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Feeding Issues in Young Children

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Keywords

• Feeding • Mealtime • Picky • Oral-motor

Key points

- Feeding experiences are influenced by developmental level, age, family relationships, and additional systems in children's lives (eg, culture, health, and childcare).
- A biopsychosocial lens is essential when assessing and treating a child's feeding challenges.
- After challenging feeding experiences, it is important to support the restoration of a sense of safety, predictability, and agency around feeding and to support the caregiver–child feeding relationship.

INTRODUCTION

Feeding challenges are one of the most common caregiver concerns discussed with primary care providers for infants, toddlers, and preschool-aged children [1,2]. Approximately 20% to 45% of caregivers of typically developing young children have expressed an eating behavior or feeding concern, and this number increases to approximately 40% to 80% for caregivers of children with chronic medical conditions and children with developmental disabilities [2–4]. To address these concerns, a comprehensive

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approach which considers several factors involved in feeding is required, including [5–7]:

- The broad environment of the child (culture, community, childcare setting);
- Caregiver–child interactions (temperament, behavior, caregiver feeding style); and
- The health status of the child (oral–motor skills, medical and dental factors).

Several classifications of feeding challenges and feeding disorders have been published over time. Feeding disorders have most recently been described in the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition, with the diagnostic category of avoidant/restrictive food intake disorder, which now covers all ages and a heterogeneous group of patients with avoidant and/or restrictive food intake, without fear of weight gain or body image disturbance [8]. To warrant an avoidant/restrictive food intake disorder diagnosis, the avoidant and restrictive eating must lead to significant medical or psychosocial problems that require independent clinical attention [9]. The *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition, provides 3 example presentations of avoidant/restrictive food intake disorder, which can occur independently or in combination:

- Those with sensory sensitivity who avoid eating specific foods (owing to tastes, textures, smells);
- Those who restrict the amount they eat owing to a lack of interest in eating or low appetite; and,
- Those who avoid specific foods or stop eating after a traumatic experience with eating.

In 2015, Kerzner and colleagues [5] provided a more practical classification for the broader area of feeding difficulties, describing 4 categories: those not eating enough, those eating an inadequate variety, those afraid to eat, and difficulties owing to parental feeding styles. In this article, we chose to describe 3 of the most common feeding challenges that occur in young children (oral motor delay, picky eating, and fear of feeding), and how they can be approached in the primary care setting. Additionally, we added the topic of caregiver feeding relationship and style, and started with this topic, because this dynamic in the child's most proximal relationship is an important determinant of child feeding behaviors.

FEEDING RELATIONSHIP AND FEEDING STYLES

Case 1: *A 15-month-old girl with history of being small for gestational age, presents for evaluation of "not eating enough." The child was hospitalized in the neonatal intensive care unit at birth for hypoglycemia and her mother was initially instructed to feed her child every 2 hours. She was discharged after 2 days. The child has always fed small amounts, but progressed nicely from purees to chopped table foods. Her mother now worries that her daughter only wants to eat every 6 to 8 hours. She therefore supplements every 3 hours with whole milk. Although the child can feed independently, she will not finish her plate*

so her mother spoon feeds her. During spoon feeding, the child tends to close her mouth and turn away or get up and leave. She currently only accepts food while watching television. A review of the child's growth chart reveals weight less than the 5th percentile until 5 months of age, with a steady increase to the 25th percentile and weight for length of 30th percentile at the clinic visit today.

Case 1 illustrates a feeding relationship disrupted by a prior history of medical intervention for hypoglycemia. The mother's authoritarian feeding practice is likely rooted in this initial problem and is her response to her perception that the child's intake is insufficient. Consequently, the child has developed an aversion to her mother's assertive feeding approaches. This feeding relationship would benefit from reassuring the parent about the child's growth and sharing of information about how to recognize feeding cues and support child independence during meals.

Early child development and behavior, including feeding, are heavily influenced by parent–child interactions. The relationships that caregivers develop with their children during feeding exist on a spectrum, from positive and supportive behaviors at one end to controlling or neglectful behaviors at the other [10]. Ellen Satter has long proposed that a division of responsibility during feeding in which caregivers determine what, where, and when their child eats and the child decides how much and whether they eat [11] is the ideal. In some instances, when these characteristics are atypical, aberrant feeding relationships develop. As demonstrated in case 1, the feeding relationship may be at risk when there is a mismatch between parental feeding behaviors and beliefs and the child's eating characteristics and abilities [11]. These disruptions can result from a prior history of difficult feeding interactions, attributes of the caregiver or child, or a poor fit between caregiver and child [12].

Children with a history of prematurity, failure to thrive, or complex medical and/or developmental conditions may have experienced intensive medical or nutritional interventions in the past. Although the child's medical condition improves or resolves, the caregiver's perception of the child as medically fragile may persist. This feeling can contribute to a mismatch between the child's nutritional needs and the caregiver's feeding practices [12]. Caregivers may be more controlling, less organized, or aloof. The child may have medical or developmental challenges that interfere with feeding. The child may exhibit behaviors or have a temperament that does not match the caregiver's expectations [12]. Further, other psychosocial stressors can also negatively influence the parent's interaction with the child. These challenging dynamics around feeding can create an ongoing cycle of distress that further contributes to disrupted feeding relationships.

Screening and Assessment Strategies

Evaluation of the feeding relationship and anticipatory guidance regarding feeding should be included for every child with feeding challenges. The guiding principle in Satter's feeding relationship is that children have an innate desire to

learn and grow and that the role of caregivers is to support their child. As such, the primary goal in assessing the feeding relationship is to identify environmental factors that do not support a child's capacity to learn to feed and grow [12]. Providers can ask the following questions to assess the feeding relationship and caregiver feeding style [5]:

- How worried are you about your child's eating?
- What happens during mealtimes?
- What happens if your child doesn't eat?

Additionally, providers can request a video of a mealtime to observe the parent–child interactions. Responses to these questions or review of the video may reveal red flags (Table 1) that could be suggestive of a disrupted feeding relationship. The responses can be categorized into 1 of 4 caregiver feeding styles, based on parenting styles originally developed by Baumrind [13,14]: authoritative, authoritarian, permissive, and uninvolved. The 4 caregiver feeding styles are classified according to the level of caregiver demandingness (degree of caregiver control and encouragement of their child to eat during feeding) and responsiveness (level of caregiver sensitivity to and recognition of their child's feeding cues and needs; Table 2). Parent feeding style can be further characterized by 6 feeding practices: responsibility, monitoring, modeling, encouraging, restriction, and pressure to eat [15,16]. These caregiver feeding styles are important for the feeding relationship, because they help to capture caregiver–child interactions and feeding dynamics during meals [17–20].

