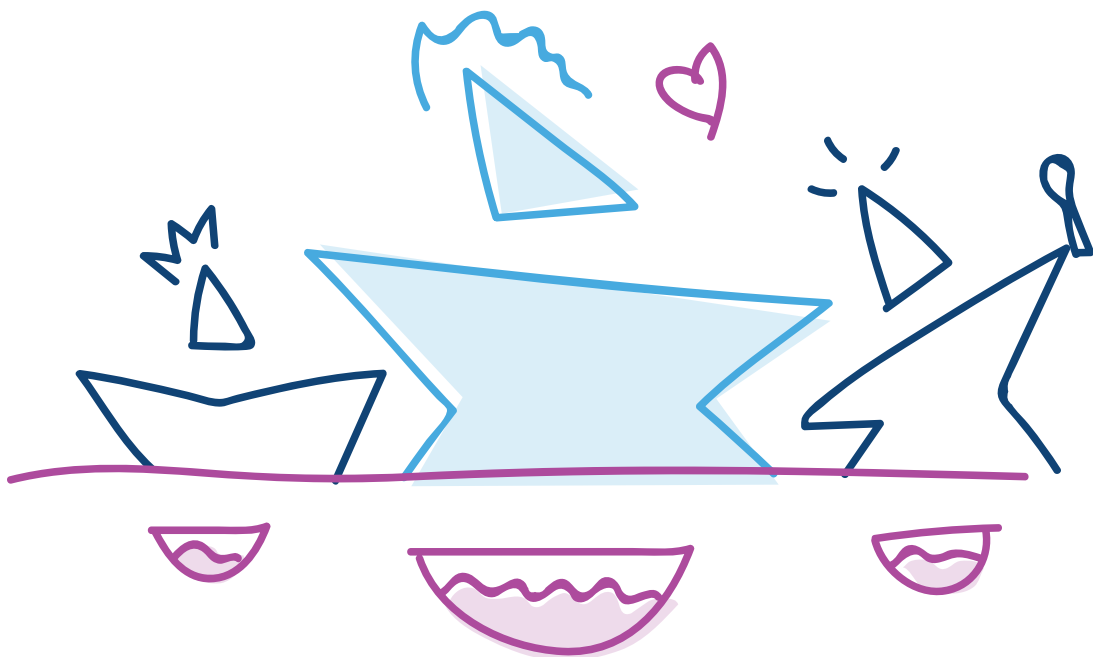


Nurturing Children's Healthy Eating

Empowering the role of families



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Nurturing Children's Healthy Eating

Future global health depends on the health of today's children. Those children who establish healthy eating and activity behaviours early in life are well-equipped to maintain their good health far into adult life.

Nurturing healthy habits in our children therefore offers a fantastic opportunity to make inroads into important public health concerns such as tackling the worldwide epidemic of overweight and obesity, and their associated health consequences.

Childhood is a decisive formative period in which to build the foundations for sustainable healthy eating patterns. That's why global health begins with the family. In millions of homes around the world, children are learning their eating habits, as well as their education and social behaviour, from their parents, grandparents and siblings. The home environment is a critical source of positive influence as the family shapes both what and how children eat from the time they are born.

However, the traditional family model has come under intense pressure from the challenges of the modern world, with busy parents struggling to balance work and family life, and children becoming increasingly engrossed in smartphones, tablets, televisions and other electronic devices. The result is often less time to prepare and share mealtimes together as a family, and less time to enjoy quality moments together.

A unique perspective

With this in mind, Danone Institute International (DII) has joined forces with experts in the field to develop a unique perspective on the topic. Dietitians, nutritionists, paediatricians, psychologists, sociologists, and public health professionals have come together to review existing evidence and discuss innovative strategies, to empower families and parents to make positive decisions for nurturing healthy eating in their children.

The outcome? In order to achieve a positive impact on children's healthy eating, it is essential to shift the emphasis from 'nutrition' to 'eating habits' and to consider not only what we eat but also how we eat. This involves adopting a multi-faceted approach, with the aim of nurturing and instilling positive changes, to support families in creating healthy eating habits.

Three key pillars were identified as supporting the role of the family in nurturing healthy eating in children:

- **Positive parental feeding**
- **Eating together**
- **Healthy home food environment.**

The aim of this document is to set out the current evidence and lay the foundations for empowering families to nurture healthy eating habits among the children of the world.

