the principle of using the means of production from limited natural resources, making products, using and then discarding those same products. In this way, resources are excessively depleted, the environment is polluted in the production process and ultimately large amounts of waste are produced, which ends up in landfills and additionally pollutes the environment in the process of decommissioning. In contrast, there is the concept of a circular economy that is not based solely on market principles and whose focus is sustainability and environmental protection. The concept itself in a way tries to imitate natural ecosystems that are circular: nothing is lost but changes shape and closes the circle - waste becomes a raw material again. Unlike linear production, use and disposal, in a circular economy all the options included in that chain are taken into account: to include as few resources as possible in the production process, to use resources as long as possible, to use products on the best possible way in its useful life and to use the generated useful waste in the end, and return part of it to the production process. Research shows that the transition to a circular economy would not only contribute to the conservation of natural resources and reduce pollution, but also create new jobs, improve the quality of life for all and achieve the concept of sustainable development. From the consumer's point of view, the zero waste movement fits into the concept of a circular economy.



Figure 2. From a linear to a circular economy

(Source: https://www.government.nl/topics/circular-economy/from-a-linear-to-a-circular-economy)

The ZERO WASTE MOVEMENT implies a drastic reduction or elimination of waste production. It is a movement that is gaining momentum in the world and is based on the principle of producing as little waste as possible in the household. Many believe that it is enough to conscientiously recycle waste to solve the problem, which certainly helps, but we should use it as a last line of defence, not as a last resort. Recycling requires significant financial resources - construction of a recycling plant, purchase of vehicles for collected waste collection, etc. In addition, energy resources are used for recycling, and it in itself pollutes the environment - during the production process, exhaust gases of separate collection trucks... Within the zero waste movement, recycling is seen only as an alternative





to waste elimination or reuse and, although included in the zero waste model, it is attempted to be used only in an emergency.

The concept of the ZERO WASTE movement that tells us that it is possible to produce almost no waste at all seems utopian, but if we follow its five simple principles 5 R: refuse, reduce, reuse, recycle, rot, in exactly that order, we can achieve it to a great extent:

1. refuse-rejecting what we do not need,

- 2. reduce-reducing what we need,
- 3. reuse-reusing what we already have,
- 4. recycle-recycling what we cannot reuse,
- 5. rot-composting everything else.

However, a certain amount of generated waste is inevitable, but it is necessary to strive to minimize its generation.

We can no longer afford a way of life-based on the belief that raw materials are cheap and inexhaustible, and the habit of using products only once and then throwing them away.

How to prevent food waste and save?

1. GO SHOPPING WITH A PLAN AND A LIST- Plan meals for the whole week: check the groceries you already have, and then make a list of the remaining groceries you need to take with you to the purchase. Do not buy when you are hungry, because in that case, you will buy more than you need. Buy fruits and vegetables that are not pre-packaged, so you can buy exactly as much as you need and you will not create waste.

2. CHECK DATES- If you do not intend to use certain foods with a short shelf life immediately, you should rather look for those with longer shelf life or buy them when you need them. Please note the meaning of the date labels: "use by" means that the food is safe for consumption until the specified date, while "best use by" means the date until which the product retains the expected quality, and is safe to use for a certain time after the specified date if used and stored in accordance with instructions.

3. TAKE CARE OF YOUR HOME BUDGET- If you buy groceries in excessive quantities and without a plan, the portion is more likely to end up as waste. Do not throw food away lightly - wasting food means wasting money.

4. MAINTAIN THE REFRIGERATOR PROPERLY - Check the seals and the radiator temperature. In to order food to stay fresh longer, it should be stored at a temperature of 1 to 5  $^{\circ}$  C.



5. GIVE PREFERENCE TO GLASS- Whenever possible, give preference to buying glass packaging - glass can be reused without risk because it does not lose its properties and is easy to clean, and can be completely recycled. You can use glass bottles or containers indefinitely as packaging or easily use them creatively for other purposes.



Figure 3. Give preference to glass

(Source: Fond za zaštitu okoliša i energetsku učinkovitost . <u>https://zaljepsunasu.hr/sprijecite-nastanak-otpada-od-hrane/</u>)

6. INSTRUCTIONS ARE IMPORTANT - Store food according to the instructions on the package.

7. ROTATE GROCERIES - Arrange the purchased groceries in the back of the refrigerator or cupboard and transfer the products that have been there for some time to the front. This reduces the chance that you will come across spoiled or expired products in the food storage compartments.

8. SERVE LESS, DON'T THROW MORE - Serve smaller amounts of food, assuming everyone can take an extra serving.9. SAVE FOR LATER Food and food left over after meal preparation should be refrigerated or frozen. Use the food prepared in this way for one of the following meals or as an ingredient in the preparation of a new dish.







Figure 4. Serve less, not to throw more

(Source: Fond za zaštitu okoliša i energetsku učinkovitost . <u>https://zaljepsunasu.hr/sprijecite-nastanak-otpada-od-hrane/</u>)

10. COMPOST - Convert leftovers from food preparation into compost. You can compost in garden composters or small home composters.

Biowaste is waste from food residues, garden and green waste and accounts for about a third of total household waste and is a valuable raw material for the production of quality biocompost

It is best to compost biowaste at the place of its origin. Composting is the oldest and most natural way of recycling waste. It is a process that involves the aerobic decomposition of biowaste to produce carbon dioxide, water, heat and compost, as the final product, in just a few months. Compost nourishes plants, ensures soil aeration, retains water and favours the growth of root plants. Waste composting is one way an individual can advocate for the preservation of the environment. You can compost in your own home compost garden by composting fruits, vegetables, tea bags, coffee grounds, as well as leaves and garden waste. Compost is a valuable fertilizer and reduces the amount of waste in landfills. By composting, a family of three can reduce greenhouse gas emissions by more than one-eighth of a year. You can compost in individual composting containers or composts in your own making, and we will show you an example of this on this occasion. It can be built of wood, wire or brick. The advantage of a composter in our own design is that we can adjust its size to our needs. What we compost: - kitchen waste (leftover bread, egg shells, coffee and tea grounds, filter tea bags, fruit and vegetable peels, chard leaves, salads...) - garden and green waste (leaves from the tree, dry branches, bark from trees, hedges, grass, weeds, wilted flowers, soil from flower pots, fallen fruit, vegetable remains)...





Figure 5. Compost

#### (Source: Fond za zaštitu okoliša i energetsku učinkovitost https://zaljepsunasu.hr/sprijecitenastanak-otpada-od-hrane/)

#### 11. RECYCLE

Did you know that each of us produces more than 400 kilograms of waste a year?

Most of that waste ends up in landfills as unusable garbage - no wonder, because as many as 80% of things are used only once and then thrown away. Therefore, the first and most desirable way of dealing with waste is to reduce the amount of waste we produce every day because in this way we can reduce its harmful impact on the environment, but also save.

Recycling is any process of material recovery that involves the collection and separation of useful materials that will then be used to make new products. By recycling, we save expensive raw materials and energy, but we also protect the environment and enable the creation of jobs in waste processing plants. Waste recovery is any process whose main result is the use of waste for useful purposes. It is a process where waste replaces other materials that should otherwise be used for that purpose. Examples include the recycling of certain materials, composting or the use of waste as a fuel for the production of electricity or heat. Recycling is called material recovery, while the use of waste to obtain energy is called energy recovery.

- In Croatia, only 16% of waste is recycled and composted, unlike the European average of 43%.
- The highest percentage of recycling and composting is in Germany (64%), Slovenia (62%), Austria (59%), Belgium (55%).
- There are still countries in the EU that dispose of more than 70% of the waste produced, such as Malta, Romania, Latvia, Slovakia...

You will surely be surprised and saddened by the fact that even a third of all food produced in the world simply perishes. Therefore, instead of behaving irrationally towards grocery shopping and meal preparation, initiate changes in our own lives so that as little food as possible ends up in the trash. By taking proper care of the use of food, you prevent the generation of food waste and reduce the amount of waste generated in the household, save





money and energy, and help preserve the environment and make it a more pleasant place to live.

#### **Reducing Food Waste and Recycling**

The lifecycle of food ideally follows a continuous circle. Food gets produced, harvested, processed, marketed, distributed, purchased, consumed and managed as waste. This entire lifecycle is also called the food supply chain, with each step in the chain represented by a separate sector: primary production, food processing & marketing, retail, food service and consumers and waste management.

Food is defined as any substance — whether processed, semi-processed, or raw — that is intended for human consumption including any substances that have been used in the manufacture, preparation, or treatment of food, excluding drinks.

#### Food waste

Inedible parts = unavoidable food waste: refers to components associated with a food that in a particular food supply chain are not intended to be consumed by humans. This is food thrown away that has not been edible under normal circumstances for most of the inhabitants. Examples could include bones, rinds, or pits/stones. On the contrary, avoidable food waste comes from originally edible parts.

Food waste (including food loss) refers to food, as well as associated inedible parts, removed from the food supply chain. That means they are not used for normal human consumption.

Inedible parts (Bones, skins)	Non-avoidable
Preparation residues (skins,)	Non-avoidable
Consumption residues	Avoidable
Partially consumed food	Avoidable
Entirely uneaten food	
(as purchased, whole, unopened)	Avoidable

20 % of food produced for human consumption (= 88 million tonnes of food) is wasted in Europe, while 795 million people globally suffer from hunger.

Food waste also amounts to a major squandering of resources, including water, land, energy, labour and capital and needlessly produce greenhouse gas emissions, contributing to global warming and climate change. 4% of EU greenhouse gas emission or 186 million tonnes per year are due to food waste – carbon footprint or food. Food wasted by consumers in Europe and North America 95–115 kg/year/person (The STREFOWA Handbook, 2019).

We can learn good practices on the topic of food donations and organic waste prevention in the NOW - No more Organic Waste - LIFE project" (Ridolfi, Vaccari, 2014). (see in annexes)



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## Conclusions

Health can be summarized as a multidimensional state. Health has many dimensions, such as genetic, biological, psychic, mental, emotional, social, cultural dimensions. The development of healthy habits begins in the family, even before conception. Preserving health through health education is a result of a long-term educational process that leads to health literacy in adulthood. This process requires a lifelong, persistent, conscious attention that must be established in early childhood. In addition to the family, Early Childhood Education and Care (ECEC) institutions have a key role to play in this process.

The "FINE! Food and Nutrition in ECEC, project is born thanks to the experiences and outputs of several projects carried out by the project partners on ECEC services quality improvement. The FINE! project focuses on the food and nutritional correlation of the complex concept of health.

The final publication of the project provides an insight into the professional materials processed in a holistic approach to the topic of food and nutrition. ECEC have an important role to play in improving the health of the children, including food, have a positive impact on health.

This book aims to promote, through a multidisciplinary work, the knowledge on the food and nutrition in the ECEC institution. This book brings together a selection of studies written by specialists from ECEC institutions, universities from every project partner.

The focus has been put on areas such as:

- The particular importance of the first 1000 days of life, when optimal nutrition and environmental influences during the critical period of individual development influence the health of the developing organism, which determines the quality of life in adult age. Negative health impacts of malnutrition (wasting, underweight, overweight, obesity) that are disproportionately being felt by family, children living in vulnerable circumstances, widening existing health inequalities.
- Providing more and more children with unique nutritional needs is a big challenge in ECEC institutions. Therapy for children with food allergies is a well-designed diet in the nursey.
- The Mediterranean Food Pyramid, which is rich in fresh, whole foods such as vegetables, fruits, seeds, legumes, nuts, fish, white meat, with a moderate total consumption of calories, daily physical activity and abundant water intake.
- Macronutrients, micronutrients, or vitamins and minerals play an important role in the children's development, brain development, cognitive development, social and emotional development.
- Conviviality, food as a social event. Meal as a moment of socialization, sharing and reciprocal improvement, food as a tool for inclusion and intercultural integration in the ECEC institutions.
- Nutrition and social inclusion of children in ECEC and their families. Child nutrition is
  a topic that cannot be separated from the social and economic context of each
  country. Access to food and the human right to adequate nutrition are conditioned
  by these factors. Poverty and social exclusion continue to affect a significant number
  of people, especially vulnerable groups such as children.
- Good practices in partner organizations used in order to educate and motivate all the intervening parties (school, family, community) to work in the same direction, to



provide a rich, nutritious, appealing and diversified food to all children as this is the basis for healthy development.

- Young children with eating and feeding disturbance, have a variety of presentations, histories, risk, and protective factors. A potential solution for dealing with this situation is the integration of knowledge, skills, and responsibilities of teachers, psychologists, medical professionals, and parents, to encourage information sharing and partnership.
- Food allergies and intolerance to food in preschool children. An adverse food reaction consists of any abnormal reaction after the ingestion of food. It may be due to food intolerance, which is an adverse physiologic response, or to a food hypersensitivity (allergy), which is an adverse immunologic reaction.
- Nutrition legislation aims for all European citizens to have access to safe and nutritious food. General regulation is the basis of the food and nutrition law. It sets out a thorough and coherent framework for the development of food and nutrition law, both at an EU and at national level.
- The European Green Deal focuses on sustainability and environmental protection. The zero-waste movement such as recycle and return of food leftover in the economic circuit, prevention of food waste and leftover, fits into the concept of a circular economy.

The Annex of the book contains a recipe book, offers you many healthy, nutritious, balanced, tasty and appetizing, good cooking recipes. The recipes chosen by the partners are easy to prepare, it is possible to prepare them in every participating country, the ingredients are available and not expensive, the meals are tasty and appealing to children.