Authoritative

An authoritative style is preferred for feeding and appropriately follows Satter's division of responsibility during feeding. Authoritative feeders guide and support, rather than control, their child's feeding [5]. They set limits and establish

Table 1
Red flags for caregiver feeding style [5,7]

Characteristic	Potential undesired outcome
Forceful feeding	Child develops aversion to feeding or develops inappropriate behaviors at meals
Disruptive, chaotic, or stressful mealtimes	Lack of appropriate food, structure, or meal-related social patterns for the child
Lack of appropriate independent feeding	Child does not have the opportunity to learn appropriate feeding skills
Distractions during mealtime	Child/parent relies on distractions (television, electronics) during feeding
Positive reinforcement	Caregiver bribes child who turns head away and cries; child's behavior is reinforced
Negative reinforcement	Caregiver ends a meal when the child acts out; child's behavior is reinforced

Table 2
Caregiver feeding styles

		DEMANDINGNESS: Caregiver control and encouragement to eat during feeding	
		HIGH	LOW
RESPONSIVENESS: Caregiver sensitivity to child's needs during feeding	HIGH	AUTHORITATIVE *High Demand/High Response* Reasonable demands Responsive to needs	INDULGENT *Low Demand/High Response* Reduced Structure Highly sensitive to needs
	LOW	AUTHORITARIAN *High Demand/Low Response* Highly controlling Less sensitive to needs	UNINVOLVED *Low Demand/Low Response* Reduced control Reduced involvement

clear expectations, while being sensitive to their child's needs [21]. Authoritative feeding has been associated with increased child intake of dairy, fruit, and vegetables and lower intake of junk foods [22–24].

Authoritarian

Authoritarian feeders may use force, punishment, or rewards to pressure their child to eat, with disregard for their child's feeding cues [17]. They may demand that their child eat their vegetables to leave the table or may restrict access to desirable/unhealthy foods and use these foods as rewards [21]. Authoritarian feeding can be associated with overeating and poorer self-regulation of energy intake in preschool-aged children [25], lower fruit and vegetable intake [26], higher intake of dietary fat [27] among young girls, and an increased risk for overweight [28].

Indulgent

Indulgent feeders give in more to their child's demands and cater to their child's every need. They might ignore the child's hunger cues and provide less structural guidance and limit setting [17]. They may prepare special or multiple foods for their child [5]. Indulgent feeding can be associated with lower consumption of nutrient-rich foods and higher consumption of dietary fat [17].

Uninvolved

Uninvolved feeders may not offer food on a predictable basis. They provide less guidance, structure, or limit setting. They might not pick up on their child's feeding cues or other emotional and physical needs [5]. Uninvolved feeding has been associated with increased weight status [17,28] and risk for adult obesity [29].

When considering how to address an atypical feeding relationship, a cornerstone of intervention is to support and develop a caregiver's sensitivity and responsiveness to their child's feeding cues. If the caregiver does not recognize

or respond appropriately to their child's cues, the child is less able to learn how to interpret or address their own cues [10]. Ideal feeding relationships should provide developmentally appropriate support, while teaching feeding skills in a manner that is sensitive to a child's needs. The focus during feeding is shifted from getting food into the child to the feeding relationship and allowing a child to gain confidence and acquire new skills [11].

Feeding Approach

The following strategies can be used to support the parent–child feeding relationship in general [10,11,30]:

- Appropriate food selection: Provide information on developmentally appropriate food selection and the developmental progression of eating skills and food acceptance. Teaching caregivers to base food selection on developmental readiness reinforces responsiveness to their child's feeding cues.
- Teach positive feeding skills: Teach caregivers how to recognize and respond to their child's feeding cues, such as hunger, satiety, and food preferences. Avoid distractions during meals, such as television and cell phones. Model appropriate eating behaviors and maintain a pleasant, neutral attitude during meals. Once a caregiver offers their child appropriate food in a positive way, their job is done. Their child ultimately decides how much and whether they eat.
- Avoid intrusion: Children have an innate desire to learn feeding skills and to regulate food intake. The caregiver's role is to support their child so that their feeding cues are disrupted as little as possible by outside forces. Encourage self-feeding and tolerate age appropriate mess.

The following strategies can be used to support the parent–child feeding relationship per specific feeding styles.

- Authoritarian: Maintain a relaxed and pleasant mealtime. Focus on conversation and time together rather than on eating. Meals will be more fun, with less conflict. Allow children to select foods for their plate and decide how much to eat from the healthy food choices you offer. Your child will gain confidence and learn to sense when they are hungry and full.
- Indulgent: Be a positive example. Set limits and offer the same foods to everyone at meal times. Your child learns from watching you eat. It is alright if the child does not like what is offered. Let the child decide how much and if they will eat the foods offered to everyone. Avoid preparing special food for your child. Trust your child to eat enough over time. It is normal for a child's appetite to vary through the day and week. Continue to offer a variety of food options throughout the day.
- Uninvolved: Work on setting a regular schedule for meal times and snacks. A daily routine helps a child to develop good eating habits and teaches a child that there are more opportunities during the day to eat. Make mealtime family time. Sit together to eat and talk. Avoid distractions, such as electronics and television, during meals. This allows your child to focus on meal time and socializing.

With the educational guidance and behavior changes described herein, most disrupted feeding relationships that result from a lack of information will

improve [10]. However, should significant challenges remain despite these measures, providers should consider referral to a mental health provider or to an interdisciplinary feeding team for evaluation and treatment (Fig. 1). If a feeding team is unavailable, providers have to refer to each relevant provider individually.

Online resources for support with caregiver–child feeding relationship

- https://www.ellynsatterinstitute.org/resources-and-links-professionals/.
- https://www.fns.usda.gov/core-nutrition/child-feeding.

SELECTIVE INTAKE BASED ON ORAL–MOTOR DELAY

Case 2: *An 18-month-old girl is seen in clinic for difficulty with eating "regular food." As an infant, she had difficulty latching on, and when drinking from a bottle she was a slow feeder. When offered smooth baby cereal at 6 months of age she turned her head away; cereal was discontinued owing to repeated gagging on small amounts. She gagged on smooth purees offered at 7 months but started eating these in small amounts at 10 months of age. Currently, she mainly eats smooth puree and meltable crackers and consumes infant formula from a bottle. She is quiet in the examination room, has excellent eye contact, and gestures nicely to express what she wants. Although as an infant she had failure to thrive, she caught up at 9 months of age and her weight for length has since been at the 55th percentile, with her height at the 60th percentile.*

This case illustrates a child who presents with delays in oral–motor skills, which have led to delays in feeding skills, and in speech–language

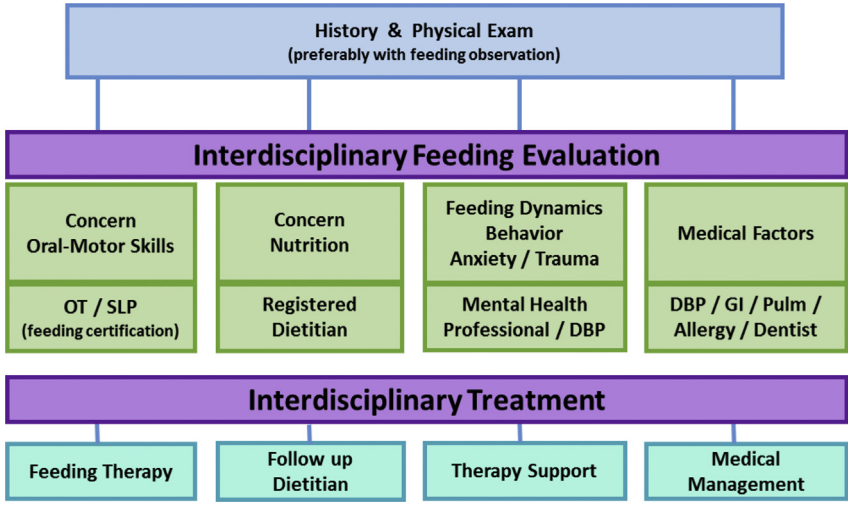

Fig. 1. General evaluation and management of feeding concerns. Allergy, allergy-immunologist; DBP, developmental-behavioral pediatrician; GI, gastro-enterologist; OT, occupational therapist; Pulm, pulmonologist; SLP, speech-language pathologist.