Olivier Goulet

President, Danone Institute International

Why focus on the role of families?

Childhood is a crucial time for laying the foundations for positive and sustainable behaviours – including life-long healthy eating habits.¹⁻³ This is because the home environment can be a powerful source of positive influence through which parents and primary caregivers shape children's early food choices and eating behaviours.⁴

Family-related factors have a strong correlation with children's weight.⁵⁻⁹ A growing body of evidence suggests the family environment plays an integral role in children's and adolescents' weight status and weight-related behaviours,^{1,9,10} and the family is vital for shaping children's eating behaviours from conception through to adolescence.⁸

Therefore, a **family-centred approach** offers a key opportunity to improve not only the pleasure of eating but also health outcomes, both on an individual and public health scale.

Acknowledging this, the **EU action plan** on childhood obesity places emphasis on the need to **inform and empower families** as parents play a significantly influential role in establishing eating habits.¹¹ The action plan states that **the family approach is likely to be essential** and encourages the promotion of family-based programmes. In addition, the **World Health Organization (WHO)** report, 'Ending childhood obesity', states

that reviews of evidence on childhood obesity show that family-focused behavioural lifestyle interventions can lead to positive outcomes in weight, body mass index (BMI), and other measures of body fatness for both children and adolescents.¹²

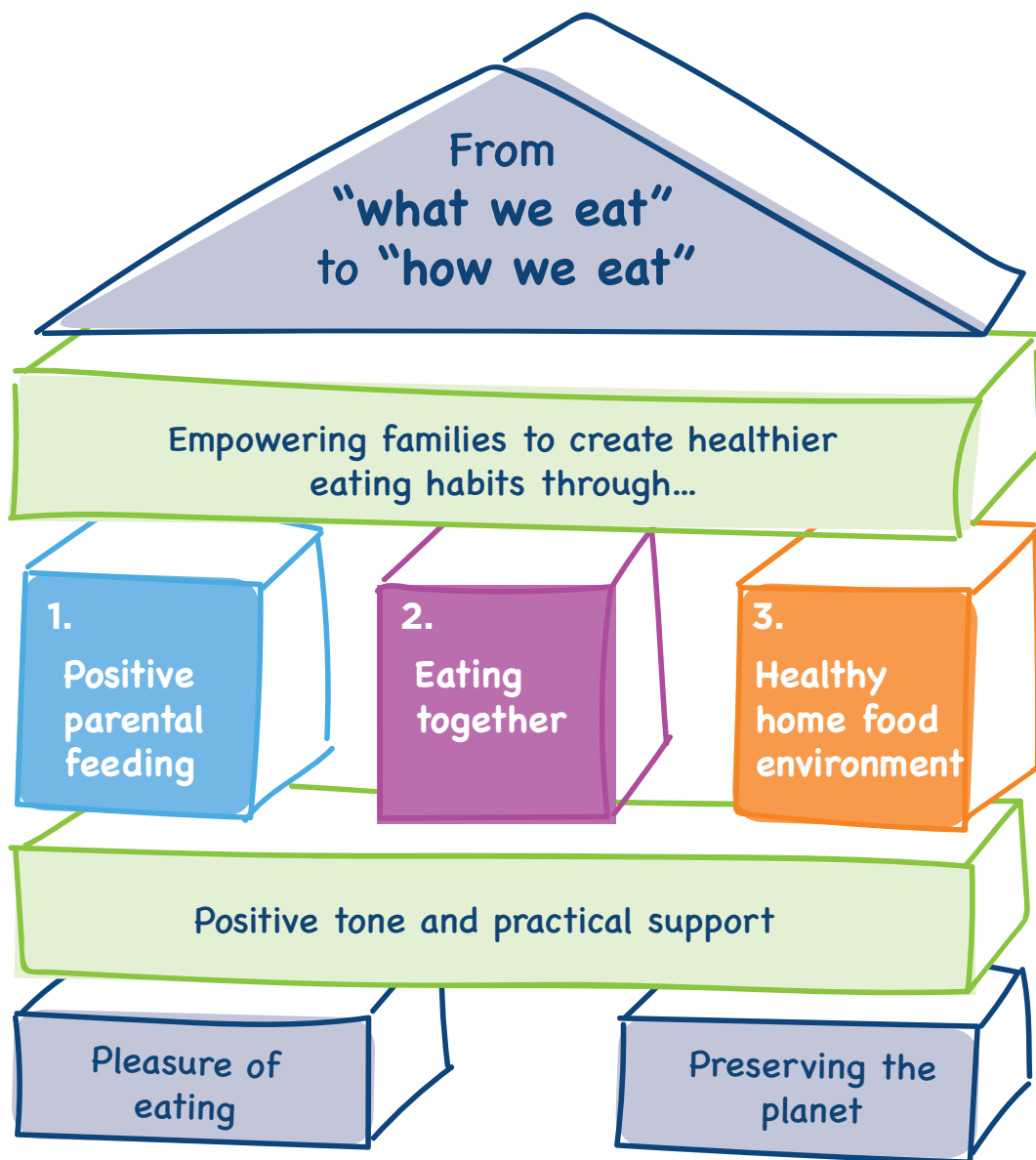
These principles underlie this DII Nurturing Children's Healthy Eating document, recognising the pivotal role of families in promoting and supporting healthy eating. The aim is to empower families in their role by communicating a shift in focus from **'what we eat'** to **'how we eat'**.