In the Annex, there is some more important information about the ECEC services in partner countries. Observation criteria of preschools and services visited during project trainings helps ones to know more about the eating and feeding practices. Weekly menus and nutrition regulations of the partner institutions are useful to understand properly the role of institutions in the healthy development of children in the early years.

Enjoy reading! Enjoy your food with moments of joyful conviviality!

> Sarolta Darvay PhD Editor



#### 7. ANNEXES

## Recipe book

#### English

https://drive.google.com/file/d/1WxGkj5pi2d\_gmm3gY7milcEl4TZLHcWN/view?usp=sharing

#### Hungarian

https://drive.google.com/file/d/1ei89HgNVTnN-Xb51m9j3B7YCzJRaSvWL/view?usp=sharing

#### Portuguese

https://drive.google.com/file/d/1eqBUC02sk1oLdwY6G\_Lw0v-Tlk8Ayu63/view?usp=sharing

#### **Bulgarian**

https://drive.google.com/file/d/1-pIWNdYMOse5k4VLZtcJWer8R3GlfcfM/view?usp=sharing

#### Italian

https://drive.google.com/file/d/1b5nik\_97S-ZKqofx\_6Qih1Vy8A4hKHX\_/view?usp=sharing

#### Croatian

https://drive.google.com/file/d/1AEpDGpAiVR\_PDItSJ5kH\_pxitntXkmHj/view?usp=sharing



# Documents of partner institutions

The documents are helpful to allow a comparison between the services provided by partners, their experiences, good practices, criticisms, strategies, solutions, approach, regulations, training of/for the staff, practical aspects of everyday life at the preschools as a menu, diets, methodologies to manage children's meals, lunch spaces, professionals involved.

#### Context of ECEC services in partner countries

#### **JEB NURSERY (HUNGARY)**

Professional figures in ECECeducation-care area:services (eg. educator, nursehead of an institution,etc.)consultantnursery leadereducatornannynanny
services (eg. educator, nurse       head of an institution,         etc.)       consultant         nursery leader       educator         educator       nanny
etc.) consultant nursery leader educator nanny
nursery leader educator nanny
educator nanny
nanny
+ psychologist
+ special educator
+ music teacher
kitchen worker:
food manager (nutritionist)
cook
kitchen helper
Level of education required for education-care area:
professional figures pedagogical career - diploma
secondary education - advanced vocational training
nanny: 100 hours intensive course required by law
(20/2017. (IX. 18.) EMMI regulation)
kitchen worker:
food manager, nutritionist diploma (dietitian)
COOK - VOCALIONAL LEAINING
Ritchen assistants - do not need education
Proportion of staff and children The 75-children hursery has approx. 24-27 employees
by regulation in ECEC service (including everyone)
1 group 12-14 children
2 teachers ½ nanny or 1 nanny
kitchon worker: 2 people
1 food manager
Relation of Educational aspect before: care



and Care aspect in ECEC	now: education an	d care	
Monthly fee paid by parents for	care fee and dining fee		
ECEC service/medium monthly	The head of the institution according to the regulation		
salary	determine the amo	ount of the care fee	2.
	The care fee shou	ld be set for a full	month even if the
	child is not taking care of every day of the month.		
	Amount of the care fee see in the table below		
	Lower limit of	Upper limit of	Care fee
	income	income	Ft/child/day
		70.000 51	
	0,- Ft	70.000,- Ft	0,- Ft
	70.001,- Ft 100.000,- Ft		210,- Ft
	100.001,- Ft 130.000,- Ft		350,- Ft
	130.001,- Ft 150.000,- Ft		450,- Ft
	150.001,- Ft 200.000,- Ft		600,- Ft
	200.001,- Ft 250.000,- Ft		800,- Ft
	250.001,- Ft 1000,- Ft		1000,- Ft
	No data of the income 1500,- Ft		
	The dining fee set by the head of the institution and		
	payable by the parent is 457 HUF / person/day.		

## **KINDERGARTEN 37 (BULGARIA)**

	KINDERGARTEN 37 (BULGARIA)	
Professional figures in ECEC	preschool educators, assistant educators, nurses	
services (eg. educator, nurse		
etc.)	other specialists	
	educators, psychologist, speech therapist, music educator,	
	resource teacher, external educators in extracurricular	
	activities for the children (English, singing, arts, sports,	
	dances, etc.).	
	other figures	
	principal, assistant principal, cashier, technical assistant,	
	kitchen coordinator (maniple), cook, kitchen staff,	
	washerwoman, specialists in maintenance.	
Level of education required	University degree – bachelor and/or master's degree	
for professional figures	High school for administrative and technical personnel	
Proportion of staff and	General ratio – 1 specialist: 6 children	
children by regulation in ECEC	Constantly with the children	
service	In nursery groups – 2 educators and 1 assistant educator	
	per 25-30 children	
	In kindergarten groups - 2 educators and 2 assistant	
	educators per 20-25 children	
Relation of Educational	In nursery groups – mainly care aspect, there are limited	



aspect and Care aspect in	educational activities for the children by educators	
ECEC	In kindergarten groups –educational focus. There is an	
	educational programme that educators follow.	
Monthly fee paid by parents	There are different practices within the country. There are	
for ECEC service/medium	towns with no fee for kindergarten.	
monthly salary	For Sofia – monthly fee 30 Euros	
	The fee may vary according to child attendance. There is a	
	reduction from the fee when the child doesn't attend.	
	Average monthly salary for Sofia, the capital – 550 – 730	
	Euro.	
	This is a very rough figure. There are very big differences	
	between the families in Sofia – from very rich to very poor.	

## KINDERGARTEN Srčeko (CROATIA)

	KINDERGARTEN Srčeko (CROATIA)		
Professional figures in ECEC	Graduate educator, a graduate nurse in the nursery with		
services (eg. educator. nurse	children at the age of 1 to 3		
etc.)			
Level of education required for	A college education at the high teacher academy in the		
professional figures	duration of 3 years		
Proportion of staff and children	According to the program duration of 7 to 10 hours		
by regulation in ECEC service 2 educators full time, 27.5 hours of immediat			
	children		
	From the age of 1 to 3 years can be 12 children in a group		
	From the age of 3 to 6 years, can be 20 children		
Relation of Educational aspect	To 40 children can be a half time expert cook in the		
and Care aspect in ECEC	kitchen.		
	Educators are working in ECEC and nursery schools with		
	children at the age of 1 to 3 years. The nurse can work		
	only in a nursery together with educators.		
Monthly fee paid by parents for	Economic price for ECEC services is 1120 KN (149€)		
ECEC service/medium monthly	Parent pay 55%,620 KN (82€)		
salary	Average of monthly salary in MEDIMURJE COUNTY is		
	4652 KN (620€)		
	In CROATIA: 6237 KN (831€)		

# ARCA (ITALY)

	ARCA (ITALY)	
Professional figures in ECEC	1.Educators	
services (e.g. educator, nurse	2.Child-care workers	
etc.)	3.Pedagogical coordinator	
	4.Chef	
	5.Kitchen assistant	
Level of education required	1.Degree	
for professional figures	2.Middle School	
	3.Master Degree	



	4.Vocational school	
	5. Middle School	
Proportion of staff and	It depends on the age:	
children by regulation in ECEC	0-12 - 6 children per adult	
service	12-24 - 7 children per adult	
	24-36 - 10 children per adult	
Relation of Educational aspect	Care, responsibility and participation are the fundamental	
and Care aspect in ECEC	principles of holding a relationship and living inside the	
	educational services	
	In the educational context, care serves as a connection to	
	build significant and authentic relationships among the	
	professionals, the children and the families.	
	Carrying out their own educational professionalism with	
	care, in accordance with the art.5 of the Regulations	
	41r/2013 of the region of Tuscany, it's the first educators'	
	responsibility.	
Monthly fee paid by parents	It varies from region to region.	
for ECEC service/medium	An average in Tuscany:	
monthly salary	fee/salary - 500 euro / 1200 euro	

# CENTRO SOCIAL DE SOUTELO (PORTUGAL)

	CENTRO SOCIAL DE SOUTELO (PORTUGAL)		
Professional figures in	Educators (8)		
ECEC services (e.g.	Education Assistants		
educator, nurse etc.)	Pedagogical (14)		
	Coordinator/Technical director (1)		
Level of education	Educators – Degree in childhood education		
required for	Education Assistants – High School (12th grade). There is no		
professional figures	mandatory certification, but professional training is valued.		
	Coordinator/Technical director – Degree in childhood education,		
	or degree in psychology/sociology or social work		
Proportion of staff and	(Nursery is not part of the educational Portuguese system and		
children by regulation in	it's held by private institutions, but the normative rules are		
ECEC service	common for services. In Centro Social de Soutelo the educator of		
	the 1-2 years old class supports the pedagogical work of the 4		
	month-1 year group, but it's not mandatory.)		
	Kindergarten		
	3-4 years old – 1 educator and 2 education assistants/25		
	children		
	4-6 year old – 1 educator and 1 education assistant /25 children		
	(CSS has 6 groups in kindergarten)		
	(Private kindergartens have these normative rules for staff, but in		
	the public system the ratio of adults to children is different from		
	each municipality)		



Relation of Educational	Although the nursery is mainly focused on childcare, CSS gives		
aspect and Care aspect	increased importance to the pedagogical aspect. Each group of		
	semester.		
	The kindergarten is focused on pedagogical aspects because we		
	need to follow the normatives and the orientations from the		
	Ministry of Education.		
Monthly fee paid by	Nursery - 40€-294€		
parents for ECEC	Kindergarten - 30€-235€		
service/medium	The fee is calculated considering the salary, expenses and		
monthly salary	number of people in the family.		



FINE! Observational Criteria - TEMPLATE			
Management	Location	Building	Environment of the facility
Size	Units and Groups	Groups	Educators per groups
Staff	Work shifts	Documentation by the educators	Opening hours
Costs	Outdoor environment	Special projects	Safety
Toys	Daily routine	Kitchen	Location
Number of meals cooked per day	Units of the kitchen	Kitchen staff	Kitchen work shift
Documentation by the kitchen staff	Daily routine	Name of institutions	Country

#### Gyermekkert Nursery – Budapest, Hungary

Management: maintained by the Local Municipality of Józsefváros

**Location**: Gyermekkert Nursery is in the heart of Corvin quarter. This quarter of the district has undergone a major transformation over the past decade. New buildings, parks, shops have been built and opened. The area became very popular among young adults. Despite all of this, our nursery was able to keep its characteristics.

**Building**: The nursery was built by the plans of Miklós Ybl and it was opened on 11 January 1877. It is the only building in the district, which has been operating as a nursery since the 19<sup>th</sup> century.

#### Environment of the facility:

- In the basement, there is a kitchen, a laundry, a meeting room, a salt room, and the only nursery museum in Hungary.
- On the ground floor can be found a spacious hall and 6 group rooms. From the hall, you can go straight to the garden covered by huge shade trees.

The groups feature different areas dedicated to symbolic playing, artwork, construction, reading and dining tables and chairs.

Children's bathrooms have potties and sinks at their height, a changing table and wardrobes for the children's clothes.

Size: up to 72 children.

#### Units and Groups:

• first unit: Ladybird group and Bear group: 14-8 children aged 20 to 36 months



- second unit: Bee group: 14 children aged 20 to 36 months
- third unit: Snail group: 14 children aged 24 to 36 months
- fourth unit: Hedgehog group and Butterfly group: 14-8 children aged 20 to 36 months

**Groups:** Each group has: a soft corner; a reading corner with books; a small hideout; a playing area with construction toys and other toys; a baby kitchen area, a doll corner.

In the infant group, there are tools for supporting gross motor skills, in the toddler groups there is an area dedicated to the pretending game and the disguise game.

#### Educators per groups:

- first unit: 3+2 full-time educators
- second unit: 3 full-time educators
- third unit: 3 full-time educators
- fourth unit: 2+2 full-time educator

#### Staff:

15 educators, 6 day-care assistants, 1 manager, 1 manager assistant, 1 kitchen manager, 2 cooks, 1 kitchen helper.

The educational staff and employees do not wear a uniform but change clothes every day before and after the service. They wear hairbands and aprons in the group during mealtimes.

The chef and kitchen assistant have a uniform.

All employees are trained to meet the safety standards in the workplace. In addition, educators have Paediatric emergency and fire prevention/escape training. The working methodology involves the definition of a reference educator for each child and his / her family. Educators have constant, daily and periodic communication with families.

#### Work shifts:

full time educators:

- 6:00 to 14:00
- 7:00 to 15:00
- 8:00 to 16:00
- 9:00 to 17:00
- 10:00 to 18:00

**Documentation by the educators:** periodic observations of children (under the age of 12 months: every month, 12 to 36 months old: every third month), children's notes for the family, logbooks of the class.

#### Opening hours:

Monday to Friday From 6:00 to 18:00 Drop off from 6:00 to 10:00 (except between 8:00 and 8:30)

**Costs:** The childcare fees are based on family income.

**Outdoor environment:** there is a big garden with outdoor tools and equipment. (Slide, sandpit, bicycles, motors)



Special projects: projects on literature and mother tongue education

**Safety:** the environments, the materials and the equipment are all provided for the children's safety

**Toys**: the basic toys are in every group: dolls, balls, playing cloths, gross motor skill toys, books in an appropriate amount to the number of children. These are completed with other toys and tools according to the age of the group.

