

## Challenging Case

# 11 Month-Old Twins With Food Avoidance

**CASE.** Maggie and Lily are 11 month-old twins who are brought by their parents to the Developmental-Behavioral Pediatric Clinic for a life-long history of feeding difficulties.

The twins are this couple's first children. Their mother is tearful as she recounts a stressful pregnancy complicated by pre-term labor beginning at 24 weeks gestation with strict bed rest for the remainder of the pregnancy. The twins were delivered at 35 weeks gestation by Caesarian Section. Lily weighed 5 lbs 11 oz; Maggie was small-for-gestational age with a birth weight of 3 lbs 13 oz. Maggie required oxygen with nasal prongs for only a few hours after birth. She remained in the Neonatal Intensive Care Unit (NICU) with initial nasogastric tube feeding; she was advanced to bottle feeding prior to discharge.

Both Maggie and Lily were slow to initiate and sustain formula feeding. They required over 1 hour to consume 2 ounces of formula and "tire easily". At 1 month of age, Maggie resisted feedings by crying and arching her back. By 5 months of age, both children cried at the sight of the bottle and tried to push it away. However, they never lost weight. Maggie was treated with intermittent naso-gastric tube feeding at 5-6 months of age in order to gain adequate weight. At 11 months of age, both girls continued to resist feeding, but their mother was able to "get in" 24 ounces each day of a 31-calorie/ounce formula "with a lot of work". Dad observed that his wife's entire day revolved around getting the twins to eat and that became a significant stress for her as well as on their relationship.

The children had a gastroenterology evaluation including an upper gastrointestinal series, pH probe and gastro-duodenal endoscopy with biopsies. All studies were normal. Trials of omeprazole, metoclopramide and thickened feeds did not improve their feeding problem. They are currently not on any medications. They have not had a history of vomiting, diarrhea, or diaphoresis with feeds, and they have experienced only 1 mild upper respiratory infection. One or two soft bowel movements occur each day. Developmentally, they are on track for their age. The parents report that they can pull up to a stand and cruise, use a pincer grasps, and speak "mama" discriminately.

A review of their growth charts reveal that their weight is consistently between the 10-25% percentiles; weight is currently at the 25% percentile. Head circumference and height are between the 25-50% percentiles. *J Dev Behav Pediatr* 27:405-409, 2006.

### Daniel B. Kessler, M.D.

This family's situation requires thoughtful consideration. Despite a tough start at 11 months of age, both Maggie and Lily appear to be doing "well enough". Their development is on target and their growth is age-appropriate.<sup>1,2</sup> However, they have not made the transition to solid foods. Keeping them "on the curve" has taken its toll on the family and the twins.

I suspect that feeding is not a pleasant experience but we do not yet know why. Feeding problems commonly originate in, and are maintained by, an interaction of factors. Empirical treatment of gastro-esophageal reflux (GERD) has not been helpful. Normal stools and lack of vomiting or diarrhea suggest the absence of other gastrointestinal disorders. Lack of diaphoresis probably excludes a respiratory or cardiac etiology for the poor feeding at this point. We know that Maggie, the smaller of the twins, visited the NICU and required some nasogastric feedings at birth and again at 5-months of age. There were clearly opportunities for aversive or traumatic experiences around feeding.<sup>3</sup>

At 5 months Maggie required nasogastric feeding to assure adequate nutrition and growth. This is the time many children begin to make the transition to solid foods. We do not know if swallow studies were performed or feeding was evaluated at that point. We know that the medical evaluation failed to clarify why feeding is such an unhappy experience. The involvement of a speech therapist or occupational therapist, who may have played the role of feeding specialist, was not mentioned.

Who has talked to this family about feeding? The need to assure nutrition by nasogastric feeding, in a child who was refusing to take adequate calories, may have been an important missed opportunity to learn about food. Perhaps initial challenges that caused choking or gagging resulted in natural but maladaptive responses on the part of the caregivers. The transition from liquid diets to solid foods is not automatic for many infants despite popular beliefs to the contrary.

Complaints about kids' mealtime behaviors are common among one in four parents and that number increases for children with special health care needs. Half of parents of

toddlers and preschoolers complain of poor food acceptance and one in ten parents admits to bribing or forcing their child to eat! Many parents have distorted beliefs and attitudes about normal, healthy eating patterns. Myths and misperceptions about feeding can contribute to the development not only of malnutrition and poor growth but also to obesity and a range of related health issues.