development. There is no concern about overall caloric intake, although the child's nutritional intake is likely affected by a higher than recommended milk and formula intake. However, the child's limited ability to manage a range of textures can be a challenge for caregivers, who report spending increased time on planning, meal preparation, and supporting the child during mealtimes [31]. Moreover, the child's limited diet can create social isolation because menus offered at childcare, restaurants, and birthday parties may not be congruent with what she can manage.

In the first 5 years of life, children are expected to make rapid gains in terms of feeding skills from safely sucking and swallowing, to chewing, drinking from a cup, to eating table food and serving themselves [32–34]. An infant's ability to efficiently coordinate suck and swallow with respiration is essential for safe oral feeding [35]. When feeding challenges are reported, the safety of oral intake is an important question, especially in populations at greater risk for aspiration, such as children who are born prematurely or have complex medical conditions (cardiac or respiratory problems or neurodevelopmental challenges, like cerebral palsy) [36–39]. Table 3 indicates red flags for possible overt or silent (no cough) aspiration, and in these cases an evaluation for dysphagia should be initiated.

Infants born prematurely, especially those less than 30 weeks gestational age, are much more likely to experience feeding–swallowing difficulties. Difficulty with lip and jaw movement and swallowing can persist up to 12 months corrected age or beyond [40]. At 18 months adjusted age, premature infants with a history of feeding difficulties are also more likely to have language delay. Neuromotor impairment and the number of days of mechanical ventilation are both important risk factors associated with these outcomes [41].

The American Academy of Pediatrics and the World Health Organization recommend breastfeeding as the sole source of nutrition for the first 6 months of life, with the introduction of complementary foods around 6 months of age if

Table 3
Red flags indicating risk for aspiration during oral feedings

During feeding	Gagging
	Choking
	Food refusal
	Apnea
	Cyanosis
	Taking >30 min/feeding
Directly after feeding	Difference in respiratory quality
	Sounding "wet/congested"
	Wheezing
	Coughing
Over time	Recurrent pneumonias
	Failure to thrive

the infant seems to be developmentally ready for this [42,43]. In terms of motor skills, sitting with some stability, having good head control, reaching for items, and bringing foods to the mouth are prerequisites for complementary and self-feeding [32]. A gradual transition from a liquid diet to smooth and then courser purees, and eventually to table food has been recommended by the American Academy of Pediatrics and the World Health Organization, with the introduction of finger foods around 8 months. However, an alternative approach called baby-led weaning (BLW), a term coined by Gill Rapley, has gained popularity in recent years [44–46]. In BLW, infants self-feed family foods that are deemed safe to manage from the very start of weaning around 6 months of age, with an emphasis on being part of family mealtimes and child choice of what and how much they eat (without the use of purees or caregiver spoon feeding). Proponents of BLW note that this approach promotes child exploration and a responsive parental feeding style. However, most studies are limited by a reliance on self-report and caregivers mostly self-selecting into the BLW approach. Concerns were raised about a possible increased choking risk with BLW; however, a randomized trial, the BLISS study, showed no significant difference in choking risk between the BLW and the traditional group. However, there was a high frequency of choking events in both groups, with a total of 35% of children between 6 and 8 months of age having at least 1 reported choking event, most commonly on a hard cracker or a raw vegetable [47]. No difference was noted in body mass index scores of BLISS participants at 12 and 24 months of age, but caregivers self-reported less food fussiness in the BLW group [48].

After children learn to coordinate suck–swallow–and–breathe [35], the next critical period generally affected by oral–motor delay is between 6 and 12 months, when a rapid progression of skills should occur from a liquid diet to managing a variety of textures and table foods at 12 months of age. Spoon-feeding capabilities in typically developing infants occurs between 6 to 8 months and takes 5.7 weeks on average [49]. A longer time to develop this skill could indicate a feeding problem. Additional symptoms of oral–motor delay affecting feeding include poor lip closure, decreased awareness of quantity and location of food in the mouth, difficulty with chewing, and feeding times of greater than 30 minutes per meal. A child's diet texture needs to match their oral–motor skill level. When a mismatch occurs with food textures being too challenging for a child, food refusal tends to occur. This refusal might be misinterpreted as disruptive behavior, although a deficit in skills is the actual cause. Additionally, prolonged holding of food in the mouth and gagging or choking events can occur. Table 4 provides an overview of developmental feeding milestones from 0 to 5 years of age.

Assessment Strategies

A basic feeding assessment includes a history of the child's past and current feeding patterns; a developmental, medical, and family history; and a physical examination. Additionally, a large amount of information can be gathered by

Table 4
Developmental feeding milestones

Age (mo)	Motor/social	Feeding skill	Food/consistency
Birth to 3	Many reflexes to protect the airway	Suck–swallow	Liquid
4–5	Sits with some support	Suck–swallow	Liquid
6–8	Sits without support Reaches for food	Gag response declines Starts munching (6 mo) Clearing spoon with top lip (7 mo)	Pureed food
9–12	First teeth erupted Points to food they like	Begins to chew Interest in self-feeding	Ground and lumpy purees Mashed table food Soft/dissolvable solids
13–24	Rejection of new food peaks at 20 mo Sits in booster chair	Most can spoon feed themselves by 15 mo Most can drink from open cup by 19 mo Moves food from one side to other side of mouth while chewing (immature rotary chew)	Table food Chews juicy foods
24–36	Total self-feeding Imitates adult eating preferences	Chews with more mature rotary chew Drinks from open cup without spilling	Table food Tougher solids
36–60	Imitates peers eating preferences	Starts using fork to stab food Progresses with chewing and swallowing of advanced textures under close supervision of caregiver	Table food Better manages advanced textures (meats, whole fruits, fried food)

a feeding observation if feeding is considered safe, even if the feeding is 5 minutes or less. Alternatively a video of feeding can be requested [50]. Because of its danger, a high index of suspicion should be maintained about silent aspiration, especially in children at higher risk, such as those with multisystem diagnoses [38].

When a child's history of past and current feeding challenges is suggestive of oral–motor delay, it is important to determine if their feeding skills match their current diet and if caregiver feeding expectations match the child's ability to manage different textures. If a clinician has a concern about a risk of aspiration, a referral should be placed for a dysphagia evaluation to assess the safety of oral intake. Referral for an interdisciplinary feeding team assessment, if available, is ideal [38], because the team can simultaneously assess different aspects of feeding, including oral–motor skills, nutritional, medical, developmental, and mental health needs (see Fig. 1). If such a team is not available, then individual providers with feeding experience need to be

found for evaluation and treatment of feeding challenges. Because oral–motor delays affecting feeding often strain the caregiver–child feeding relationship, assessing this is an important component of any feeding evaluation [31].