#### Daily routine

**6:00 to 8:00** Drop-off and exchanges of information between educators and parents. Free play. Educators take care of children's personal hygiene when needed.

8:00 to 8:30 Breakfast sitting at the tables. Children have fixed seats.

**8:30 to 9:30** Free play or guided activity or activity in the garden.

**9:30** Elevenses: short break to consume a drink or fruit

**10:00 to 10:45** Free play or guided activity or activity in the garden.

**10:45 to 11:00** Personal hygiene. Preparation for lunch

11:20 to 11:45 Lunch

**11:45 to 12:00** Personal hygiene. Preparation for nap time

12:00 to 14:30 Naptime

15:00 to 15:30 Snacks

**15:30 to 18:00** Pick-up, information exchange on daily life at childcare.

For the 6 to15 months old children, there is a personalized schedule of the day.

#### Kitchen

**Location:** The kitchen is located on the basement level of the building.

Number of meals cooked per day: 65 children, 20 employees

#### Units of the kitchen:

- the cooking area including a dishwasher for cookware,
- separate room for meat preparation,
- separate room for vegetable preparation,
- vegetable storage, dry goods storage,
- dishwasher for consumers' dishes,
- storage for food waste.

Staff: 1 kitchen manager, 2 cooks, 1 kitchen helper

Due to hygiene and safety reasons, all kitchen staff members wear a uniform, safety shoes and hairnet, and they are not allowed to wear jewellery.

Work shift: 6:00 to 14:00

**Documentation by the kitchen staff:** Documentation according to HACCP system.

- Checking the temperature of the refrigerator twice a day
- Documentation of tasting
- Checking the temperature of the meals at the last step of serving
- Filling in the cleaning sheet immediately after cleaning the units



We take small samples of each menu-item every day as it is required for HACCP verification.

Daily routine:

**6:00 to 8:00** Receiving of goods, storage, preparation of breakfast for children and employees.

**8:00 to 12:00** Preparing mid-morning snacks for the children, preparing lunch for children and employees.

**12:00** Serving the lunch for the groups in the kitchen, then ending it to the group rooms. Serving the lunch of the employees

**12:00 to 14:00** Preparing snacks for the children. Cleaning and disinfecting the whole area of the kitchen.

#### Játékvár Nursery – Budapest, Hungary

Management: maintained by the Local Municipality of Józsefváros

Location: Palotanegyed (Palace Quarter) is in the inner part of <u>Józsefváros</u>.

One part of Józsefváros – while developing – is still rather run down, while the other part – the Palace District – is one of the most beautiful areas in Budapest. In this part of the innercity historic buildings and stunning aristocratic palaces can be found at every turn.

Many of the quarter's palaces have been restored, local and international investors have seen the charm and potential in the area. The local government of Józsefváros has made progress rebuilding the district's streets to widen footpaths, rationalise parking, plant more trees and generally smarten the area up.

**Building**: The nursery was opened on November 7<sup>®</sup>, 1973. Its construction was aimed to be a facility for early childhood.

It is a four-storey building. There are two playrooms on the ground floor, on the first floor and on the second floor. The kitchen and the dining room are placed on the third floor.

#### Environment of the facility:

- ground floor: entrance hall, stroller storage, childcare unit (two playrooms, milk kitchen, one bathroom, changing room)
- first floor: childcare unit (two playrooms, milk kitchen, one bathroom, changing room), office
- second floor: childcare unit (two playrooms, milk kitchen, one bathroom, changing room)
- third floor: staff's dining room, kitchen, laundry, employees' changing room
- there are toilet facilities on each floor
- garden

The groups feature different areas dedicated to symbolic playing, artwork, construction, reading and dining tables and chairs.

Children's bathrooms have potties and sinks at their height, a changing table and wardrobes for the children's clothes.

Covered terraces: in the afternoons the children sleep outside on the covered terraces (until -5 C degree. In extremely hot or cold weather, the children sleep in the playrooms.)



On the terraces, there are personalized beds for each child.

Size: up to 74 children.

#### Units and Groups:

- ground floor unit: Ladybug group and Mushroom group: 13-13 children aged 24 to 36 months
- first-floor unit: Balloon group and Butterfly group: 12-12 children aged 20 to 36 months
- second-floor unit: Sun group and Rainbow group: 12-12 children aged 6 to 20 months

#### Groups:

Each group has a soft corner; a reading corner with books; a small hideout; a playing area with construction toys and other toys; a baby kitchen area, a doll corner.

Graphic activity is always available.

In the infant group, there are tools for supporting gross motor skills, in the toddler groups there is an area dedicated to the pretending game and to the disguise game.

#### Educators per groups:

- ground floor unit: 2+3 full-time educator
- first-floor unit: 2+2 full-time educator
- second-floor unit: 2+3 full-time educator

#### Staff:

14 educators, 4 day-care assistants, 1 manager, 1 manager assistant, 1 kitchen manager, 2 cooks, 1 kitchen assistant, 1 milk kitchen assistant, 4 day-care assistants

The educational staff and employees do not wear a uniform but change clothes every day before and after the service. They wear headbands and aprons in the group during mealtimes.

The chef and kitchen assistant have a uniform.

All employees are trained to meet the safety standards in the workplace. In addition, educators have Paediatric emergency and fire prevention/escape training. The working methodology involves the definition of a reference educator for each child and his / her family. Educators have constant, daily and periodic communication with families.

#### Work shifts:

Full time educators:

- 6:00 a.m. to 14:00 p.m.
- 7:00 a.m. to 15:00 p.m.
- 8:00 a.m. to 16:00 p.m.
- 9:00 a.m. to 17:00 p.m.
- 10: 00 a.m. to 18:00 p.m

**Documentation by the educators:** periodic observations of children (under the age of 12 months: every month, 12 to 36 months old: every third month), children's notes for the family, logbooks of the class.

**Opening hours:** Monday to Friday



From 6:00 a.m. to 18:00 p.m. Drop off from 6:00 a.m. to 10:00 a.m. (except between 8:00 and 8:30)

**Costs:** The childcare fees are based on family income.

Outdoor environment: outside the childcare there is a garden with equipment outdoor tools

Special projects: projects on literature and mother tongue education

Safety: the environments, the materials and the equipment are all provided for the children's safety

**Toys**: the basic toys are in every group: dolls, balls, playing clothes, gross motor skill toys, books in an appropriate amount to the number of children. These are completed with other toys and tools according to the age of the group.

Activities: motion/physical activity, reading and narration, sound education activities, gardening experiences, etc.

#### Daily routine

**6:00 to 8:00** Drop-off and exchanges of information between educators and parents. Free play. Educators take care of children's personal hygiene when needed.

8:00 to 8:30 Breakfast sitting at the tables. Children have fixed seats.

**8:30 to 9:30** Free play or guided activity or activity in the garden.

9:30 Elevenses: short break to consume a drink or fruit

**10:00 to 10:45** Free play or guided activity or activity in the garden.

**10:45 to 11:00** Personal hygiene. Preparation for lunch

11:20 to 11:45 Lunch

**11:45 to 12:00** Personal hygiene. Preparation for nap time

12:00 to 14:30 Naptime

15:00 to 15:30 Snacks

**15:30 to 18:00** Pick-up, information exchange on daily life at childcare.

For the 6 to15 months old children, there is a personalized schedule of the day.

#### Kitchen:

**Location:** The kitchen and the staff dining room are located on the third floor.

Number of meals cooked per day: 60 children, 14 employees

#### Units of the kitchen:

- the cooking area including a dishwasher for cookware,
- separate room for meat preparation,
- separate room for vegetable preparation,
- vegetable storage, dry goods storage,
- dishwasher for consumers' dishes,
- storage for food waste.

**Staff:** 1 kitchen manager, 2 cooks, 1 kitchen helper Due to hygiene and safety reasons, all kitchen staff members wear a uniform, safety shoes


and hairnet, and they are not allowed to wear jewellery.

Work shift: 5:30 to 13:30

## Documentation by the kitchen staff:

Documentation according to the HACCP system.

- Checking the temperature of the refrigerator twice a day
- Documentation of tasting
- Checking the temperature of the meals at the last step of serving
- Filling in the cleaning sheet immediately after cleaning the units

We take small samples of each menu-item every day, as it is required for HACCP verification.

## Daily routine:

**5:30 to 7:30** Receiving of goods, storage, preparation of breakfast for children and employees.

8:00 to 11:00 Preparing mid-morning snacks for the children, preparing lunch for children and employees.

**10:45 to 11:00** Serving the lunch for the groups in the kitchen, then

11:15 to 11:25 Sending it to the group rooms.

**12:00** Serving the lunch of the employees

12:00 to 14: 00 Preparing snacks for the children. Cleaning and disinfecting the whole area of the kitchen.

#### Tücsök-lak Nursery – Budapest, Hungary

Management: maintained by the Local Municipality of Józsefváros

**Location:** The nursery was built in 2013. The site is located in the middle of one of the most underdeveloped and segregated districts in Budapest – both in social and economic terms – where these urban conditions emphasize even more the indispensability of basic social services.

It can be claimed that the only available plot owned by the municipality in the surroundings is basically unsuitable for establishing a day-nursery on it – even though it was formerly occupied by a fairly run-down kindergarten building. The main architectural challenge undoubtedly was to define a displacement for the program which, despite all the inconveniences, still reacts to the complex and general functional needs and besides to the disturbing urban environment. Consisting basically of three double-room units the building pushes itself against the void between the huge firewalls leaving as much free space as possible for the sheltered green playground. Then the light is shuffled into the solid building mass with the help of reflective white vertical surfaces and through transom-windows and light-wells.

Size: up to 74 children.

## Environment of the facility:

- ground floor: lobby, stroller storage, 3 childcare unit (6 playrooms), staircase
- first floor: office, staff's dining room, kitchen, laundry,
- motion/physical activity room for children





- salt room
- garden

#### Units and Groups:

- 1<sup>st</sup> unit: Winnie-the-Pooh group and Squirrel group: 12-12 children aged 13 to 19 months
- 2<sup>nd</sup> unit: Bee group and Butterfly group: 12-12 children aged 20 to 36 months
- 3<sup>rd</sup> unit: Ladybug group and Kitten group: 13-13 children aged 30 to 36 months

## Groups:

Each group has a soft corner; a reading corner with books; a small hideout; a playing area with construction toys and other toys; a baby kitchen area, a doll corner.

In the infant group, there are tools for supporting gross motor skills, in the toddler groups there is an area dedicated to the pretending game and the disguise game.

## Educators per groups:

There are 5 educators in each unit.

#### Staff:

15 educators, 4 day-care assistants, 1 manager, 1 kitchen manager, 2 cooks, 1 laundry assistant

The educational staff and employees do not wear a uniform but change clothes every day before and after the service. They wear headbands and aprons in the group during mealtimes.

The chef and kitchen assistant have a uniform.

All employees are trained to meet the safety standards in the workplace. In addition, educators have Paediatric emergency and fire prevention/escape training. The working methodology involves the definition of a reference educator for each child and his / her family. Educators have constant, daily and periodic communication with families.

## Work shifts:

Full time educators:

- 6:00 to 14:00
- 7:00 to 15:00
- 8:00 to 16:00
- 9:00 to 17:00
- 10:00 to 18:00

**Documentation by the educators:** periodic observations of children (under the age of 12 months: every month, 12 to 36 months old: every third month), children's notes for the family, logbooks of the class.

**Opening hours:** Monday to Friday From 6:00 to 18:00 Drop off from 6:00 to 10:00 (except between 8:00 and 8:30)

**Costs:** The fees for childcare are based on the family income.



Outdoor environment: there is a garden with outdoor equipments and sandpits

Special projects: 6 places for children with special needs in integrated groups

**Safety:** the environments, the materials and the equipments are all provided for children safety

**Toys**: the basic toys are in every group: dolls, balls, playing clothes, gross motor skill toys, books in an appropriate amount to the number of children. These are completed with other toys and tools according to the age of the group.

## Daily routine

**6:00 to 8:00** Drop-off and exchanges of information between educators and parents. Free play. Educators take care of children's personal hygiene when needed.

**8:00 to 8:30** Breakfast sitting at the tables. Children have fixed seats.

**8:30 to 9:30** Free play or guided activity or activity in the garden.

**9:30** Elevenses: short break to consume a drink or fruit

**10:00 to 10:45** Free play or guided activity or activity in the garden.

10:45 to 11:00 Personal hygiene. Preparation for lunch

11:20 to 11:45 Lunch

**11:45 to 12:00** Personal hygiene. Preparation for nap time

12:00 to 14:30 Naptime

15:00 to 15:30 Snacks

**15:30 to 18:00** Pick-up, information exchange on daily life at childcare.

For the 6 to15 months old children, there is a personalized schedule of the day.

## Kitchen:

**Location:** The kitchen, the offices and the staff dining room are located on the first floor. **Number of meals cooked per day:** 56 children, 13 employees

## Units of the kitchen:

- the cooking area including a dishwasher for cookware,
- separate room for meat preparation,
- separate room for vegetable preparation,
- vegetable storage, dry goods storage,
- dishwasher for consumers' dishes,
- storage for food waste.

## Staff: 1 kitchen manager, 2 cooks

Due to hygiene and safety reasons, all kitchen staff members wear a uniform, safety shoes and hairnet, and they are not allowed to wear jewellery.

Work shift: 6:00 to 14:00

## Documentation by the kitchen staff:

Documentation according to the HACCP system.

