



Feeding Strategies for Older Infants and Toddlers

Synopsis — More than 50 million American children and adults suffer from allergic disease. In addition to annoying symptoms, allergies may also contribute to asthma and, by causing sleep disorders, lead to fatigue and learning problems.

Of all the allergies, a sensitivity to pet allergens is the most challenging to manage and treat because families are usually quite emotionally attached to their pets. Cat allergen sensitivity is particularly challenging because it is the most common pet allergy and the most difficult to completely eliminate from the environment. Sadly, often the best solution is to remove the beloved pet from the home — particularly if the allergies are severe or trigger asthma in a family member. Many people, however, feel that their allergy symptoms are a small price to pay for the unconditional love, affection and companionship that they receive from their pet. In these instances physicians should attempt to educate, then focus on the types of treatment and avoidance that are most acceptable to the patient.

One of the common myths about eating is that it is easy and instinctive. Eating is actually the most complex physical task humans engage in. It is the only physical task that utilizes all of the body's organ systems: the brain and cranial nerves; the heart and vascular system; the respiratory, endocrine and metabolic systems, all the muscles of the body, and the entire gastrointestinal tract. Just swallowing, for example, requires the coordination of 26 muscles and six cranial nerves. Eating is also the only task which children do, that requires the simultaneous coordination of all of the sensory systems. The ability to manage this physical coordination begins instinctively, but only for the first month of life. From end of the first month to the end of the fifth or sixth month of life, the primitive motor reflexes (rooting, sucking, swallowing) take over as the older infant lays down pathways in the brain for the voluntary motor and sensory control over eating. After the fifth or sixth month of life, eating is actually a learned behavior.

Because eating involves the interplay of so many body systems and activities, it is important for parents to establish a feeding plan early on that will help their older infant and toddler master the incremental skills needed to transition from pureed baby foods to textured table foods. The skills that need to be achieved for successful eating include: 1) *postural stability*, which is affected by the type of chair supporting the growing infant; 2) *oral-motor skills*, which need to progress from a sucking movement for purees to the side-to-side tongue movements needed for eating table foods; 3) *jaw skills*, which progress from a suck, to a munch, to a rotary chewing motion so that

foods with textures can be properly broken apart; 4) *sensory skills*, which allow the older infant and toddler to tolerate the “feel” of foods in their mouth, to learn to like the taste of table foods, and to track where the food is in the mouth at any given time; 5) *hand-to-mouth skills*, which allow the child to learn to self feed; and 6) *parenting skills*, which encourage the infant to enjoy a variety of foods and the feeding experience throughout the formative years.

Postural Stability

As with the younger infant just learning to eat baby cereal, the ability to sit upright independently is critical for transitioning on to more difficult-to-manage foods. Once a child is able to sit independently without falling over for approximately 10 minutes, it's time to make the transition from an infant feeding seat to a standard high chair. This usually takes place somewhere between 8-9 months of age for most children. Today's new high chairs frequently have good side and front supports, often with a saddle bar in the center to prevent the older infant from sliding forward out of the chair. If the family does not have this type of high chair, a non-skid mat under the rear end and a foam insert called a “High Chair Helper” can provide the same level of support and secure sitting.

As the older infant grows into a toddler, parents will notice their child's increased interest in sitting at the table with the rest of the family, usually around 18 months of age. Since this is also an age when children become very interested in imitating others, it is important to have meals at a family table where the child can closely watch the family eating (Rozin, 1996). While keeping toddlers in high chairs may keep them contained (somewhat), it also perpetuates physical separation from the family and doesn't allow them to see well enough to learn by imitation. Ideally, the family will use a height-adjustable high-chair which can be pushed up to the family table with the tray



caption area
caption area
caption area

removed. This will allow the inquisitive and active toddler to remain in a stable seat, while still joining the family.

If the high chair is not adjustable, a booster seat, with very high side arms and a stable back, should be used. The booster seat will need to be securely attached to the front edge of the adult chair so that the toddler's legs are in a 90 degree position with the feet are supported by a foot rest. Sliding a booster seat to the back of an adult's chair will cause the child's legs to stick out under the table at an odd angle, and does not permit stable seating. The lack of a stable seating arrangement is the most common clinical reason for toddlers to repeatedly get in and out of their chairs during meals. Running away from the table during meals does not support good eating habits.

