When people talk about feeding difficulties, they often try to put the children into one of two categories; those who have "organic" or "physical" problems and those who have "behavioral" problems. In our original work at Rose Medical Center in Denver, (and now SOS Feeding Solutions @ STAR) we find that dichotomizing children with feeding difficulties is not helpful. One reason is that there is an implication of blame in this system. We don't believe it is accurate or useful to support a blaming stance with children who won't eat. Second, these are not true pure categories because children with physical difficulties often develop "behavioral" problems after their attempts to eat don't go well (i.e. they learn to avoid eating), and children with "behavioral" eating difficulties develop physical disorders after having poor nutrition for a period of time. So, the first thing we need to do is to get rid of the notion of trying to force children into categories where they don't belong. Instead, we find it most helpful to think about children who won't eat as having had poor learning experiences with food.

Many people believe that eating is completely instinctual and that no matter what happens, a child will eat. This is another myth in the food world. Actually instincts only start the process, and that is if you are lucky enough not to have your instincts not interfered with by prematurity, a physical disorder, or disruptive procedures needed for survival. Eating is, in reality, a learned behavior. Just as children learn to eat, so can children be taught to not eat by the circumstances of their lives. But how does this learning take place?

Research shows that learning about food happens through two main ways. The first is when a connection is made in time between one natural event, behavior, or object (= stimulus) and another neutral stimulus. For example, we know that feeling sick to your stomach causes a physical reaction of appetite suppression. This is the natural event. If we consistently connect the feeling of being nauseous with a food (previously a neutral thing), pretty soon that food itself will make us sick. Drinking too much alcohol and then never being able to go near that drink again without an upset stomach is a firsthand experience that many people have had. Another example is, when someone is in pain or discomfort they try to escape or avoid that pain (natural event). If this pain is then paired over time with food, the person will learn to escape the eating situation. Gastroesophageal reflux (GER) is a good example of this type of learning.

The second way we learn is through reinforcement and punishment. Here are some examples of these types of learning about food:

Eating ---> followed by praise or imitation (= positive reinforcement)

 ---> leads to more eating
Refusing to eat --> followed by lots of attention & interaction from parents stressed about needing to have their children eat (= positive reinforcement) --> more refusal

So you can see that positive reinforcement can cause more of an undesired behavior, as well as increasing wanted behaviors!

Now, how about some punishment examples?

Eating --> followed by choking and fear (= punishment) --> less eating

Eating --> followed by being yelled at (= punishment) --> less eating

Punishment around food is very powerful. Booth (1990) showed that if the learned reaction to food is negative, there is a physical effect of appetite suppression. That is, if the learning about food is unpleasant, our bodies will turn off our appetites. Also, Weingarten and Marten (1989) showed that if you make negative connections to the cues to eating (e.g. sitting down at the table, the utensils you use, the people present, the room where you eat), you will learn to avoid the feeding situation completely. The power of punishment is why we do not support force feeding, except in very special circumstances. We find that children who are force fed may learn to eat some foods to avoid being punished; but that this is not a normal way of eating (it is actually escape learning). In addition, often times after the punishment is removed, the child stops eating again.

What about learning to eat new foods? This takes place through a process of presenting the new food over and over again along with positive reinforcement for ANY interaction with the food. Birch (1990) showed that it takes up to 10 repeated presentations of a new food with positive reinforcement before a child will begin to eat that food regularly. Many people make the mistake of taking that first rejection of a new food as the final word, but it is not.

It is important whenever we work with children who have feeding problems to first figure out how they learned to not eat. Were they premature and constantly had people sticking things in their face? Did they have pain every time they ate? Were they always congested so that they could never breathe while they were eating? Did they have motor problems so that it was hard to coordinate eating and they were always frustrated? Do they have a sensory integration disorder so that it is hard for them to understand all the different pieces to eating? The reasons children learn to not eat are many and varied.

