Feeding Dynamics: Helping Children to ▪ Eat Well ▪

Ellyn Satter, MS, RD, MSSW

Pediatric nurse practitioners are in a key position to help parents learn to effectively feed their children. Classic research studies, current research, and clinical observations on feeding have identified children's capabilities, behaviors, and potential competencies with their eating. An appropriate feeding relationship supports children's developmental tasks at every age and allows them to eat the right amount of the proper food to achieve their genetically determined growth endowment. Children must, in turn, attain developmental tasks. In defining and managing feeding problems, the pediatric nurse practitioner may emphasize prevention by building positive feeding interactions, and promoting early detection and management as well as providing treatment for established problems. J PEDIATR HEALTH CARE. (1995). *9*, 178-184.

Pediatric nurse practitioners (PNPs) spend considerable time with parents of young patients discussing feeding issues and concerns. Feeding problems impact large numbers of children: an estimated 25% to 30% of children show feeding problems such as poor food acceptance, overeating, spitting up and vomiting, failure to progress appropriately to semi-solid and then table food, finickiness, and objectionable mealtime behaviors (Linscheid, 1986). One percent to 2% of infants and children have prolonged feeding problems that impinge on growth (Dahl, 1987).

Early childhood feeding problems may be indicators of difficulty in the parent-child relationship (i.e., failure to achieve homeostasis, poor attachment). These feeding problems may persist and are replicated in emotional and social adjustment (Satter, 1990). For example, mothers whose feeding interactions show little contingency (i.e., who are relatively unresponsive to children's signals) have infants who are not securely emotionally attached to their mothers later in life (Barnard et al., 1989). Further, distortions around feeding look very much like distortions around play interactions (Ainsworth & Bell, 1969). Also, 2-year-old children with early feeding problems have more infections and behavioral problems (Dahl, 1987). Children with early feeding problems also have an increased risk of obesity as adolescents (Shapiro, 1988).

Feeding problems are often the basis of poor growth. Of 1,120 infants with growth failure, Accardo (1982) found 40% to 50% had nonorganic causes and/or feeding problems. To include evaluation of feeding dynamics as part of a diagnostic workup is likely to eliminate the need for much laboratory testing. Of 2,067 laboratory tests administered to 185 children who were admitted to Children's Hospital in Buffalo, N.Y., only 36 tests (1.4%) were of positive diagnostic significance (Sills, 1978).

Classic behavioral studies (e.g., Ainsworth & Bell, 1969; Beal, 1957; Fomon, Filer, Thomas, Anderson, & Nelson, 1975), current research (e.g., Birch, 1987; Birch, Johnson, Andresen, Peters, & Schulte, 1991; Johnson & Birch, 1994; Saunders, Friedman, & Stramoski, 1990; Sullivan & Birch, 1994), and clinical observation on feeding (e.g., Barnard, Bee, & Hammond, 1984; Chatoor, Dickson, Shaefer, & Egan, 1986; Linscheid, 1986; Rolls, 1986; Satter, 1990) identify children's capabilities, behaviors, and potential competencies, as well as the supports they require from their parents (Barnard et al., 1984; Field, 1977; Klesges, Malott, Boschee, & Weber, 1986; Price, 1975; Pridham, 1987). The PNP is in a key position to use this information to help establish positive dynamics around feeding between parents and children, to give anticipatory guidance when feeding relationships are potentially problematic, and to generate interventions that solve problems.

▪ THE FEEDING RELATIONSHIP

The feeding relationship is the complex of interactions that take place between parent and child as they engage in food selection, ingestion, and regulation behaviors. Feeding is a reciprocal process that depends on the

Ellyn Satter is a registered dietitian and clinical social worker at the Family Therapy Center, Madison, Wisconsin.

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Reprint requests: Ellyn Satter Associates, 4226 Mandan Crescent, Suite 50, Madison, WI 53711.

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■ BOX 1 CHILDREN PRONE TO DEVELOPING FEEDING PROBLEMS

1. Children who are temperamentally negative or slow to warm up
2. Children "at risk" or "at nutritional risk"
3. The exceptionally large or small child
4. The exceptionally large or small eater
5. The child who has been ill
6. Children who were prematurely born
7. Children with neuromuscular and/or cognitive limitations
8. Children on modified diets; for example, children with diabetes

Note, From *Preventing Childhood Obesity: A New Paradigm* by E. Satter, October 25, 1994, paper presented at the Wisconsin Special Supplemental Food Program for Women, Infants and Children (WIC) and Maternal Child Health (MCH) conference: "Uniting Communities for Mothers and Children," Wisconsin Dells. Copyright 1994 by Ellyn Satter. Adapted by permission.