Oral-motor Skills

The oral-motor skills needed for transitioning to finger foods and table foods are different from those used for breast/bottle feeding and spoon-feeding. Breast/bottle feeding predominantly involves forward/backward tongue movements. Spoon-feeding skills develop over time, however, from a normal tongue thrust for about the first month, to tongue “waves” that transfer foods from front to back of the mouth after about a month of practicing with the spoon. Between 7-9 months, the infant learns to cup the tongue for the spoon, and close their lips around the spoon to help draw the food into the mouth (Glass and Wolf, 1992).



Preventing and Treating “Food Jags”

Even the typically developing child can become a picky eater when allowed to food jag. This is because if children are only exposed to the same few foods every day, they do not learn how to manage the complex sensory information needed to eat difficult foods, such as raw vegetables, hard-to-chew meats, or wet/slippery fruits. The infant who once ate all types of fruits and vegetables as a pureed baby food, doesn't learn how to eat the table food versions. Or, the toddler who has become neophobic of every green food is no longer given the sensory practice of eating peas because the child is tantruming.

The key here is to back down the sensory progression of learning about foods to a step the toddler can tolerate. These sensory steps are (in order of most basic to most difficult):

- 1) visually tolerating the food
- 2) interacting with the food without actually touching it (vestibular; kinesthetic and proprioceptive systems)
- 3) smelling
- 4) touching
- 5) tasting and then, finally
- 6) eating

This means that a toddler may need to back down from actually eating peas to just squishing them for a while to become reacquainted with their sensory qualities. Gradually, the parent can move their child back up the sensory steps towards eating.

To move a child up the “Steps to Eating Hierarchy” outlined above, the parent needs to create “play with a purpose”, with the purpose being to move the child up to the next sensory step in the progression. For example, for an older infant or toddler who does not want to even look at the food, making it

wiggle in front of them can often times attract their attention. Pretending the food is an animal coming to talk to them is also engaging. Stirring, pouring and dumping from a spoon are all good (and fun) ways to encourage a child to interact with food. Having an older child help with food preparation is also an excellent way to move up to interacting with the foods while achieving the smell step of the hierarchy. Breaking, pulling, waving and crushing the foods are all excellent strategies for teaching a child about how the food will move once it is in their mouth, as well as moving them up to the touch step of the hierarchy. Blowing “rockets” into a cup – or better yet into the trash – is the easiest way to get children to taste a food they otherwise would not go near. Remember, playing with the food is not the end goal of this process. These are merely more manageable steps along the way to actually eating the food.

Parent can prevent food jags in the first place by changing some physical property about the preferred food EVERY time it is presented. This means that the size, shape, color, texture, temperature or taste will need to be different each time the child is given their food jag food. For example, for the child who will only eat macaroni and cheese from a blue box, begin by putting the raw ingredients in a plain, sealed plastic bag or bowl first. Next, offer the child the preferred noodle shape with the pieces cut in half, then change to a different shaped noodle for several exposures. By this time the child should be able to tolerate the different flavor of the macaroni and cheese created by adding Parmesan cheese to the mix. Finally, parents can offer the color macaroni and cheese mixture in a different color by adding a small

amount of food coloring.

Many parents and professionals treat food jags as a normal toddler behavior that can be tolerated. While the appearance of the pattern may be normal, maintaining it is not and will only serve to limit a child's exposure to a variety of other foods, reinforcing the child's preference for a very limited number of foods.

caption
caption



In order to eventually manage the transition to table foods, the older infant/toddler needs to learn how to move the tongue to the sides of the mouth and place a bite of food onto the molar area of the gums. This movement pattern, known as a lateral tongue movement, is critical for successfully transitioning from baby food purees to table foods. A controlled “lateral tongue movement pattern” is learned in developmental stages that begin with learning to tolerate the feel of a long hard object in the mouth. Mouthing teething toys and a variety of developmentally appropriate objects of different textures helps infants and toddlers learn to manage the feeling of objects in their mouth and teaches them how to move their tongue from side to side. Initially, the hands help move the foods around in the mouth. Over time and with practice, the “lateral tongue reflex” comes under voluntary control and food is moved around without as much assistance from the hands (Morris and Klein, 1987). Typically, this skill develops around 8-9 months of age. Older infants who have mastered lateral tongue movements are ready to try finger foods.

