



Project acronym: EDULIA

Project title: BRINGING DOWN BARRIERS TO CHILDREN'S HEALTHY EATING

Grant number: H2020 - MSCA - ITN - 2017: Project no. 764985

Coordinator: NOFIMA, Norway

Website: www.edulia.eu

Deliverable D6.2

Guidelines: managing feeding practices of caregivers, in family and school food catering context; nudges for improving food choice at home and beyond

Authors: Abigail Pickard & Jérémie Lafraire

WP/WP-leader: Sandrine Monnery-Patris

Task/Task leader: Task 6.2/Jérémie Lafraire, Institute Paul Bocuse

Dissemination level: PU

Deliverable type: Report

Approval Task/WP: 07 September 2021

Approval Supervisory board: 15 September 2021

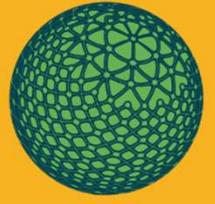
Submission date: 27 September 2021



Executive summary

Guidelines for the implementation of practical recommendations for managing feeding practices of caregivers, in the family and school food catering context, and of nudges for improving food choice at home and in broader food choice environments (e.g., school). Guidelines developed as a complement to existing guidelines (EFSA, European directives).

This leaflet outlines and explains recent research findings on how children's knowledge of food influences food acceptance. It further provides ideas and activities for parents and caregivers to teach children about food and boost food acceptance and wider dietary variety.



EDULIA

FROM PICKY EATERS TO INQUISITIVE EXPLORERS

Practical recommendations for feeding
practices in the home and school to
foster greater food acceptance

BY ABIGAIL PICKARD



TIPS FOR IMPROVING FOOD CHOICE AT HOME AND BEYOND

Young children need diverse diets to meet their nutritional needs, but dietary variety is far from straightforward in this age group. Between the ages of 3 and 6, many children suddenly become fussy at mealtimes and reject foods that they had previously accepted. To resolve food rejection, researchers have spent decades searching for the influencing factors of food rejection in children to promote greater food acceptance. This research indicates that many factors influence whether a child accepts or rejects food, such as access to food and parents' feeding practices. However, little research has looked at how children's knowledge and ideas about foods and eating situations influence their reasoning and decision making for food. Even 3-year-old children are already displaying great cognitive development and start to reason more sophisticatedly about whether to accept or reject food. Therefore, researchers at the Institute Paul Bocuse Research Centre began investigating how children's representation and ideas about food influence food choices. Their work, funded by the European Union Horizon 2020 project, showed that even very young children have knowledge about foods to influence their food decisions. This leaflet outlines some of the team's research findings and provides ideas and activities for boosting food acceptance.



HOW CHILDREN THINK ABOUT FOOD

Among the many abilities we acquire, we have developed great skills in classifying EVERYTHING around us and mentally grouping objects that are considered "equivalent" or have similarities (Murphy 2002). For example, we recognise a dog as an animal or trousers as clothing. The process of categorizing and grouping similar items allows us to make decisions more efficiently and interact appropriately with the millions of items we encounter throughout day-to-day life. This is an essential skill for humans because it allows us to recognise a new object as belonging to a familiar category allowing information we know about other category members to be extended to the new item. For example, when given a new pair of trousers placing them into the category of clothes would help us understand that the trousers are supposed to be worn rather than used to clean the dishes.

Categorising and grouping objects is very effective with food. A starting strategy is to classify items as either edible or inedible, as seen in the image on the right. Identifying objects as food versus non-food is particularly crucial to avoid ingesting substances that may invoke disgust or even toxicity.

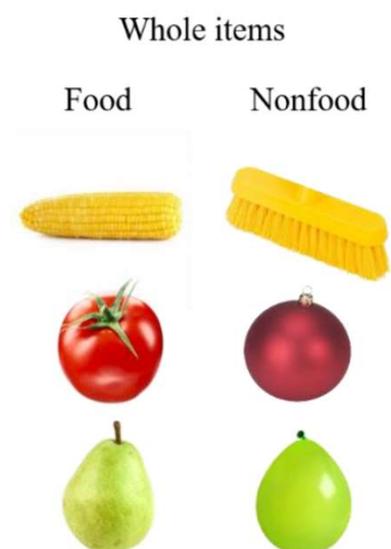


Image courtesy of Foinant, Lafraire & Thibaut

Following on from the basic knowledge of what we can or cannot consume, we then develop more detailed ways of deciding what foods to consume. Sub-categories such as fruits, vegetables, dairy, as seen in the food pyramid on the right, help inform us of nutritional properties and what foods need to be included in our diet.



