

# APPETITE IN CHILDHOOD:

## HOW IT IS DEVELOPED AND SHAPED

A GUIDE FOR PARENTS  
AND CAREGIVERS



**Appetite in Childhood:  
how it is developed and shaped**

A Guide for Parents and Caregivers to recognize, respect and respond to hunger and satiety signals of Children

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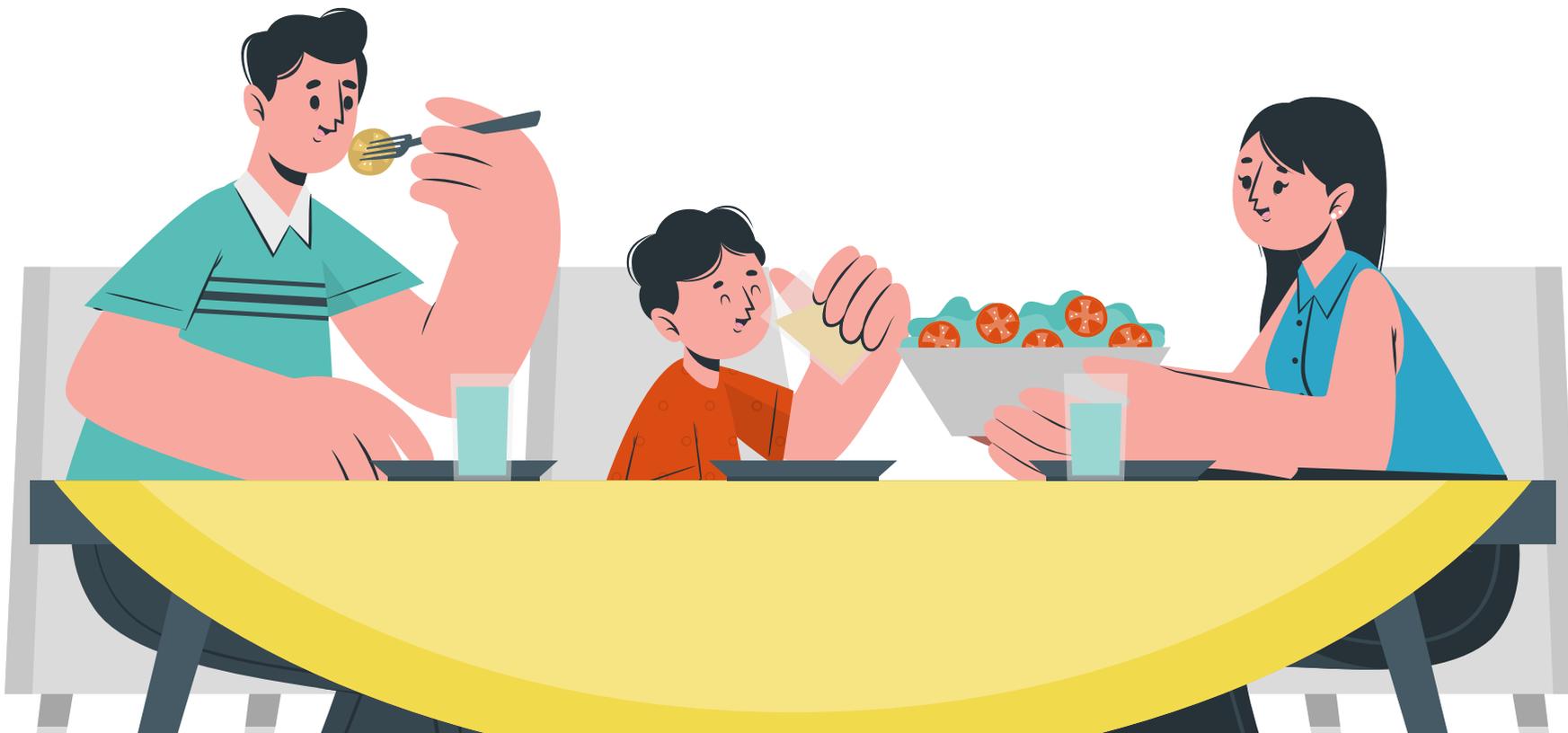
Decisions about what, how much and when to eat are complex processes influenced by many interconnected factors. **Appetite traits** are the drivers behind these processes, reflecting a complex combination of the internal signals of hunger and/or fullness, with environmental cues, such as attitudes and psychosocial factors related to food selection and food choices. Appetite is distinguished from diet because it includes the factors that determine when eating episodes begin and end, thus reaching beyond the types of foods that are consumed.