Because learning is the key factor here, it is also critical to always be aware of what each feeding interaction may be teaching the child. By refusing to eat certain foods ourselves, are we teaching our children to avoid those foods? By never sitting down to a family meal are we preventing our child from having a rich learning experience about food, in addition to missing an important teaching
opportunity? By giving a child a toy during a meal after they just refused to take a bite for us, haven't we just reinforced noncompliance? By yelling or forcing are we teaching them that eating is unpleasant (and turning off their appetite)? Although difficult, it is often helpful to have someone else watch us feed our child so that they can help us pick up on these subtle negative teachings.

So, how do we teach children to eat? The overall goal of all treatment with children who won't eat is to create a situation which positively reinforces normal, healthy eating patterns. There are five main categories of strategies:

**Structure** - having a routine to meal times, eating in the same room, at the same table, with the same utensils are all things which capitalize on the need for repetition in learning. The more you can make things about the meal the same, the easier it will be for the child to learn. In addition, the routine itself can help get the child primed and ready to eat. It is especially important with G-tube fed children to have approximately the following routine: 1. help with food preparation, 2. sit in high chair or at table with same utensils, 3. offer food and drink first, 4. as the child is almost done with the meal, start their bolus feeding while still in the chair with food on the tray. Many G-tube fed children are fed lying on their back in their bed. This is not a normal way of eating. Children fed like this learn that when they are hungry food comes out of nowhere without their effort, or they learn that they eat from the pump without using their mouths. We want these children to learn to connect the sensation of their stomachs being filled with food in their mouth. Even infants on tubes should be fed in a normal bottle or breast feeding position, preferably with a bottle or pacifier with formula or breast milk on it in their mouth.

**Social modeling** - one major way children learn to eat is through observation of others. Family meals are critical to providing children with multiple opportunities to learn about eating. This also means that we need to be very good role models. Over-emphasizing chewing with our mouths open and using exaggerated swallowing, helps children to understand about what to do with food. We need to be positive about our interactions with food. Because children love to imitate what we do, we need to not make faces or bad comments about food. If you are a poor eater, it may be difficult to help your child.

**Positive reinforcement** - so many times when we see children who won't eat, we find out that mealtimes have become an unhappy struggle for everybody. Meals need to be pleasant and enjoyable. Eat a normal family meal and wait to do any feeding programs until you are done with your food (but don't forget to keep a little food aside so you can be a good role model during the program time of the meal). During the meal, make sure that ANY interaction with the food is rewarded. Verbal praise is the best and most normal reinforcer. However, a smile, a touch, a cheer, clapping are all other options. The level of reward needs to be geared to each individual child. Also, remember that punishment can turn off a child's
appetite. Special feeding programs should be created only with the help of a qualified professional.

**Making foods manageable** - a common problem we see is a child being offered foods they really cannot manage to eat. Giving a 2 year old child with oral-motor problems a full hamburger, plus potato, plus vegetable on their tray is overwhelming, frustrating and defeating. Foods need to be in small, easily chewable bites or in long, thin strips that the child can easily hold. Also, the rule of thumb is to only present a child with a total of 3 foods on their plate at any one time. There should be 1 tablespoon per each year of your child's age of each of these 3 foods. With new foods, make the food less "new" by first introducing it to the child on the table only. Then you can put it on their plate. Remember, new foods need to be presented repeatedly with positive reinforcement for any interactions with the new food.

**Accessing cognitive skills** - because the skills for eating haven't come easy to children with feeding problems, they need to use their intelligence (cognitive abilities) to help themselves better manage the foods. This means that we need to teach them about the physical properties of the foods so that they will know how to make the foods work in their mouths. For example, banging a carrot stick on the table and talking about how hard it is teaches that the mouth and teeth will need to use hard pressure to break that food apart. Versus, a piece of string cheese which wiggles and is squishy will be somewhat chewy in the mouth. Versus a food such as yogurt is cold, wet and smooth and therefore can be just sucked down. We refer to this process as teaching children the "physics of food".

These recommendations are just a few of the many ways children can be helped to eat. Hopefully, this article will get you thinking about your child's feeding interactions and how you can become a more positive feeding teacher!

**References:**