

The child who doesn't want to eat: Why does it happen?

Abstract

One of the most frequent complaints in pediatric offices is the child don't want to eat, which causes a lot of concern among parents, generating stress and several attempts to insist that the child eat. The reasons for this behavior are diverse, varying with the child's age, family relationships and social contexts. Faced with this challenge,

it is important to know some of the different characteristics of children from birth. This article is a non-systematic review whose objective is to present some of the most important characteristics of children, their nutritional needs, the physiology of the development of the digestive system and how neurological and emotional maturation

occurs, seeking to integrate all factors related to the act of eating to help health professionals and family members to better understand and resolve this common problem in childhood.

Keywords: Feeding, Infant feeding, Child, Eating difficulties, Child health

Introduction

Eating is a multifactorial and learned process that improves along with the development of the child, who learns to use their sensory and oral skills to interpret and interact with food. This complex function involves organic and emotional aspects associated to motivation within the socio-environmental context of the family and the world that surrounds it. The act of feeding a child also carries a high emotional burden for parents, especially for the mother, who is seen socially and culturally as the main person responsible for the growth and well-being of her children.¹

One of the most frequent complaints in pediatric offices is that the child does not want to eat, which causes a lot of concern among parents and other family members, generating stress and various attempts to insist that the child eat according to the family's wishes. The reasons for this behavior are diverse and even complex, varying

according to the child's age and interactions between family characteristics and social contexts.² These search for quick and even miraculously solutions mean that actions are taken based on random guidelines, often recommended by lay people and, more worryingly, with the use of pharmacological substances without scientific proof, putting the child at risk.³

To try to resolve this issue, it is important to know some of the different characteristics of the child from birth, their nutritional needs, the physiology of the development of the digestive system and how neurological and emotional maturation occurs, integrating all the factors related to the act of becoming to feed. Therefore, it is necessary to emphasize to those responsible that children are born with a survival instinct, that is, they feed driven by two stimuli: the body's need and the feeling of hunger.⁴

Initially, it is necessary to recognize that children have varying nutritional needs depending on their age. The speed of growth, which is very high in the first two years of life, reduces from 2 years until the beginning of puberty.^{5,6} As a result, it is natural for children to start eating less during this period, even though they still meet their nutritional demands, which is not always noticed by family members. Furthermore, in addition to the aspect of survival, feeding is an act of the child's relationship with their world, with the people around them and their environment, serving to create bonds of affection and strengthen the relations with the mother.⁷

Discussion

There is practically no information in the literature that can cover the main aspects related to the act of eating. Therefore, in this section, the main elements that must be understood to interpret the child's refusal to eat will be presented.

Child characteristics

During the process of motor and emotional development children accumulate knowledge due to observation and experiences acquired throughout life, learning earlier what is not food and developing an internal ability to determine the amount of food they need and/or are possible to be ingested. ⁶It is important to know that the amount consumed at meals and food preferences change frequently, even within

the same day, and are associated with adults' attitudes of affection, tiredness, environmental conditions, illnesses, etc. and this must be recognized and respected. With myelination progressing in the cranio-caudal direction child acquires posture, motor maturity and oral skills necessary for the feeding process ⁸, as can be seen in table 1.

Table 1. Development of the child's motor and oral skills

Age (month)	Skills
At birth	coordinates sucking and swallowing movements
4–6	extrusion reflex disappears; firms neck; improves sucking and swallowing; performs tongue movements and mouth closure to capture food
5–6m	oral reflex is replaced by voluntary movement of the mouth for feeding and speaking
6–8	remains with lips closed; greater tongue and cheek movement

After 8	kneads food with tongue and gums; initiates food lateralization movements
After 10	oral reflex is replaced by voluntary movement of the mouth for feeding and speaking; greater tongue movement; organizes and swallow food that has been chewed in the lateral region
After 18	chewing progress; can determine whether food still needs to be chewed or can be swallowed
24–36	chewing total control; can eat foods that require different mouth movements
36–48	values appearance, color, shape and consistency of food