Furthermore, **three key pillars** have been identified to support this aim:

1. **Positive parental feeding** – shaping and building healthy eating habits
2. **Eating together** – a key element of health promotion in children
3. **Healthy home food environment** – creating the setting for healthy eating

The DII believes that information pertaining to these three pillars should be communicated through **positive practical support** and underpinned with the importance of the **pleasure of eating** and the **need to preserve the planet**.

Three pillars supporting the family role in nurturing children's healthy eating



This document highlights evidence pointing to the pivotal role that families can play in nurturing healthy eating habits in children. It focuses on the supports - 'pillars' - that need to be built to help empower families to create positive and sustainable eating behaviours in children: positive parental feeding, eating together, and a healthy home food environment.

Positive parental feeding

Parents' behaviour – notably their feeding style and feeding practices – profoundly influences the development of children's eating habits. Through support and encouragement, positive parental feeding can set children on the road to healthy eating right from the start.



Parents are influential in shaping children's food choices and the formation of children's eating habits. Children's food choices and eating behaviours are clearly influenced by parents' own behaviours.

Young children are dependent most of the time on their parents or caregivers to select and prepare their meals and snacks.¹³ Parents continue to influence what and how children eat as they grow up, not only through their control of the foods children can access but also through their modelling and support of certain eating behaviours that are culturally accepted within the family.¹⁴

Parental feeding styles, as well as feeding practices, have been associated with childhood eating habits and BMI.¹⁵

Feeding style – the overall attitude and emotional context that parents create around their child during times of eating can profoundly affect the child's eating behaviours.

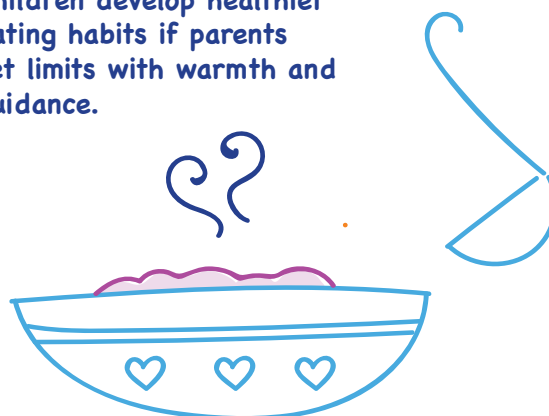
Parental feeding styles can be categorised according to the demands and controls that parents put in place for their children's eating, and parents' level of involvement. The 'authoritative' feeding style is characterised by reasonable nutritional demands and structure, as well as sensitivity to the child's needs.

By setting clear limits alongside warmth and explanation, parents help their children learn about food, and set the foundations for their healthy food choices.¹⁰

Children whose parents have adopted a **supportive and informative approach to feeding**, with education and choice, are more likely to have good energy intake regulation and avoid under- and over-eating.¹³

Conversely, the 'indulgent' feeding style – used by highly responsive parents who provide largely free access to foods, and the 'authoritarian' style – used by highly demanding but low responsive parents, have been associated with less healthy eating behaviours in children.^{10,15,16}

Children develop healthier eating habits if parents set limits with warmth and guidance.



Certain feeding practices can impact on children's self-regulation.