Online resources for feeding difficulties

- https://www.infantandtoddlerforum.org/health-childcare-professionals/fact sheets.
- www.healthychildren.org/English/ages-stages/baby/feeding-nutrition/Pages/Signs-of-Feeding-Difficulties.aspx.

PICKY EATING

Case 3: *A 3-year-old boy presents in clinic for well child care. His mother expresses concern that her son will barely eat anything compared with his 5-year-old cousin. The child was exclusively breastfed for the first 6 months of life. He easily made the transition to oral solids. His mother provides 3 meals and 2 snacks per day. She reports that he refuses most vegetables. She has tried to hide them in his preferred foods, but he finds them and picks them out. The child will sit at the table, eat for approximately 10 to 15 minutes, and then get up from the table, saying, "All done." A review of the growth chart indicates that the child has maintained a steady rate of weight gain and linear growth, with a body mass index at the 25th percentile. His mother reports that she will often make the child return to the table to eat more. This sometimes results in the child crying or gagging on his food.*

Case 3 illustrates a caregiver's frustration with a child who is a picky eater. Parental anxiety around the child "not eating enough" despite evidence that he is growing well could bring more pressure into the mealtime environment. Brown and colleagues [51] found that 33% of mothers expressed concern about their child being a picky eater despite evidence of adequate growth. This concern was associated with greater use of pressure and coercive strategies at mealtime to encourage intake. This often contributes to battles that disrupt family mealtimes.

Children with picky eating frequently demonstrate an unwillingness to eat either familiar or new foods (neophobia) and consume a limited variety of foods (selective eating). Parental concern about picky eating correlates with perceived or actual low weight status and with concerns about nutritional adequacy [51]. Children are often identified as being picky based on parent report as opposed to formal screening tools [51,52]. Despite a lack of a singular definition of picky eating there are several recurring themes that appear in the literature. These challenging eating behaviors interfere with daily routines and can be problematic for the caregiver, the child, and the caregiver–child relationship. Parents feel pressured to prepare alternative meals to ensure adequate intake. Picky eating contributes to stress in the household and impacts meal preparation and even food purchases [53].

A recent systematic review estimated the prevalence of picky eating in young children at 22% [54]. Data from the Feeding in Infant and Toddlers study

reports prevalence rates of 34.4% for somewhat picky eating and 10.2% for very picky eating [55]. Although picky eating is typically transient in nature, it can be amplified by other behavioral concerns. A secondary data analysis of the Duke Preschool Anxiety study examined selective/picky eating and its relationship with anxiety or depression [56]. The authors reported that 20.3% of children were identified with selective eating, 17.7% with moderate selective eating, and 3% with severe selective eating. Children identified with severely selective eating were 2 times more likely to have comorbid social anxiety or depression. The prevalence rates of picky eating can be influenced by who is observing the behavior. An observational study assessed the agreement between childcare providers and parents in identifying picky eaters. Although the sample was limited, parents were more likely to identify a child as a picky eater compared with a childcare provider, regardless of whether childcare was home based or center based [54,57].

Picky eating is a common concern among parents of young children. However, it tends to be transient in nature with no lasting impact on growth and development [58]. The major risk factor associated with the development of persistent picky eating is the late introduction of lumpy foods [59]. The Generation R study [56,60] reported that breastfeeding for fewer than 2 months correlated with a higher rate of food fussiness at age 4 years compared with children who were breastfed more than 6 months. Later introduction of solids (beyond 6 months of age) is also associated with greater food fussiness. Preterm infants have a higher prevalence of food refusals and picky eating than term infants [61]. Genetic influences on selective or picky eating have long been reported in the literature. A recent study reinforced the heritability of selective eating behaviors, noting a positive association in these behaviors between middle-aged parents and their adult children [62].

Screening and assessment strategies

The Children's Eating Behavior Questionnaire is a validated instrument to identify picky eating [63], although its length (35 items) precludes routine use in a general pediatric office. However, researchers have identified 3 questions that correlate with picky eating.

- Is your child a picky eater?
- Does your child have strong likes?
- Does your child accept new foods?

Further questions that support the identification of picky eaters would assess variety and frequency of disruptive behaviors like tantrums at meal times. Children identified as picky eaters at 3 years of age were noted to be picky eaters as early as 15 months of age, a time when most children have made the transition to table foods [59]. Thus, well-child visits occurring between 12 and 24 months are opportune times to screen for feeding behaviors that can become more problematic in the future.

Feeding approach

Challenges around feeding typically focus on child noncompliance. However, children's eating habits are also influenced by parent behavior. A study of parents of children with picky eating reported a higher use of inappropriate behaviors, such as threats using foods or activities as awards and offering extra snacks to encourage eating [64]. Parents using such approaches can become frustrated when the child no longer responds to threats or promised rewards. This refusal amplifies tension at mealtimes. To ameliorate the tension, providers can advise parents to reduce the emphasis on specific foods or food groups while focusing on variety and positive mealtime behaviors. See Table 5 for strategies to reduce picky eating. The mnemonic TASTE is another way to frame this for parents:

*T*ime	Choosing the best time of day to explore a challenging food, such as after a nap.
*A*ctivity	Engage the child in age-appropriate activities in the kitchen, such as tearing lettuce.
*S*enses	Use all the child's senses to explore a new food by looking at, smelling, and touching it.
*T*aste	Choose the right taste approach for your child such as kissing, licking, or biting.
*E*xperience	Talk about the experience, not just the taste (eg, "What sound did it make?").

Online resources for picky eating

- https://www.healthychildren.org/English/healthy-living/nutrition/Pages/Picky-Eaters.aspx.
- https://healthychildren.org/English/ages-stages/toddler/nutrition/Pages/default.aspx.
- https://www.superkidsnutrition.com/nutrition-articles/nutrition-concerns/picky-eaters/.

FEAR OF FEEDING: MEDICAL TRAUMA AND FEEDING CHALLENGES

Case 4: *A 3-year-old boy with Tetralogy of Fallot who had undergone several surgeries was born premature and spent 3 weeks in the neonatal intensive care unit. His developmental trajectory has been mainly within normal limits, despite a mild speech–language delay. Several months ago, the child underwent another medical procedure, for which he was hospitalized for a week. Since discharge, he has been irritable and displays diminished interest in playing with his peers. He started having daily nightmares and is now sleeping in his parents' room. His mother reports that he cries and is aggressive any time he has an appointment with a physician. He recently started refusing to eat solids and to participate in family mealtime. On examination, the child seems to be fearful and teary, and his parents express worry over his poor growth and lack of interest in eating.*

Table 5
Strategies to reduce picky eating

Strategies		Examples
Using all the senses	Looking at the food	''What does this look like?''
	Smelling the food	''What does this smell like?''
	Touching the food	''How does it feel?''
Focusing on positive interaction	Give verbal (not tangible) praise	''You took a brave bite.''
Respecting no after tasting	Allowing expression of dislikes	''Thank you for trying.''
	Trying it again at another meal	
BEING A ROLE MODEL	Eat *with* your child	''It's my turn to take a bite.''
	Let child *watch you try new foods*	
Including your child in	Grocery shopping	''Can you find the apples?''
	Meal planning	Choose a new food based on:
	Cooking	Color (eg yellow squash)
		Shape (eg round melon)
		Letter (eg M for mango)
		''Nice job adding raisins to your oatmeal.''
		''Mix blueberries to the pancake batter.''