But equally, we create sub-categories as a basis of behavioural or cultural habits, such as foods that taste good together, things needed to eat foods, or even specific times or events to consume foods. These categories differ not solely from culture to culture but also from individual to individual. While some categories will be particularly culture based (i.e. bread and butter), others may stem from personal preference (e.g. avocado and toast). These categories allow us to represent food in certain situations so that we are familiar with food even when we have never encountered the same food.



Image courtesy of Allison Sweatman

Take the example of soup, a common representation for soup is that it is served in a bowl with a spoon at lunch or dinner. If we were served soup in a syringe at breakfast or even the dentist the fact that it is very unrepresentative of our ideas of soup situations would make us cautious to accept it.

Previous research shows that adults often rely on the knowledge of how or when to expect food to guide acceptance or rejection. For example, we wouldn't accept soup served in a syringe or at breakfast time.

The researchers at the Institute Paul Bocuse Research Centre found that young children are already using these representations and ideas too. Thus, when food is first presented to a child, the child will immediately "categorize" it based on its characteristics (Murphy 2002, Vauclair, 2004; Lafraire et al., 2016). The knowledge gained from this initial encounter will allow for increasingly easy and rapid categorization when subsequently presented with the same or similar food (Aldridge Dovey & Halford, 2009).

However, an important aspect to consider is that when such categories and food rules are established they are relatively strict and liable to restrict our food acceptance. For example, when selecting something for breakfast we are likely to default to the few food members we deem appropriate for the said category. For example, in France, it would be considered normal to eat a croissant dipped in coffee or milk for breakfast. French people are then more likely to think the idea of a croissant dipped in soup for breakfast is bizarre and even repulsive. However, until the 1940s, the majority of French people were more likely to consume bread dipped in soup (or wine!) than coffee, tea or cocoa.

This example demonstrates how such categories come to be formed through social norms and daily experience. Therefore, the problem arises in that young children tend to follow the same reasoning that certain foods belong to certain meal times or associations, but young children have much fewer category members. The researchers found that children who had fewer ideas of foods conventionally paired together or served at certain meal times displayed higher levels of food rejection.

Breakfast Time



While we may see all the examples above as suitable breakfast foods, children with less experience will be likely to only have a few representations for possible breakfast foods (such as the few items highlighted below). This means that when you present them with something that does not seem to belong to a meal script (i.e. cheese) they will be less likely to accept the food. As such, not having lots of representations of foods that go together or appear in certain situations hinders the child from viewing the food as acceptable.

Breakfast Time



TIME TO INVESTIGATE...