- Checking the temperature of the refrigerator twice a day
- Documentation of tasting
- Checking the temperature of the meals at the last step of serving



• Filling in the cleaning sheet immediately after cleaning the units

We take small samples of each menu-item every day as it is required for HACCP verification. **Daily routine:** 

**6:00 to 8:00** Receiving of goods, storage, preparation of breakfast for children and employees.

**8:00 to 12:00** Preparing mid-morning snacks for the children, preparing lunch for children and employees.

**12:00** Serving the lunch for the groups in the kitchen, then ending it to the group rooms. Serving the lunch of the employees

**12:00 to 14:00** Preparing snacks for the children. Cleaning and disinfecting the whole area of the kitchen.

## ASILO NIDO "DRAGONCELLO" – Florence, Italy

Under direct management through a tender of the Municipality of Florence

Size: It can welcome 52 children, 11 educators, 1 cook, 1 Kitchen assistant, 4 childhood assistants

Property of the building: City of Florence.

Number of classes: 3

Number of children per group: 16 + 17+ 19.

Number of educators per group: 1 for 6 kids,1 for 9 kids,1 for 9 kids (as provided by Regional Regulations)

Target: 3 to 36 months

Children are divided into classes by age group: 3 to12 months, 13 to 36 months, 21 to 36 months

**Staff:** there are 11 educators, four in the class of kids 3 - 12 months, 3 in class 13 - 36 months e 4 in the class 21 - 36 months (one of the teachers is a support for the group cause a child with a disability). The teachers work together for the entire school year.

Educators work about 6/7 or 4 hours per day plus, they have a certain number of hours to use for working group meetings, family meetings, professional development and for preparing documentation.

The educational staff and employees do not wear a uniform but change clothes (comfortable) every day before and after the service (in terms of changing rooms). The chef and kitchen assistant have a uniform.

- Educators (Degree in Education)
- Internal Manager (one of the educators), which carries out administrative tasks, facilitates communication within the working group, is in charge of internal substitutions (replacements) and maintains constant communication with the reference coordinator and with the various figures of the Arca organization (purchases,



maintenance, safety, management, replacements, personnel).

- **Childhood assistants** (they must take care of the environment/spaces and they are a support to the sections) Training: HACCP and Secondary school education level.
- **Cook** (prepares the weekly menu, does the food orders, prepares meals, does the kitchen wash-up). Specific professional qualification. HACCP training and training for food preparation for people with celiac disease.
- **Kitchen assistant**. HACCP training and training for food preparation for people with celiac disease.

**Documentation**. There are four kinds of documentation: one for children, one for the families, one about the service and one about relations with other institutions.

**Opening hours:** Monday to Friday from 7.30 am to 5.30 pm

**Costs:** the price is based on family income with municipal help for the non-private admissions, otherwise the price is full for the private admissions (possibility of economic support by the Region).

**Location: Dragoncello Nursery** is in a residential area and it welcomed families from different backgrounds, children with disabilities and children with a specific educator.

**Spaces:** There are 3 classes. Each class is divided into 3 rooms: a dining-activity-play room, a bathroom, and a sleeping room.

Each class hosts a group of children (16-17-19).

There are also: a specific room for the manual activity, a gym room, a specific room for heuristic and construction play, a space for sensorial activities, a large entrance dedicated to adults and children, an archive, a kitchen, a laundry, bathrooms and dressing rooms for all staff members, a warehouse, a space dedicated to parents, an office.

**Outdoor environment:** outside the childcare there is a garden with minimal equipment for each activity room.

**Special projects:** this childcare is based on the attention to environmental and materials ecology. Projects like reuse and recycling, family education, gardening. Dragoncello realizes projects with the nursery Strigonella, situated on the first floor.

**Safety:** the environments, the materials and the equipment are all provided for children's safety and as foreseen by the accreditation.

**Classes:** each class has spaces for the pretending game and for the free play. Each class, characterized by different colours, has wall documentation, lunch tables, carpets, reading areas, and toys.

**Toys:** toys are everywhere in childcare in an appropriate amount to the number of children.

## Daily routine for 13 to 36 months class: Schedule and activities

**7.30 am to 9.30 am.** Drop-off and exchanges of information between educators and parents. Children play, organize themselves in pretending games or read books. Educators take care of children's personal hygiene when needed.



9.30 am to 10.15 am. Breakfast sitting at the tables in small groups. Children have fixed seats.

**10.15 am to 11.15 am.** Free play or guided activity or activity in the garden or activity at the park or motion/physical activity.

**11.15 am to 11.45 am.** Personal hygiene. Preparation for lunch

11.45 am to 12.15 pm. Lunch

12.15 pm to 13.15 pm. Personal hygiene. Preparation for nap

**12.30 pm to 13.30 pm.** Some children (choice of the family) go home.

13.15 pm to 15.15 pm. Naptime

15.15 pm to 16.00 pm. Snacks

**16.00 pm to 16.30 pm.** Pick-up, information exchange on daily life at childcare.

For all the children there is a personalized schedule of the day. All the children of 3 – 12 months finish the activity at 16.30.

**17.00 pm to 17.30 pm.** Pick-up, information exchange on daily life at childcare. For the child of 13 to 36 months.

Activities: motion/physical activity, reading and narration, sound education activities, natural materials labs, heuristic play, gardening experiences, park walks, etc...

Activities are proposed in small groups and are thought-about after observing the children and their needs and group dynamics. Educators' attention is mostly to children's needs and to the relationship with them.

Attention to welcome the family and listen to their needs helps educators to really connect with them and to identify the best strategies to meet the emerging needs.

Training on-site about intercultural and the welcome of diversity remains a fundamental necessity.

## ASILO NIDO "IL GRILLO PARLANTE" – Mantignano (Florence), Italy

Under direct management through a tender of the Municipality of Florence

Size: It can welcome 56 children, 12 educators, 1 cook, 1 Kitchen assistant, 4 childhood assistants

Property of the building: City of Florence.

Number of classes: 3

Number of children per group: 14 + 20+ 22.

Number of educators per group: 1 for 6 kids,1 for 9 kids,1 for 9 kids (as provided by the Regional Regulations)

Target: 3 to 36 months

**Children are divided into classes by age group:** 3 to12 months, 13 to 36 months, and 13 to 36 months

Staff: there are 12 educators, four in each class that work together for the entire school



year.

Educators work about 6 or 4 hours per day plus, they have a certain number of hours to use for working group meetings, family meetings, professional development and for preparing documentation.

The educational staff and employees do not wear a uniform but change clothes (comfortable) every day before and after the service (in terms of changing rooms). The chef and kitchen assistant have a uniform.

- Educators (Degree in Education)
- Internal Manager (one of the educators), which carries out administrative tasks, facilitates communication within the working group, is in charge of internal substitutions (replacements) and maintains constant communication with the reference coordinator and with the various figures of the Arca organization (purchases, maintenance, safety, management, replacements, personnel).
- **Childhood assistants** (they must take care of the environment/spaces and they are a support to the sections) Training: HACCP and Secondary school education level.
- **Cook** (prepares the weekly menu, does the food orders, prepares meals, does the kitchen wash-up). Specific professional qualification. HACCP training and training for food preparation for people with celiac disease.
- **Kitchen assistant**. HACCP training and training for food preparation for people with celiac disease.

**Documentation**. There are three kinds of documentation: one for children, one for the families, one about the service and one about relations with other institutions.

**Opening hours:** Monday to Friday from 7.30 am to 5.30 pm

**Costs:** the price is based on family income with municipal help for the non-private admissions, otherwise the price is full for the private admissions (possibility of economic support by the Region).

**Location: Grillo Parlante Nursery** is in a not very populated, residential area, and it welcomes families from different backgrounds, children with disabilities and children with a specific educator.

**Spaces:** There are 3 classes. Each class is divided into 3 rooms: a dining-activity-play room, a bathroom, and a sleeping room.

Each class hosts a group of children (14-20-22).

There are also: a specific room for the manual activity, a gym room, a specific room for symbolic play, a specific room for heuristic activities, a large entrance dedicated to adults and children, an archive, a kitchen, a laundry, bathrooms and dressing rooms for all staff, a warehouse, a space dedicated to parents, an office.

**Outdoor environment:** outside the childcare there is a garden with minimal equipment and a large loggia available for each activity room.

**Special projects:** this childcare is based on the attention to environmental and materials ecology. Projects like reuse and recycling, family education, gardening.

Safety: the environments, the materials and the equipment are all provided for children's



safety and as foreseen by the accreditation.

**Classes:** each class has spaces for the pretending game and for the free play. Each class, characterized by different colours, has wall documentation, lunch tables, carpets, reading areas, and toys.

**Toys:** toys are everywhere in childcare in an appropriate amount to the number of children.

Daily routine for 13 to 36 months class: Schedule and activities

**7.30 am to 9.30 am.** Drop-off and exchanges of information between educators and parents. Children play, organize themselves in pretend games or read books. Educators take care of children's personal hygiene when needed.

9.30 am to 10.15 am. Breakfast sitting at the tables in small groups. Children have fixed seats.

**10.15 am to 11.15 am.** Free play or guided activity or activity in the garden or activity at the park or motion/physical activity.

11.15 am to 11.45 am. Personal hygiene. Preparation for lunch

11.45 am to 12.15 pm. Lunch

12.15 pm to 13.15 pm. Personal hygiene. Preparation for nap

**12.30 pm to 13.30 pm.** Some children (choice of the family) go home.

13.15 pm to 15.15 pm. Naptime

15.15 pm to 16.00 pm. Snacks

**16.00 pm to 16.30 pm.** Pick-up, information exchange on daily life at childcare.

For all the children there is a personalized schedule of the day. All the children of 3 – 12 months finish the activity at 16.30.

**17.00 pm to 17.30 pm.** Pick-up, information exchange on daily life at childcare. For the child of 13 to 36 months.

Activities: motion/physical activity, reading and narration, sound education activities, natural materials labs, heuristic play, gardening experiences, park walks, etc...

Activities are proposed in small groups and are thought-about after observing the children and their needs and group dynamics. Educators' attention is mostly to children's needs and to the relationship with them.

Attention to welcome the family and listen to their needs helps educators to really connect with them and to identify the best strategies to meet the emerging needs.

Training on-site about intercultural and the welcome of diversity, remains a fundamental necessity.

## ASILO NIDO "PANDIRAMERINO" – Florence, Italy

Under direct management through a tender of the Municipality of Florence

Size: it can welcome up to 54 children.

Inside floor area: 600 sqm.

Garden area: 600 sqm.



**The building:** the structure of the building was finished on March 30, 2013. Its construction was funded by a regional project aimed to build a facility for early childhood (0/3). The facility is part of a large architectural complex that houses the childcare, a kindergarten, and a primary school in the Coverciano district. It is spread over two floors. The glass entrance door to the childcare opens onto a large, bright area, which leads to a corridor connecting the three classes: the laboratories, the kitchen and the staff toilet facilities. On the upper floor are the employees' changing rooms and the "Space Book", a library dedicated to children aged 2 to 6 accompanied by an adult. The garden develops sideways, and it is accessible from the three sections.

**Property of the building:** Municipality of Florence.

**Location:** The Childcare is situated in a middle-class neighbourhood of Florence. There are also many families of foreign origins from many parts of the world. Childcare can be attended by both high-class families and disadvantaged ones.

## Environment of the facility:

- Garden
- lobby/entrance hall, reception area
- 3 classes (each one has two playrooms, one bathroom and a sleeping room) The classes feature different areas dedicated to symbolic playing, artwork, construction, reading and dining tables and chairs. Children's bathrooms have potties and sinks at their height, a changing table, and a chest of drawers for changing the children. The sleeping room has personalized beds for each child.
- 3 labs (motion/physical activity, graphics, and discovery), set up for various activities
- 1 Kitchen
- Toilets for adults
- 1 Office
- Changing rooms for staff
- Storage closets

## Classes / groups:

Each class has: a soft area; a reading area with books and photo-book of children's families; a small hideout; two areas for exploration of objects and materials; a playing area with construction toy and plastic animals; an area dedicated to the graphic activity; an area dedicated to the musical activity; an area dedicated to the pretending game and to the disguise game (with a basket containing shoes, scarves, hats and bags). In the yellow class, there is also specific furniture for the "first steps" and some sensory panels hanging to the wall.

## Children per group:

The Yellow one hosts 13 children aged 3 to 12 months; the orange one hosts 20 children aged 12 to 36 months and the green one that hosts 21 children from 24 to 36 months

**Number of educators per class:** each section has 4 educators (3 full time and one part-time) plus one childhood assistant. The numerical educators-children ratio in the yellow class is 1 to 4, in the orange class is 1 to 6/7 and in the green class is 1 to 7/8.

Partition of children in each section (by age or mixed) The yellow class can be considered mixed (about 70% of children attend childcare for two years and the remaining 30% for



three years). The orange class is mixed (half of the children attend childcare for two years and a half for one year only). The green class is homogeneous and welcomes children attending the last year of childcare.

**Staff:** The working group is composed of 12 teachers, 5 childhood assistants, 1 cook, 1 kitchen assistant and three special needs teachers.

- Educators (Degree in Education)
- Internal Manager (one of the educators), which carries out administrative tasks, facilitates communication within the working group, is in charge of internal substitutions (replacements) and maintains constant communication with the reference coordinator and with the various figures of the Arca organization (purchases, maintenance, safety, management, replacements, personnel).
- **Childhood assistant** (he/she must take care of the environment/spaces and is a support to the sections) Training: HACCP and Secondary school education level.
- **Cook** (prepares the weekly menu, does the food orders, prepares meals, does the kitchen wash-up). Specific professional qualification. HACCP Training.
- Kitchen assistant. HACCP Training.