Case 4 illustrates a child who presents with fear of feeding that began after a recent intrusive medical procedure and disruption of his daily routines. Although the child's complex medical history reportedly has not significantly impacted his overall cognitive and psychosocial development, his feeding experiences have been shaped by early tube feeding in the neonatal intensive care unit and repeated surgeries requiring intubation. The child's mild speech–language delay impacts his ability to verbalize his needs and experiences. In addition to the parental concerns about the child's medical care, the recent changes in his feeding behaviors add an additional layer of parental stress because his parents are concerned about his caloric intake and growth. This concern has strained their interactions with the child during mealtime.

A fear of feeding can be understood as a phobia [65], where the child who has experienced an event perceived as traumatic (choking, allergic reaction, pain during mealtime) is highly activated when reminded of the event and makes ongoing attempts to avoid further insults. The avoidance of a specific food item may not be detrimental to a child's development. However, avoidance of multiple food items and to multiple aspects of the mealtime indicate a larger scale problem. Children who experience ongoing uncomfortable experiences related to feeding or to their mealtime experiences, who have organic and structural abnormalities resulting in painful feeding, and/or who undergo medical and dental procedures related to their oral structures or to the gastrointestinal tract [5,66] may present with more pervasive avoidant behaviors and overall fearfulness, which goes beyond mealtime and feeding, and resembles symptoms of posttraumatic stress. In these instances, the fear of feeding can be understood and treated

as posttraumatic stress, which develops among children whose sense of safety, predictability, and agency, and ability to explore their environment and thrive [12,66] are hindered by painful and uncomfortable daily feeding experiences.

A certain degree of fear of feeding is common among children who have gastroesophageal reflux [67], craniofacial disorders, neurologic and neuromuscular disorders, and/or undergo intrusive procedures to their oropharynx or esophagus [68]. Additionally, children who have experienced a single traumatic episode related to feeding (choking) [69] or had a food allergy reaction [70,71] can also present with fear of feeding. Additional risk factors for fear of feeding include prematurity, young age and developmental level [72,73], child's premorbid symptoms of anxiety [74] or depression [75], characteristics of parent–child feeding interactions where there is a controlling, indulgent or neglectful parenting style, incompatibility between parent feeding style and the child's temperament, and poor relationship quality [11,12]. Parental anxiety, depression, and trauma symptoms [76] also increase risk for difficulties around the feeding interactions. The degree of symptomatology vastly varies from 1% to 5% in the general population to approximately 80% among young children who present with comorbid complex medical conditions and medical histories and with neurodevelopmental conditions [77–79].

Screening and assessment strategies

The development of aversive feeding behaviors and fear of feeding occurs within the context of a child's feeding experiences, which are influenced by their developmental level and age, family relationships, and additional systems in their lives, such as their educational status, health care, and culture. A biopsychosocial lens is, therefore, essential when assessing for a child's feeding behaviors [79].

A thorough medical, psychosocial, and feeding history is needed to conceptualize the context in which the fear of feeding developed and is maintained and to acquire detailed information clarifying the caregiver's perception regarding the possible antecedents leading to the reported changes in feeding behaviors. It is beneficial to explore any strategies caregivers might have implemented to address a child's feeding behaviors and to obtain information regarding the child's responses. Objective information such as a feeding observation can be very helpful. A child with fear of feeding may present as vigilant around mealtimes and may cry or refuse to eat [80], become distressed or aggressive if pressured to eat, or present with physiologic responses like gagging or vomiting [66].

Specific questions to ask caregivers

- What events occurred before the change in the child's feeding behaviors?
- What are some of the child's behaviors during mealtime?
- What are some of the child's behaviors when presented with certain food items?
- What strategies were implemented in response to the child's feeding behaviors?
- What are the child's responses to the caregiver's strategies?
- How do these changes impact the family mealtime dynamics?

Further questions about general symptoms of posttraumatic stress beyond feeding [8,81]

- Presence of notable distress and/or dysregulation (eg, fears, defeated/depressed, tantrums)
- Changes in child's sleeping/toileting habits
- Reduced interest in previously enjoyed activities
- More aggressive or thematic play
- Presence of hypervigilance
- Developmental regression
- Avoidant behaviors
- Nightmares

Finally, it has been shown that parental distress and symptoms of posttraumatic stress increase the child's risk of development and maintenance of posttraumatic stress symptoms [82,83]. Screening for caregiver stress symptoms can also inform family functioning.

Feeding approach

Table 6 provides an overview of the signs, symptoms, and strategies to address fear of feeding. It is essential to support the development or restoration of a sense of safety around feeding and around the parent–child feeding relationship as the foundation for regulation and for food exploration. Validate,

Table 6
Fear of feeding: signs, symptoms, and strategies

Scenario	Observed behaviors	Strategies
Anticipation of mealtime (bottle, food items)	Vigilance and tension Shallow/fast breathing Crying Signs of nausea Gagging Vomiting	Identify behaviors as signs of fear Reassure the child Implement predictability (duration of mealtime, expectations) Promote regulation for child (deep pressure, Yoga, breathing) Promote regulation for caregiver (breathing, mindfulness)
During mealtime	Crying Arching backward Closing their mouth Pushing food away Aggression (eg, hitting)	Help the child understand their fear Create a positive mealtime environment Restore safety and trust Attunement to the child's cues Communication between child and caregiver Provide the child with a sense of control Infant holding their bottle Toddler helps to set the table Promote regulation for child and caregiver
While feeding	Refusing to swallow Spitting out food Pocketing food	Avoid force feeding Follow the child's lead Whether and how much they choose to eat Promote independence Serve themselves, serve others, self-feed

reassure, and provide the family with information about the impact of the child's medical condition, medical interventions, and the event(s) that was experienced as traumatic on their feeding behaviors, regulation, interpersonal relations, and communication. Teach the parent that healing from these traumas will require some specific steps. Goals are to:

- Address any medical and/or organic issues impacting mealtime experiences;
- Develop a sense of trust and restoration of safety;
- Strengthen the parent–child feeding interactions and overall communication;
- Provide the child with predictability, a sense of control and mastery;
- Promote developmentally appropriate food exploration; and
- Promote a positive mealtime experience.

A systemic approach is warranted to address the multiple biopsychosocial factors influencing the development and maintenance of the fear of feeding. This is best done through an interdisciplinary team evaluation staffed by a physician, dietitian, mental health clinician, occupational or speech–language pathologist (see Fig. 1) [50,84,85]. Once medically cleared to participate in oral feeding activities, a cotreatment model between mental health and an oral–motor specialist such as an occupational therapist or speech–language therapist ensues. Dyadic or family trauma-informed mental health therapy is aimed at promoting systemic change and symptom reduction [65,86–93].