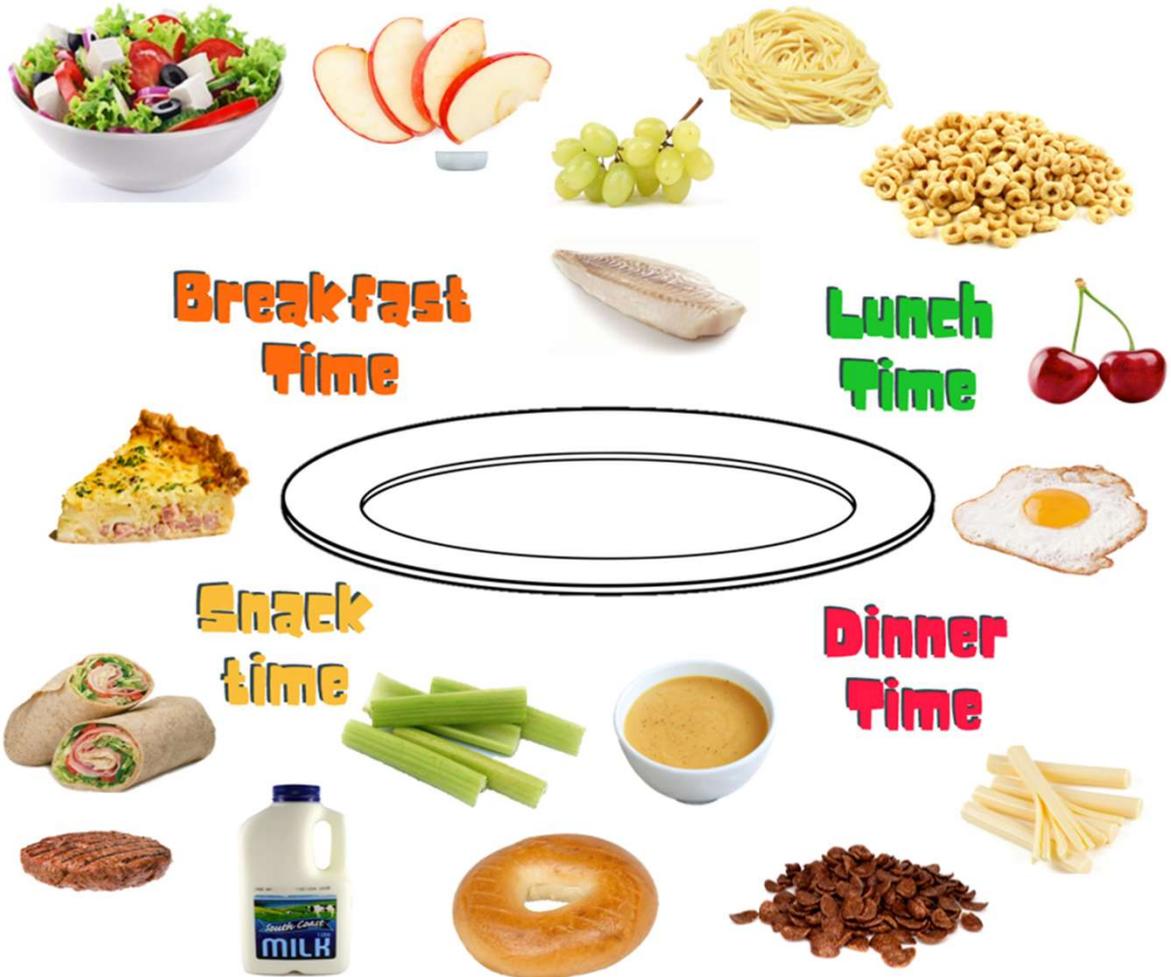
Activity 1 – What food goes where?

A good way to investigate what ideas children already have about foods and meals is to ask them to come up with different meals that are normally eaten at breakfast, lunch, snack, dinner and even different events or situations (i.e. a picnic or the movies). This activity is a good insight into how a child thinks about food and what their meal script categories consist of. Young children may find it more difficult to provide 'typical' meals (even adults struggle to come up with different ideas) and may resort to unconventional or bizarre food items. However, this does not necessarily mean that the child would be willing to accept unconventional foods into certain meal categories in a real-life setting.

Pack a picnic



Activity 2 – What food when?