It is important to recognize that, in order to correctly manage textured table food from an oral-motor standpoint, lateral tongue movements must be learned first. When older infants are given pureed baby foods that have chunks of other foods in them before they learn how to lateralize their tongue, the chunk of food may become stuck on the top of the tongue and cause the child to gag. (You can find out just how uncomfortable this feels, as well as come to a better understanding of the oral mechanics of eating textured foods, by conducting the experiment on page 6.) Infants and toddlers who frequently gag on food learn that eating is not a pleasant experience and, consequently, may avoid textured foods or avoid food altogether.

The oral-motor skills necessary for cup drinking are also quite different from those used with breast and bottle feeding. Most importantly, the older infant needs to learn how to hold a small amount of fluid in



caption area

the mouth, and to pull it into a ball (or bolus) for swallowing (Morris and Klein, 1987). Cups with no-spill valves perpetuate a bottle/breast drinking oral pattern in which the fluid is sucked back using negative pressure with the tongue flat held underneath a spout (or nipple) and do not support the development of the more mature drinking skills. An open cup or sipper cup without a no-spill valve is a more appropriate first cup choice. Ideally, the cup would have two handles and a recessed lid so the older infant can

easily hold and manipulate the cup, as well as avoid compressing the nose against the lid

Jaw Skills

As previously noted, breast/bottle-fed infants primarily use their tongue for feeding. While there is some jaw movement involved in both early fluid feeding (compression movements) and spoon feeding (open and close), the role of the jaw and chewing is small compared to that of the tongue (Glass and Wolf, 1992). Between 9 and 10 months of age, the jaw becomes very active in eating as the child learns to break food apart by moving the jaw up and down with pressure on the food. An up and down jaw movement is referred to as a “munch” (Morris and Klein, 1987).

Rotary chewing emerges between 12 and 14 months of age as the toddler encounters more chewy textured foods (Glass and Wolfe, 1992). Appropriately sized and shaped, soft table foods can be introduced once a child adds a small grind with the teeth on the food, along with a small side-to-side motion of the jaw (rotary chew).

Sensory Skills

Eating requires the simultaneous integration of all eight of our sensory systems. These senses include the five which are well known: seeing, hearing, tasting, touching and smelling, as well as the lesser-known senses of balance, awareness of body in space and information received from one's joints. The latter three sensory systems are known as the vestibular,

kinesthetic and proprioceptive systems respectively. Once an infant is sitting independently, these three sensory systems start to play a very large role in feeding.

Another one of the myths about feeding is that eating is our body's first priority, when actually it is only the third. Breathing is the body's number one priority and balance is the second. As such, the vestibular/balance system becomes very important to the infant who is no longer held by an adult who is providing their balance. In addition, every time humans move their heads, the fluid in our inner ear shifts and the vestibular system must readjust our sense of balance. In order to spoon feed, the older infant needs to come to midline and open their mouth; a task which shifts the head in space and requires an adjustment in balance. Chewing table foods is an even more difficult task as humans do not naturally chew with their heads perfectly still. Young toddlers especially move their head with every chewing motion, and therefore have to readjust their sense of balance with each munch or chew that they make.

With regard to kinesthesia, drinking from a nipple does not require much body awareness since the nipple fills up much of the mouth. A puree coats the inside of the mouth and is not difficult to locate from a body awareness standpoint either. However, a small piece of table food can be easily lost in the mouth if there is not good body awareness. Older infant and toddlers need to be able to track each piece of food in their mouth so they do not accidentally bite their tongue or cheek instead of the food. In addition, the food must be followed inside the mouth to know that it has been placed correctly onto the molars, and where it is located when it is time to swallow. You have experienced a kinesthetic awareness problem if you have ever eaten popcorn and ended up with a popcorn shell stuck in the back of your



caption area
caption area
caption area

Do Try This at Home

Take large bite of a soda-type cracker. Chew the cracker 4-5 times, then place the pieces onto the center of your tongue. Now, attempt to swallow the chewed cracker from here — without lifting your tongue into your palate. This should be difficult and uncomfortable.