- Address symptoms of anxious or/and depressed mood and of posttraumatic stress disorder.
- Address symptoms of trauma in both the child and the caregiver.
- Promote structural change in the family system.
- Enhance communication between family members.
- Promote emotional and behavioral regulation.
- Implement parent education and training.

Nutritional consultation and guidance are often required to ensure sufficient caloric and nutrient intake [50,84].

Ongoing collaboration and consultation with medical teams is ideal. Trauma-informed evidence-based models, such child–parent psychotherapy (CPP), are particularly effective in addressing fear of feeding symptoms that develop and are maintained within the context of traumatic relational, medical, and/or feeding experiences. CPP is an attachment-based treatment model that promotes the parent–child relationship as a foundation for regulation and safe exploration. CPP has been shown to positively ameliorate a myriad of trauma symptoms in young children and their caregivers. CPP strategies have also been effectively used as part of feeding interventions in medical and clinical settings, despite the lack of specific studies on CPP and its effects on feeding interaction. Table 7 provides an overview of mental health–related treatment options and their goals.

Online resources for medical trauma related feeding challenges

- http://drchatoor.com/ptfd/

Table 7
Overview mental health treatment options

Type of intervention	Strategies	Targeted symptoms and outcome
Cognitive therapy and behavioral therapy [65,91,94–96]	Stimulus control Extinction Gradual exposure Shaping Cognitive restructuring Relaxation strategies	Promote food exploration Reduce avoidance Reduce anxiety Reduce fear response Reduced caregiver distress
Parent support and training [84,97,98]	Reassurance Validation Information Skill acquisition and practice	Improve caregiver–child interaction Promote developmentally appropriate caregiver strategies Reduce caregiver distress
Trauma-informed family/dyadic therapy [87,88,99,100]	CPP Culturally sensitive attachment-focused intervention Play therapy, and cognitive and behavioral strategies Trauma narrative	Promote secure child–caregiver attachment bond Promote communication Promote regulation Reduce anxious/depressed mood Reduce traumatic stress symptoms
Trauma-informed child therapy (ages 3–21) with co-joint caregiver support https://paperpile.com/c/3kopwd/OpkR [101]	Trauma-focused cognitive–behavioral therapy Psychoeducation and parenting skills Relaxation and affect regulation Cognitive strategies Trauma narrative Safety maintenance	Reduce anxious mood Reduce traumatic stress symptoms Promote communication Promote regulation Promote effective parenting Reduce relapse
Medication referral https://paperpile.com/c/3kopwd/aSyB [65,102]	Medication treatment (selective serotonin reuptake inhibitor, guanfacine)	Reduce anxious mood Reduced symptoms of posttraumatic stress disorder

- The National Child Traumatic Stress Network: https://www.nctsn.org/
- https://www.nctsn.org/sites/default/files/resources//pediatric_toolkit_for_health_care_providers.pdf.

SUMMARY

Feeding experiences are influenced by developmental level, age, family relationships, and additional systems in children's lives (eg, culture, health, childcare/preschool). A biopsychosocial lens is thus essential when assessing and treating a child's feeding challenges. With the educational guidance and behavior changes described in this article, most disrupted feeding relationships that result from a lack of information will improve. However,

should significant challenges remain despite these measures, providers should consider referral to a mental health provider or to an interdisciplinary feeding team for evaluation and treatment. If a feeding team is unavailable, providers have to refer to each relevant provider individually.

References

[1] Field D, Garland M, Williams K. Correlates of specific childhood feeding problems. J Paediatr Child Health 2003;39:299–304.

[2] Carruth BR, Ziegler PJ, Gordon A, et al. Prevalence of picky eaters among infants and toddlers and their caregivers' decisions about offering a new food. J Am Diet Assoc 2004;104:s57–64.

[3] Bryant-Waugh R, Markham L, Kreipe RE, et al. Feeding and eating disorders in childhood. Int J Eat Disord 2010;43:98–111.

[4] Reau NR, Senturia YD, Lebailly SA, et al. Infant and toddler feeding patterns and problems: normative data and a new direction. Pediatric Practice Research Group. J Dev Behav Pediatr 1996;17:149–53.

[5] Kerzner B, Milano K, MacLean WC Jr, et al. A practical approach to classifying and managing feeding difficulties. Pediatrics 2015;135:344–53.

[6] Rybak A. Organic and nonorganic feeding disorders. Ann Nutr Metab 2015;66(Suppl 5): 16–22.

[7] Phalen JA. Managing feeding problems and feeding disorders. Pediatr Rev 2013;34: 549–57.

[8] American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5®). Arlington (VA): American Psychiatric Pub; 2013.

[9] Thomas JJ, Lawson EA, Micali N, et al. Avoidant/restrictive food intake disorder: a three-dimensional model of neurobiology with implications for etiology and treatment. Curr Psychiatry Rep 2017;19:54.

[10] Satter EM. The feeding relationship. J Am Diet Assoc 1986;86:352–6.

[11] Satter E. The feeding relationship: problems and interventions. J Pediatr 1990;117:S181–9.

[12] Davies WH, Hobart Davies W, Satter E, et al. Reconceptualizing feeding and feeding disorders in interpersonal context: the case for a relational disorder. J Fam Psychol 2006;20: 409–17.

[13] Baumrind D. Current patterns of parental authority. Dev Psychol 1971;4:1.

[14] Damon W. Child development today and tomorrow. San Francisco (CA): Jossey-Bass Incorporated Pub; 1989.

[15] Hubbs-Tait L, Kennedy TS, Page MC, et al. Parental feeding practices predict authoritative, authoritarian, and permissive parenting styles. J Am Diet Assoc 2008;108:1154–61 [discussion: 1161–2].

[16] Arlinghaus KR, Vollrath K, Hernandez DC, et al. Authoritative parent feeding style is associated with better child dietary quality at dinner among low-income minority families. Am J Clin Nutr 2018;108:730–6.

[17] Hughes SO, Power TG, Orlet Fisher J, et al. Revisiting a neglected construct: parenting styles in a child-feeding context. Appetite 2005;44:83–92.

[18] Hughes SO, Power TG, O'Connor TM, et al. Maternal feeding styles and food parenting practices as predictors of longitudinal changes in weight status in Hispanic preschoolers from low-income families. J Obes 2016;2016:7201082.

[19] Hughes SO, Power TG, Papaioannou MA, et al. Emotional climate, feeding practices, and feeding styles: an observational analysis of the dinner meal in Head Start families. Int J Behav Nutr Phys Act 2011;8:60.

[20] Hughes SO, Shewchuk RM, Baskin ML, et al. Indulgent feeding style and children's weight status in preschool. J Dev Behav Pediatr 2008;29:403.

[21] Savage JS, Fisher JO, Birch LL. Parental influence on eating behavior: conception to adolescence. J Law Med Ethics 2007;35:22–34.