There is a strong body of research focused on understanding the development of appetite traits and how they are associated with weight gain and excessive weight in childhood. Why do some children show more interest towards food or why are they never full? These are current concerns from parents and caregivers of young children.

The **GENERATION XXI birth cohort** has provided valuable data for advances in this area of research. GENERATION XXI is the first Portuguese birth cohort, a study that follows over time a group of people born at a similar date or period, gathering information at different ages. It includes 8647 children born in Porto (Northern Portugal), in 2005/2006, who were followed-up at 4, 7, 10 and 13 years of age.

This e-book presents an overview of the establishment of appetite traits during childhood, their determinants, and their effects on health, focusing on the results obtained within this large birth cohort. It was developed by researchers and health professionals involved in the managing of eating behaviours of young children.

The e-book aims to offer guidance to parents and main caregivers towards recognising, respecting and responding to their child's signals of hunger and satiety. Here we present ways to help understand these signals better and strategies to respond to the child's individual appetite traits.



## APPETITE IN CHILDHOOD

**Appetite traits in childhood have been associated with weight status. In population-based studies, these traits have been measured by parent-report questionnaires and they are commonly grouped into 'food approach' and 'food avoidant' behaviours.**

**Food approach behaviours** reflect a bigger or 'more avid' appetite. They include being very responsive to external food cues (e.g. wanting to eat when you smell or see delicious foods), eating more in response to negative emotions (e.g., when you are unhappy), or finding it difficult to recognise when you are full up and to stop eating (these internal signals of fullness are called satiety cues).

**Food avoidant behaviours**, on the other hand, are related to having a smaller appetite. These include behaviours such as eating slowly during meals, showing little interest in foods or eating, unwillingness to try new foods, and undereating in response to emotions (e.g., eating less when you are worried or anxious).

The explanation and conceptual definition of some of these behaviours and related concepts are described in the **GLOSSARY**.



## GLOSSARY

**APPETITE:** Includes a set of processes that influence energy intake (i.e., food consumption) and associated motivational drives such as hunger. It can be regarded as a system that reflects a complex interaction of biological, psychological, and environmental processes in the overall expression of food consumption.

**FULLNESS:** Refers to an internal sensation that occurs after eating a meal. Meal consumption results in gastric distension and production of hormones that creates a feeling of fullness.

**HUNGER:** Relates to the cue that is expected to drive meal initiation. Can be traced to changes in physical sensations in parts of the body, such as the stomach. Physical signals of hunger may include feelings of light-headedness, weakness, or emptiness in the stomach.

**SATIATION:** Includes a set of complex processes that bring an episode of eating to an end. It controls the size of meals.

**SATIETY:** Describes the processes that occur after a meal and inhibit further eating. It includes the feeling of fullness and/or inhibition of hunger sensations that occurs once eating has ceased. It controls the intervals between eating episodes.

**APPETITIVE OR APPETITE TRAITS/BEHAVIOURS:** These refer to a set of persistent predispositions toward foods. They reflect aspects such as hunger, appetite, satiety, and response to food cues. Appetite traits/behaviours interact with environmental factors and influence food selection and eating choices.

### Examples of appetite traits

**Desire to drink:** Refers to a desire and craving to drink throughout the day. This behaviour is problematic when directed towards energy-dense beverages, such as sugary drinks. Example: *My child is always asking for a drink.*

**Emotional Eating:** Refers to food intake motivated by negative emotions such as anxiety, worry or anger. In Emotional Overeating,

the child tends to eat more in response to emotions. Example: *My child eats more when anxious.* In contrast, in Emotional Undereating, the child reduces their food intake in response to emotions. Example: *My child eats less when angry.*

**Enjoyment of Food:** Relates to the child's satisfaction and desire towards foods and is evidenced by behaviours such as a general interest and pleasure in food and a constant desire to eat. Example: *My child looks forward to mealtimes.*

**Food Fussiness:** Characterized by a set of selectivity behaviours regarding which foods are consumed, such as eating a limited number of foods, unwillingness to try new foods, and food rejection based on certain sensory properties such as flavours or food textures. Example: *My child refuses new foods at first.*

**Food Responsiveness:** Refers to eating in response to food cues (e.g., external stimuli such as the appearance and smell of food). Children with a greater response towards foods tend to exhibit behaviours such as a tendency to overeat when exposed to certain foods, constantly asking for food, and never refusing food when it is offered, even when they feel full. Example: *My child is always asking for food.*