The act of eating

Among some priorities of the human body - such as breathing, circulation, brain control, and others - the act of eating is important for survival as a way of obtaining energy and nutrients, being the only action of the human body that requires the participation of all organs and senses. Furthermore, it stands out for being a fundamental action in the process of human beings' relationship with the environment, as it evolves from an instinctive act in the first weeks of life to learned behavior over the following months [8]. It is a behavioral phenomenon that varies with the individual's nutritional needs, age, physical and emotional conditions, ambient temperature and amount of food eaten in the previous meal.²

Motivations for eating include the initial desire to eat, appetite, sensory affective factors (taste, odor, texture, appearance, temperature of food) and pleasant sensations linked to the act of eating, which makes the individual continue eating, even without being hungry.⁹ Regulatory signals for the act of eating begin with the thought, vision

and smell of food, which is called the cephalic phase, followed by the stimulation of chemical receptors after food ingestion that configures the gastric phase, passing through the intestinal phase with the arrival of food partially digested to the duodenum. Foods rich in sugar, fat and salt are related to positive contexts while foods with low palatability configure the negative context of eating.⁹

Once the act of eating begins, the organism triggers a series of complex interactions of molecular, hormonal, neural and behavioral mechanisms that, acting on different structures such as the hypothalamus (where the control center is located) and stomach (distension of the walls), and interacting through orexigenic and anorexigenic neuropeptides, leptin, ghrelin and insulin will establish the appropriate balance between the body's needs and food intake.⁷

Taste

After birth the oral cavity presents a very organized sensory and motor integration, allowing the child to learn in the early years what is not food. Taste begins to be stimulated in intrauterine life by substances present in amniotic fluid and, later, by breast milk, reflecting the mother's eating experiences.¹⁰ Breastfed children are less demanding and more likely to try new foods. The innate preference for sweet tastes since the prenatal phase facilitates the acceptance of high-calorie foods (as they have greater palatability and a feeling of satiety) and those unknown when associated with sugar.^{11,12} The presence of chlorides in breast milk puts the child in contact with the salty taste while the bitter taste (generally from foods with an unpleasant texture and low energy content) suffers greater rejection, which can be understood as a protective factor against harmful substances.¹³

Chewing and swallowing

Chewing is an act learned throughout development that, in addition to crushing food, contributes to facial growth and facilitates speech development. From birth, the orofacial muscles and mouth are active and develop through stimuli from hands, objects and food. Starting from initially poorly coordinated movements, chewing will be fully developed in the fifth year of life, performing incision, crushing and pulverizing of food in addition to recognizing texture, flavors and odors.^{14,15} Chewing force, still small in the first year of life, explains the non-acceptance of hardened foods, such as pieces of meat, which can cause concerns for family members.¹⁶ The swallowing process consists of oral preparatory and propulsive (conscious and voluntary), pharyngeal (conscious and involuntary) and esophageal (unconscious and involuntary) phases. For swallowing to be normal, there must be a balance between the muscular forces of the lips, tongue and cheeks, which involves the work of 26 muscles and six cranial nerves.^{17,18}

Oral defensiveness

From birth, a child presents some well-developed protective sensory behaviors, mainly related to the hands and mouth, where a great number of receptors are concentrated. During the first year of life, a child interacts with the world through the mouth, and from the 7th week of intrauterine life the perioral region already responds to tactile stimuli, culminating in the sucking movements that have been present since birth. In some cases, due to the inefficiency of stimulus processing, a child demonstrates exacerbated reactions when stimulated, mainly by touch, responding with a negative interpretation of protection, fear, flight and fight. This phenomenon is called tactile

defensiveness and manifests itself in different ways such as not putting fingers or objects in the mouth, refusing different types of food (due to taste, odor, texture), not chewing, having tactile sensitivity in other areas (discriminates the use of clothes), avoiding spicy foods and experiencing nausea and vomiting.¹⁹ More directly related to food (temperature, texture and flavor) this sensitivity can trigger reactions of refusing and avoiding food. Therefore, this condition needs to be identified and managed appropriately, through the progressive increase in sensorimotor-oral comfort with massages, touch and objects that stimulate the most sensitive areas of the mouth.²⁰