Feeding practices – specific behaviours that parents use to get their children to eat – include restricting certain foods, using food as a reward, and pressuring their child to eat. Parents may see restriction as a way of limiting the amount of unhealthy food their child eats. However, parental restriction is positively associated with children's desire for the restricted foods, tendency to over-eat and adiposity.¹³

Children whose parents use food as a reward, either for eating another food or for good behaviour, are more likely than others to eat when they're not hungry.^{17,18}

Pressure to eat – when parents insist on their child eating more or repeatedly prompt the child to eat even when he or she is not hungry – has been linked with fussy eating behaviour, such as eating fewer fruits and vegetables.^{4,19}

Both maternal and paternal factors are important influences and, combined, seem to have a profound effect on the child's uptake of nutritional habits.^{20,21}

Some feeding practices can impair children's ability to regulate the amount and type of food they eat – including caregivers restricting certain foods, using food as a reward, and pressuring children to eat.

Parental knowledge and culture may influence the adoption of adequate feeding behaviours that impact on their child's diet.

Parental knowledge and attitudes about what is healthy, influence the food choices they offer their child. However, the impact of parents' nutritional knowledge has so far attracted little research interest and warrants further investigation.¹³

Parental views about children's weight and

about what constitutes healthy eating have been found to vary across different cultural, ethnic and socioeconomic status groups.^{22,23} Moreover, parents' use of specific child feeding practices have been found to vary between different ethnic groups,^{24,25} highlighting the need to tailor advice and recommendations to take account of culture and ethnicity.

Parents are role models and their actions influence their children's behaviours.

Positive role modelling has been shown to improve child eating practices, leading to significant health benefits and preventing undesirable eating practices.²⁶

The overall quality of the parent's diet influences the quality of their child's diet. Children whose parents eat a greater number of healthy foods, such as fruit and vegetables, are likely to eat more of these healthy foods themselves.²⁷ Children's daily mean energy intake is also related to that of their parents. This reflects the food available in the home, food preferences and habits of the parents, as well as the family's culture of eating that is modelled in the home.²⁸

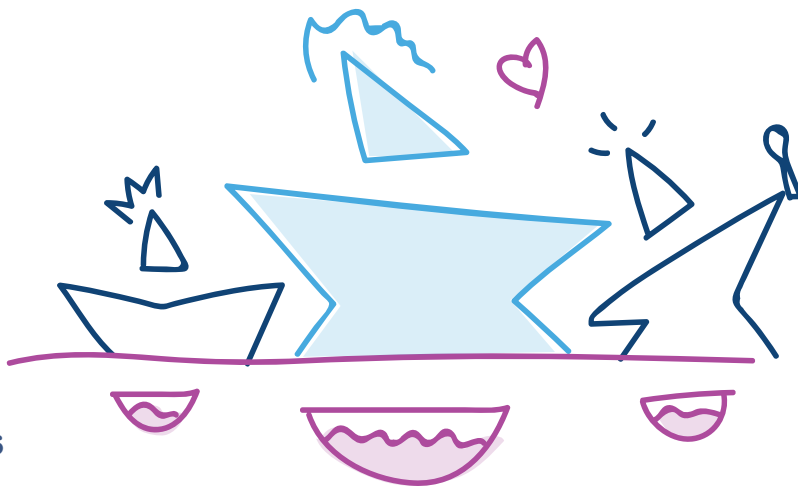
Parents are ideally placed to steer their children's eating in the right direction. They can positively influence and establish family norms around meal and snack patterns – including sitting down to regular, frequent family meals.²⁶

By being positive role models, parents are instilling eating habits that their child is likely to carry into adult life.



Eating together

Eating together as a family is associated with many positive outcomes for children, including the establishment of healthy eating habits. Highlighting the importance of the family meal and promoting its positive outcomes to parents may help them to serve as positive role models, valuing the family meal and implementing it more frequently. In this way, parents can pass on dietary, physical and psychological influences to their children.*



Family meals are associated with healthy dietary habits.

Compared with those who do not often eat together, children who have frequent family meals are more likely to have breakfast and to eat more healthy nutrient-dense foods, such as fruits, vegetables and dairy products.²⁹ Furthermore, children who eat few meals together as a family eat more fast foods, sugary drinks and saturated fats than those who have frequent family meals.³⁰ Family meals during childhood and adolescence appear to have a positive, sustained impact on dietary intake into young adulthood.^{31,32} Most studies have examined frequency of family meals, but quality of food provided at the meal is also important to examine.³³

Family meals are associated with positive psychological outcomes.