**Satiety Responsiveness:** Defined as the ability to recognize and adjust food intake in response to internal satiety signals. This is reflected in children's behaviours such as not being able to eat a meal if they have just eaten something before, feeling full before finishing what is on the plate, and having a smaller appetite in general. Example: *My child gets full up easily.*

**Slowness in Eating:** Refers to the speed of eating during a meal. Assesses child eating rate as the meal progresses. Example: *My child eats slowly.*

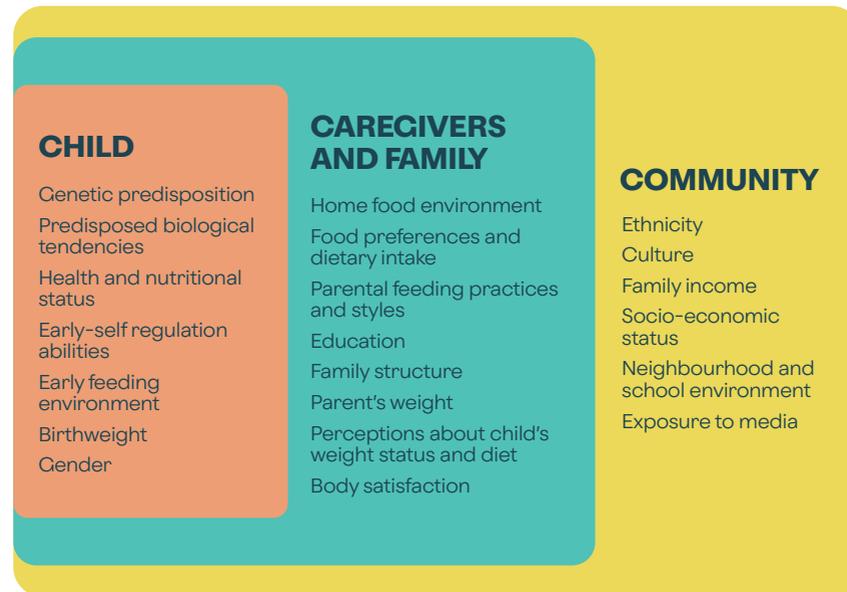
## THE ROLE OF GENES AND THE ENVIRONMENT

People can vary widely in terms of their appetites. These differences in appetite traits (or appetite behaviours) are caused by a combination of our genes and the environments we live in. Genes seem to have a stronger influence on appetite (and also in our weight status) as we grow and age, suggesting that other factors besides genetics, such as the home environment, shapes one's appetite (and therefore weight), especially in early life.

In a study with twins from **GENERATION XXI**, we observed that appetite traits, such as Food Responsiveness (i.e., eating in response to external stimuli such as the appearance and smell of food), Slowness in Eating (i.e., speed of eating) and Food Fussiness (i.e., food selectivity), at age 10 were highly explained by genes. However, the variability of these traits (around 30%) was also explained by the environment in which the children live in <sup>(1)</sup>.



The environment, such as family, friends, and the community, plays a critical role in the development of these appetite behaviours (**Figure 1**). The food environment and the way parents feed their children (i.e., the parental feeding practices) appear to be particularly relevant, especially at younger ages.



**Figure 1.** Factors associated with the development of eating behaviours in childhood. Adapted from: De Cosmi V, Scaglioni S, Agostoni C, 2017.



## EARLY FEEDING ENVIRONMENT

It is well known that the **first 1000 days of life**, which includes the time from conception to age 2, is a **critical period** in the development of eating habits and programming of future health. This is a time of great vulnerability when very rapid growth and neurodevelopment take place. **Environmental exposures** during this time may also influence appetite regulation and eating behaviours in children.

Beginning with the mother's diet, undernutrition or over-nourishment during **pregnancy** affects foetal growth and development. Babies born very small (with a low birth weight for their age at birth, e.g., below 2500 grams with 37 weeks of gestation) or very large (e.g., above 3500 grams with at least 37 weeks of gestation) appear to have a higher risk for developing diseases later in life, including obesity. Recent research suggests that nutrition in utero (in the womb) may also affect the development of appetite regulation.

Additionally, exposures occurring in the womb (**intrauterine exposures**) may also contribute to the establishment of children's food preferences. The foetus has first flavour experiences via the amniotic fluid, which contains flavour components derived from the mother's diet. There is evidence that foetal flavour exposure increases the acceptance of similarly flavoured foods during infancy and childhood.