Learnto eat

To start ingesting non-liquid foods a child must have acquired a certain degree of neurological maturity, such as that obtained from the 4th month of life in full-term babies. This corresponds to muscular control and coordination (sitting with stability, keeping the trunk erect, handling food and taking it to the mouth) in addition to adequate relationships with caregivers and the environment.^{21,22}

From then on, a more differentiated phase of learning begins when the child begins to associate flavors with the eating process, developing the ability to identify the palatability of food and associate it with the degree of satiety. At the end of the first semester of life, flavors are learned and then, from 6 to 10 months of age, the ability to identify the texture of food will be developed.^{11,23}

Food neophobia

Neophobia is a child's reluctance to try new foods. This is normal and even expected behavior in the 18 to 24-month age group, whereas it does not cause secondary damages such as growth retardation and/or nutritional deficiencies. Children's

willingness to accept specific foodshas hereditary components and is culturally influenced by early exposure to the taste and texture of food, causing different patterns of food acceptance, and is also considered a protective behavior against the ingestion of harmful substances.²⁴⁻²⁶ Children tend to exclude fruits and vegetables from their diet due to aversion to their color and appearance, giving preference to foods with a high caloric density. This behavior can result in deficiencies in essential micronutrients, such as vitamins and minerals, in addition to increasing the consumption of foods rich in carbohydrates, which can lead to excess weight.^{27,28}

Child behavior, family and environment

Throughout life, the act of eating is a common daily task, driven by the search to satisfy nutritional needs and reinforced by the feeling of pleasure it provides. The pleasure of eating is also learned and contributes to the development of children's eating habits, which will remain practically unchanged until they reach adulthood.

²⁹Some children exhibit selective eating behavior, which leads to limited consumption of important foods such as meat and vegetables, giving preference mainly to those with a higher content of carbohydrates, milk and a greater component of dairy products. It is also common to observe that highly selective children only accept food that has been prepared in a certain way or if the food is presented separately from other components of the meal.³⁰ Therefore, selectivity manifests itself in the form of three characteristics: refusal to eat, little appetite and disinterest in food. The most commonly intrinsic characteristics of children who are picky eaters include increased sensitivity (especially to taste and smell) and personality traits.^{31,32}

The family structure and the environmental context are fundamental elements for the adequate development of the child, directly influencing behavior and the acquisition

of eating habits. From the beginning of life, the mother is directly linked to the child's nutrition, both during pregnancy and after birth.^{33,34} Family adjustment, with its daily habits and dynamics, must also be present in issues related to the child's diet, contributing to the adoption of healthy and lasting practices. In this context, child care programs can decisively help by indicating the appropriate time to introduce new foods, organizing mealtime and frequency, diet composition and in transmitting knowledge about the development of feeding physiology at different ages of the child.^{35,36}

What to do when child doesn't want to eat

When caring for a child who is not eating, a general assessment of health and nutritional status must initially be carried out. This is necessary to reassure family members, as most of the time the child is in good health and free from illness. With this information it is possible to demonstrate that the child is consuming enough to satisfy their nutritional needs, which do not always coincide with family expectations. Another important aspect is knowing the child's eating habits (times, foods consumed and rejected, quantity and acceptance of meals), assessing the level of anxiety of the child and family and the parents' attitude towards food refusal. With all this information³⁵⁻³⁹, some conditions can be established to facilitate the child and family's relationship with food, as can be seen in table 2.