The educational staff and employees do not wear a uniform but change clothes (comfortable) every day before and after the service (in terms of changing rooms). The chef and kitchen assistant have a uniform.

All employees are trained to meet the safety standards in the workplace. In addition, educators have Paediatric emergency and fire prevention/escape training. The working methodology involves the definition of a reference educator for each child and his / her family. Educators have constant, daily and periodic communication with families. The childhood assistants collaborate with the classes, so they have ongoing relationships with the children's group and the educators.

The staff has an office with a notice board for communications, a computer (for email communications and documentation) and a paper archive.

## Work shifts:

- full-time educators in yellow class: 7:30 am to 1:30 pm 9:30 am to 3:30 pm and 10:30 am to 4:30 pm.
- full-time educators in orange class: 7:30 am to 1:30 pm 9:30 am to 4:30 pm and 10.30 am to 5:30 pm.
- full-time educators in green class: 7:30 am to 1:30 pm 9:30 am to 3:30 pm and 11:30 am to 5:30 pm
- part-time educators (one for each class): 8:30 am to 12:30 pm childhood assistants: 7:30 am to 1:30 pm - 8.30 am to 2:00 pm - 9.30 to 2:30 – 2:00 pm to 6:00 pm. and 2:30 pm to 6:00 pm.
- cook: 7:30 to 1:45 pm
- kitchen assistant: 9:00 to 2:00 pm.

Now, there is also an operator as protected job insertion, which accomplishes 4 hours daily from Monday to Friday in the afternoon.

**Documentation:** periodic observations of children, children's diaries, logbooks of the class, Message Boards, Cookbook of the childcare, Annual report of activities, papers for families (3 in a year), The Educational Project.

## Opening hours:



From 7:30 am to 4:30 pm for children in the yellow class. From 7:30 am to 5:30 pm for children orange and green class. Drop off from 7.30 am to 9.30 am Pick up from: 12.30 pm to 13.30 pm - from 15.00 pm to 15.30 pm - from 4 pm to 4:30 pm and from 5 pm to 5:30 pm.

## Costs:

The childcare fees are based on the family income bracket, calculated on the Equivalent Economic Situation Indicator (ISEE) and the child pick-up time.

Pick-up time at the childcare

With ISEE equal or lower € 5,500.00

<u>Minimum fee</u>

With ISEE equal or lower To € 32,500.00

<u>Maximum fee</u>

1:30 pm or 2:30 pm € 59,00 € 357.00

3:30 pm € 59,00 € 388.00

4:30 pm € 63,00 € 463.00

## Special reductions

Special reductions are provided in the Regulation in cases of absence of the child due to hospitalization, convalescence after hospitalization or injury; the continual absence of the child due to a certified illness lasting more than 60 days; interruption of the educational service due to Christmas and Easter holidays; two or more brothers/sisters attending a 0-3 educational service (the first child attending the educational service will pay the fee depending on the ISEE value, while the following brothers/sisters will attend for free). A total exemption from payment of the fee is possible in the following cases: when the child is a certificated disabled child in accordance with the law n.104 of 1992; family economic discomfort. The family pays directly to the city council. Reserved places for the disadvantaged: children reported by Social Services in foster care families, children reported by Social Services; children holding a certificate or receipt for the submission of a request for obtaining a certificate in accordance with the following normative provisions: L. 104/92 "Framework Law on Assistance, Social Inclusion and Rights of Disabled Persons"; children recognized by only one parent or orphans, even orphans of one parent.

Presence of disabled children and respective special needs educator (in this current year):

- in the yellow class: a hearing-impaired child
- in the orange class: an autistic-spectrum disorder child
- in the green class: a child with diabetes and a child followed by social services (the mother and the three children are in a foster home for domestic violence).

In each class, there is a group support educator (the service is entrusted to an external cooperative chosen by the City Council).

Special projects that distinguish the Childcare:

Continuous communication and exchange with the Kindergarten throughout the year. Light lab. Workshops with the families throughout the year like Christmas workshops, kitchen workshops, spring party, participation in the party organization.

Safety: the entrance to the gate of the childcare is controlled from the inside. There is no heater inside the building, but the heating is on the ground.

The environments, the materials and the equipment are provided for children's safety and they have no edges. Games and materials are mostly natural, edible, and standard for children from 0 to 3 years old.



## Daily routine

5:30 SCHEDULE DAILY ACTIVITIES 07.30 -09.30 Drop off and Reception 09.30 -10.00 Breakfast 10.00 -10.30 Bath time 10.30 -11.15 Activities or free play 11.15 -11.30 Lunch preparation / bath time 11.30 - 12.30 Lunch

## Activities

## For children:

3 to 12 months: game of discovery, narrative, reading, singing, 'basket of treasures', playing in the garden, motion/physical activity, music, sensory activities.

12 to 18/24 months: discovery and exploration activity, manipulative activities (fill and pour, edible dough manipulation, heuristic play), graphic-pictorial (painting, drawing), cognitive (constructions), linguistic (shared reading, narrative), musical (listening, playing), expressive (disguise game) and the discovery of nature (exits and walks in the garden, observation, nature care).

18/24 to 36 months: creation (for houses and hideout, complex symbolic scenes, short stories, graphic representations and small and large construction with various objects and materials, media education (light and shadows, image projection). Intercultural: readings, songs, dishes, pictures, stories, rhymes.

**For families:** meetings, workshops, special events parties. 13:00 to 13:30 1st pick-up 13.00 - 15.00 nap time 15.00 to 15.30 2nd pick-up 15.30 -16.00 Awakening and snack 16.00 to 16.30 3rd pick-up 16:30 to 17:30 4th pick-up

## CENTRO SOCIAL DE SOUTELO NURSERY AND KINDERGARTEN - Rio Tinto, Gondomar, Portugal

## Management:

A non-profit organization, with partial public funding. The board is elected from the associates and is elected every four years. There are workers that guarantee the daily coordination of the organization and respond to the board. There is 1 coordinator of the educational services that is nominated by the board. There are 2 pedagogical directors in the kindergarten and 1 technical director in the nursery. All of them are educators. This is a yearly function, so every educator has this role periodically.

Location: Rio Tinto, Gondomar.

Size: up to 171 (daycare – 37 children; kindergarten – 134 children).

## Environment of the facility:

**Ground Floor** – In this floor can be found the kitchen and pantries, cafeteria with access to an indoor park, laundry, 1 meeting room, 4 offices, reception, 1 activity room, 6 kindergarten classrooms and several toilet rooms, 2 locker rooms for the staff.

**First floor** – In this floor can be found the day-care with 3 group rooms, access to a balcony with toys, a small kitchen, 1 meeting room, several toilet rooms, multifunction space (that is used also as a day centre for the elderly) with access to a garden and an outdoor park.



## Units and Groups:

## Nursery

- Age 4 to 12 months group: 8 children
- Age 12 to 24 months group: 12 children
- Age 24 to 36 months group: 15 children

## Kindergarten

- 3 to 4 years old group: Group A 22 children/ Group B 21 children
- 4 to 5 years old group: Group A 25 children/ Group B 24 children
- 5 to 6 years old group: Group A 22 children/ Group B 20 children

## Educators per groups:

Every group has an educator full time, the nursery and the 1-year-old group share an educator.

## Staff:

8 educators, 14 educator assistants, 1 educational service coordinator. The educational staff wears a uniform (same as the children from 2 to 5 years old) and a hairnet during mealtimes.

## Work shifts:

Full-time educators work 7 hours a day: 8h30 to 17h or 9h to 17h. The educator assistants work 7 hours and 30 minutes a day, they do the shifts between 7h and 19h30 to ensure all the institution opening hours. Every employee has 1 hour or 1 hour and 30 minutes to lunch.

**Documentation by the educators:** Individual development plans for every child, weekly activity plans, logbooks, periodic development evaluations.

## **Opening hours:**

Monday to Friday From 7:00 to 19:30 Drop off from 6:00 to 10:00 (except between 8:00 and 8:30)

**Costs:** The childcare fees are based on family income.

**Outdoor environment:** There is a garden, an outdoor park equipped with slides and tunnels and an indoor park equipped with balls and tricycles.

**Special projects:** Science; Literacy; Computer skills instruction, Music.

**Safety:** The environments, the materials and the equipment are all provided for children and staff safety.

**Toys**: Each group has at their disposal a variety of toys that are suitable for their ages and needs. Such as books, puzzles, dolls, animals, cars, LEGOs, kitchen tools, and games that are in an appropriate amount to the number of children.

## Daily routine

**7h to 9h** - Children's reception; exchanges of information between educators and parents.



Free play. Educators take care of children's personal hygiene when needed.

**9h to 9h30** - Serving the morning snack.

**9h30 to 10h** - Recess time. Free play.

10h to 11h - Guided activity.

**11h to 11h30** - Personal hygiene. Preparation for lunch.

11h30 to 12h30 - Lunch

**12h30 to 13h** - Personal hygiene. Preparation for nap time.

**13h to 14h30** - Nap time.

15h30 to 16h - Afternoon snack.

**16h to 16h30** - Free play or guided activity.

**16h30 to 19h30** – Free play. Pick-up, an information exchange with parents.

## Kitchen:

**Management:** Despite providing the facilities and staff, Centro Social de Soutelo has its kitchen currently being managed by an external company (Gertral) which is responsible for: implementing and auditing the HACCP standards, setting menus in partnership with Centro Social de Soutelo, purchasing food and selecting suppliers.

Location: Headquarters' ground floor.

Number of meals cooked per day: 715 (40 breakfasts, 475 lunches/dinners, 200 snacks)

## Units of the kitchen:

- Cooking area
- Space to wash cookware and dishes includes dishwasher
- Space for meat/fish preparation
- Space for vegetable preparation
- Potatoes storage
- Vegetable and dry goods storage
- Storage for frozen food
- Storage for food waste
- Serving area

**Staff:** 1 chief of kitchen sector, 1 cook, 4 kitchen helpers

Due to hygiene and safety reasons, all kitchen staff members wear a uniform, safety shoes and hairnet, and they are not allowed to wear jewellery.

Work shift: The kitchen staff works 8 hours a day: 7h to 16h or 7h30 to 16h30 or 8h to 17h. Every employee has 1 hour to lunch.

## Documentation by the kitchen staff:

All the documents used are according to the HACCP system.

- Sheet to register the temperature of the meals at the last step of serving.
- Sheet to register the temperature of the refrigerator and the freezer (twice a day).
- Sheet to register the cleaning of the units.
- Datasheet for using cleaning detergents.
- Specific diet sheet (diabetes, hypertension, food restrictions).

Food safety: We take small samples of each menu-item every day as it is required for HACCP



verification and store it up to 72 hours.

**Menu:** The menu is set weekly by a team of nutritionists. There are specific menus for daycare, kindergarten/adults, elderly.

**Receiving food and storage:** Receiving goods and storage twice a week (vegetables, fruits, meat, and fish). The bread is delivered twice a day, in the morning and the afternoon. The food bank offers food twice a month.

## Daily routine:

**7h to 7h30** - Preparing the fruit for the morning snack.

7h30 to 10h30 - Preparing and cooking all foods for lunch (soup, main course and dessert).
10h30 to 11h30 - Disinfecting and setting the tables in the cafeteria for the children's lunch.
11h30 to 14h - Serving the lunch for day-care, kindergarten, elderly, employees. Serving the lunch boxes for the home support. Washing and sanitizing dishes, equipment, and flooring.
14h to 17h - Afternoon snack preparation and serving.

Preparing meat or fish for lunch for the next day.

Cleaning and disinfecting the whole area of the kitchen and cookware.

## Kindergarten 37 "Valshebstvo" - Sofia, Bulgaria

## Management

Kindergarten 37 "Valshebstvo" is a municipal child facility located at "Vitosha" region, Sofia. A principal manages kindergarten 37. The Pedagogical Council is the collective governing body of the kindergarten. The Pedagogical Council includes the principal, teachers, and other professionals with pedagogical roles. The Pedagogical Council is a specialized body with a goal of noticing and managing different pedagogical questions:

- 1. takes on a strategy for the development of the kindergarten, that is annually updated
- 2. decides on regulations of actions for the kindergarten
- 3. decides on a yearly complex plan for the children facility
- 4. discusses and decides all programmes that will be executed
- 5. discusses and decides matters based on the results of the educational process
- decides about all activities apart from the state educational requirements additional pedagogical services, and additional methods for pedagogical interaction
- 7. updates annually the regulated relationship with the parents regarding arrangements of children's living situation in the kindergarten, and payment of fees.

Within the Pedagogical Council, the chairperson of the parent's board and the medical professional, who is on duty in the kindergarten, can participate with a right for an advisory vote.

Kindergarten 37 is funded by Sofia city and state budgeting.

## Location

37 Kindergarten "Valshebstvo" is located at "Vitosha" region in Sofia-city, Pavlovo district, Belmeken str. 1. Pavlovo is a quiet and peaceful neighbourhood in the southern part of Sofia. It is located at the skirts of Vitosha Mountain - the first natural park on the Balkan Peninsula.

## Building



The Kindergarten 37 "Valshebstvo" is a municipal kindergarten founded in 1977 with the purpose of care and education of children in early and preschool, years.