Next, close your eyes and take another bite of the cracker. As you chew and swallow normally, visualize how and where you move the cracker in your mouth, where you chew it, and from where you swallow it. All of these skills must be in place for eating table foods well.

throat. Your sensory system lost track of the location of that shell and it ended up in a place it did not belong.

During feeding, information received from the jaw joint via the proprioceptive system is also different depending on whether the infant is drinking a fluid, sucking back a puree, or chewing table foods. Remember, drinking is actually more of a tongue than a jaw movement, and spoon-feeding requires primarily an open/close motion of the mouth. Chewing, however, is quite complex and gives a large amount of shifting information as a food is broken apart for a swallow. (Think about how different the cracker you chewed in the above experiment felt from the first chew to the last and what kind of jaw pressure differences you registered).

Another very important developmental sensory event that occurs during this time is the change in function of a toddler's taste buds (Mennella and Beauchamp, 1996; Duffy and Bartoshuk, 1996). Prior to this age, the taste buds on the back of the tongue, soft palate, uvula and back of the throat were primarily used. Shortly after a child's first birthday, the taste buds on the front of the tongue become predominant and the others decrease in function and/or disappear. As such, the toddler begins to reject baby foods because the taste is no longer preferred. The toddler also becomes resistant to being spoon fed at this age because changes in cognitive and emotional development inspire them to test their independence. (Lieberman and Birch, 1985; Satter, 2000).

In order to eat textured table foods then, the toddler needs to be able to simultaneously integrate information from all 8 of his sensory systems with every single chewing motion; the sight of the food changes as it is

continued on page 8

Putting Research Into Practice

with Michael Frank, MD, FAAP



"Nobody knows the trouble I'm in..." might be the perfect lament of children with feeding disorders. They often struggle along on minimal choices from each food group. They aggravate their parents at every bite; while equally frustrated pediatricians try to reassure parents that "at least your child is growing along a normal curve." No one may suspect the child is in the early stages of a bonafide feeding disorder, and fewer people know how to identify and correct them.

This occurs because our basic training is excellent in the areas of general nutrition, gross and fine motor development, electrolyte balance, and the recognition of various deficiency states, but is often inadequate in understanding the natural process of learning to eat. Eating is first and foremost experiential, ultimately requiring the integration of a child's sensory, gross, fine and oral-motor capacities. The accompanying article by Dr. Kay Toomey, details this elegant journey of learned behavior. She provides the "rest of the story" they didn't tell us in medical school.

It's easy to appreciate the interdependency of these processes when faced with a disorganized preemie or a child who, for whatever reason, has been fed by a G-tube from an early age. They have to learn or relearn the process, and it is no easy task. At a more subtle level, the same impediments to learning are taking place with our problem eaters.

All of us can recognize a child with poor weight gain, ongoing choking, gasping, coughing and vomiting, and the child that arches and cries at each meal. These symptoms prompt early and intense work ups, and usually demonstrate a suspected metabolic disorder, mechanical swallowing difficulty, or GE reflux.

But what about the otherwise normal child who, due to a combination of physical and/or behavioral issues, won't eat, or will only eat a few foods? To the right are some red flags suggesting early signs of an emerging feeding disorder. The usual cause of each problem follows in parenthesis.

Simple and Effective Office Interventions

Many feeding difficulties can be prevented or treated with a little guidance from you early on. For example:

Rethink your feeding recommendations along developmental rather than nutritional lines. Success with the early feeding of solids is best attained when a child has learned to sit alone. Early on, an infant seat or swing works well. Later, a high chair with a t-strap fastener (or a non-skid pad) and adequate back support is best.

Suggest to parents that initially food should be explored by the senses rather than eaten.

Encourage parents to demonstrate how to eat and explore new foods because babies learn best through imitation. Along those lines, encourage parents to smile when their baby grimaces at a new taste — not imitate their baby's frown.

Remind parents that it may take 10-20 exposures before a child acquires a taste for a new food. Don't give up too early.

Instruct parents that the spoon should just touch their child's lips. The child should be allowed to explore and taste the food, ultimately taking the spoon into the mouth by his own initiative.