Regarding **feeding**, the composition of **breast milk** seems to support the development of optimal appetite regulation. Like the amniotic fluid, breast milk can reflect flavours of the mother's diet, which may promote food acceptance (especially when mothers consume varied diets). Feeding directly from the breast, rather than through a bottle, is also thought to support the development of an adequate appetite regulation. When using a bottle, mothers/caregivers have more control over the amount of milk offered since they can see and feel the volume consumed by their baby; that can lead to over-feeding in some circumstances. In contrast, breastfeeding directly from the breast means that babies are in control of the amount consumed, and not mothers/caregivers, enhancing their appetite regulation.

**Complementary feeding** (i.e., introduction to solid foods) is a key period for learning food preferences (likes and dislikes) and appetite control. During complementary feeding, infants discover the sensory and nutritional properties of foods. Infants are born with taste predispositions that favour sweet (since breastmilk is sweet) and rejection of bitter/sour tastes.

However, preferences for healthy foods can be developed through learning via exposure, social modelling (watching other people eat and enjoy foods) and reward (give something to children in recognition of their healthy foods choices). Repeated exposure to a variety of foods and textures is thought to promote food acceptance, including those foods that are commonly rejected due to their bitter taste, such as vegetables.



#### IN GENERATION XXI WE FOUND THAT:

- Infants who were breastfed for 6 months or longer showed lower Food Responsiveness, Emotional Over and Under-eating, and Desire to Drink at 7 years of age. Other factors such as higher maternal weight and smoking during pregnancy were related to a more avid appetite in school-age years <sup>(2)</sup>.

#### KEY-MESSAGE:

*In utero* exposures and the early feeding environment appear to play an important role in the development of appetite traits. An optimized environment (e.g., good nutrition during pregnancy, promotion of breastfeeding, healthy foods offered around 6 months of age during complementary feeding) has the potential to promote the development of optimal appetite behaviours.

## RECOMMENDATIONS FOR PARENTS/CAREGIVERS:

- ▶ A **healthy** and **balanced diet** during pregnancy is essential for both the mother and the baby!
- ▶ **Breastfeeding** is the ideal choice when possible. Exclusive breastfeeding in the first six months of life provides optimal nutrition and supports healthy growth, also potentially promoting better appetite regulation and healthier food preferences. Breastfeeding is recommended; however, how the baby is fed is a decision of the mother. Breastfeeding is not the only determinant of a child's health.
- ▶ It is important to pay close attention to the **baby's hunger and satiety signals** and feed when the baby indicates that they are hungry and stop feeding when they indicate that they are satisfied. It can be challenging to recognize these signals of hunger and fullness, but parents and caregivers could avoid encouraging a baby to finish a bottle of milk or keep feeding the baby when they have indicated that they have had enough..
- ▶ The window between the **fourth** and **fifth month** is considered a sensitive period for **introducing complementary foods** to improve flavour acceptance. According to current guidelines, complementary foods should be introduced between 4 and 6 months, not before nor after this period.
- ▶ During complementary feeding, it is important to offer the baby a variety of foods gradually to improve flavour learning and acceptance (including bitter tasting vegetables). This stage requires time and patience from parents. Babies might initially reject certain foods, and can take up to 10 exposures to learn to like a new food. In these cases, it is important not to give up and to keep offering a variety of foods: repeated exposure is required!

## FOOD CONSUMPTION

**Establishing healthy eating habits in childhood is essential, as habits learned early in life tend to persist into adulthood. During childhood, food must provide energy and nutrients necessary for good overall health, optimal growth and development. Eating foods rich in essential nutrients, in the right amounts, is the foundation of healthy eating habits!**

As previously mentioned, there are a range of different appetite traits in childhood. These are influenced by genes and related to our diets and food choices. In the first years of life, a very common behaviour is Food Fussiness, characterized by food rejection and unwillingness to try new foods. This behaviour has been associated with lower consumption of fruit and vegetables and a less varied diet. Food Fussiness reaches its peak at age 2 (with children sometimes refusing even foods they previously enjoyed eating) and usually begins to decline by age 4 or 5. On the other hand, there are children who are very receptive to food and enjoy eating. Typically, they tend to eat more and are open to trying a great variety of foods.

The relationship between appetite traits and eating habits is complex. For example, the foods or drinks we consume can affect some mechanisms related to appetite regulation (e.g., drinking sugar-sweetened beverages may lead to lower satiation compared to eating solid foods with the same energy content, and therefore lead to increases in the total amount of energy consumed). Also, children which are highly selective towards foods may be often targeted with certain strategies to increase consumption of foods that they often reject, changing their food intake.