The family meal environment, with the

associated interactions between parents and children, is linked to improvements in academic achievements, self-esteem, and a lower likelihood of substance abuse, depression and violence.³⁴ Frequent family meals may also protect against disordered eating behaviours.³⁵ Psychosocial benefits include improved perceptions of family relationships.³⁶

Family meals are relevant for the prevention of childhood obesity.

Regular family meals allow parents to provide their children with new and nutritious foods, and also allow them to monitor and limit the children's intake of unhealthy foods, with parents serving as role models for healthy eating behaviours (see page 9).^{30,36}

By supporting these healthy eating behaviours, more frequent family meals may lead to reduced risk of excess weight gain and obesity in children.³⁰

Eating together: context matters

Eating together but with distractions such as television and other electronic devices affects the way families communicate, especially during meal times, and is associated with a poorer diet quality in children.^{37,38}

Childhood overweight and obesity have been associated with a lack of family rules around mealtime behaviour, parents who are overweight and parents who work full-time.^{39,40} Families represented by a parent who is overweight report fewer positive family meal practices, higher levels of depression and fewer family rules compared with families represented by a healthier-weight parent.⁴¹

The number of family meals eaten together has steadily declined since the 1960s.^{42,43}

Available studies suggest that the frequency of family meals has reduced over time and is continuing to fall.⁴² The frequency with which families eat together also varies between countries; in Europe, 78% of Spanish families enjoy >5 meals together per week, compared with only 33% of the UK population.⁴⁴

Busy schedules and stressful lives are associated with fewer family meals

Working parents tend to have fewer family meals.⁴⁵ This is a modern-day problem as they also spend less time preparing meals and are more likely to serve easy-to-prepare or fast food options to their children. This is especially so in the case of low income families where parents may have multiple jobs (see page 12).

High levels of work-related stress and scheduling challenges are also associated with fewer family meals and more frequent fast food dinners.^{46,47}

Other correlates associated with frequency of family meals include socioeconomic, demographic and psychosocial constructs.⁴⁶

Family meals are recognised as an important component of health promotion.

Professional organisations** strongly recommend that families should eat together more frequently. This is because family meals are associated with the formation of healthy eating habits, which should be a key element of childhood obesity prevention strategies.^{11,30,48,49} In promoting healthy eating, those working with families should consider how to overcome barriers to eating together, such as time and scheduling challenges and food preferences.⁴⁶

Support for families experiencing time pressures may be an effective intervention to help them eat meals together.



Possible strategies that require further research include involvement of children and adolescents, and support for families experiencing time-related barriers.^{36,46} Further research is underway to establish the most effective interventions to promote family meals.^{50,51}

* A family meal is generally defined as at least one parent + children. Further research is needed to understand fully the multi-factorial influences that contribute to the benefits of eating together.⁵²

**AAP, ESPGHAN, WHO, European Report on Childhood Obesity.

Healthy home food environment

The quality, availability and accessibility of foods in the home are of utmost importance in the development of healthy eating habits in children. Hence it is essential that families are made aware of the importance of bringing healthy foods into their homes and ensuring their children have access to them.



The home environment has an important role in affecting children's habits, including eating behaviours.

Around 65–72% of daily calories are consumed in the home⁵³; therefore, the quality of the foods and the nutrients that are available in the home are of great importance to the health of all family members. Many factors influence the quality and quantity of foods that are available and eaten in the home, including the cost of foods, how foods are prepared and served, and the emotional environment of the home.^{39,41,47,53-56}

Resources available to the family, including family income and education levels of parents, affect the home food environment.

Cost is a major factor influencing the types of food parents bring into the home. The higher cost of fresh fruits and vegetables, lean meats and fish, stands in contrast to the lower cost of refined grains and foods with added sugars and fat.⁵⁵

Income affects not only purchasing power but also food-related activities in the home. Lower income homes may have adults who are working in multiple jobs with less time to prepare foods.⁵⁰ Indeed, research from the USA suggests that more energy-dense and nutrient-poor foods that require little preparation are the norm for many low-income families,⁵³ while research from the UK suggests that financial cost and time are both barriers to caregivers offering healthy foods to their children.⁵⁷

The availability of foods in the home has a major impact on children's dietary choices.