Look carefully for signs of sensory problems, such as finger splaying, grimacing, extending legs, and closing their eyes during feeding.

Early Signs of a Feeding Disorder

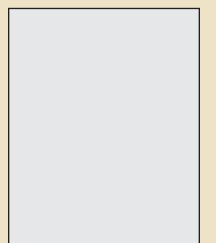
1. Inability to transition to baby food purees by 10 months (oral-motor/sensory)
2. Inability to accept table foods by 12 months. (oral-motor/sensory)
3. Inability to transition from breast/bottle by 16 months. (learned/lack of proper exposure)
4. Inability to wean off baby foods by 16 months. (oral-motor/sensory)
5. Avoidance of foods of specific textures or food groups. (sensory)
6. Parents report that the child is difficult for anyone to feed and meals are a battle zone. (any combination of the above)

Aversion to loud noises, motion sickness, avoiding climbing stairs, or lack of interest in exploring anything with the mouth can also be signs of feeding problems.

Refer a picky eater — sooner rather than later — to a feeding specialist with OT/ST support, so that the oral-motor sensory dynamics can be fully evaluated and effectively treated.

In summary, don't be content with the picky eater who consumes a few items from each food group, yet continues to grow at a normal velocity on the curve. There is usually an underlying correctable reason that is worth pursuing. Persistence in your investigation and/or referral can make a world of difference early on in the lives of your patients and their families. ●

Dr. Michael Frank is a pediatrician in private practice in Denver specializing in eating disorders and ADHD; clinical instructor for The University of Colorado Health Science Center, and Medical Director of the Colorado Pediatric Therapy and Feeding Specialists, Inc.





continued from page 6

chewed, how it feels changes, what it sounds like in the mouth changes, the taste and the smell actually change, and adjustments need to be made in balance, location of the food, and pressure being exerted. Difficulties with the sensory system is the most common clinical reason for children not being able to transition from baby food purees to textured table foods.

Hand-to-Mouth Skills

Finger feeding begins when and (A paragraph here, please.)

While finger feeding should become noticeably efficient around 14-16 months, utensil use does not become efficient until after 24 months and should not be the primary way of self-feeding until after the age of 3 years. The best toddler utensil is one that is short in length (not the long infant feeding spoon), with an enlarged handle covered in a textured surface. This type of utensil is ideally suited to allow for the toddler's wider and less proficient grasp pattern. A metal spoon bowl and metal blunted fork tines are preferred by the toddler to assist with poking the foods and because the rubber tipped infant feeding spoon has usually become a non-preferred item. The metal makes the toddler utensils different from the infant spoons and allows them to be more like the others in their family using "grown up" utensils. A heavy or weighted spoon is ideal as the slightly increased weight helps the toddler with their fine motor control.

The Parents' Role

The most important tasks for parents teaching their older infants and children how to eat are: focusing on the mechanics of the task; choosing developmentally appropriate foods; and making the experience enjoyable. Pleasant, fun mealtimes help establish life-long, healthy relationship with food.

In order for parents to teach their children to be good eaters, they need to become aware of the messages that they may be sending their child about food and/or about their own food preferences. If a parent is concerned that their older infant or toddler may not be able to handle a particular food and then looks worried about it, the child will get the message that the food is not safe and should be rejected.

If the parent is concerned at all about their child's physical capability of managing a food, they should instead "show and tell" the child how to eat the food. This means literally talking their older infant and toddler through the process of biting and chewing, as well as showing the child in an over-exaggerated fashion exactly how to move the food around in the mouth. For example, a parent would want to explain in very simple language how they manage a bite of a cracker by saying, "I'm going to bite with my front teeth and move it back to my strong back teeth with my tongue. Then I am going to chew, chew, chew."

Understanding Why Children Won't Eat and How to Help

When children won't eat, parents and professionals are often tempted to classify them in one of two categories: those who have "organic" or "physical" problems and those who have "behavioral" problems. These kinds of labels are not particularly helpful. First, because there is an implication of blame in this system, which is neither very accurate nor useful when trying to help children with feeding problems. Second, children with physical difficulties often develop behavioral problems after their attempts to eat don't go well, and children with behavioral eating difficulties develop physical disorders after having poor nutrition for a period of time. So there isn't a clear-cut distinction between the two.