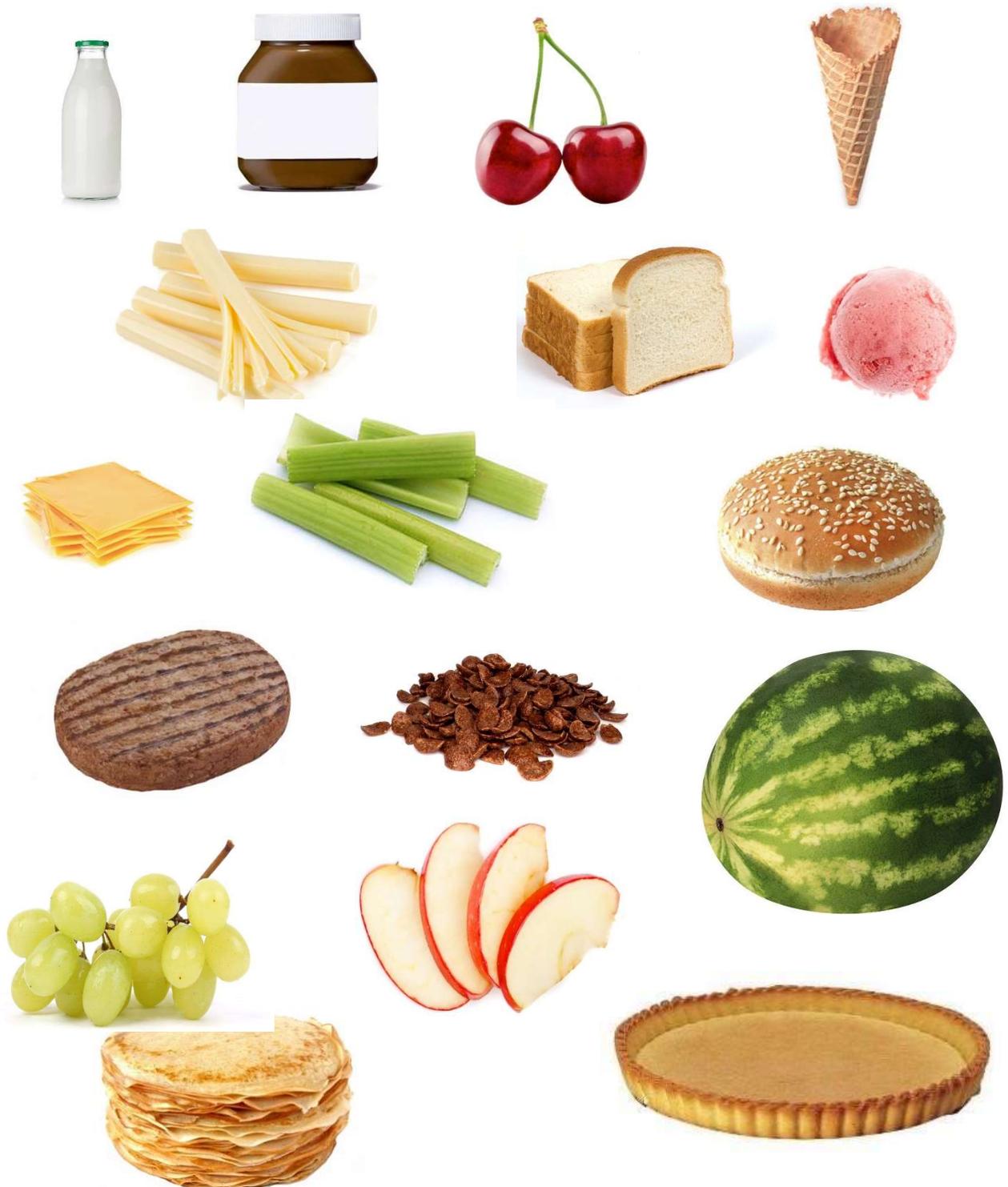
For younger children or children with less vocabulary, images of foods could be used.

Print out many different items of food and ask the child to sort them into scenes of different meal times or activities. Provide them with different scenes or scenarios and ask them to group the foods that they think belong to each mealtime.

This activity is also a great way for children to learn new vocabulary for foods.

Activity 3 – What food goes with what?

Similar tasks can also be conducted to see what foods children associate together. Again, print out many different cards and ask the child to pair up the images or group them with things that go well together or are served on the same plate.



SUMMARY

These activities provide a great insight into how children think about food and what knowledge and categories they already have. However, similar activities can also be conducted to improve children's knowledge of foods and eating situations so that they are more likely to accept foods. Read the next section for some easy ideas to boost children's ideas about food.



