Telability: Pediatric Feeding Therapy Using A Medical, Motor, & Behavior Approach

Krisi Brackett MS SLP/CCC
feedingnews@earthlink.net

What is a Feeding Problem?

Developmentally, A feeding problem exists when a child is "stuck" in their feeding pattern and cannot progress. (Eicher)

- Feeding problems are complicated!
- And sometimes difficult to treat.

What's makes a Successful Feeder?

Skill acquisition =
Positive Practice X Rate of Maturation

-Peggy Eicher MD

How do we get our clients to practice the skills we want them to learn?

- By using an integrated approach!
- Or a medical, motor and behavioral feeding program

- Feeding is a learned behavior!
- The presentation changes over time as the child grows and develops.

Components of a feeding problem

1. Oral motor-sensory
2. Swallowing
3. Respiration
4. Motor/postural alignment
5. Nutrition
6. GI
7. Behavior

1. **Oral motor structures and function**
   (what oral pattern being used and is it age appropriate? Is it efficient?)
2. **Swallowing**
   (Are there signs/symptoms of aspiration?)
3. **Respiration**
   (what is the shape of the child's ribcage and is the breathing pattern age appropriate?)

4. **Motor skills**
   (Are the child's motor skills age appropriate? If old enough, is the child able to sit in postural alignment? Do they have trunk support and rotation?)

5. **Nutrition**
   (Is the child gaining weight and growing appropriately? Do they eat out of all the food groups?)

6. **Gastrointestinal issues**
   (Are there underlying GI issues that are effecting intake and preventing progression of feeding skills?)

7. **Learned Patterns of Behavior**
   (Is the child showing aversive feeding behaviors that are interfering with successful practice?)

Think like a team!

For successful intervention, it is important to understand the various components contributing to the feeding problem.

"The child's appropriate response to our inappropriate demand" - Eicher

Medical Conditions

- Gastrointestinal input can significantly influence the feeding process (modifying swallow, interest in food).
- Dysmotility anywhere along the GI tract can contribute to feeding difficulties even in the absence of frank signs of GI dysfunction.

Medical Conditions

- Food avoidance and aversion have been associated with GER and esophagitis (Hyman, 1994)
- Constipation can cause slower transit through the whole system, contributing to abdominal fullness and decreased interest in food.
- GER can cause the UES to close prematurely to protect the airway

Overview of using a medical, motor, and behavior approach

Medical

I. Treat the medical issues first:
- Growth/ nutrition issues
- GI issues (make the stomach comfortable)
- swallowing
- breathing

* This is an ongoing process as the child changes and grows!
* With medical team: manipulate medicine, formula, rate and feeding schedule for gut comfort.

Medical

- Stay involved with the MD managing GI issues
- Goal is gut comfort!
- Gut comfort leads to oral feeding.
- look for subtle signs of improvement and discomfort
- Keep assessing

Swallowing

- Assess swallowing function and risk for aspiration
- objective study results, (MBSS, FEES)
- Take the child's history, medical status, mobility, and ability to cough and clear into account when making diet recommendations

Motor

Motor issues:

- Improve motor patterns for feeding skills
- Postural alignment
- Trunk mobility and rotation

All working toward postural alignment and the best support for good oral-motor skills.

Motor: For Feeding Skills

Biomechanical alignment: structures of the body are aligned to allow the most efficient muscular interaction.

Example: neutral pelvic position makes sitting straight easier and provides the spinal alignment and base of support for the ribcage, shoulder girdle, and head position.

Several studies have demonstrated that proper biomechanical alignment is associated with improved swallowing, feeding and speech function

Breathing

- Assess breathing pattern for efficiency (shape of ribcage)
- Therapeutic intervention to improve breathing patterns: handling, positioning for better trunk support/rotation, upper chest expansion if tight, upper extremity work if elevated shoulder girdle, kineseo taping, improve cough
- Rx: Mary Massery, PT who specializes in pulmonary rehab. Workshop: If You Can't Breathe You Can't Function.

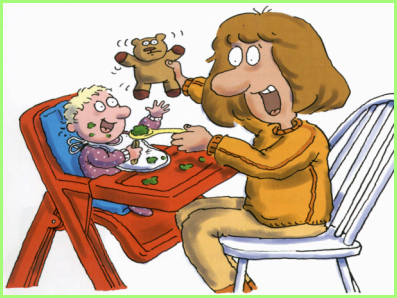
Behavior

III. Use your behavioral techniques:

- to improve oral acceptance.
- As the oral acceptance improves, work on improving oral motor patterns with real food!
- Build in cup drinking and prechewing skills.

Research

- Rommel, N, De Meyer, A, Feenstra, L, & Veerman-Wauters, G. The complexity of feeding problems in 700 infants and young children presenting to a tertiary care institution. *Journal of Ped Gastro and Nut,2003*;37:75-84.
- D. Field, M Garland, and K Williams. Correlates of specific childhood feeding problems. *Journal of Pediatric Child Health* (2003) 39, 299-304.
- Schwartz, M. S., Corredor, J., Fisher-Medina, J., Cohen, J., & Rabinowitz, S. (2001). Diagnosis and treatment of feeding disorders in children with developmental disabilities. *Pediatrics*, 108 (3): 671-.6
- Manno, C., Fox C. , Eicher P., and Kerwin,M. (2005) Early oral motor interventions for pediatric feeding problems: what, when, and how. JEIBI, vol 2, no 3, Fall, page 145.