[22] Cullen KW, Baranowski T, Rittenberry L, et al. Social–environmental influences on children's diets: results from focus groups with African-, Euro- and Mexican-American children and their parents. Health Educ Res 2000;15:581–90.
[23] Patrick H, Nicklas TA, Hughes SO, et al. The benefits of authoritative feeding style: caregiver feeding styles and children's food consumption patterns. Appetite 2005;44:243–9.
[24] Nicklas TA, Baranowski T, Baranowski JC, et al. Family and child-care provider influences on preschool children's fruit, juice, and vegetable consumption. Nutr Rev 2001;59: 224–35.
[25] Faith MS, Scanlon KS, Birch LL, et al. Parent-child feeding strategies and their relationships to child eating and weight status. Obes Res 2004;12:1711–22.
[26] Fisher JO, Mitchell DC, Smiciklas-Wright H, et al. Parental influences on young girls' fruit and vegetable, micronutrient, and fat intakes. J Am Diet Assoc 2002;102:58–64.
[27] Lee Y, Birch LL. Diet quality, nutrient intake, weight status, and feeding environments of girls meeting or exceeding the American Academy of Pediatrics recommendations for total dietary fat. Minerva Pediatr 2002;54:179–86.
[28] Rhee KE, Lumeng JC, Appugliese DP, et al. Parenting styles and overweight status in first grade. Pediatrics 2006;117:2047–54.
[29] Lissau I, Sørensen TI. Parental neglect during childhood and increased risk of obesity in young adulthood. Lancet 1994;343:324–7.
[30] Kerzner B. Clinical investigation of feeding difficulties in young children: a practical approach. Clin Pediatr 2009;48:960–5.
[31] Estrem HH, Thoyre SM, Knafl KA, et al. 'It's a long-term process': description of daily family life when a child has a feeding disorder. J Pediatr Health Care 2018;32:340–7.
[32] Carruth BR, Ziegler PJ, Gordon A, et al. Developmental milestones and self-feeding behaviors in infants and toddlers. J Am Diet Assoc 2004;104:s51–6.
[33] Miles G, Siega-Riz AM. Trends in food and beverage consumption among infants and toddlers: 2005–2012. Pediatrics 2017;139:e20163290.
[34] Birch LL. Learning to eat: behavioral and psychological aspects. Nestle Nutr Inst Workshop Ser 2016;85:125–34.
[35] Lau C. Development of infant oral feeding skills: what do we know? Am J Clin Nutr 2016;103:616S–21S.
[36] Lefton-Greif MA, Arvedson JC. Pediatric feeding and swallowing disorders: state of health, population trends, and application of the international classification of functioning, disability, and health. Semin Speech Lang 2007;28:161–5.
[37] Gisel E. Interventions and outcomes for children with dysphagia. Dev Disabil Res Rev 2008;14:165–73.
[38] Dodrill P, Gosa MM. Pediatric dysphagia: physiology, assessment, and management. Ann Nutr Metab 2015;66(Suppl 5):24–31.
[39] Kuperminc MN, Gottrand F, Samson-Fang L, et al. Nutritional management of children with cerebral palsy: a practical guide. Eur J Clin Nutr 2013;67(Suppl 2):S21–3.
[40] Sanchez K, Spittle AJ, Slattery JM, et al. Oromotor Feeding in children born before 30 weeks' gestation and term-born peers at 12 months' corrected age. J Pediatr 2016;178: 113–8.e1.
[41] Adams-Chapman I, Bann CM, Vaucher YE, et al. Association between feeding difficulties and language delay in preterm infants using Bayley Scales of Infant Development-Third Edition. J Pediatr 2013;163:680–5.e1–3.
[42] World Health Organization. Global strategy for infant and young child feeding. Geneva, Switzerland: World Health Organization; 2003.
[43] Schwarzenberg SJ, Georgieff MK, Committee on Nutrition. Advocacy for improving nutrition in the first 1000 Days to support childhood development and adult health. Pediatrics 2018;141; https://doi.org/10.1542/peds.2017-3716.
[44] Cameron SL, Heath A-LM, Taylor RW. How feasible is Baby-led Weaning as an approach to infant feeding? A review of the evidence. Nutrients 2012;4:1575–609.

[45] Rapley G, Murkett T. Baby-led weaning: the essential guide to introducing solid foods—and helping your baby to grow up a Happy and confident eater. New York: The Experiment; 2010.
[46] Brown A, Jones SW, Rowan H. Baby-led weaning: the evidence to date. Curr Nutr Rep 2017;6:148–56.
[47] Fangupo LJ, Heath A-LM, Williams SM, et al. A baby-led approach to eating solids and risk of choking. Pediatrics 2016;138; https://doi.org/10.1542/peds.2016-0772.
[48] Taylor RW, Williams SM, Fangupo LJ, et al. Effect of a baby-led approach to complementary feeding on infant growth and overweight: a randomized clinical trial. JAMA Pediatr 2017;171:838–46.
[49] van den Engel-Hoek L, van Hulst KCM, van Gerven MHJC, et al. Development of oral motor behavior related to the skill assisted spoon feeding. Infant Behav Dev 2014;37:187–91.
[50] Arvedson JC. Assessment of pediatric dysphagia and feeding disorders: clinical and instrumental approaches. Dev Disabil Res Rev 2008;14:118–27.
[51] Brown CL, Pesch MH, Perrin EM, et al. Maternal concern for child undereating. Acad Pediatr 2016;16:777–82.
[52] Taylor CM, Wernimont SM, Northstone K, et al. Picky/fussy eating in children: review of definitions, assessment, prevalence and dietary intakes. Appetite 2015;95:349–59.
[53] Trofholz AC, Schulte AK, Berge JM. How parents describe picky eating and its impact on family meals: a qualitative analysis. Appetite 2017;110:36–43.
[54] Cole NC, An R, Lee S-Y, et al. Correlates of picky eating and food neophobia in young children: a systematic review and meta-analysis. Nutr Rev 2017;75:516–32.
[55] van der Horst K, Deming DM, Lesniauskas R, et al. Picky eating: associations with child eating characteristics and food intake. Appetite 2016;103:286–93.
[56] Zucker N, Copeland W, Franz L, et al. Psychological and psychosocial impairment in preschoolers with selective eating. Pediatrics 2015;136:e582–90.
[57] Luchini V, Musaad SM, Donovan SM, et al. Differences and agreement in perception of child picky eating among center- and home-based childcare providers and parents and its impact on utilized mealtime strategies. Nutr Metab Insights 2017;10:1178638816684830.
[58] Taylor CM, Steer CD, Hays NP, et al. Growth and body composition in children who are picky eaters: a longitudinal view. Eur J Clin Nutr 2018; https://doi.org/10.1038/s41430-018-0250-7.
[59] Emmett PM, Hays NP, Taylor CM. Antecedents of picky eating behaviour in young children. Appetite 2018;130:163–73.
[60] de Barse LM, Jansen PW, Edelson-Fries LR, et al. Infant feeding and child fussy eating: the Generation R Study. Appetite 2017;114:374–81.
[61] Johnson S, Matthews R, Draper ES, et al. Eating difficulties in children born late and moderately preterm at 2 y of age: a prospective population-based cohort study. Am J Clin Nutr 2016;103:406–14.
[62] Elkins A, Zickgraf HF. Picky eating and food neophobia: resemblance and agreement in parent/young adult dyads. Appetite 2018;126:36–42.
[63] Steinsbekk S, Sveen TH, Fildes A, et al. Screening for pickiness - a validation study. Int J Behav Nutr Phys Act 2017;14:2.
[64] Chao H-C, Chang H-L. Picky eating behaviors linked to inappropriate caregiver–child interaction, caregiver intervention, and impaired general development in children. Pediatr Neonatol 2017;58:22–8.
[65] Chatoor I, Conley C, Dickson L. Food refusal after an incident of choking: a posttraumatic eating disorder. J Am Acad Child Adolesc Psychiatry 1988;27:105–10.
[66] Chatoor I, Ganiban J, Harrison J, et al. Observation of feeding in the diagnosis of posttraumatic feeding disorder of infancy. J Am Acad Child Adolesc Psychiatry 2001;40:595–602.
[67] Dellert SF, Hyams JS, Treem WR, et al. Feeding resistance and gastroesophageal reflux in infancy. J Pediatr Gastroenterol Nutr 1993;17:66–71.