Rather than force children into categories where they don't belong, we need to think about children who won't eat as having had poor learning experiences with food. In other words, just as children learn to eat, they can also be taught to not eat by the circumstances in their lives.

Research shows that learning about food occurs in two main ways. The first is when a connection is made between one stimulus (a natural event, behavior, or object) and a second neutral stimulus. For example, we know that feeling sick to your stomach causes the physical reaction of appetite suppression. This is a natural event. If feeling nauseous is consistently paired with a specific food (previously a neutral thing), eventually the food itself will cause nausea. Another example would be someone who is in pain or discomfort who would naturally try to escape or avoid the circumstance that causes the pain. If the pain is then paired over time with food, the person will learn to avoid or escape from situations that involve eating. Gastroesophageal reflux (GER) is a good example of this type of learning.

The second way that we learn is through reinforcement and punishment. Eating followed by praise or imitation (positive reinforcement) leads to more eating. Similarly, refusing food followed by lots of attention/interaction (also positive reinforcement) leads to more food refusal.

So, in addition to increasing desired behaviors, positive reinforcement can cause more of an undesired behavior as well.

Punishment around food is also very powerful. Booth showed that if the learned reaction to food is negative, the physical effect is

appetite suppression. That is, *if the learning about food is unpleasant, our bodies turn off our appetites*. Weingarten and Marten showed that if negative connections are made to the cues of eating (e.g., sitting down at the table, the utensils used, the people present, the room where meals are eaten), a child learns to avoid the feeding situation completely.

The overall goal of all treatment with children who won't eat is to create a situation that positively reinforces normal, healthy eating patterns through:

Structure — Have a routine to mealtimes, eating in the same room, at the same table, with the same utensils, which capitalizes on the need for repetition in learning.

Social modeling — Allow children to learn through the observation of good mealtime role models. Parents who are poor or picky eaters will have a difficult time helping their children.

Positive reinforcement — Meals need to be pleasant and enjoyable, and any interaction with food should be rewarded. Verbal praise, a smile, a touch, a cheer, and hand clapping are all great options.

Manageable foods — Foods need to be prepared in small, easily chewable bites, or in long, thin strips that a child can easily hold.

Learning about "the physics of food" — The mouth and teeth will need to use hard pressure to break apart a carrot stick. Wiggly, squishy string cheese is chewy in the mouth. Yogurt, which is cold, wet and smooth, can just be sucked down.

By helping parents understand that eating is a learned behavior in which there is an interplay between the child's physical capabilities and their experiences with food, professionals can help them take on a positive teaching role with their children rather than the negative forcing or no-limits approaches to feeding. The teaching approach clarifies for parents that there are things they can do to make the feeding situation better, and it gives them hope. It also teaches parents, as well as us professionals, that there are also things that we can do which may make the situation worse and it reminds us how to avoid the pitfalls of working with children who won't eat.

Booth D: Learned role of tastes in eating motivation. In: Taste, Experience and Feeding, E Capaldi and T Powley (eds), pgs 179-95. American Psychological Association, Washington DC, 1990.

Weingarten HP: Learning, homeostasis, and the control of feeding behavior. In: Taste, Experience and Feeding, E Capaldi and T Powley (eds), pgs 45-61. American Psychological Association, Washington DC, 1990.



caption area
caption area
caption area





**Table X:
Picky Eaters Versus Problem Feeders**

Picky Eaters	Problem Feeders
Decreased range or variety of foods. Will eat 30 foods or more.	Restricted range or variety of foods, usually less than 20 different foods.
Foods lost due to “burn out” because of a food jag are usually re-gained after a 2 week break.	Foods lost due to food jags are NOT re-acquired.
Able to tolerate new foods on plate and usually can touch or taste a new food (even if reluctantly).	Cries and “falls apart” when presented with new foods.
Eats at least one food from most all food texture groups.	Refuses entire categories of food textures.
Will add new foods to repertoire in 15-25 steps on Steps to Eating Hierarchy.	Adds new foods in more than 25 steps.