■ BOX 2 PARENTS PRONE TO PRECIPITATING FEEDING PROBLEMS

1. Parents who are overactive and too stimulating
2. Parents who are underactive or not engaging
3. Parents who are unusually rigid or controlling
4. Parents who are unusually chaotic or disorganized
5. Parents who are excessively concerned about their child's diet and weight
6. Parents who are excessively concerned about their own diet and weight
7. Parents who have a particular agenda with growth

Note. From *Preventing Childhood Obesity: A New Paradigm* by E. Satter, October 25, 1994, paper presented at the Wisconsin Special Supplemental Food Program for Women, Infants and Children (WIC) and Maternal Child Health (MCH) conference: "Uniting Communities for Mothers and Children," Wisconsin Dells. Copyright 1994 by Ellyn Satter. Adapted by permission.

capabilities of both parents and children. Optimal feeding interactions depend on emotionally healthy, sensitive, and responsive parents and on children who are able to achieve a minimal level of communication and stability (Satter, 1990).

If parents and children fail to establish a reciprocal relationship, children may show marked eating and growth distortions. If parents get pushy or overmanaging with feeding, children's need for autonomy may lead them to resist eating and even show marked growth failure. Parents who are unresponsive to a child's bids for attention may lead the child to overdemand food as a way of engaging the parent's attention (Satter, 1990).

As a guide for parents during the feeding process and a support to this reciprocal interchange, a division of responsibility in feeding is recommended. Parents are responsible for **what** children are offered to eat; children are responsible for **how much** they eat. Parents choose appropriate food, provide structured meals and snacks (after the first year), and ensure a pleasant eating environment. Children decide how much and even whether they eat what parents put before them (Satter, 1987). Children are naturally interested in eating and have an investment in their own survival. Parents need only support those inclinations, not put them in place.

Feeding in a developmentally appropriate fashion is vital. Optimally, food selection and methods of feeding should be in concert with children's neuromuscular development and feeding skills (American Academy of Pediatrics [AAP], 1980). Children do best with feeding when they can actively participate in the process. Supportive adults provide children with achievable tasks, then offer only as much help as they need to accomplish the task. In this way, adults give children concrete and repeated experiences of being able to behave autonomously without being abandoned, of being supported without being intruded upon.

Boxes 1 and 2 summarize characteristics of children and parents that can impair the feeding process (Satter, 1990). Children who are temperamentally negative and cautious, developmentally delayed (Magyary, 1984), identified as being "at risk" or "at nutritional risk"* may be instrumental in getting their parents to be forcing and overmanaging in feeding (Field, 1977). It has been observed clinically that when children are at the extremes of eating or growth, parents tend to try to compensate for these extremes. For instance, if a child is particularly large and/or eats a particularly large amount, parents may hestitate to totally gratify the child's hunger for fear the child will get too fat. If a child is particularly small or eats particularly small amounts, parents may worry that the child is not growing well and urge the child to eat past satiety (Satter, 1990).

*The terms *"at risk"* and *"at nutritional risk"* may be applied to a child's or parent's emotional, physical, medical, or nutritional condition. Regardless of the specific basis for the designation, calling the child "at risk" tends to make parents overzealous on behalf of the child and is therefore disruptive of feeding.

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■ BOX 3 HELPING BABIES TO EAT WELL

- Feed when the baby is fully awake, but not exhausted from crying.
- Cuddle the baby during feeding, holding securely but with a little room for wiggling.
- Support the baby's head, making sure that it is a little higher than the rest of the body.
- Wait for the baby to open up for the nipple. Touch the baby's lips with the nipple or show it to the baby.
- Hold still during feeding.
- Let the baby decide how fast or slowly to eat.
- Talk to the baby in a quiet and encouraging manner during feeding, but do not distract the baby by being too active.
- Let the baby pause and rest during feeding.
- Burp only if the baby seems to need it.
- If the baby stops to fuss, soothe and again offer the nipple. Do not force more food—just check to see if the baby has had enough.
- Keep the feeding smooth and steady. Do not stop to wipe the baby's chin or arrange clothes and blankets.

Note. From "Breast-Feeding Your Baby (0 to 3 months)," "Bottle-Feeding Your Baby (0 to 3 months)," in *Ellyn Satter's Nutrition and Feeding for Infants and Children: Handout Masters* by E. Satter and P. B. Sharkey, 1995, Madison, WI: Ellyn Satter Associates. Copyright 1995 by Ellyn Satter. Adapted by permission.