Most pediatricians receive limited training in normal feeding. They may not know about the range of normal feeding patterns, understand fully concerns expressed by families, or know how to evaluate, treat or refer the child with feeding problems. Too often we carry strong personal beliefs with limited scientific support or memories from our own family experiences when growing up. How many of us were told we had to “clean our plates” or about “the starving kids in \_\_\_\_\_”? As a result, many children may not develop a “good food sense”. Too many of us eat more than we should or for the wrong reasons. Many of the messages parents receive from the media and friends and sometimes from their doctors are wrong.

One myth about feeding is that children will always eat when they are hungry.<sup>4</sup> Although it is true for perhaps 95% of children (not bad odds in clinical medicine), this advice is extremely unhelpful for the other 5%. In my experience, once GERD is ruled-out, the majority of these children have a combination of oral hypersensitivity or oral motor difficulty. They often demonstrate distinct patterns of food textural preferences and refusals.<sup>5</sup> Learning also plays a powerful role. When feeding is associated with pain or discomfort (e.g., in GERD), it will lead a child to avoid that experience. However, if refusing to eat is followed by more attention and interactions, food refusal may increase and persist.<sup>6</sup> Some children have oropharyngeal dysphagia. This is most often associated with neurological and or other handicapping conditions (e.g., chromosomal abnormalities and congenital infections) and requires careful study,<sup>7</sup> but some have isolated low oral motor tone.

While we know that both Maggie and Lily and their parents are experiencing feeding difficulties, we need to learn more about how they got here. We need to offer them help now.

#### Advice about Feeding Babies:

Though much can be said on this topic, I offer brief guidance (for which I owe Ellyn Satter considerable credit for her concept of a “Division of Responsibility”<sup>8</sup> and to Kay Toomey for her understanding of “picky eaters”).<sup>9</sup> The American Academy of Pediatrics offers some useful materials in a series of brochures and publications that pediatricians can share with their patients.

For infants less than 1-year of age, parents should be responsible for what a child eats. The child is responsible for how much she will eat at any given meal.

Children do well when offered a variety of healthy, non-sweetened choices over the course of the day. Whatever the child does not eat after 30 minutes is put away without comment until the next mealtime. If the child does not like what is available, one additional choice is offered from a previous meal. Parents should be discouraged from providing “menus” at meals. For kids with extra nutritional needs, scheduled meals should be provided along with regular between meal snacks and higher calorie foods. All young

children have some difficulty accepting new foods. They may need up to 15 opportunities to taste a new food before they decide to like it. Those opportunities involve watching others eat and enjoy it or just seeing it on the table but never being made to “just try it”.

For toddlers, the parent is responsible for the what, when, and where of the meal. Meals should be at child friendly tables, high chairs or sassy seats; not on a parents lap or in front of a TV. The toddler decides how much to eat and even whether they will eat at any given meal. If you watch normal, healthy growing toddlers for several days you see them eat (as an example) a good meal, a so-so meal, a lousy meal, a lousy meal, a so-so meal, a good meal, a so-so meal, a lousy meal, and so on. Over the course of several days they will get the calories and nutrients they need to grow and develop well.

Self-feeding is encouraged because it provides children with responsibility based on developmental ability. Children are not old enough for solid foods until they can be stable sitting upright with minimal support and turn their heads away or push food away with their hands if they are full or not interested in eating. This occurs at around 6 months of age. Before this time, breast milk or infant formula is sufficient for most babies. At 8 to 10 months, they can usually pick up small soft food items and put them in their mouths and use their fingers to move the food around. By 22 months of age children have made the transition to a full modified (smaller amounts in smaller sizes) adult diet.

Parents are responsible for choosing and preparing food, providing regular meals and snacks. Families can be encouraged to eat together at least one meal a day. Mealtimes are “social” occasions and fun (but not playtime). Parents should encourage and support mastery experiences around using and playing with food, using their fingers as well as utensils for self-feeding, and trying new foods.

Causes for concern include poor weight gain or weight loss, choking, gagging, or vomiting, inability to transition to baby foods by 10 months, or off baby foods by 16 months, or eating less than 20 foods. Concerns should be referred sooner than later to a speech or occupational therapist with feeding therapy training or a feeding team when such is available.