**Despite the complex relationship, there is a simple message to retain: repeated exposure to a variety of nutritious foods is one of the most robust ways to promote healthier food choices and support the development of adequate appetitive traits!**

**IN GENERATION XXI WE FOUND THAT:**

- Children with a dietary pattern characterized by a higher intake of snacks and a lower intake of foods typically eaten at main meals (such as fish, meat, rice, and fruit and vegetables) at age 4 were fussier (i.e., more selective) and showed lower Enjoyment of Food at age 7<sup>(3)</sup>.
- Children with a dietary pattern rich in energy-dense foods at 4 years (characterized by higher consumption of sweets, sugar-sweetened beverages, and high-fat foods) showed higher general appetite for food or desire to eat (Food Responsiveness) and emotional eating three years later<sup>(3)</sup>.
- At 7 years old, children who ate small amounts of food, who asked for food rewards, and refused to eat at the table with the rest of the family had a poorer diet quality characterized by higher consumption of energy-dense foods and lower fruit and vegetable intake<sup>(4)</sup>.
- Food Fussiness at age 7 was associated with lower diet variety from 4 to 7 years of age and with lower diet quality at 10 years of age. A lower diet quality at age 7 was associated with higher Food Fussiness and Satiety Responsiveness at 10 years. Thus, the relationship seem to be in both directions (the eating behaviour leads to lower diet quality, but a lower diet quality also influences the eating behaviour at an older age)<sup>(5)</sup>.
- The consumption of ultra-processed foods at age 4 (i.e. foods that are usually nutrient-poor, hyper-palatable, and energy-dense) was associated with a higher general appetite for food and greater Food Fussiness at age 7<sup>(6)</sup>.

- Consuming more sugar-sweetened beverages in pre-school years (4 years) was associated with lower food avoidant and higher food approach behaviours (particularly a higher Desire to Drink) in later childhood (at 7 years)<sup>(7)</sup>.



**KEY MESSAGES:**

- Food consumption in childhood (including dietary patterns, quality and variety of the diet, consumption of ultra-processed foods and sugar-sweetened beverages) is related to children's appetite traits.
- Children who show a smaller appetite and lack of interest towards foods (displaying appetite behaviours that put them at lower risk of overweight) appear to consume less food overall, and their diets might be less varied and include more ultra-processed foods.
- Unhealthy eating habits need to be identified and targeted early in life as they may influence the development of less desirable eating behaviours in the long term.

## RECOMMENDATIONS FOR PARENTS/CAREGIVERS:

- ▶ The sooner parents and caregivers intervene to increase improve the diet quality of children, the better! Assuring a **structured meal-time**, fostering an overall **interest in healthy food**, as well as **repeatedly exposing** children to the taste of certain foods, are some of the strategies that might help improve food acceptance and diet quality.
- ▶ Modifying the **variety of foods** served at meals (e.g., increasing the variety of healthy foods while decreasing the variety of less healthy, energy-dense foods) is another strategy that seems to increase acceptance of healthy foods.
- ▶ Parents might wish to reduce exposures to unhealthy foods and to serve as **role models** in eating! Avoiding the consumption of ultra-processed foods, promoting the intake of alternative healthy drinks, such as water, and monitoring the availability of other sweetened options are some beneficial strategies that could be engaged by parents and caregivers.

WHERE PARENTS CAN READ MORE ABOUT HEALTHY EATING:

Eatright.org

Nutrition.org

E-book: Vegetables and fruit: Help your child to like them



## PARENTAL FEEDING PRACTICES

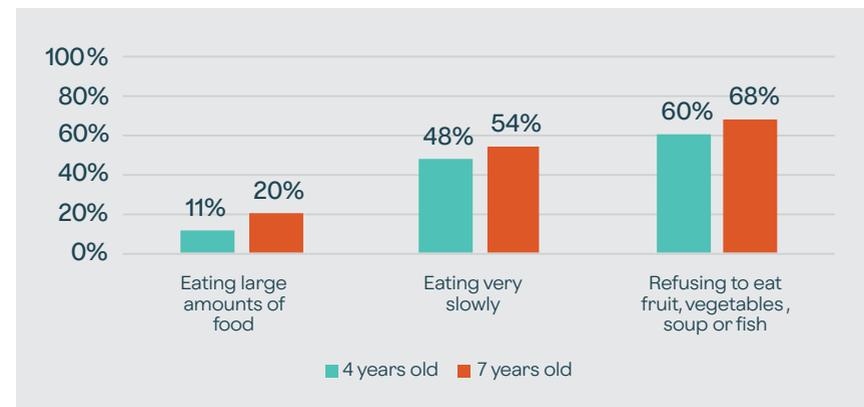
Parents build their children's food environment, for example, by buying foods, setting rules about the timing, frequency, structure of mealtimes, and through interactions they have with their children at mealtimes.