References



The language needs to be paired with a large biting motion, with an open mouth to show how the tongue moves and then with an up and down head movement to emphasize the chewing motion. Recall that children in this age range learn best by watching others engage in an action. As such, parents need to be good role models for their infants and toddlers. This applies not only to role modeling the mechanics of eating, but also our food choices. If a parent makes a face and complains that they don't like broccoli, it is doubtful that their child will eat this food either. Recent research suggests that the likes and dislikes of parents play a large role in whether or not their children learn to eat fruits and vegetables throughout their lives.

Parents also need to remember that it may take an average of ten exposures to a new food, paired with positive reinforcement, before a child will consistently accept the food (Birch 1990, 1995, 1996, 1998). If a child appears to dislike a food, the parent should maintain their cheerful face, reassure the child that they are “okay” using a positive voice and then model taking another bite themselves. If the reaction is very large again, the parent can continue to reassure and praise the child for taking the bite, but move on to a different food. The questionable food then needs to be tried again on a different day.

The flip side of needing to try new foods several times before prior to acceptance is not permitting a child to choose to eat the same food over and over again to the exclusion of any other foods. Known as a “food jag”, this behavior is especially prevalent in older toddlers and thought to be related to their discomfort with new foods, or neophobia (Rozin, 1996; Satter, 2000). Food jaggling is also believed to be a typical toddler feeding pattern and, therefore, is not viewed as a problem. However, a child allowed his food jags, eventually “burns out” on a particular food and refuse to eat it again, even after a month or more hiatus in children with feeding difficulties. As a result, the child loses more and more foods out of their food repertoire as they jag and burn out on each successive foods, until there may be only 5-10 foods that he will eat. This child then needs professional help in order to assure a nutritionally adequate diet. For the typically developing child, a break from the food for about two weeks seems to be sufficient to allow the child to become willing to eat the food again.

Lastly, parents should not forget that their older infant, and especially toddler, is becoming more interested in exploring the world than eating. If meals and foods are not made fun and an extension of the child's exploration of the world, there will be little incentive to come to the table to eat. Parents should feel free to get creative with the food — using cookie

cutters to make different shapes in the food and natural food colorings to create foods that look interesting to eat. Describing the physical properties of the foods (texture, temperature, consistency, pliability) facilitates exploration by teaching children the “physics of food” and helps them understand how the food will feel, break apart and move in their mouths. Allowing the older infant and toddler to get messy and “play” with their food, will be especially helpful for gaining and maintaining interest in food.

Play centered on food needs to be “play-with-a-purpose”; play which teaches the child something new about the food. This type of play is different than play that happens when a child is done eating. Play-with-a-purpose allows the older infant and toddler to explore food as one more exciting and fun part of their world, as well as teach them how to manage food once it gets it into their mouths. Hopefully while using these strategies, parents will re-discover an enjoyment in eating for themselves, which they can then impart to their children.

Conclusion

When parents of typically developing children in pediatric practices are polled, up to 33% of them indicate that they have problems getting their infant or toddler to eat (O'Brian, 1996; Crist and Napier-Phillips, 2001). Parental stress around feeding can be greatly alleviated through guidance by a pediatric practitioner who can educate parents about the complexity of the process of learning to eat. This education empowers parents and helps them realize that there are things they can do which will make the feeding experience go better for their child and themselves. This guidance can also give them hope for a child who will have a future healthy relationship with food. ●

Dr. Kay Toomey is a Pediatric Psychologist specializing in the assessment and treatment of children with feeding difficulties. She has been working with children who won't eat for over ten years. Dr. Toomey co-founded the Oral Feeding Clinic at The Children's Hospital in Denver in 1990, and acted as Director of the Rose Medical Center's Pediatric Feeding Center from 1995 to 2001. Currently, Dr. Toomey is in private practice as the Director of the Colorado Pediatric Therapy & Feeding Specialists, Inc. She lectures nation-wide regarding her feeding treatment program, the SOS Approach To Feeding.