■ NEWBORNS

From birth to 2 or 3 months of age, the infant's developmental task is to achieve regulation of state: homeostasis. To be successful with breast- or bottle-feeding, babies must become alert enough to engage their parents' attention and to signal their needs. They must be able to respond to their parents' efforts to please them without getting overstimulated (Mogan, 1987). Infants who are having difficulty achieving homeostasis may be so sleepy that they do not not rouse sufficiently to ask to be fed or so agitated that they cannot calm down enough to eat.

For feeding to be successful, parents must work to calm their baby and feed in a smooth and continuous fashion, paying attention to their baby's cues of timing, amount, tempo, and eating capability (Ainsworth & Bell, 1969). Feeding on demand is critical for a baby to achieve an optimal state of homeostasis. Babies are most engaged and organized when parents are attentive and responsive to them (Box 3).

Children are inherently capable of eating the right amount of food to grow well (Fomon et al., 1975). They vary enormously in the amount they eat, both day-to-day and from one child to another (Satter, 1986). Even preterm infants can self-regulate. Physiologically stable babies as small as 1550 gm were able to eat predominantly on demand and gained weight on less calories than their schedule-fed counterparts (Saunders et al., 1990).

Early feeding is an important organizer for babies (Chatoor et al., 1986). Feeding interactions propel an infant from a state of isolation and self-absorption to an active engagement with other people and the world (Barnard et al., 1984). Experiencing the social, emotional, and physical reinforcement from eating appears to be important in helping children take a sustained and exuberant pleasure in their contact with the environment. Parents can be helped to get on the same wave length as their baby if they are supported in interpreting their baby's behavior (Price, 1975), if they are taught to imitate their baby's gestures and verbalizations (Field, 1987), and if they are given support from other parents or care providers (Minde, Shosenberg, Thompson, & Marton, 1983).

Even if a child is eating and growing well, parents need to be sensitive to the feeding dynamics with their baby. Twenty percent of the mothers in a population of neonatal intensive care unit graduates expressed dissatisfaction with the personal aspects of feeding (Pridham, 1987). Such expressions should be taken seriously and intervention supplied, so parents can feel more personally satisfied in interacting with their baby.

■ ATTACHMENT

Between 2 and 3 months of age, infants who can sustain a reasonable level of calmness and focused attention can begin to direct their interest outside themselves. They are ready for attachment. Between 2 and 6 months of age, babies develop a variety of ways to engage the interest and involvement of their parents and are delighted when parents socialize with them.

However, for infants to continue to be engaging and responsive, they need an answering response from parents, at least some of the time. If parents do not respond

■ **TABLE** Development of feeding capabilities in babies

When a baby:	The baby is ready for:
Cuddles Roots for the nipple Sucks	Nipple-feeding
Sits Watches spoon Opens for spoon Closes lips over spoon Swallows	Semi-solid food
Moves food to sides of mouth Munches: Chews up and down	Thicker, lumpier food
Bites off food Chews: grinds with jaws Closes lips around cup	Lumpy food, pieces of soft food
Picks up foods in fingers or palms Puts food in mouth Chews	Finger foods

Note: From "What Should You Feed Your Baby?" in *Ellyn Satter's Feeding with Love and Good Sense: The Older Baby Video and Teacher's Guide* by E. Satter and P. B. Sharkey, 1995, Madison, WI: Ellyn Satter Associates. Copyright 1995 by Ellyn Satter. Reprinted by permission.

or if they act in contradictory or confusing ways, children compensate. They may give up and become listless and apathetic; they may exaggerate their efforts to connect by being demanding and aggressive, or they may guard against negative interactions by becoming watchful and hypervigilant.

When an infant is 2 to 6 months of age, feeding interactions continue to be the focus of much of the time the infant and parents spend together. As a consequence, eating competence is closely correlated with emotional attachment between parent and child. If children are to eat well, parents must be at least minimally sensitive and responsive to them as people and to their messages about eating. Poorly attached children may fail to signal their hunger and may sink into a profound state of undernourishment (Chatoor et al., 1986). Clinical observations show that other infants overdemand food and overeat as a way of engaging parents (Satter, 1990).

Not until infants approach the age of 6 months can most of them sit up, manage the more complicated mechanics of spoon-feeding, and maintain a sense of involvement with the parent over a greater physical distance (AAP, 1980). Studies show that babies begin to willingly accept spoon-feeding at age 4 months. Attempting to introduce solid foods before the child is 4 months of age leads to struggles between mothers and babies around the act of feeding (Beal, 1957). Such struggles can interfere with the attachment process. The Table summarizes developmental cues that indicate feeding readiness.