ACTIVITIES FOR BOOSTING CHILDREN'S FOOD KNOWLEDGE

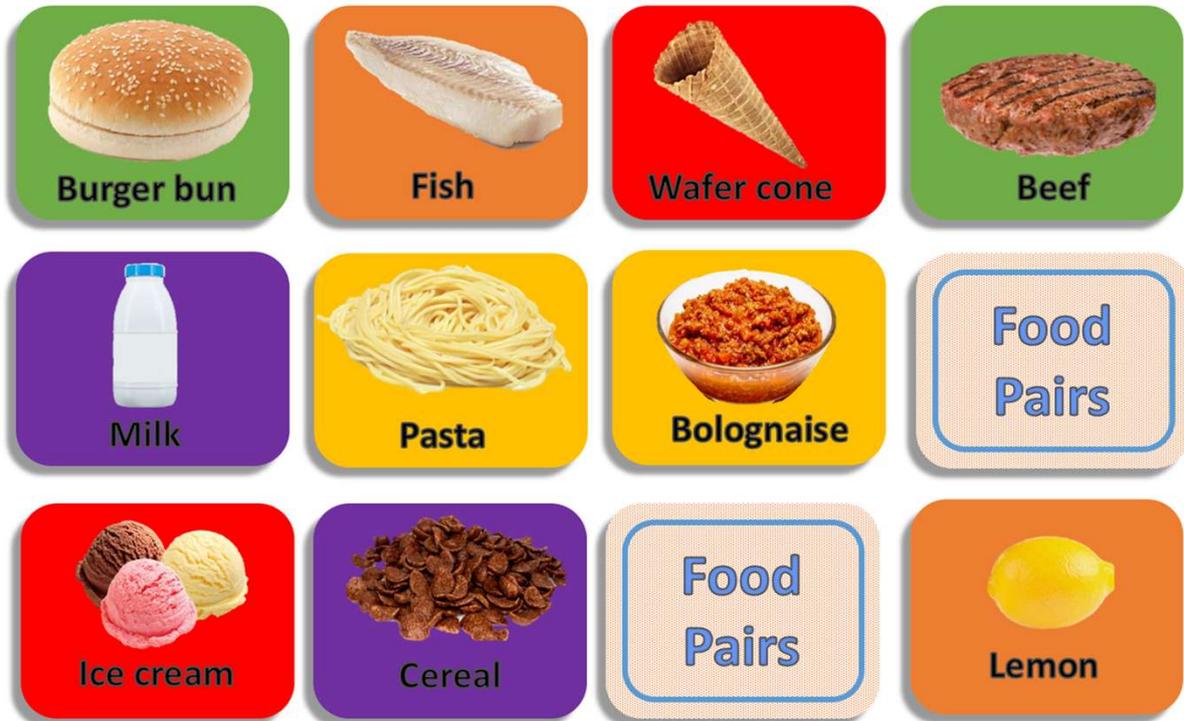
Picture naming cards used in Montessori education are very useful to increase familiarity and think about foods belonging to more categories. Cardboard cards depicting fruits, vegetables and other foods can be initially used to enrich the child's vocabulary and develop reading skills.

The idea is to initially present the child with a few cards and then to expand his or her knowledge according to categories (e.g. summer vegetables, fruit from trees, different varieties of squash, etc.). They also allow for classification games for children (according to colours, seasons, seed or stone, etc.).



Image courtesy of Nathan education materials

Activity 1 – Find the food friends



Place pictures of foods that are often paired together facing up, so that the child has time to look carefully at the pictures. Then, turn all the cards over and take it in turns to turn over two cards. A