Table 2. How to make feeding easier for a child

Provide a pleasant environment, without distractions or noise
Make the child comfortable at meal times
Establish meal duration and times
Respect normal and temporary fluctuations in appetite
Respect the child's right to have preferences and dislikes
Offer food in small quantities
Present dishes in a pleasant way, with an age-appropriate texture, avoiding food monotony
Do not disguise food, child must know what they are eating, encouraging learning and identifying textures and flavors
Do not force, threaten, punish or force child to eat
Do not offer rewards and/or treats
Do not use subterfuge such as the famous "little plane or little train"
Do not show irritation or anxiety when refusing
Encourage the child to participate in preparing food and assembling their plate

Conclusion

Given the various factors previously presented above, it can be considered that a set of guidelines can be implemented to assist in resolving the problem.

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References

1. Gigoski VS, Miranda KF. Emotional aspects of food aversion in paediatric patients: interface between phonology and psychology. *Psicoestud* 2019;24:e45247 .
2. Harada M, Amariglio N, Wills H, Koolwijk I. Feeding issues in young children. *Adv Pediatr* 2019;66:123-145.

3. Harrison ME, Norris M, Robinson A, Spettigue W, Morrissey M, Isserlin L. Use of cyproheptadine to stimulate appetite and body weight gain: a systematic review. *Appetite* 2019;113:62-72.
4. Nyaradi A, Li J, Hickling S, Foster J, Oddy WH. The role of nutrition in children's neurocognitive development, from pregnancy through childhood. *Front Hum Neurosci* 2013;7:97-103.
5. Butte NF. Energy requirements of infants. *Public Health Nutr*. 2005;8:953-967.
6. Newell KM, Wade MG. Physical growth, body scale, and perceptual-motor development. *Adv Child Dev Behav* 2018;55:205-243.
7. Moran TH, Ladenheim EE. Physiological and neural control of eating. *Gastroenterol Clin North Am* 2016;45:581-599.
8. Kolb B, Fantie BD. Development of the Child's Brain and Behavior. In: Reynolds CR, Fletcher-Janzen E. *Handbook of Clinical Child Neuropsychology*. Springer New York, NY. 2008.
9. French S, Castiglione K. Recent advances in the physiology of eating. *Proceed Nutr Soc* 2002;61:489-496.
10. Mennella JA. Flavour programming during breastfeeding. In Goldberg GR (ed). *Breast-Feeding: early influences on later health*. Springer Science. New York. 2009.
11. Chow CY, Skouw S, Bech AC, Olsen A, Bredie WLP. A review on children's oral texture perception and preferences in foods. *Cr Rev Food Sci Nutr* 2024;64:3861 - 3879.
12. Paglia L. The sweet danger of added sugars. *Eur J Paediatr Dent* 2019;20:89.

13. Liem DG. Infants' and children's salt taste perception and liking: a review. *Nutrients* 2017; 13:9-26.
14. Almotairy N, Kumar A, Grigoriadis A. Effect of food hardness on chewing behavior in children. *Clin Oral Investig* 2021; 25:1203-1216.
15. LeReverend BJLR, Edelson LR, Loret C. 2014. Anatomical, functional, physiological and behavioral aspects of the development of mastication in early childhood. *BriJ Nutr* 2014; 111:403-414.
16. Floch MH. Nutrition and diet therapy in gastrointestinal disease. Plenum Medical Book Company. New York and London. 1981.
17. Stevenson RD, Allaire JH. The development of normal feeding and swallowing. *Pediatr Clin North Am* 1991; 38:1439-453.
18. Matsuo K, Palmer JB. Anatomy and physiology of feeding and swallowing: normal and abnormal. *Phys Med Rehabil Clin N Am* 2008; 9:691-707.
19. Ross CF, Surette VA, Bernhard CB, Smith-Simpson S, Lee SJ, C. G. Russell C Get al. Development and application of specific questions to classify a child as food texture sensitive. *J Text Studies* 2022; 53:3-17.
20. Demonteil LC, Tournier A, Marduel M, Dusoulier H, Nicklaus S. Longitudinal study on acceptance of food textures between 6 and 18 months. *Food Qual Pref* 2019; 71:54-65.
21. Viswanathan S, Jadcherla S. Feeding and swallowing difficulties in neonates: developmental, physiology and pathophysiology. *Clin Perinatol* 2020; 47:223-241.
22. van Dijk M, Leonardi G, Pérez DL, Racaszek-Leonardi J. Co-regulation of movements during infant feeding. *Infant Behav Dev* 2022; 69:101755.