■ THE SECOND SIX MONTHS

Separation and Individuation

During the infant's second 6 months of age, the separation and individuation process begins. Infants become mobile, learn to deal with physical separation, and become able to maintain emotional contact over distance. They also begin somatopsychological differentiation. That is, they begin the process of sorting out their feelings and sensations of inner experience and correctly identifying causes and solutions. Both infants and parents help with this sorting process: infants, by clearly signaling their physiologic or emotional needs; parents, by reading the infant's signals correctly and responding appropriately.

Solid Foods

By the age of 6 months, infants who are able to sit with minimal support and open their mouths when they see something coming are likely to have the mouth skills to begin taking solid food (Satter, 1986). Their readiness to be challenged with spoon-feeding depends on their neuromuscular development and their willingness to approach new feeding experiences (Table). Although breast- or bottle-feeding continues during this transition period, weaning begins with the introduction to solid foods.

For effective spoon-feeding, parents need to be engaging but not overwhelming, restrained in their responses so as not to overwhelm the infant's expressions, and sensitive to information coming from the infant. To

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support this early stage of separation and individuation, it is critical for the parent to allow the infant to take the initiative with eating. The parent should sit directly in front of the infant, offer the spoon, and wait for the infant's mouth to open before attempting to feed. The effective feeder supports the child's autonomy by respecting the infant's tempo in accepting new foods and by being willing to stop the feeding promptly when the infant wants to quit. Parents help the child to develop eating skills by offering foods of increasingly challenging texture and eventually allowing the infant to finger feed with a variety of soft table foods (Table), as early as 8 months of age. Parents must be willing to tolerate messiness, to be present but not interfere with the child's exploration of eating.

■ TODDLERS: 12 TO 36 MONTHS

Toddlers continue the process of separation and individuation started during the second 6 months of life. Into and through the second year, feeding gives the creative toddler many opportunities to explore, test limits, and learn about separateness. Toddlers do not benefit from being fed on demand. In fact, failing to provide toddlers with the structure and limits they need—in feeding, as in other areas—amounts to neglect. To mature optimally, toddlers need the structure of regularly scheduled meals and snacks, with restriction of food handouts between these scheduled times. Toddlers who are offered structured meals and snacks and who are not allowed food or caloric beverages between times eat as much as 50% more than those allowed to snack ad libitum (Toomey, 1994). They come to the table hungry and willing to approach the food there, and they are able to eat with concentration and focus until they are full (Satter, 1986).

Parents, for their part, must provide a variety of food that has been modified in simple ways so the toddler can both be successful in eating familiar foods and be challenged by new food experiences (Satter, 1986). Parents must also allow the toddler to choose from what they have made available. Unlike adults, toddlers are unlikely to eat some of everything on the table. They may eat a particular food with great enthusiasm one day and turn it down the next. They are also likely to eat great quantities of food one time and virtually nothing the next. They tire of even their favorites. Yet studies show that, over time, toddlers tend to eat a variety of food and achieve a nutritionally adequate diet (Rolls, 1986).

Toddlers tend to be more aware of new foods and cautious about approaching them than infants who are just learning to eat table foods. In fact, toddlers are naturally neophobic: they do not like new food. Despite this initially negative reaction to new foods, they do learn to accept them with time and repeated neutral exposure. To master a food, toddlers first watch grown-ups eat it. Then the toddlers put the food in their mouth and take it out again. Parents misinterpret this taking-out-again behavior as food rejection, when it is actually children's way of gaining experience with the food. Eventually, after many exposures, they master the food. Trying to hurry the process backfires and only slows it down. In fact, if pressure is brought to bear on children's food acceptance they eat **less** well, not better (Birch, 1987).

Toddlers are capable of accurately regulating their food intake (Birch et al., 1991). With food regulation, as with food selection, putting pressure on a toddler's eating can be counterproductive, Some toddlers submit to their parent's pressure to the extent that they overeat and gain too much weight (Klesges et al., 1986) or have difficulty with precisely regulating their food intake (Johnson & Birch, 1994). Other toddlers resist parent's pressure by refusing to eat. At times, the struggle for autonomy and control of feeding becomes so vehement and entrenched that some children undereat and lose weight (Chatoor et al., 1986).

■ PRESCHOOLERS: THREE TO FIVE YEARS

If all has gone well with homeostasis, attachment, and separation/individuation, children emerge as preschoolers with a positive sense of self, wanting to learn about food and new eating situations. They are able to sit at the table with the rest of the family, to handle utensils and cups reasonably well, accept most foods, try others repeatedly until they learn to like them, and politely refuse still others. Their aversion to new foods decreases as they develop cognitively and verbally. Unlike toddlers, who can only learn by experimentation, preschoolers are able to talk about new food and learn about it in many ways (Birch, 1987).