**Parental feeding practices are a set of strategies used by parents aiming to control or modify what, when, and how much their children eat and/or to control or modify their weight.**

Parents usually want to promote healthy eating and make sure that their children have a healthy growth and development. Therefore, they tailor their feeding practices to achieve these goals and adjust their strategies based on their children's eating behaviours and weight.

When parents perceive that their children are not eating enough or are refusing to eat certain foods, various concerns may arise due to its impact on child health.

In GENERATION XXI, we estimated the % of certain eating behaviours according to parent's perception:



To deal with these behaviours, parents that are concerned about the child eating too little or being too thin try to get their children to eat more by using strategies such as pressuring them to finish all the food on their plates and repeatedly asking them to eat more (even if the child is not hungry or is already full). On the other hand, when parents believe their child is eating too much or not eating the right amounts and/or types of foods, they tend to become concerned about excess weight gain. In an attempt to control children's food consumption, parents may use feeding practices such as restricting the child's access to unhealthy foods (e.g., foods high in fat and sugar) or limiting the portion size or amounts of food their children eat.

There is clear evidence that parents adapt their feeding practices in response to their children's characteristics, such as their weight and eating behaviours. However, children's eating behaviours also appear to be influenced by parents' feeding practices. Despite parents' best intentions, studies have found that certain parental feeding practices seem to be counterproductive. Coercive feeding practices that reflect attempts to dominate, pressure, or impose the parents' will upon the child, including practices such as restricting the child's access to food, pressuring the child to eat, and using food as a reward or to control negative emotions, appear to lead to undesirable eating behaviours and/or weight.

- **When parents pressure the child to eat more, this could reduce the child's willingness to consume these foods and consequently exacerbate food refusal.**
- **Excessive control and restriction could increase children's intake of and attraction to the foods that are prohibited.**
- **The use of foods as reward appears to increase the children's interest in and attraction to those foods (which are usually candies, treats, and unhealthy snacks).**

#### IN GENERATION XXI WE FOUND THAT:

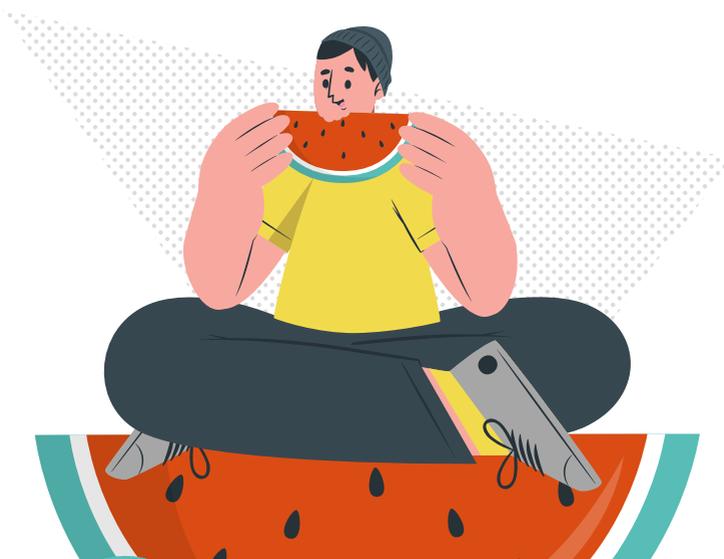
- Parents and children influence each other's behaviour in the context of feeding. Children's eating behaviours at age 4, such as eating large amounts of food, eating slowly, and food refusal, influenced parents to adopt certain feeding practices (such as restriction of foods, monitoring child's food consumption, and pressure to eat), but these practices also seem to influence children's behaviours after three years<sup>(6)</sup>.
- Parents whose children eat large amounts of food restrict the child's access to unhealthy foods and are more concerned about the child's weight<sup>(6)</sup>.
- Practices such as determining the size of the child's food portions and the type of food offered, strictly defining what the child should eat, or tracking the child's food consumption were less related with eating behaviours, such as eating large amounts of food and refusing to eat, considered as undesirable behaviours<sup>(6)</sup>.
- Children whose parents used strategies such as pressure to eat at 4 years old showed certain appetite traits, such as eating more slowly and refusing to eat, three years later<sup>(6)</sup>.

#### KEY MESSAGES:

- Parents and children mutually influence each other's behaviour. Parents use specific feeding practices in response to children's eating behaviours, however, these practices also seem to influence child's eating.
- Responsive feeding practices that recognise and respect children's hunger and satiety signals are encouraged.
- Health education interventions involving the entire family may be beneficial if considering the important role of parents and caregivers in the development of eating habits.