[68] Di Scipio WJ, Kaslon K, Ruben RJ. Traumatically acquired conditioned dysphagia in children. Ann Otol Rhinol Laryngol 1978;87:509–14.
[69] McNally RJ. Choking phobia: a review of the literature. Compr Psychiatry 1994;35:83–9.
[70] Haas AM. Feeding disorders in food allergic children. Curr Allergy Asthma Rep 2010;10:258–64.
[71] Christie L. Food fears in children with food allergies. J Allergy Clin Immunol 2004;113:S154.
[72] Wilken M, Bartmann P, Dovey TM, et al. Characteristics of feeding tube dependency with respect to food aversive behaviour and growth. Appetite 2018;123:1–6.
[73] Kassam-Adams N, Butler L. What do clinicians caring for children need to know about pediatric medical traumatic stress and the ethics of trauma-informed approaches? AMA J Ethics 2017;19:793–801.
[74] Norris ML, Robinson A, Obeid N, et al. Exploring avoidant/restrictive food intake disorder in eating disordered patients: a descriptive study. Int J Eat Disord 2014;47:495–9.
[75] Psychological and psychosocial impairment in preschoolers with selective eating. Pediatrics 2015;136:X19.
[76] Ammaniti M, Ambruzzi AM, Lucarelli L, et al. Malnutrition and dysfunctional mother-child feeding interactions: clinical assessment and research implications. J Am Coll Nutr 2004;23:259–71.
[77] Chatoor I. Diagnosis and treatment of feeding disorders in infants, toddlers, and young children. Washington, DC: Zero to Three; 2009.
[78] Aldridge VK, Dovey TM, Martin CI, et al. Identifying clinically relevant feeding problems and disorders. J Child Health Care 2010;14:261–70.
[79] Manikam R, Perman JA. Pediatric feeding disorders. J Clin Gastroenterol 2000;30:34–46.
[80] Benoit D, Coolbear J. Post-traumatic feeding disorders in infancy: behaviors predicting treatment outcome. Infant Ment Health J 1998;19:409–21.
[81] Kazak AE, Kassam-Adams N, Schneider S, et al. An integrative model of pediatric medical traumatic stress. J Pediatr Psychol 2005;31:343–55.
[82] Price J, Kassam-Adams N, Alderfer MA, et al. Systematic review: a reevaluation and update of the integrative (trajectory) model of pediatric medical traumatic stress. J Pediatr Psychol 2016;41:86–97.
[83] De Young AC, Hendrikz J, Kenardy JA, et al. Prospective evaluation of parent distress following pediatric burns and identification of risk factors for young child and parent posttraumatic stress disorder. J Child Adolesc Psychopharmacol 2014;24:9–17.
[84] Silverman AH. Interdisciplinary care for feeding problems in children. Nutr Clin Pract 2010;25:160–5.
[85] Sharp WG, Volkert VM, Scahill L, et al. A systematic review and meta-analysis of intensive multidisciplinary intervention for pediatric feeding disorders: how standard is the standard of care? J Pediatr 2017;181:116–24.e4.
[86] Reyes V, Stone BJ, Dimmler MH, et al. Child-parent psychotherapy: an evidence-based treatment for infants and young children. In: Landolt MA, Cloitre M, Schnyder U, editors. Evidence-based treatments for trauma related disorders in children and adolescents. Cham, Switzerland: Springer International Publishing; 2017. p. 321–40.
[87] U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. Child maltreatment 2013. 2015.
[88] Lieberman AF, Van Horn P. Psychotherapy with infants and young children: repairing the effects of stress and trauma on early attachment. New York: Guilford Press; 2011.
[89] Williams KE. Childhood feeding disorders, J. H. Kedesdy and K. S. Budd, 1998, Brookes, Baltimore, 416 pp. Behav Interv 2001;16:140–1.

[90] Bryant-Waugh RJ, Piepenstock EHC. Childhood disorders: feeding and related disorders of infancy or early childhood. In: Tasman A, Kay J, Lieberman JA, et al, editors. Psychiatry. Hoboken (NJ): John Wiley & Sons, Ltd; 2008. p. 830–46.
[91] Lukens CT, Silverman AH. Systematic review of psychological interventions for pediatric feeding problems. J Pediatr Psychol 2014;39:903–17.
[92] Seiverling L, Burns J, Rodriguez J, et al. The effects of a brief behavioral intervention on food refusal in a child with a fear of choking. Clin Case Stud 2015;15:117–25.
[93] Duncan LG, Coatsworth JD, Greenberg MT. A model of mindful parenting: implications for parent-child relationships and prevention research. Clin Child Fam Psychol Rev 2009;12: 255–70.
[94] Sharp WG, Jaquess DL, Morton JF, et al. Pediatric feeding disorders: a quantitative synthesis of treatment outcomes. Clin Child Fam Psychol Rev 2010;13:348–65.
[95] Kerwin ME. Pediatric feeding problems: a behavior analytic approach to assessment and treatment. Behav Anal Today 2003;4:162–76.
[96] Okada A, Tsukamoto C, Hosogi M, et al. A study of psycho-pathology and treatment of children with phagophobia. Acta Med Okayama 2007;61:261–9.
[97] Kaminski JW, Valle LA, Filene JH, et al. A meta-analytic review of components associated with parent training program effectiveness. J Abnorm Child Psychol 2008;36:567–89.
[98] Babbitt RL, Hoch TA, Coe DA, et al. Behavioral assessment and treatment of pediatric feeding disorders. J Dev Behav Pediatr 1994;15:278–91.
[99] Ghosh Ippen C, Harris WW, Van Horn P, et al. Traumatic and stressful events in early childhood: can treatment help those at highest risk? Child Abuse Negl 2011;35:504–13.
[100] Paul HA. Treating trauma and traumatic grief in children and adolescents (2nd Ed.) by J. A. Cohen, A. P. Mannarino, & E. Deblinger. Child Fam Behav Ther 2017;39:318–24.
[101] Cohen JA, Deblinger E, Mannarino AP. Trauma-focused cognitive behavioral therapy for children and families. Psychother Res 2018;28:47–57.
[102] Banerjee SP, Preeya Banerjee S, Bhandari RP, et al. Use of low-dose selective serotonin reuptake inhibitors for severe, refractory choking phobia in childhood. J Dev Behav Pediatr 2005;26:123–7.