References

- Birch, L. (1990). Development of food acceptance patterns. *Developmental Psychology*, 26, 515-519.
- Birch, L. & Fisher, J. (1995). Appetite and eating behavior in children. In G. E. Gaull (Ed.), *The Pediatric Clinics of North America: Pediatric Nutrition*. (pp. 931-953). Philadelphia, Pennsylvania: Saunders.
- Birch, L. & Fisher, J. (1996). The role of experience in the development of children's eating behavior. In E. Capaldi (Ed.), *Why we eat what we eat: The psychology of eating*. (pp. 113-141). Washington D.C.: American Psychological Association.
- Birch, L. & Fisher, J. (1998). Development of eating behaviors among children and adolescents. *Pediatrics*, 101, 539-549.
- Duffy, V.B. & Bartoshuk, L.M. (1996). Sensory factors in feeding. In E. Capaldi (Ed.), *Why we eat what we eat: The psychology of eating*. (pp. 145-171). Washington D.C.: American Psychological Association.
- Crist, W., Napier-Phillips, A., McDonnell, P., Ledwidge, J. & Beck, M. (1998). Assessing restricted diet in young children. *Children's Health Care*, 27(4), 247-257.
- Crist W, Napier-Phillips A. (2001). Mealtime behaviors of young children: A comparison of normative and clinical data. *Developmental and Behavioral Pediatrics*, 22(5), 279-286.
- O'Brien, M. (1996). *Journal of Pediatric Psychology*, 21(3), 433-446.
- Glass, R. & Wolf, L. (1992). *Feeding and Swallowing Disorders In Infancy*. Tucson, AZ: Therapy Skill Builders.
- Lieberman, A. & Birch, L. (1985). Interactional developmental approach. In D. Drotar (Ed.), *Failure To Thrive* (pp. 259-277). New York: Plenum Press.
- Mennella, J.A. & Beauchamp, G.K. (1996). The early development of human flavor preferences. In E. Capaldi (Ed.), *Why we eat what we eat: The psychology of eating*. (pp. 83-112). Washington D.C.: American Psychological Association.
- Morris, S.E. & Klein, M.D. (1987). *Pre-Feeding Skills*. Tucson, AZ: Therapy Skill Builders.
- Nebling, L. (2002). Phytochemicals: The color of a healthy diet. *Pediatric Basics*, 98, 2-9.
- Rozin, P. (1996). Sociocultural influences on human food selection. In E. Capaldi (Ed.), *Why we eat what we eat: The psychology of eating*. (pp. 233-263). Washington D.C.: American Psychological Association.
- Satter, E. (2000). *Child of Mine: Feeding With Love and Good Sense*. Palo Alto, CA: Bull Publishing Company.

when you're very young... there's more to food than just eating



Talk with your doctor if your child:

- Eats only pureed foods at 10 months
- Won't eat table foods at 12 months
- Still takes a bottle at 16 months
- Eats only baby food at 16 months
- Avoids certain textures
- Avoids certain flavors
- Is difficult to feed

Babies need to learn to:

- First, move food around in their mouths without gagging
- Then, move their tongues from side to side
- Finally, place food on the molar area of the gums for chewing

Rather than just spooning food in, gently touch the spoon to your baby's lips and let her come for it.

ORAL SKILLS

HAND-TO-MOUTH SKILLS

need text:

- Cup drinking
- Finger feeding
- Using utensils

Babies need to explore toys and food with their hands and mouths.

Add soft table foods when your baby starts "chewing."

- Babies first learn to "munch" soft foods with their jaws up and down (9-10 months)
- "Chewing," comes second by adding a small grind with the teeth and a side-to-side motion with the jaw (between 12-14 month)

JAW SKILLS



POSTURNAL STABILITY

- Start feeding your baby in an infant seat
- Move her to a high chair around 8 months
- Bring your toddler in close to the family table

Good back and side support is essential for good eating.



Coordination of the eight senses:

- Seeing
- Hearing
- Tasting
- Touching
- Smelling
- Balance
- Body Awareness
- Joint Information

SENSORY SKILLS

Is your toddler having a difficult time shifting from purees to textured foods? Let him get acquainted with old and new flavors using all eight senses.

Get a picture of your baby "wearing" his food, because it's just as important to explore food as it is to eat it!

PARENT SKILLS

- Choose appropriate foods
- Show and tell your baby how to eat and enjoy new foods
- Don't give in to "food jags"
- "Dress up" the flavor of foods to make them more interesting – cheese sauce on peas, lemon sprinkled on cooked carrots

Repeated exposure during fun meal-times is the key to learning to like a good variety of foods.