## RECOMMENDATIONS FOR PARENTS/CAREGIVERS:

- ▶ It is not advised to pressure children to eat more than they want, such as cleaning the plate and it is important to **respect their eating pace**. Instead, parents need to pay attention to children's hunger and satiety signals.
- ▶ **Offer consistently and repeatedly healthy foods** to children, without forcing them to eat; rejection of some foods does not mean the child does not like them, they just need to become familiar with these foods.
- ▶ Try to focus on children's characteristics but also on **creating a structured environment** that naturally limits undesirable behaviours: establishing and being involved in meal routines (eating at the same place and time, involving children in meal planning and preparation); determining portion sizes, types of foods offered and tracking children's food consumption.
- ▶ Children need parents and caregivers to be **role models**, who make healthy choices and supportively encourage them to adopt healthier eating habits. Be a good role model for your children!



## WEIGHT IN CHILDHOOD

**Appetite traits** may play an important role in **weight gain** during childhood. Children greatly differ in their appetite, and these differences might explain why some are at risk of underweight and others overweight.

Children with a more avid appetite have a higher probability of accumulating body fat and consequently developing excessive weight and obesity; while those with a poor appetite are more likely to have a lower amount of body fat and be at risk of underweight. Behaviours such as Food Responsiveness, Enjoyment of Food and Emotional Overeating have been associated with overweight and obesity risk. On the other hand, higher Satiety Responsiveness, Slowness in Eating and Food Fussiness have been linked to lower body weight.



The interaction between appetite traits and the food environment that children live in can influence their body weight. In the modern food environment, children are often exposed to large portions of energy-dense foods and the pleasurable sensory aspects of food can lead to overeating and excessive weight gain in children who are more responsive to food.

#### IN GENERATION XXI WE FOUND THAT:

- Children with higher weight in middle childhood are at increased risk of developing an avid appetite over time <sup>(9)</sup>.
- Although appetite traits in early life may influence later body composition, body composition in turn seems to then predict later appetite <sup>(10)</sup>. This complex relationship seems to be more evident in heavier children.



#### KEY MESSAGES:

- There is an association between weight, body composition and appetite traits in childhood, which may be a consequence of a child's previous weight status.
- In addition to the influence of appetite on weight, body weight status itself may also play an important role in appetite regulation; for example, an avid appetite can lead to excess weight gain but on the other hand, a higher body weight might in turn lead to poorer appetite regulation over time. This highlights the importance of maintaining a healthy weight from an early age.
- To prevent the development of problematic appetite traits at older ages (7-10 years old), let's focus on managing, at earlier ages, our child's weight.

## BEYOND WEIGHT...

A study from GENERATION XXI explored whether appetite traits were also associated with cardiometabolic risk (risk factors that increase the probability of experiencing cardiovascular events such as hypertension, high blood cholesterol, blood pressure and glucose levels, and abdominal obesity later in life).

We found that children with higher scores on food avoidant behaviours, such as Food Fussiness, Satiety Responsiveness and Slowness in Eating at age 7 years, had lower cardiometabolic risk at age 10. On the other hand, children with higher food approach behaviours, such as Enjoyment of Food and Food Responsiveness, had higher cardiometabolic risk three years later. These effects were, at

least in part, due to children's current body mass index, which is a key predictor of cardiometabolic risk in childhood <sup>(11)</sup>.

An additional study showed that higher leptin levels (an anorexigenic hormone, with appetite-reducing effects) were associated with higher food approach behaviours, namely Food Responsiveness, Enjoyment of Food and Emotional Overeating at 7 years old (12). These findings suggest that young children may already be experiencing a phenomenon called leptin resistance (when the body does not respond to this hormone), which impacts on eating behaviours, promoting overeating, and mitigating against weight loss in adulthood.



## RECOMMENDATIONS FOR PARENTS/CAREGIVERS:

- ▶ Weight can be a sensitive topic, even for young children. Whether a child has overweight or/ obesity and shows a more avid appetite, or has underweight showing a poorer appetite, parents/caregivers **must avoid negative or judgemental comments**, which can worsen the problem. Children are should be **encouraged to be open and share their feelings** on their body image, and on their internal (more physiological) or emotional drives for eating, getting reassurance that they are understood, independently of their shape and size.
- ▶ Parents/caregivers should not blame a child for their weight but take part in that journey as well. The focus must be put on children's overall health, with **lifestyle changes occurring within the family**, such as adopting healthier sleeping and eating habits (including learning to identify and respect children's feelings of fullness/satiety) and finding fun ways to move and spend active time **together**.
- ▶ Managing children's weight and health may seem an overwhelming task, but it is worth it! Excessive weight in childhood is a key predictor of poorer health later in life. Searching for health **professional guidance and advice** may ease the process.