The way parents approach food has a major influence on preschoolers' eating attitudes and behaviors, as well as on their ability to learn to like a variety of nutritious foods. Optimally, adults provide structured, nutritious, and good-tasting meals and snacks and limit children's between time panhandling for food. At structured eating times, they allow children to pick and choose from the food they have made available, letting children decide what and how much to eat (Satter, 1987).

Data, however, indicate that actual feeding behavior is quite different from this optimum pattern. Anliker, Laus, Samonds, and Beal (1992) found that parents of preschoolers provided nutritious meals and snacks for their children, but the parents dictated what and how much children would eat at these structured eating times; then they let the children help themselves to food between times.

Such crossing of the lines of division of responsibility distorts children's eating attitudes and behaviors and

interferes with their ability to learn to like a variety of nutritious food. Coercing children into eating certain amounts and types of food turns meals and structured snacks into struggles between parents and children. If children are only allowed autonomy with their eating when parents are not around, they are confronted with a dilemma. As preschoolers, they value their parents' companionship and depend on their parents' supportive presence to do well with their eating, but parents' overmanaging spoils their eating.

■ SCHOOL AGE AND TEENS

As children move into the school-age and teen years, they build on their early mastery of eating by becoming increasingly autonomous with eating. They eat more meals and snacks away from home, and they begin to prefer helping themselves to snacks at home. To continue to do well with eating the right amount of food to grow appropriately and to consume a nutritionally adequate diet, school-aged and teenaged children depend on parents to continue to take responsibility for the family eating time, grocery list, and food preparation. Parents can continue to expect older children to join in the family meal and to tell children to limit their snacking just before dinner.

The research of public relations specialists shows that children are growing increasingly influential in food purchasing decisions and ever more involved in family food preparation (Creamer Dickson Basford, personal communication, August 3, 1989). Whether accurate or not, food marketers have seized on this perception of children's increased food autonomy, pitching food product development and advertising directly to them. Children—and parents—get the message that children should be able to manage food selection—and even preparation–on their own.

Thus the media become a factor in parents' difficulty in knowing how important they continue to be in caring nutritionally for their older children. School-aged children respect their parents, like them, and want them around. School-aged children are working toward mastery, and they need to learn a considerable amount of that mastery from their parents. Children aged 6 to 12 years benefit from learning the skills of food selection and preparation. But they need to learn from their parents, not from advertising. School-aged children are not ready to go it alone with eating—or with any other aspect of their lives.

During the teen years, children may struggle for autonomy and identify with eating in such a way that it interferes with their ability to maintain a nutritious diet and regulate food intake. Most teens continue to participate in family meals, and the nutritional quality of their diet increases when they do so (Story, 1984). Despite their experimentation, however, family habits prevail: eventually children revert to the eating habits they grew up with (Pliner, 1983).

■ INTERVENTION

Feeding intervention can build positive feeding interactions, promote early detection and management, and provide treatment for established problems (Satter, 1990). Most problems concerning feeding can be prevented by routine support and education about feeding and parenting. Parents prone to precipitating feeding problems (Box 2) and parents of children prone to developing feeding problems (Box 1) require careful anticipatory guidance and follow-up.

Regarding the central theme of positive and attentive interactions, parents may be offered verbal information and written material on food selection as it relates to developmental stage and on neuromuscular development as it relates to feeding. Referral to a registered dietitian can be made if more detailed instruction and problem solving techniques are needed.

Well-established feeding problems potentiated by distorted family dynamics are frequently refractory to treatment. Parents are likely to be so overwhelmed by processes going on outside or within themselves that they are not able to be sensitive and responsible to the needs of their children. To be able to institute positive change, it is first necessary to bring the parents into the range of optimal functioning. To do so may require a social services referral to help the parent cope with overwhelming social and economic circumstances or a mental health referral to help the parent deal with depression or the intense need to control (Satter, 1990).

■ SUMMARY

To be successful in helping parents and children to achieve positive dynamics around feeding, the PNP must be aware of the considerable capability of children to participate actively in feeding, be skilled at alerting parents to the natural progression that children go through in accumulating eating skills, and be sensitive to the support children require from parents if they are to do well with eating. Feeding at every age is centrally instrumental in helping children and parents to achieve developmental tasks. Any influence that leads a parent to be underresponsive to a child's feeding cues or overcontrolling of the feeding process puts the feeding dynamics at risk and is likely to impair the child's ability to eat well. ■

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