The kindergarten extends over an area of 8200 square meters of which 1555,25 square meters of built-up area and 6644,25 square meters of the yard and outside facilities. In 2018-2019 a new part was built.

## Environment of the facility

Kindergarten's buildings consist of administrative part; parts for nursery and kindergartens groups; the kitchen sector; laundry; two lounges (small and large); gym; storage rooms. Located in the administrative part are:

- the principal's office
- the vice principal's office
- professionals' offices (psychologist, speech therapist, special needs teacher)
- medical professionals' office
- manciple's office
- administration and technical secretary office.

The yard has 11 playgrounds for play and outdoor activities. At each playground are located sandboxes and various play facilities. There are also football playground and basketball court. All the facilities in the yard are made of high-quality materials. All the playgrounds are covered by special soft and shock-absorbing material. There is also a special area equipped with facilities for training children in traffic safety rules.

In the newly built part of the facility, there are 3 kindergarten groups, in a two-group section and 4 kindergarten groups, and a four-group sector. The nursery part consists of 2 groups. Each sector has a separate entrance.

## Size

The Kindergarten provides educational services and care for 319 children between 10 months and 6/7 years of age. Children from 10 months until 3 years of age are divided into two nursery groups. Four nurses take care of them. The nurses are under the authority of the Ministry of Health. They work on two shifts. The kindergarten groups for children 3-6/7 years of age are nine – 76 3 years old children split into 3 groups, 62 4 years old children, 62 5 years old children, and 65 6/7 years old. For each group of children, there are 2 teachers, working in two shifts and educational assistance. Kindergarten 37 works with children on a five-day working week from 7:00 until 19.00 hour.

## Units and Groups

The Kindergarten provides educational services and care for 11 groups of children. Details are provided in Table 1.

Nursery Group	10 m - 3 y.o.	"Yaki the Duck"	27			
Nursery Group	10 m - 3 y.o.	"Patilantsi"	27			
First group A	3 - 4 y.o.	"Sun"	26			
First group B	3 - 4 y.o.	"Rainbow"	25			
First group C	3 - 4 y.o.	"Kids' planet"	25			
Second group A	4 - 5 y.o.	"Kids' world"	31			
Second group B	4 – 5 y.o.	"Star kid"	31			

#### Table. 1. Distribution of children per groups



-	Total: 11 groups - 2 nurser	319 children		
	Forth group (pre-school) B	6 - 7 y.o.	"Joyful sparrows"	33
	Forth group (pre-school) A	6 - 7 y.o.	"Winnie the Pooh"	32
-	Third group (pre-school) B	5 - 6 y.o.	"Barborino"	28
-	Third group (pre-school) A	5 - 6 y.o.	"Know-it-all"	34

## Groups

The area for each nursery or kindergarten group consists of:

- an entry area where individual wardrobes for every child are positioned
- a big playroom with corners for various play and educational activities (corner for role-playing games, corner with constructive games, a library with age-appropriate books, a corner with materials for creative activities, various toys, etc.
- a sleeping room with individual beds for every child for an afternoon nap
- service areas (toilets, washing machine, etc.)

Each kindergarten group has multimedia, interactive board, tablets.

#### Educators per groups

Nurseries: 2 nurses, and 2 assistant teachers. Kindergarten groups: 2 teachers, and 1 assistant teacher.

## Staff

62 persons are working in the kindergarten - preschool educators, music teacher, medical nurses, psychologist, speech therapist, special educator, kitchen staff, administrative and technical staff, etc.

- 25 persons pedagogical staff
- 29 persons non-teaching staff
- 8 medical nurses

## The pedagogical staff includes 25 employees:

- principle
- vice principle
- 18 teachers
- pedagogue
- music teacher
- psychologist
- speech therapist
- special needs teacher

The non-pedagogical staff includes 29 employees. The medical nurses are 8. They are under the authority of the Ministry of Health and the mayor of "Vitosha" region.

To provide a supportive environment, a Team for personal development support for children of the facility is formed. A speech therapist, a psychologist, and a special needs teacher are employed. There is a special office for those professionals. A preventive, diagnostic, rehabilitation and corrective work with children is done. Also, pedagogical and psychological support is available.

Work shifts



There are two main shifts for the teachers. First shift starts from 07:00 to 13:00, and second shift starts from 13:00 to 19:00.

Assistant teachers at the kindergarten work from 07:30 to 16:00.

Nurses and assistant teachers from the nursery also work on two main shifts.

## Documentation by the educators

Kindergarten 37 "Valshebstvo" has its own Program system. Each group develops its own system, basing on educational booklets from a specific publisher and different didactic materials. The system includes:

- Methods and forms of pedagogical interaction
- Alignment of all forms of pedagogical interaction
- Themed distribution for each age group
- Interaction mechanism among participants in pre-school education.

For educational and medical documentation to be kept current and accurate, the following rules are established:

- All teachers and nurses must finish the record of the number of children present for the day latest due 08:30, as this should be done in the designated attendance book. A signature needs to be present also in the online register.
- Planning the educational content by groups, based on age characteristics and personal rate of development, is done within the yearly distribution of the educational regulations. This is under the authority of the State Educational Requirements for pre-school education and preparation. It is to be described in weekly plans (register).
- Planning the educational content of the nursery is done within two-weeks based plans. It is to be executed by the nurses and teachers. It should be described in the group's register.
- It is a responsibility of the kindergarten's nurse to store, keep track of, and validate the medical documents of all children; also, of all medical test results and regularity of immunizations, keeping track of and storing medical cards and personal health cards, contact notes, information from and to Metropolitan Regional Health Inspectorate.

Educational booklets are provided for each child. Diagnostic procedures are done (screening of 3-year-olds, diagnostics of knowledge development, etc.).

Affirmation of the mandatory pre-school preparation, that takes place two years prior first grade, has a strong educational effect that brings long-term benefits regarding social skills and achievements of each child throughout the whole education period. An intensive process of integrated education of pupils with special educational needs is established.

## Opening hours

Kindergarten 37 "Valshebstvo" is open Monday to Friday from 7:00 to 19:00 Drop off from 7:00 to 08:30.

## Costs

There is a monthly fee paid by the parents (guardians) of the children for them to attend. The parents (guardians) must follow the stated deadlines. The fees are accounted for in the budget of Sofia Municipality. The fees are decided on all norm requirements, as the sum is



calculated based on the child's attendance.

## Outdoor environment

There are 11 playgrounds in the yard. They are equipped with sandboxes, green space, tiles, and playthings. There are also football and a basketball field.

## Special projects

The specialists from the kindergarten have long-term experience in various projects both national and international. Some of them are:

- "I Learn and Play Safe" a project funded by Program for prevention of children's life and health as participants in the road traffic
- "School Fruit" a national strategy for implementing a scheme for the provision of fruits and vegetables in educational establishments in Bulgaria
- "Cup of Milk" a national strategy for implementing a scheme for the provision of milk and dairy products in educational establishments in Bulgaria
- "Happy and Healthy" project within the Program for the implementation of the Municipal Strategy for the Development of Physical Education and Sport 2016-2020, support for the initiative "Sofia - European Capital of Sport – 2018"
- "Green Magic" a project of the Association of Parents' Trustees of 37th Kindergarten, funded by the Program Green Sofia
- "Health Parade" a project funded by Program for Development of Physical Education and Sport, Sofia Municipality, 2017
- National program "Information and Communication Technologies (ICT) in the system of pre-school and school education" - Ministry of Education and Science project
- Pedagogical Practice "Morning Fairy-tale" an adaptive psycho-pedagogical and methodical practice for joint work of teachers and family representatives during the period of adaptation of children to kindergarten, Ministry of Education and Science project
- Project "Active inclusion in the system of pre-school education"
- Food and Nutrition In ECEC, FINE! (2018-1-HU01-KA201-047760), Erasmus+ Project
- Ready to Read, READ, (2019-1-HU01-KA201-061099), Erasmus+ Project
- Social and Emotional Skills Development in Early Childhood Education and Care in Europe, EU-SELF, (2019-1-BG01-KA201-062593), Erasmus+ Project

They also provide various additional extracurricular activities for the children to provide a stimulating environment, so children to be able to develop their intellectual potential. These activities are not provided by the kindergarten. Parent pay for them extra. Among the proposed extra-curricular activities are:

- •English language learning
- •Applied Art
- •Folk Dances
- •Vocal Singing
- •Speech therapist
- Ballet
- Yoga
- •etc.

Annually various activities for the children out of the kindergarten are organized like excursions, green school and white school, summer camps, etc.

Each month professional actors perform plays for the children in the kindergarten. This is



arranged by the "Kids Play for Kids" initiative.

Parents are teachers' partners. There are different initiatives, among which are an Open-House day, a Christmas event, a 1ª of March event ("Baba Marta"), an Easter event, a "Teacher for a Day".

Kindergarten 37 "Valshebstvo" is working on the Ministry of Education and Science's projects "A Morning Fairly-tale" and "We Succeed Together". Those are innovative projects, aiming for the children to adapt safely to new environments, and to acquire reading skills and interest in books.

## Safety

All types of equipment in the yard are made from high-quality materials. The flooring of the playgrounds is soft and shock-absorbing.

## Toys

For each group, different toys are provided: soft toys, constructors, puzzles, kitchen set, the workshop set with tools, doctor's medical set, didactic games, differently sized balls, dolls, books, kids' store set, etc. All toys are selected based on the children's age. The toys are made with high-quality materials. They are made and used according to the requirements of Directive 2009/48/EO about children's toys safety.

## Daily routine

A schedule for the daily routine for nursery and kindergartens groups are presented in Table 2.

Day Schedule Pre-school Nursery Drop-off Activities chosen by the children 07:00 - 8:30 07:00 - 8:30 Morning stretching Breakfast 08:30 -08:30 -09:00 09:00 Morning routine (personal hygiene) 09:00 -09:30 Planned pedagogical situations 09:30 -09:00 -09:45 10:00 Additional forms for pedagogical interaction 09:45 -10:00 Brunch 10:00 -10:00 -10:10 10:10 Pre-noon nap 10:00 -10:30 Additional forms for pedagogical interaction – working with 10:10 professionals 11:30 Planned pedagogical situations 10:10 -10:40 Additional forms for pedagogical interaction – working with 10:40 professionals 12:20

Table 2. The daily routine of nursery and kindergarten groups



Lunch	11:30 -	12:20 -
	12:15	12:40
Afternoon routine (Personal hygiene) and preparing for a nap	12:15 -	
	13:00	
Activity games		12:40 -
		13:00
Afternoon rest	13:00 -	13:00 -
	15:30	15:00
Afternoon routine (Personal hygiene)	15:30 -	
	16:00	
Snack	16:00 -	15:15 -
	16:30	15:30
Planned pedagogical situations		15:30 -
		16:25
Pick-up, additional forms for pedagogical interaction, additional	16:30 -	16:30 -
activities	19:00	19:00

## Kitchen

There are 3 persons working in the kitchen: a chef, an assistant chef, a kitchen helper. All are working from 06:00 to 14:30. Daily meals are prepared in the kindergarten, including breakfast (served at 08:20), brunch (served at 10:00), lunch (a 3-course meal), and an afternoon snack.

Kitchen staff wear uniforms, anti-slip shoes, and caps. All requirements by the Hazard Analysis and Critical Control Point (HACCP) system are followed daily. The following documents are to be filled in: registers for refrigerating temperature, food temperature, and disinfection.

## Location

The kitchen of the kindergarten is in the central building, on the first floor. It is equipped according to the European standards.

There are also:

- Hygiene materials storage
- Packaged food storage
- Fruit and vegetable storage
- Kitchenware storage.

## Number of meals cooked per day

The food for the children is prepared separately for nursery groups and kindergarten groups. Every day at 9:00 am, the manciple fills in the attendance book the children who are present for the day. For them are cooked the meals for the day. The morning breakfast is prepared according to the number of children present from the previous day.

The number of meals cooked per day depends on children's attendance.

Currently, the kindergarten has 319 children. Potentially this is a maximum of 1595 meals per day.

## Units of the kitchen

- Food preparation area (2 stoves with 6 hot plates; 4 ovens)
- Refrigerator for fish



- Refrigerator for egg
- Refrigerator for vegetables and milk
- Refrigerator for meat
- Storage room for hygiene materials
- Storage room for packaged foods
- Storage room for fruit and vegetable
- Storage room for kitchenware.

## Staff

Three persons working in the kitchen: a chef, an assistant chef, a kitchen helper.

## Work shift

From 06:00 to 14:00.

## Documentation by the kitchen staff

Documentation according to HACCP system.

- Registers for refrigerating temperature
- Registers for food temperature
- Registers for disinfection

We take small samples of each menu-item every day, as it is required for HACCP verification.

## Daily routine

A schedule for the kitchen's daily routine is presented in Table 3.

Table 3. The daily routine of the kitchen

Time	Activities
6:00 – 7:30	Disinfection, preparation and processing of ingredients
7:30 - 8:00	Breakfast preparation
8:10 - 8:20	Breakfast distribution
10:00 - 10:05	Brunch (fruit) distribution
8:30 - 11:00	Lunch menu preparation
11:30 - 12:20	Lunch distribution
11:30 - 13:30	Afternoon snack preparation
14:00 - 14:05	Afternoon snack distribution
14:05 - 14:30	Cleaning and disinfection

## KINDERGARTEN SRČEKO VRATIŠINEC, CROATIA

#### Management:

Kindergarten Srčeko based in Vratišinec, Dr Vinko Žganec, is a private institution registered on April 26. 2004. The owners of kindergarten Srčeko are educators Claudia Baumgartner and Isabela Lisjak from November 2018. The principal of Srčeko is Isabela Lisjak, an educator with a university degree with a professional exam and 21 years of experience in educational work. The activities of Srčeko are: care, upbringing, education and protection of children of early and preschool age from the age of 3 until they start primary school.