## APPETITE: FROM THEORY TO PRACTICE

In this e-book, we have explored different factors associated with the development of appetite traits. As highlighted previously, these behaviours have a strong genetic basis but can also be shaped by the environment in which the child lives, beginning with exposures in the mother's womb and then throughout all childhood, with the particular influence of food consumption, food environment, as well as feeding practices used by parents/caregivers, among others.

Appetite traits manifest differently from child to child, and their identification is not always straightforward. Considering the potential impact of these traits on children's nutritional and health status (as we have described in relation to body weight, body composition and cardiometabolic risk), it becomes relevant to know how to identify them. This is the first step for parents/caregivers to be able to intervene adequately.

**Does the child love to eat, eat quickly and hardly resist the smell or appearance of certain foods? Then this is a sign of strong "Food approach" behaviours. Or does he/she eat just a little? Or very slowly? Or doesn't want to try new foods? Then they are showing "Food avoidant" behaviours.'**

The following tables describe some of the child's attitudes/behaviours that may be indicative of their appetite profile, as well as some of the strategies you might wish to use to support your child. However, it is worth mentioning that the child may not entirely fit into any one of these categories. It is common for children to have a greater appetite for foods rich in sugar and fat but refuse to eat other foods.

## FOOD APPROACH BEHAVIOURS

### How to identify them?

- Does the child **love to eat** and is **interested in food**?
- Does the child **find it hard to resist** the smell or appearance of **delicious foods**?
- Does the child **never refuse** food and is always willing to **try new foods**?
  - Does the child constantly **ask for food** or **drinks** (beverages or juices)?
  - Does the child **enjoy mealtimes** a lot?
  - Does the child have a **big appetite** most of the time?
- Does the child keep on **eating** even when already **full/satisfied**?
- Does the child **eat more food** when **anxious, worried, or upset**?

### How to act?

- ▶ Modify the child's food environment: offer and make more available low energy-dense foods (low in calories) and more nutritionally interesting foods — such as fruits and vegetables, nuts, whole grains, water, etc....
  - ▶ Promote repeated exposure to healthier foods and avoid ultra-processed foods rich in salt, sugar or fat (beverages, cakes, cookies, chocolates), restricting them to specific occasions.
    - ▶ Avoid offering second helpings at meal times, offer fruits/vegetables if still hungry.
- ▶ Avoid using foods (particularly foods high in calories, sugar or fat) as a reward.
- ▶ Increase awareness of the child for their internal hunger and fullness feelings, respecting the internal signs of satiation and satiety.
  - ▶ Use a constructive approach with your child, avoiding negative comments about weight or appetite, and encouraging them to share feelings and to address these.

## FOOD AVOIDANT BEHAVIOURS

### How to identify?

- Does the child **not like to eat** and is not **interested in food**?
- Does the child seem to **have a small appetite**? Is he/she **seldom hungry**?
- Does the child **refuse to eat** and **not like** to try new foods?
- Does the child **eat very slowly** and often **leave food on the plate** at the end of a meal?
  - Does the child often **get full before finishing** a meal?
    - Is the child **difficult to please** with **meals**?
- Is the child **unable to eat** a meal if they have **eaten something before** (a small snack or even a glass of milk)?
  - Does the child **eat less** when **tired, angry, or upset**?

### How to act?

- ▶ Avoid pressuring the child to eat more and forcing them to eat everything on their plate.
- ▶ It is important to respect the child's hunger and understand what portions are appropriate for the child (a child eats much less than an adult).
  - ▶ Offer the same food (fruit/vegetable) several times so that the child can become familiar with the flavour. You can offer it along with other foods that they already appreciate.
  - ▶ Involve the child in meal preparation and planning so that they feel more motivated to eat.
  - ▶ Praise the child for eating new nutritious foods that they were reluctant to try/eat before.
    - ▶ Avoid offering unhealthy foods that the child likes to eat (e.g., treats and chocolate) to get them to eat their meal. Instead, a symbolic reward (e.g., a sticker or badge) or verbal praise can be given.
    - ▶ Avoid giving the child unhealthy snacks, especially just before mealtimes (e.g., cookies, chocolates, French fries).
    - ▶ Be a role model, eat healthy food and show that you like it!



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