Eating is one of life’s great pleasures and every baby book should include at least one picture of a child wearing their food!

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## REFERENCES

1. Kessler DB, Dawson P. *Failure to Thrive and Pediatric Undernutrition: A Transdisciplinary Perspective*. Baltimore, MD: Brookes Publishing, 1999.

2. Stein MT, Kessler DB, Hubbard E. Failure to thrive in a four-month-old nursing infant. *Journal of Developmental and Behavioral Pediatrics*. 2004 October;25 Supplement:S69–S73.
3. Chatoor I. Feeding Disorders in Infants and Toddlers: Diagnosis and Treatment. In: Robb AS, eds. *Eating Disorders. Child and Adolescent Psychiatric Clinics of North America*. Philadelphia. Saunders 2002;11: 163–183.
4. Toomey KA. Top Ten Myths of Mealtime in America. Colorado Pediatric Therapy and Feeding Specialists. 2002.
5. Schwarz, et al. Diagnosis and treatment of feeding disorders in children with developmental disabilities. *Pediatrics*. 2001;108:671–676.
6. Toomey KA. *When Children Won't Eat: Understanding The "Why's" and How to Help*. Denver, CO: Toomey and Associates, Inc., 2002.
7. Arvedson JC, Brodsky L. *Pediatric Swallowing and Feeding. Assessment and Management*, Second Edition. Thomson Learning, 2001.
8. Satter E. The feeding relationship: problems and interventions. *J Pediatrics*. 1990;12:115–120.
9. Toomey KA. Feeding strategies for older infants and toddlers. *Pediatric Basics*. 2002;100:2–11.

### Erin L. Fortune, M.D.

Monitoring growth and development is the foundation of pediatric practice. Through anticipatory guidance we prevent feeding problems and poor growth. Careful monitoring assures early identification and treatment of children with inadequate growth. Failure to thrive (FTT) is defined as weight <5th percentile, weight that has crossed two major percentile lines on a standard growth curve, or a weight for height <5–10th percentiles.<sup>1</sup> Although Maggie and Lily do not meet the criteria for FTT at the time of the presentation at 11-months of age, they currently require highly fortified formula to maintain their growth, specifically 31 calories/ounce compared to the standard formula of 20 calories/ounce. From this perspective, it is useful to review the differential diagnosis of FTT.

FTT can be divided into three categories based on mechanism: insufficient caloric intake, an elevated caloric requirement, or an inability to absorb/utilize available calories. In most cases, a comprehensive medical, developmental and psychosocial history and a physical examination indicates the most likely mechanism.<sup>1</sup>

A history of diarrhea, bloody stools or known gastrointestinal abnormalities may indicate possible malabsorption. The differential diagnosis for malabsorption includes: infection, cow's milk protein allergy, pancreatic insufficiency (e.g., cystic fibrosis), celiac disease and tufting enteropathy. Children with metabolic disorders may have difficulty utilizing the calories they consume. A history of recurrent infections, heart disease, lung disease or hyperthyroidism suggests primary disorders that may secondarily lead to FTT due to increased metabolic requirements.<sup>2</sup>

The most common etiology of FTT in young children is secondary to inadequate caloric intake.<sup>1,2</sup> From an international perspective, this is the most common cause of FTT. In the US, poverty is associated with poor provision of food for children, although supplemental nutrition and education programs (e.g., WIC) lessen this risk. Many children satisfy their appetite on low calorie, low nutritional fluids such as water and juice. Chronic constipation or a gastric

motility disorder, may lead to abdominal distension and a decrease in appetite. Dysphagia associated with GERD and peptic esophagitis, chronic dental caries, and central nervous system dysfunction may also cause a child to avoid eating due to the associated discomfort.<sup>3</sup>

As noted, the twins are both consuming highly fortified formula in order to maintain an adequate growth rate. Maggie and Lily previously had gastrointestinal evaluations that ruled out the conditions associated with malabsorption and an increased metabolic requirement. Perhaps most importantly, from the perspective of their mother, they are not growing adequately; she perceives their health to be in danger. Considering their current healthy state and a history of life-long feeding difficulties, the primary issue is feeding refusal.