The home food choices of children depend on the foods that are made available to them. Parents are therefore important gatekeepers for children's food choices at home.^{58,59} The provision of healthy foods available at home increases children's motivation to eat new foods and promotes greater enjoyment of healthier options.¹⁷ The healthiest diet for parents to give their child is one that is

balanced and based on a variety of nutrient-dense foods in appropriate amounts.⁶⁰

Studies have documented that young people's intake of fruits and vegetables is positively associated with the availability of healthy foods in the home and negatively associated with less healthy foods in the home.⁶¹ Young family members are more likely to eat sweet and savoury snacks or have high-calorie drinks if there are more unhealthy foods available in the home.^{62,63}

The availability of food in the home has also been shown to be associated with obesity risk, both of the parents and of the young person in the home.⁶⁴

While family income certainly influences the types of foods that families can make available to children, research suggests that income only differentially affects the availability of healthy foods in the home. Less healthy foods are found in the homes of both high- and low-income families. It is essential that families are made aware of the importance of making healthy foods more available in the home.⁶¹

The accessibility of foods in the home affects children's dietary choices.

Accessibility refers to providing healthy foods in places children can reach, as well as providing foods in forms that are easy for children to eat. For instance, cutting and

peeling fruits and vegetables increases the chances that children will eat them – particularly if children are preparing their own snacks⁵⁶ – and making water accessible for children has a positive impact on their water intake.⁶⁵

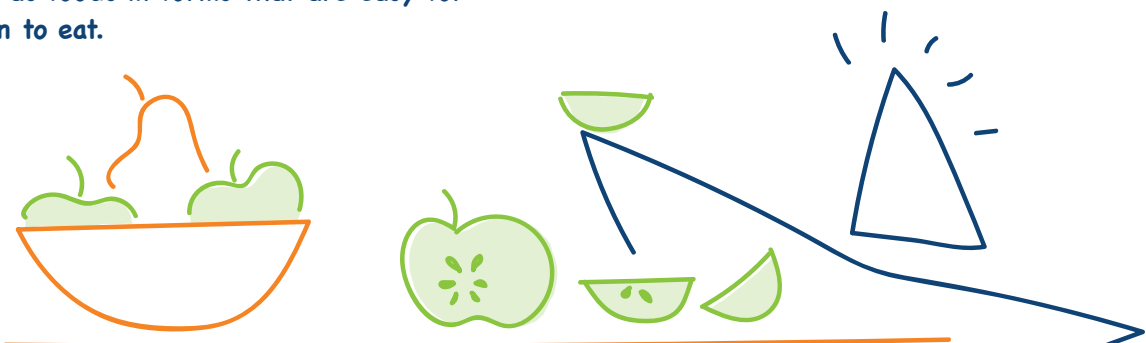
Accessibility also refers to portion sizes offered to children in the home.^{66,67} Promoting the accessibility of nutrient-dense foods to children, limiting the accessibility of caloric-dense and nutrient-poor snacks and also adapting portion sizes to age (with smaller portions of unhealthy foods offered) will help minimise the harmful effects of less healthy treats.^{66,67}

Cues to eating that children receive in the home affect their dietary choices.

The home environment provides many cues to eating that not only influence immediate food intake but also shape the establishment of habits and norms about when, what and how much to eat. In particular, parental eating behaviours provide powerful eating cues to children (see page 8).^{56,62,68}

Television viewing offers another important set of cues for eating and includes cues to eat in the absence of hunger, as well as promotion of the types of food to eat.^{69,70} Reducing children's access to television appears to be important in reducing obesity risk, likely due to the food advertisements, as well as television's promotion of sedentary behaviour.⁷¹

Accessibility refers to providing healthy foods in places children can reach, as well as foods in forms that are easy for children to eat.



Pleasure of eating

The pleasure of eating can be an important lever to encourage healthy eating among children. Public health campaigns should promote the pleasure of healthy eating, and help guide parents to support their children's pleasure of healthy eating through repeated, positive exposure to healthy food options, in a warm social context.



Pleasure could be a valuable tool in promoting healthy eating because it drives food choices.

Pleasure is an important part of the learning experience surrounding eating. Children must learn what, when, how, and how much to eat.⁷² Among the various controls of eating, pleasure plays a critical role in determining our food choices.