Size:



Srčeko can welcome up to 30 children. It has inside floor areas 105sqm, and garden area 1000sqm.

## **Building:**

Kindergarten Srčeko is located in a municipal building that was built in 1848. It is a historical heritage and protected building where was once a primary school of Vinko Žganec, melographer and recorder of Međimurje songs. The building is shared by a dental clinic, post office, family medicine practice and kindergarten Srčeko.

Kindergarten has its own entrance through the garden. Parents and children enter through a hallway to the locker room. After the dressing room, there is on one side entrance to the kitchen and on the other side to the playrooms for children. In Srčeko there are two rooms for two mixed groups. The spatial arrangement allows children to play and socialize with each other on the principle of a family kindergarten. In the hallway, there is the entrance to the staff toilet, children`s toilet, the changing room for cook and wardrobe for an educator. The yard is spacious and arranged so that each child can satisfy their own needs. In the yard, children and educators planted a garden with vegetables and berries.

Property of building: Municipality of Vratišinec.

**Location**: Kindergarten Srčeko is located in a small village Vratišinec in the county of Međimurje in northern Croatia. It is 13 km away from the town of Čakovec.

## Environment of the facility:

- entrance hall, changing room for children
- kitchen
- toilet for adults
- changing room for the cook
- changing room for educators
- toilet for children
- storage
- 2 playrooms for children where the educational process and all activities are in spaces that are normatively, pedagogically and spatially equipped and designed for children's activity. Kindergarten equipment was selected according to pedagogical standards.
- garden

#### Groups:

Polyvalent spaces of activity area are equipped for: physical, musical, art activities, for manipulative and didactic games, equipped also with nature area, construction and family area. There is also a space for research-cognitive activities, area for occasional activities with water and sand. Area for books and development of pre-reading skills is in playroom for children in 5-6 years. The organized small library is in the playroom for children from 3-5 years where there are also custom beds for children that need to rest. The organization of space in kindergarten is such that it enables the child to take an active attitude towards everything that surrounds him while taking care of the safety of all participants in the implementation process. Two playrooms have also dining tables and chairs where our children eat.

Children per group and number of educators per class:



Groups in Srčeko have names that are selected with children and educators. Group of children from 3-5 years are named giraffe. There is one educator with 11 children. The other group of children from 5-6 years is named elephants and has one educator with 14 children.

## Staff:

2 educators, half time employed cook and cleaning staff, principle Work shifts:

- full-time work of an educator is 7 hours with children, and half-hour for documentation, in two shifts: from 6 to 13.00., and from 8.30 to 15.30.
- cook works from 7.30. to 13.30.
- employees have 30 min break per workday

## **Documentation by the educators:**

 quarterly plan of educational work, weekly and daily plan, daily valorization and observations on activities of the children, individual maps of development of children, documentation of individual interviews with parents, individual professional development documentation, message boards for parents.

## **Opening hours:**

Monday to Friday from 6:00 to 15.30. (working day of kindergarten is flexible according to the needs of parents).

- all-day stay option is from 6.00. to 15.30.
- half stay day option is from 8.30. to 13.30.

#### Costs:

The total fee for all-day stay program is 1120,00 kn (150 euro) -45 % pays municipality and 55 % parents.

Total fee for a half stay day program is 820,00 kn(110 euro) -45% pays municipality and 55% parents.

For a second child in kindergarten, there is a 7 euro discount and for a third child, the municipality pays the total fee.

## **Outdoor environment:**

The yard of kindergarten is covered with a grassy area, slides, climbers, sandbox, houses for outdoor play and toys that satisfy the highest pedagogical standards.

Children and educators arrange a garden where vegetables and berries are grown. There are trees and fruit trees in the yard that provide shade for children. Various toys made of unshaped materials provide children with different, imagine games in the yard.

## **Special projects:**

• eco and humanitarian projects

## Safety:

Kindergarten Srčeko has a preventive plan and a program that defines safety protocols in various situations. The equipment, materials and the whole environment are according to pedagogical standards and provides safety for children and staff.

Toys:

Toys and materials are in a function to provide environment in which they will develop their



potential to the maximum, satisfy their interests and needs. Each playroom has toys and games appropriate to the age of children. Educators make games from various unshaped materials in which children also participate. Toys are weekly disinfected by cleaning staff.

## **Daily routine**

**6.00.to 8.30** - Children's reception who are on all day stay program, exchanges of information between educators and parents. Free play, morning snack.

8.00.to 8.30 - Breakfast.

**8.30.9.00.**-Reception of children on half-day stay program, exchanges of information between educators and parents.

10.00.-Fruit meal.

**9.00. -11.00**. Games and activities that are planned for that day, spontaneous games and activities, games initiated by children.

11.00.-11.30.-Lunch.

**11.30**- Personal hygiene-brushing teeth.

12.00.-13.30-Free play.

**13.30**.-Dismissal of children from half-day stay program.

13.30.-14.00-Afternoon snack.

14.00.-15.30.- Spontaneous games and activities.

**15.30**.-Dismissal of children from all-day stay program exchange information with parents.

## Kitchen:

## Management:

In kindergarten Srčeko a cook who prepares menus in agreement with the principal and all according to the Ordinance on proper nutrition of children in kindergartens, according to HACCP criteria. Proper nutrition of children is a basic factor of healthy growth and development in kindergarten. The following is taken into account:

- dietary norms,
- the impact of nutrition on growth and development,
- educating employees about children's nutrition,
- taking microbiological food samples,
- swabs of work surfaces and cutlery.

Weekly menus with caloric values are published on an information board for parents. Cook is responsible to select and order form suppliers, taking into account local food producers. Control and supervision of nutrition are performed by the Međimurje county PHI. Rodent control and disinfection are carried out by the Biological Institute of Čakovec

## Location:

Kindergarten Srčeko

**Number of meals cooked per day:** 18 breakfast meals, 28 fruit snacks, 28 lunches, 18 afternoon snacks.

## Units of the kitchen:

- Sink for cook only
- Cooking area
- Storage for dishes
- Storage for frozen food



- Space for food preparation
- Space to wash cookware and dishes includes dishwasher
- Storage for vegetables and dry goods
- Storage for defrost meat
- Space for food waste
- Serving area

**Staff:** 1 cook who wears a uniform, safety shoes and cooking cap.

Work shift: Cook works 6 hours per day. From 7.30. to 13.30.

#### Documentation by the kitchen staff:

The documents used are according to the HACCP system:

- sheet to register the temperature of freezer and refrigerator
- sheet to register the temperature of meals when the food is cooked and before serving
- Sheet to register the cleaning of the units
- sheet of grocery suppliers (date, name, and phone number of supplier)
- sheet of education of employees
- sheet of control of pests
- specific diet sheets (if there are any)

**Food safety:** Kindergarten has a contract with the Institute of Public Health and they take food samples every 3 months as a microbiological food control.

**Menu:** Weekly menus with caloric values are published on board for parents. Cook prepares the menus with the principal and all according to the Ordinance of proper nutrition in kindergartens.

**Receiving food and storage:** Receiving goods and storage once a week. Receiving bread once a day, in the morning. Receiving vegetables and fruits twice a week.

#### Daily routine:

7.30-8.30.-preparing and serving breakfast.
8.30.-11.00-preparing and cooking food for lunch, and fruit snack at 10.00.
11.00.11.30.- disinfecting and setting the tables for lunch, serving the lunch
12.00.-13.00.- cleaning, washing, disinfecting: dishes, equipment, floor
13.00.-13.30.- preparing and serving afternoon snack,

Erasmus+



# Weekly menu - Partners' ECEC service

## HUNGARY

## Date: from 2020.04.13 to 2020.04.17 Name of the service, city, country: JEB Nurseries, Budapest, Hungary Age of the child group: 1-3 years old

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Breakfast</b> Food Drink Allergens	Homemade Chicken liver pate, Wheat bread, Radish Milk, Tea gluten, milk, mustard	Homemade cream cheese, Whole wheat bread, Green onions Tea milk, gluten	Homemade broccoli pate, Rye bread, Tomato Milk, Tea gluten, milk, egg	Sardine pate, Potato bread, Bell pepper Tea gluten, egg, fish, mustard	Zucchini pate, Rye bread, Leeks Cocoa milk, gluten, egg, mustard
Mid am snack Food Drink Allergens	Apple Water	Orange Water	Pineapple Water	100% fruit juice	Pear Water
<b>Lunch</b> Food Drink Allergens	Egg soufflé, Spinach pottage, Boiled potatoes, Banana Water milk, gluten, egg	Chicken stew with apples, Bulgur with carrots, Pear Water milk, gluten, celery	Frankfurter soup, Cottage cheese pie, Apple Water milk, gluten, soy, egg	Chicken liver risotto with brown rice, Banana Water -	Creamy cauliflower with chicken breast and béchamel sauce Pineapple milk, gluten, egg
Mid pm snack Food Drink Allergens Late tea Food Drink Allergens	Homemade cabbage scone Tea gluten, milk, egg	Crescent Homemade Cherry drinking yoghurt gluten, milk	Buttercream with celery, Whole wheat roll, Cucumber Tea milk, gluten, celery	Cinnamon biscuits (Nutribella), Apple Milk milk, gluten	Homemade banana yoghurt, Rod with bran Tea milk, gluten



#### BULGARIA

## Date: from 13.05.2020 to 17.05.2020 Name of the service, city, country: 37 Kindergarten, Sofia, Bulgaria Age of the child group: 3-7 years old

	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast					
Food Drink Allergens	Macaroni with butter and cheese Herbal Tea, Lemon Cereals containing gluten, Milk and milk products	Sandwich with butter, cheese and tomato Fruit Tea, Lemon Cereals containing gluten, Milk and milk products	Sandwich Rhodopean Breakfast with cucumber Mountain Tea, Lemon Cereals containing gluten, Milk and milk products	Milk with cornflakes Cereals containing gluten, Milk and milk products	Sandwich with butter, olives and tomato Ayran Cereals containing gluten, Milk and milk products
Mid am					
<b>snack</b> Food Drink Allergens	Fruit - Cherries	Fruit - Strawberries	Fruit - Banana	Fruit - Pomelo	Fruit - Cherries
Lunch					
Food Drink Allergens	Balls soup Beans stew Cucumber salad Fruit - Banana Whole-grain bread	Carrot tarator Roll Stephanie Potato salad Fruit - Apple Whole-grain bread Cereals containing	Lentil soup Fish with vegetables Fruit - Cherries Whole-grain bread	Cucumber tarator Moussaka with minced meat Green salad with radishes Fruit - Pear Whole-grain broad	Chicken soup Zucchini with rice Yoghurt 2% Fruit - Banana Whole-grain bread
	Cereals containing gluten, Eggs and egg products, Milk and milk products	gluten, Eggs and egg products, Milk and milk products	Cereals containing gluten, Fish and fishery products	Cereals containing gluten, Milk and milk products	Cereals containing gluten, Eggs and egg products, Milk and milk products
Mid pm					
<b>snack</b> Food	Kurabiya Yogurt 2%	Baked Macaroni	Fruit yoghurt	Sandwich with	Cocoa cream
Drink	Coroala	Auran	Cereals	iyutenitsa	Milk and milk
Allergens	containing gluten,	Cereals containing	containing gluten,	Cereals	products



	Eggs and egg products, Milk and milk products	gluten, Eggs and egg products, Milk and milk products	Milk and milk products	containing gluten, Milk and milk products	
<b>Late tea</b> Food Drink	-	-	-	-	-
Allergens					



#### CROATIA

## Date: from 25.05. to 29.05.

## Name of the service, city, country: KINDERGARTEN SRČEKO, VRATIŠINEC, CROATIA Age of the child group: FROM 4 TO 6 YEARS

	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast					
Food Drink Allergens	Wheat grits with cinnamon and chocolate Milk	Millet porridge with apples and honey Fruit tea	Fresh cheese with milled sesame, whole grain bread	Rice with milk and honey Milk	Corn bread with chickpeas spread
			Chamomile tea Milk, sesame seeds		Milk, gluten
Mid am					
snack	Apple	Apricot	Cherry	Strawberries	Banana
Food					
Drink					
Allergens					
Lunch				<b>-</b> .	
Food	Pumpkin soup with oat flakes, risotto with peas,	Bean stew with rooted vegetables, beef and	Vegetable soup, Batat puree, chicken	Tomato soup, Spinach and turkey meat moussaka,	Buckwheat soup with leek, Baby beef in
Drink Allergens	carrot and chicken fillet, tomato salad	oatmeal, rye bread, carrot cake	drumstick, lettuce salad	Lambs lettuce salad Apricot tea	sauce, gnocchi, beetroot
	Lemonade Milk	Hibiscus tea Gluten, eggs	Orange juice Milk	Milk	salad Blueberry tea Gluten, eggs
Mid pm					
snack	Fruit yogurt,	Chocolate	Fruit salad	Salt cake with	Pie with
Food	Integral biscuits	pudding		zucchini	sour cherry
Drink		Milk		Fruit tea	
Allergens	Milk, gluten			Gluten, eggs	Gluten, eggs
Late tea					
Food					
Drink					
Allergens					