player makes a match if the two cards turned picture-side-up form a typical food pair (the cards can be colour coded to help identify the association). When a match is made, the player takes both cards and places them in front of him or her. That player then takes another turn and continues taking turns until they miss.

The winner is the player that makes the most pairs.

Activity 2 – Travel the globe

Increasing a child's experience with food and eating situations increases the feelings of familiarity and certainty when confronted with such situations in the future.

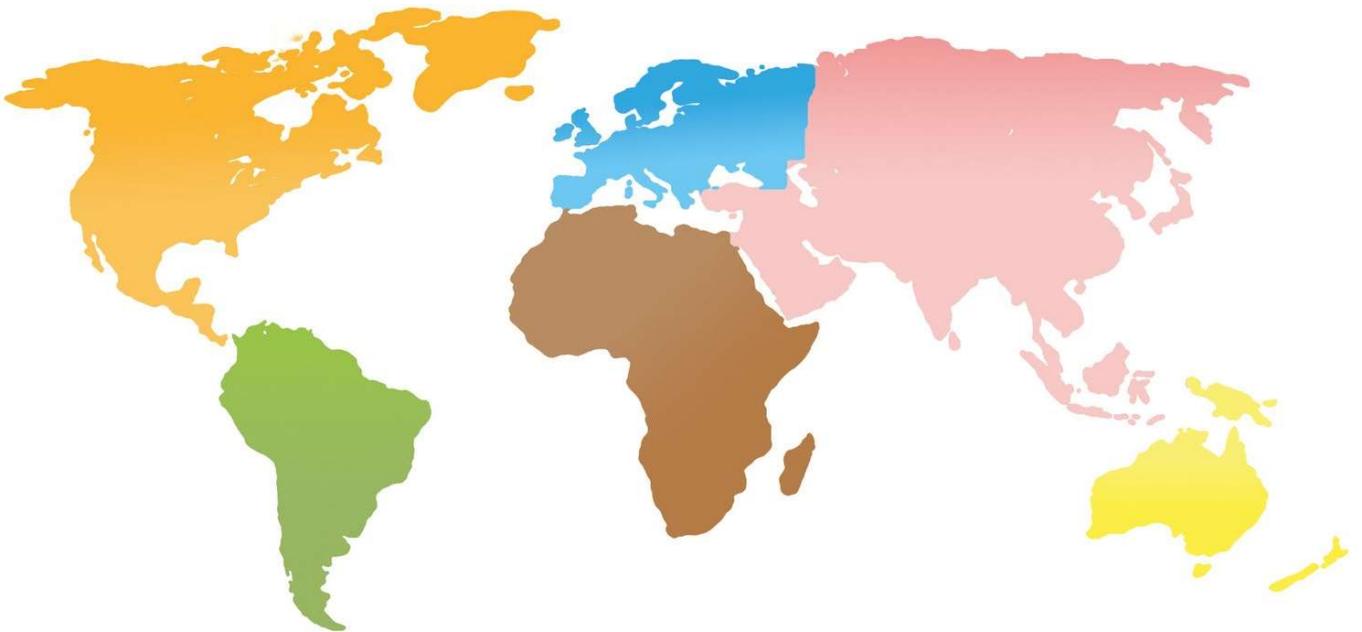
At different mealtimes introduce different foods from other cultures that will initially appear unconventional to the child. For example, if a child is typically exposed to sweet breakfast foods found in French cuisine, try a savoury dish such as the classic Bulgarian dish of Banista or the Mexican dish of Huevos Rancheros. See the image below for some ideas!