23. Lifschitz C. Complementary feeding: beyond nutrition. *Ann Nutr Metab*. 2018;73(Suppl1):20-25.
24. Lobos P, Januszewicz A. Food neophobia in children. *Pediatr Endocrinol Diabetes Metab*. 2019;25:150-154.
25. Torres TO, Gomes DR, Mattos MP. Factors associated with food neophobia in children: systematic review. *Rev Paul Pediatr* 2020;6:39:e2020089.
26. Białek-Dratwa A, Szczepańska E, Szymańska D, Grajek M, Krupa-Kotara K, Kowalski O. Neophobia-A Natural Developmental Stage or Feeding Difficulties for Children?. *Nutrients*. 2022;14:1521-1529.
27. Finistrella V, Gianni N, Fintini D, Menghini D, Amendola S, Donini LM, Manco M. Neophobia, sensory experience and child's schemata contribute to food choices. *Eat Weight Dis* 2024;29:25-34.
28. Harris G. Development of taste and food preferences in children. *Cur Op Clin Nutr Metab Care* 2008;11:315-319.
29. Marty L, Chambaron S, Nicklaus S, Monnery-Patris S. Learned pleasure from eating: An opportunity to promote healthy eating in children? *Appetite* 2018;120:265e274
30. Scaglioni S, De Cosmi V, Ciappolino V, Parazzini F, Brambilla P, Agostoni C. Factors Influencing Children's Eating Behaviours. *Nutrients* 2018;10:706-714.
31. Chilman L, Kennedy-Behr A, Frakking T, Swanepoel L, Verdonck M. Picky eating in children: a scoping review to examine its intrinsic and extrinsic features and how they relate to identification. *Int J Environ Res Public Health* 2021;18:9067.

32. Rahill S, Kennedy A, Kearney J. A review of the influence of fathers on children's seating behaviours and dietary intake. *Appetite*. 2020;147:104540.
33. Gray HL, Buro AW, Sinha S. Associations Among Parents' Eating Behaviors, Feeding Practices, and Children's Eating Behaviors. *Matern Child Health J*. 2023 ;27:202-209.
34. Sherrard A, Tan CC. Children's eating behavior and weight-related outcomes: a latent profile analysis of parenting style and coparenting. *Eat Behav* 2024;52:101845.
35. Grammera AC, Balantekinc KN, Barcha DM, Marksona L, Wilfleya DE. Parent-Child influences on child eating self-regulation and weight in early childhood: a systematic review. *Appetite* 2022;168:105733.
36. DeJesus JM, Gelman SA, Herold I, Lumeng JC. Children eat more food when they prepare it themselves. *Appetite* 2019;113:305-312.
37. Wadhera D, Phillips EDC, Wilkie LM. Teaching children to like and eat vegetables. *Appetite*. 2015;93:75-84.
38. Rosato MS, Cipriano A, Napolano R, Cella S. Maternal control and eating styles in children: The mediating role of emotion differentiation. *Clin Child Psychol Psychiatr* 2024;29:76-89.
39. Brown CL, Kay MC, Thompson LA. Eating Family Meals Together at Home. *JAMA Pediatr* 2024;178(5):510-15.
40. Broilo MC, Vitolo MR, Stenzel LM, Levandowski DC. "What can I do when he/she doesn't want to eat?": Maternal strategies for ensure children's food consumption in early childhood. *Appetite*. 2017 Sep 1;116:575-83.