Maggie required nasogastric tube feeding early in life and again at 5–6 months of age. This early experience can lead to conditioned dysphagia, an oral hypersensitivity due to noxious procedures involving the oropharynx (e.g., recurrent placement of a nasal-gastric feeding tube). Both infants were mildly premature which may have contributed to slower process of initiating and sustaining feedings. They also were diagnosed with GERD, which may contribute to dysphagia.<sup>3</sup>

Application of a biopsychosocial model of feeding disorders suggests both a mechanism to the twins feeding refusal as well as targeted treatment options.<sup>3</sup> The model proposes that children with feeding disorders, including food refusal, have an initial organic cause such as GERD, dysphagia and prematurity in the case of Maggie and Lily. They subsequently develop food avoidance behaviors including crying and pushing food away. Parental responses, including forced feeding, distraction, bribing and anxiety, can further exacerbate the feeding refusal.<sup>3</sup> In most cultures, food is symbolic for love and refusal of food may be interpreted by the parent as rejection.<sup>4</sup> As the twin's father described, mealtimes become tremendously stressful for the entire family, which further exacerbates the twin's avoidance behaviors.

Treatment is not easy given the emotions and patterns of behavior that have been engrained over time.<sup>4,5</sup> At the clinic consultation, we reassured the mother that the twins were healthy and thriving. Positive comments on the children's physical examination and developmental milestones were directed specifically to the mother.<sup>6</sup> We encouraged her to offer healthy foods and to let the twins decide what and how much to eat. We insisted that she discard the baby scale at home in order to take the focus away from weight measurements. Father was enlisted to support mother's need for time outside of the home, time to nurture and care for herself.

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### REFERENCES

1. Krugman S, Dubowitz H. Failure to thrive. *American Family Physician*. 2003;68:879–884.

2. Deborah F, Zeisel S. Failure to thrive. *The Pediatrics Clinics of North America*. 1998;35:1187-1196.
3. Manikam R, Perman J. Pediatric feeding disorders. *Journal of Clinical Gastroenterology*. 2000;30:34-46.
4. Piazza CC, Carroll-Hernandez T, Assessment and Treatment of Pediatric Feeding Disorders, *Encyclopedia on Early Childhood Development*. Center for Excellence for Early Childhood Development. Marcus Institute, Johns Hopkins University and Emory University School of Medicine, 2004.
5. Black M. Helping Children Develop Healthy Eating Habits. *Encyclopedia on Early Childhood Development*. Center of Excellence for Early Childhood Development. University of Maryland School of Medicine, 2003.
6. Linscheid TR. Behavioral treatments for pediatric feeding disorders. *Behavior Modification*. 2006;30:6-23.

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Further history revealed that the twin's mother was always a "picky eater" as a child and adult. She currently consumes a limited diet based on strong food preferences. She stated that she "pushes harder" when feeding the children compared to her husband.

A Denver Developmental Screening Test (DDST II) was administered and confirmed age-appropriate function in motor, social and language skills.

Parents initially lap-held each twin and were encouraged to accompany the examiner in floor play with the twins. Father immediately complied, but mother was somewhat hesitant. Toys were chosen that specifically required finger poking and probing. Maggie and Lily appeared to delight in exploring the cause/effect relationships as they utilized their well-developed fine motor and cognitive skill.

With parental permission, small bits of cookies were casually placed in and around the toys. The parents were coached to make happy sounds as they picked up and ate the cookies while avoiding eye contact and encouragement with the twins. Modeling included the parents playing with the food and feeding each other. The twins watched and without hesitation began to imitate these relaxed and playful behaviors. This provided the parents with their first experiences of feeding the twins as an emotionally neutral and positive activity. Both parents said that they had never considered this type of feeding experience possible.

Educational prescriptions, based on a cognitive-behavioral approach, were demonstrated and matched to the twin's developmental needs. The parents were encouraged to offer child-sized spoons, forks, cups and plates during meals. The goal was to foster autonomy, self-help skills and mealtime pleasure. Additional necessary ingredients for at least one meal a day included allowing and/or encouraging messiness and exploration followed by routine bath time.