However, in the modern western world where energy-dense foods are over-abundant, pleasure can be a foe as well as a friend to healthy eating, in terms of both what people choose to eat and how much they eat. We need to understand what influences pleasure of healthy eating so that we can fully identify the circumstances in which pleasure can boost rather than hinder healthy eating.⁷³ Ultimately, this should help inform strategies to promote healthy eating habits that meet children's drive for pleasure.

Three dimensions of pleasure affect eating during childhood.

Theoretical models show that people's food choices are determined not only by the

food itself, but also by the context of eating. Indeed, three dimensions of pleasure of eating in childhood can be identified: sensory, interpersonal, and cognitive.⁷³

1. Sensory pleasure: learning to like a new food is through repeated exposure to the food.

Appearance, taste, and texture are all closely linked with our enjoyment of food, and pleasure may also be affected by how rewarding a food is – how well it satisfies our need for energy or our appetite. In addition, these sensory properties of food are indicators of whether the food is safe and appropriate to eat. Our senses make it possible to identify and remember foods, by detecting flavours and energy density.

Except for our innate liking of sweet foods, we learn sensory pleasure from food through our early eating experiences.⁷² From birth, infants can taste⁷⁴ and smell foods, an experience that can take place through human milk as the food eaten by the mother influences the flavour of her milk, and thereby the child's preference.^{75,76} As infants develop they attain the oral abilities to process foods with different

textures. Children can also learn about the characteristics of foods, including information regarding the energy density of the food, and adapt their energy intake accordingly.^{77,78} Many studies show that a robust mechanism for learning to like a new food is through repeated exposure to the food.⁷⁹ For instance, a new food may be liked after up to 10 exposures.⁸⁰

2. Interpersonal pleasure: social interactions with others during mealtimes guide what and how much children eat.

Eating is a social experience. Social eating – with parents, other adults and peers – is crucial for the development of children's eating behaviours.⁸¹ Young children learn which foods are culturally preferred by watching and imitating other people.⁸² Social eating impacts on the amount children eat,⁸³ their acceptance of novel food, and their food choices.

The impact of social modelling occurs for children as young as one year old and continues through development⁸⁴ (see also page 9 on parental role modelling).

Talking about the food being eaten – for example, expressing enjoyment of eating healthy foods – is also important for shaping a child's enjoyment of mealtimes.^{85,86} Thus, supporting healthy eating and role modelling among the adults and peers with whom children eat is an important strategy to support healthy eating among children.

3. Cognitive pleasure: children's thoughts about food can modulate pleasure of eating.

Eating is associated with thoughts, images and ideas that can modulate the pleasure of eating. Cognitive influences on foods include 'credence' cues – such as branding, packaging or other marketing communication. By building expectations about a specific food, marketing and advertising can influence children's enjoyment of that food.^{87,88}

Several studies have examined the influence of marketing on children's eating

behaviours.⁸⁹ They have shown that children do not begin to understand the persuasive aim of advertisements until they reach approximately 7 or 8 years of age.⁹⁰ Until then they tend to view advertising as entertaining or informative, which makes them vulnerable and affects their attitudes towards advertised foods. Older children can still be influenced by advertising^{89,90} and branding which may increase liking of foods.⁹¹ Promoting the consumption of healthy foods and restricting marketing of unhealthy foods may be an important strategy to support healthy eating among children and youths.

Pleasure may be used as a lever to encourage healthy eating behaviour in children.

- *Facing the dilemma of nutrition versus pleasure:*

In addition to telling children that healthy foods are good for them, public health campaigns and interventions to support healthy eating could focus on the pleasure of eating healthy foods, because these foods are enjoyable as well as healthy. Children can like the taste of a healthy food especially if they have learned to like it through repeated, positive exposure.

- *Pleasure from eating healthy foods together to increase children's choice of healthy food options:*

Sharing healthy mealtimes with family or peers can allow children to observe others enjoying healthy foods. Such positive social contexts could help children to learn to like healthy foods.

- *Promoting enjoyment of healthy eating to limit energy-dense foods:*

Enhancing the pleasure children expect from healthy food can be an effective strategy for limiting their consumption of energy-dense foods. Sharing mealtimes, talking about what is eaten, and the associated pleasant sensations, all help, as does the promotion of the pleasure of eating healthy foods.

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