## PORTUGAL

## Date: This menu can be adapted to all seasons.

Name of the service, city, country: Centro Social de Soutelo, Rio Tinto, Porto, Portugal Age of the child group: 2 years old to 6 years old

	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast					
Food	Our	Our institution	Our	Our institution	Our
Drink	institution	doesn't serve	institution	doesn't serve	institution
Allergens	doesn't	breakfast.	doesn't	breakfast.	doesn't
	serve		serve		serve
	breakfast.		breakfast.		breakfast.
Mid am					
snack	Seasonal	Seasonal fruit	Seasonal	Seasonal fruit	Seasonal
Food	fruit (pear)	(apple) and	fruit	(pear)and toast or	fruit (apple)
	and toast or	toast or bread	(banana)	bread	and toast or
Drink	bread		and toast or		bread
Allergens		Gluten	bread	Gluten	
	Gluten				Gluten
			Gluten		
Lunch	Portuguese	Cauliflower	Savoy	Turnip Soup.	White
Food	cabbage	cream.	Cabbage	Baked chicken	Cabbage
	soup.	Roasted fish	Soup.	with pasta and	and Carrot
	Roasted	with potatoes	Pork stews	tomato salad.	Soup.
Drink	Poultry	and vegetables	with white	Seasonal fruit	Codfish
Allergens	Burger with	(carrot,	rice.	(meion).	with cream
Allergens	Tomato	cabbage).	Gelatine.		(potato)
	Sauce,	Seasonal Iruit		Water	with lettuce
	Spagnetti	(watermeion).		Gluten: eggs:	Salau. Fruit colod
	and rettuce	Mator	Water	milk	Fruit Salau
		VValer.	water.		(pineappie,
	Salau.				KIWI,
	fruit				mango)
	(orange)				Mater
	Water				Fich.
	Gluten: eggs:				neanuts.
	sov: Sulphur				sov: milk
	Dioxide and				30 <i>y</i> , mik.
	Sulphites				
	milk.				
Mid pm					
snack	Milk with	Milk and bread	Yoghurt and	Milk and bread	Milk with
Food	cocoa and	with jam.	bread with	with ham.	coffee and
	bread with		butter.		bread with
Drink	cheese.	Milk; gluten.		Milk; gluten.	butter.
Allergens			Milk; gluten.		



	Milk; cocoa; gluten.				Milk; gluten.
Late tea					
Food	Seasonal	Seasonal fruit	Seasonal	Seasonal	Seasonal
	fruit	(tangerine) and	fruit (apple)	fruit(banana) and	fruit (pear)
Drink	(banana) and	toast or bread	and toast or	toast or bread	and toast or
Allergens	toast or		bread		bread
	bread	Gluten		Gluten	
			Gluten		Gluten
	Gluten				



#### ITALY

# Date: from November to March (all the weeks in a month are different. This is just an example of one week of the winter menu)

Name of the service, city, country: **all the Florentine nurseries and kindergarten, Italy** Age of the child group: **1 to 6 y.o** 

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Breakfast</b> Food Drink Allergens	Our institution doesn't serve breakfast.	Our institution doesn't serve breakfast.	Our institution doesn't serve breakfast.	Our institution doesn't serve breakfast.	Our institution doesn't serve breakfast.
Mid am snack Food Drink Allergens	Seasonal fruits Water	Seasonal fruits Water	Seasonal fruits Water	Seasonal fruits Water	Seasonal fruits Water
<b>Lunch</b> Food Drink Allergens	Pasta with tomato Legumes with olive oil Water Gluten	Rice with vegetables Rabbit meat with vegetables Water	Broth of vegetables Baked ham with mashed potato Water Lactose, Gluten	Pasta with fish (tuna or clams) Cooked vegetables Water Gluten, molluscs	Vegetables cream with rice or tspelt or barley Cheese with Raw vegetables Water Lactose, gluten
<b>Mid pm</b> snack Food Drink Allergens	Yogurt Water Lactose	Flatbread with olive oil Water Gluten	Cake Water Gluten, lactose	Bread with jam Water Gluten	Fruits Water
<b>Late tea</b> Food Drink Allergens	Our institution doesn't serve late tea.	Our institution doesn't serve late tea.	Our institution doesn't serve late tea.	Our institution doesn't serve late tea.	Our institution doesn't serve late tea.



# This is how our kitchen works! "The Food Journey!" – Partners' Videos

Some of our partners made a short video where they show how the food is being prepared and then distributed to the children.

Links:

- Hungary: <u>https://www.youtube.com/watch?v=c1nlb9Kwi0E</u>
- Croatia: <u>https://drive.google.com/drive/u/5/folders/1Ci3IAunYOzBDmnPC2POAyL8a-DM5a5Qu</u>
- Portugal: <u>https://www.youtube.com/watch?v=R0VNS\_lciuc&feature=share&fbclid=IwA</u> <u>R12YZSwiOkmOzJ0u\_GkkO-Gyf2A0tIrUevwZgsxzZrsdheYmcCp91t3j2k</u>
- Bulgaria: <u>https://drive.google.com/drive/u/5/folders/1sAeqDrnusjBkAHzE0RqdPw1hHZTgsSSg</u>



# NOW - No more Organic Waste - LIFE project



## Title of the project:

NOW No more Organic Waste. A new integrated system to eliminate organic waste in the organized large-scale distribution

Financed by UE LIFE+2010, period 01/10/2011-31/12/2014 www.nowlife.eu

CAUTO Cooperativa Sociale Onlus, Brescia, Italy - https://www.cauto.it/

## Project objectives:

Promoting the prevention, recovery and recycling of the waste in the Organised Large-Scale Distribution, paying particular attention to its organic part.

The specific objectives:

- To promote the implementation of a new system for the organic waste management of the GDO with the involvement of local authorities and representatives of distribution groups;
- To improve the reduction of undifferentiated waste quantity through the treatment of organic waste;
- To promote innovative ways to allow that 95% of food, which in the traditional organic waste management system represents approximately 25% of what is discarded by a large-scale distribution outlet, could be donated for social purposes.
- To promote the recovery of specific large-scale distribution's waste fractions, such as packaging, wood/plastic and WEEE (Waste Electrical and Electronic Equipment), turning them into a product that can be reused;
- To develop a network of local relationships aimed at recovering and donating foods;
- To promote a broad transferability of the system by involving a large amount of supermarkets during project implementation;
- To involve interested institutions, also at the EU level and show its replicability in other local areas.

## Actions:

## DEFINITION OF THE INTEGRATED SYSTEM FOR GDO WASTE MANAGEMENT

The first step was the finalization of agreements among Cauto, municipalized companies and GDO groups of Brescia, concerning waste management and potential donations.

Then, in order to identify the best waste management system, the selection, transport and disposal phases at each outlet were defined:

- The selection phase consisted of the differentiation of the different types of waste at the outlet;
- The transport phase in the definition of the modalities of waste collection on the basis of their frequency, the means of transport and the call service;



• The disposal phase in the evaluation of the destination of waste through the identification of the different authorized plants in relation to distances, types and economic benefits.

Moreover, the definition of the best management system for organic waste at each outlet was finalized. During the definition, all the components of organic waste were evaluated in relation to their characteristics and potential destinations, i.e. donations, the organic fraction of urban waste, dog and cat pounds, breeders or energy production plants.

#### IMPLEMENTATION OF THE INTEGRATED SYSTEM FOR GDO WASTE MANAGEMENT

The defined integrated system arranged with the municipalities and organised large-scale distribution groups were activated for each outlet.

The most suitable equipment for the service, the transport vehicles and the loading/dumping waste equipment was detected and purchased.

The selection criteria were applied according to product categories: ready-to-sell and packaged fruits and vegetables, fresh and baked products, bread, drinks, etc. Then, the selection area was equipped with appropriate containers on the basis of the destination lines.

Finally, a monitoring action for large-scale distribution's waste management system was carried out to verify the achievement of the expected results and put into action corrective solutions.

**FOOD DONATIONS AND ORGANIC WASTE PREVENTION** consist of the recovery of products that once became waste and that fall within the types that can be donated to charities from the area of Brescia.

Treatments: Preparation, Storage, Collection and Transport Documents, transfer at a sorting platform and delivery to charities. These institutions could use the products for domestic consumption: accommodation centres, religious institutions or poor people.

A technical training course was realized in the environment-area, dedicated to the involved non-disabled and disadvantaged workers and volunteers.

**COMMUNICATION-DISSEMINATION** Project web pages and several demonstration activities were implemented at local and European level, participation at events and workshops, demonstration days at Cauto's headquarters.

#### **RESULTS:**

- Agreements with 30 supermarkets (Auchan, Sma, Pam);
- N.26 integrated waste management systems;
- Platform for donations;
- Reduction of:
  - cost for waste management of 10-20% for each outlet and savings from the municipalized companies of 10%;
  - trips of 30%;




- undifferentiated waste of 70% of a tune of 2,000 tons/year on 2,500 tons/year;
- Reuse system of some waste fractions for No.26 outlets;
- Reuse and introduction of the product on the market for 2% of waste for a total of 120 tons/year of which: 110 tons/year of wood and plastic packaging; 10 tons/year of WEEE;
- Management of 1,500 tons/year of unsold products at the Social Pantry affected of which: 700 tons/year of fruits and vegetables; 500 tons/year of fresh products; 500 tons/year of packed and baked products and soft drinks.

## CONCLUSIONS

The NOW model brings together several local stakeholders: private industry in the shape of the mass retailer, the public world of the municipalities, municipal agencies and charities. It has made possible an improvement in the efficiency of waste management and integration by means of recovery of surplus products. The result has been a series of positive repercussions-financial, social and environmental – as indicated and quantified above. Often administrative and logistical difficulties and fears linked to health safety have reduced significantly the impact of the stakeholders' donation policies. Administrative and logistical aspects have also led to extra costs for mass retailers without, in many cases, any corresponding reductions in municipal (waste) tax.

There is no doubt that the process tested by Cauto has generated many benefits in the local area and has also highlighted several critical aspects of the system which, it is hoped, can be dealt with thanks to a collaboration between all those involved in the process.



## Nutrition regulations in partner countries

Nutritional regulations for nursery/kindergarten catering						
	ARCA Italy	K37 Bulgaria	JEB Hungary	CSS Portugal	Srčeko Croatia	
There are nutritional <u>regulations</u> for nursery/kindergarten catering (national, regional) in your country	NO	YES	YES	YES	YES	
There are national <u>guidelines</u> for child nutrition	NO	YES	YES	YES	YES	
	Topics of the	e regulatior	ns/guidelines	for catering	•	
Rules for planning diets	YES	YES	YES	YES	YES	
The number of meals to be provided	NO	YES	YES	YES	YES	
The measure of meals to be provided	YES	YES	YES	YES	YES	
Obligation to provide information	YES	YES	YES	YES	YES	
Foods and food groups to be provided daily	NO	YES	YES	YES	YES	
Regulations, limitations, and prohibitions of use relating to certain foods and meals	NO	YES	YES	YES	YES	
Special diets	YES	YES	YES	YES	YES	
Personal conditions	YES	YES	YES	YES	YES	
Authorities' controls	YES	YES	YES	YES	YES	
	Forms of co	operation v	with parents	on nutrition		
Consultation with	<ul> <li>internal</li> <li>nutritionist/</li> <li>dietician</li> <li>kitchen</li> <li>staff</li> <li>educator</li> </ul>		- internal nutritionist/ dietician	- educator	<ul> <li>- internal nutritionist/ dietician</li> <li>- senior</li> <li>nurse</li> <li>- kitchen</li> <li>staff</li> <li>- educator</li> </ul>	



					- health
					VISICOLS
Parent group discussion	YES	YES	YES	NO	YES
Healthy nutrition day	NO	YES	NO	YES	YES
Recipes, a recipe book for parents	YES	YES	YES	NO	NO
Another form of	NO	YES	YES	NO	YES
parents		<ul> <li>Open</li> <li>doors</li> <li>Events on</li> <li>healthy</li> <li>eating</li> <li>ABC Book</li> <li>Parents</li> <li>and</li> <li>children</li> <li>cook</li> <li>together at</li> <li>the home</li> <li>healthy</li> <li>recipe and</li> <li>record it,</li> <li>and discuss</li> </ul>	At the end of the year, the Pediatrist and the Dietitian give a lecture on the healthy lifestyle for the parents		Workshop and educational events for parents
	Special o	րւ Jiets in the r	urserv/kind	ergarten	
There are special kitchen items (e.g. special pots, etc.)	YES	YES	YES	YES cutlery, plates, pans	NO
There are specialists providing special meals (e.g. dietitian, food manager, diet cook)	NO	YES	YES	NO	NO
Eligibility for special diet (diagnosis, parental request)	YES	YES	YES	YES	YES



The special diet is solved by the parent	NO	NO	NO	YES	NO
		Parents cannot bring food to their children. There are very strict regulations for all the food provided to children		it could be in some specific cases, if the kitchen cannot secure the food or cooking it safely	
Name of the special	YES	YES	YES	YES	YES
diets (vegan, lactose-free, gluten-free, fructose- free, diabetic etc.).		No vegan Diet based on medical reasons - allergic – fruits, milk, etc.		diabetic, food allergies/intolerances (eggs, fish, nuts, lactose, gluten, fructose)	lactose-free

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