A follow-up phone call with the mother at 15-months of age revealed marked positive changes. The first noteworthy observation was the mother's elevated affect and delight in providing an update. She said, "...there is no trauma or drama around meal times anymore". High calorie formula was terminated at one year of age. She reported that both girls enjoy foods and special favorites include avocado, grapes,

pasta, macaroni and cheese. They now initiate using a fork, spoon, and regular cup as well as finger feeding. The parents utilize a variety of behavioral tools during meal times including verbal compliments, laughter, and making meal time an enjoyable experience for the twins and themselves. The parents report enjoying each other more and feeling relieved of any judgments or criticisms surrounding feeding. They now see themselves as more relaxed parents. Mother concluded the follow-up interview by saying, "their sometimes fussy eating is simply normal toddler behavior".

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The process of feeding infants and young children is a behavioral event. The interplay between the adult who is feeding a child and the child is mediated by a variety of factors that include gestational and perinatal events and the psychological state of the parent. Each child's temperament, state regulation, physiological variables and behavior organization also contributes to the interactional process. The pleasure derived from sucking when a responsive caregiver feeds an infant and the satisfaction derived from independent feeding fuel the development of basic trust, the major psychosocial task of the first year of life.

That this interactional process is typically well tuned and results in appropriate growth and psychological development in most young children is remarkable. As we have seen in the case of Maggie and Lily, numerous factors can potentially inhibit this interactional process and effective feeding. Although many infants tolerate nasogastric tube feedings without subsequent food avoidance, it is a risk factor that likely contributed to the twin's feeding pattern. Untreated, GERD associated with peptic esophagitis causes recurrent episodes of pain and irritability ("heartburn") making feeding undesirable. These post-natal physical factors, combined with the mother's life-long history of strong food preferences and a "picky eater", led to a maladaptive feeding pattern. To maintain growth, the children were most likely force fed with limited opportunities for independence during meals. Prolonged feeding times and mounting maternal frustration with the feeding process led to increasing stress and over-concern about the children's weight.

This interpretation of Maggie and Lily's food avoidance pattern was a result of information derived from a clinical interview. As the parents talked about the children and their perspectives about how the food avoidance developed, sufficient trust between the clinicians and parents encouraged the parents to express their feelings. When "dad observed that his wife's entire day revolved around getting the twins to eat and that became a significant stress for her as well as on their relationship", the dialogue moved in a new direction. Tearful and with clarity, the mother was then able to

talk about her recurrent fear of inadequate growth and persistent need to increase caloric intake. Her husband's openness seemed to encourage her to more openly express her own feelings.

Following the brief floor-play intervention with an emphasis on modeling and behavioral change, it was the consensus of the clinic staff that the parents came away from the visit with a fresh insight into the twin's feeding behaviors. The follow-up phone call confirmed these observations.

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### RECOMMENDED READING

1. Stein MT. Common issues in feeding. In: Levine MD, Carey WB, Crocker AC, eds, *Developmental-Behavioral Pediatrics*, 3rd ed, Philadelphia: W.B. Saunders Company, 1999:392-396.

### *Literary Quotes*

#### **Carson McCullers II- Shifts in Environmental Perceptions**

*Probably all of us have had the experience of seeing our surroundings differently when our internal thinking and feelings change. This phenomenon is imaginatively described through the eyes of a bored, motherless girl in 1940's Georgia.*

*Frankie Addams is the 12-year-old girl in The Member of the Wedding by Carson McCullers (1917-1967). At the outset she is lonely and regards her small town as hopelessly tedious and uninteresting. Then she conceives her plan to be not only a participant in her brother's forthcoming wedding but to become a part of their lives by sharing their honeymoon with them. "They are the we of me" and "I belong to be with them" she concludes. (pp. 39, 43).*

*"The day before the wedding was not like any day that F. Jasmine (Frankie) had ever known. It was the Saturday she went into the town, and suddenly, after the closed blank summer, the town opened before her and in a new way she belonged. Because of the wedding, F. Jasmine felt connected with all she saw. ...She walked the streets entitled as a queen and mingled everywhere". (p. 44) But her unrealistic fantasy about the wedding and honeymoon does not work out. She returns home deeply disappointed. She sees her town once again as a boring place to escape from. "The world was too far away and there was no way any more that she could be included". (p. 148). While her fantasy lasted, the world had looked much more attractive to her, but now the appeal was gone.*

*A common theme in McCullers's writing is the lonely world of adolescents. Apparently she was writing from her own experience and sharing her feelings of what it is like.*

*McCullers, C. The Member of the Wedding. New York. Bantam Books. 1950. (New York. Houghton Mifflin. 1946.)*

*Submitted by William B. Carey, M.D.*