Image courtesy of Mattress Clarity

Tips

Play upon children's food scripts by including other aspects of the meal's culture, such as traditional decorations and music. Treat this activity as a game by having a map of the world and colouring in the country that you are 'visiting'.



PERSEVERANCE IS KEY! Repeat the meal several times, because script categories are formed through regular experience and memory. The first few times the child may not be willing to try the new breakfast food, they should not be forced to try it but gently encouraged to appreciate that it is a possible food to be eaten for breakfast. The child will start to become familiar with eggs or tomatoes for breakfast and see them as a possible addition to their category of breakfast foods. They will also come to understand that despite the food not belonging to their meal category it is still appropriate and acceptable to eat.

Activity 3 – Books and Food education

Books are an easy and effective method to teach children not solely about the food itself but how they are likely to experience the food (i.e. at a party, served with other things). By providing 2- to 6-year-olds with picture books of leeks and carrots, Heath et al. (2011) and De Droog et al. (2014) showed that toddlers consumed more of the vegetables they saw in their picture book, compared to a corresponding control vegetable. Picture books, stories told from personified fruits and vegetables, or stories in which a recipe, a family meal, are told are all promising ways of expanding children’s food knowledge.

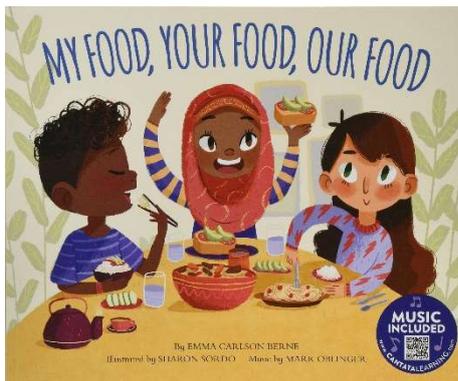


Image courtesy of Emma Carlson Berne

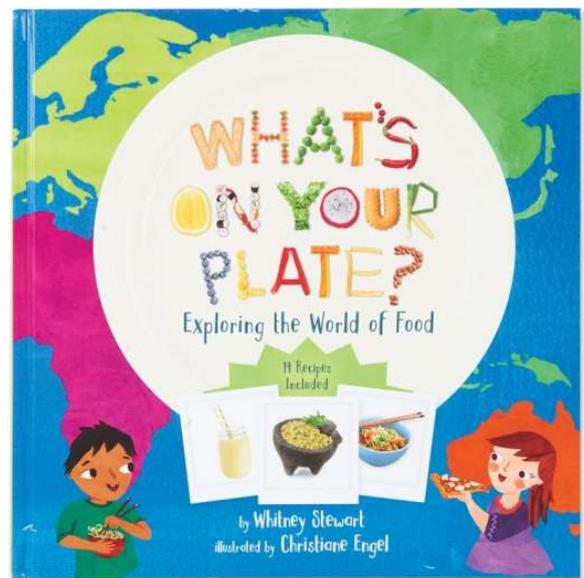


Image courtesy of Whitney Stewart

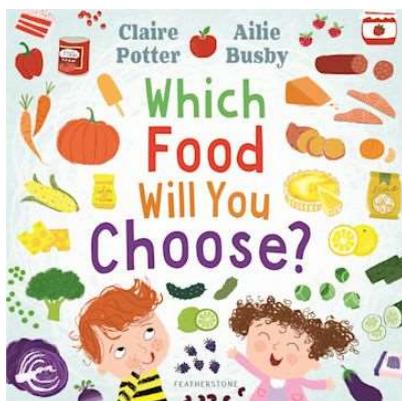


Image courtesy of Claire Potter & Ailie Busby

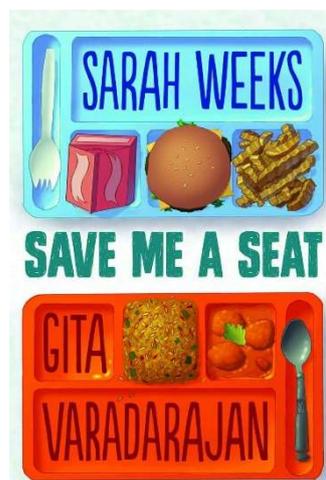


Image courtesy of Gita Varadarajan

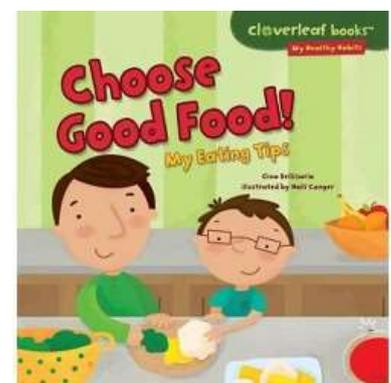


Image courtesy of Gina Bellisario

Activity 4 – Pretend play

Games involving food such as pretend tea parties and children's play kitchens are the perfect opportunities to learn about food in real-life situations. This is a particularly effective method to engage children who are very apprehensive when it comes to food as there is no pressure to try the food. This is the perfect way to introduce new fruits and vegetables and you should try and include obscure or pretend foods for your child. Search online for play foods from different cultures or cuisines (such as mussels from France or sushi from Japan) to familiarize children with food before introducing it at the table.



Activity 5 – Get in the kitchen



'Home economics' classes for children, in which they do household activities such as cooking and cleaning could be a great opportunity to expose children to different food situations. Allowing the children to follow the process of growing, preparing and serving foods helps them become more familiar with what they are eating. As long as they are supervised, even children as young as 2 years old can help in the kitchen and many places sell children's kitchen utensils that can be used safely. Search the internet to purchase child friendly utensils such as wavy choppers or silicon knives.

IN SUMMARY...

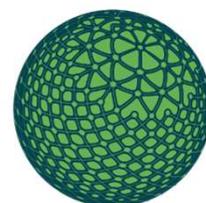
It is expected that young children will display many food rejection tendencies during their early years. The most recent research on the factors influencing food rejection shows that reduced knowledge of acceptable foods and combinations may lead children to feel uncertain and err on the side of caution by rejecting the food.

However, all hope is not lost.

As children are exposed to more eating situations and foods their knowledge and ideas of food will equally increase. If children lack experience with eating situations this will hinder their ideas about the appropriateness of food and lead to subsequent rejection. Therefore, the important takeaway message is to keep persevering with exposing children, not solely to a variety of foods, but a variety of eating situations and food combinations. This education will allow children to see the potential of different foods in different scenarios and foster greater food acceptance.



This work was produced for the EDULIA project with funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 764985

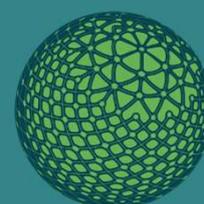


This document has been produced by Abigail Pickard with the advice and guidance of Dr Jérémie Lafraire, Institut Paul Bocuse Research Centre.

Special thanks and recognition go to Audrey Zucchi and Jérémie Lafraire, authors of La Faim des Haricots, and the research conducted by the EDULIA consortium.



This work was produced for the EDULIA project funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 764985



EDULIA