Summary of ideas

1. Feeding problems result from a combination of factors
2. Think like a team!
3. The feeding problem will change over time as the child grows
4. Early intervention is the best strategy
5. Think - what is maintaining this problem?
6. Think medical, motor, and behavior!

Therapeutic Feeding Techniques

What is our goal?

- Caregivers want their child to eat. Our therapy should focus on techniques that move the child toward this goal.
- What I see as the biggest mistake most clinicians make is not adequately achieving gut comfort and not using behavioral techniques to gain acceptance of the spoon.

Tip

- Feeding skills need to be practiced on a daily basis.
- Set up a program that involves daily practice of the skills you are aiming for.
- Remember there is not one way to intervene. Each child and family is unique!

Frequently Used Techniques

- Transition from a suckle pattern.
- Teaching a child to chew.
- Increasing acceptance of foods (may include volume variety, texture).
- Transition from bottle to cup drinking.
- Eliminating food holding or stuffing.
- Transitioning off of a feeding tube.
- Swallowing

Transition from a suckle pattern.

- Many of our kids get stuck in a suckle pattern, the in and out pattern of the tongue.
- Intervention should include jaw stabilization so that tongue can work off of a stable base. From there, teach the child to use the tongue in an up/down pattern by allowing sucking off of the spoon or with jaw stability.

Transition from a suckle pattern.

- Establish a pattern of success with smooth purees.
- Decrease sucking (on bottle and spouted sippy cups) if possible.
- Some kids may need oral motor strengthening (biting, lip and cheek strength)
- Use good positioning with postural alignment. (foreword head reinforces an extension tongue pattern).

Teaching a child to chew.

- Chewing is based on biting and lateral tongue movement.
- Use the chewy tube protocol, it's helpful to learn the basics then improvise from there.
- I work on biting with chewy tubes and dry meltable solids placed laterally.
- Use lateral placement of purees to encourage lateral tongue movement.
- Use motor therapy, encourage upper extremity strength, trunk strength and lateral trunk rotation.

Increasing acceptance of foods (may include volume variety, texture).

- Use behavioral programs (reward or distraction) to increase acceptance! Consistency and practice are important.
- Start first with a dry spoon (this part is not about food, it's about teaching acceptance and establishing success)
- Then move slowly a dip in one flavor of smooth puree working toward volume. Then add in other smooth purees.

Increasing acceptance of foods (may include volume variety, texture).

- From here, move toward thick purees, cup drinking, chewing. Etc.

Transition from bottle to cup drinking.

- Introduce the cup several times a day with positive reinforcement.
- I prefer lip cups like a sassy infatrainer or even a 30cc medicine cup to teach cup drinking skills.
- You can use a dry cup or dip the rim in puree to establish acceptance.
- Thickened liquids will slow the flow and can be helpful for some kids.

Eliminating food holding or stuffing.

- Get rid of behavior you don't want and go back to where the child can have success- which is puree.
- Establish a successful acceptance pattern of taking puree, transferring it and swallowing. Then reintroduce soft chewables, reinforcing transfer and swallowing.

Transitioning off of a feeding tube.

This is a complicated one and each child is unique.

1. Some kids will respond to aggressive gut management followed by a tube feeding wean.
2. Some kids needs a behavioral program to achieve acceptance and then you can slowly reduce tube feeds.
3. Some kids respond to appetite stimulants and consistent feeding schedules.

Swallowing therapy

- For kids,mainly passive.
- Adapt adult therapy exercises:for pharyngeal strengthing- Shakir exercise.
- Upper extremity strengthening.
- Vital stim.
- Keep the kids eating is you can, practice is important . Also some kids can tolerate a certain amount of aspiration. Work with your medical team closely.

Questions

How do you diminish a tongue thrust with a child with Down syndrome?

- Typically, persistent tongue thrust results from low tone in the jaw. You need to stabilize the jaw with finger support under the jaw or base of tongue.
- With kids with Down syndrome you also need to check their tonsils and adenoids to determine if the forward tongue position is a result of upper airway obstruction and that they can adequately breathe through their nose.

More ideas/techniques to deal with kids with sensory feeding issues (recent example: What to do with a kid who can't handle eating in the cafeteria at school secondary to the smell?)

- In my experience sensory issues are not usually isolated to the mouth. Sensory issues maybe a symptom of something else going on in the body.
- I would look for reflux and GI issues which may be contributing to the hypersensitivity, especially with a child who is sensitive to smells. That is associated with GI issues.

More ideas/techniques on how to advance textures

Follow the developmental stages of advancement:

1. Establish success with smooth puree
2. Transition to thicker purees
3. Begin chewing with dry meltable solids
4. Chewing is lateral tongue movement and biting practice
5. Transition to chewables

What do you do when the child seems interested in chewing more advanced textures but is late in getting his/her teeth in?

- Chewing is new motor pattern and takes 3 years to develop in a typically developing toddler
- With this child, practice lateral tongue movement and biting on dry meltable solids.

What do you do to treat refusals or poor behavior when behavioral feeding therapy isn't working (no follow-through at home, etc.) and the child needs to put on weight?

- First, establish a feeding program where the child can meet his nutritional needs.This may be through liquids and purees or with tube feeding.
- Work with the family on a behavioral program, if they can't follow through, the child may be a candidate for an SOS program or going away to an intensive feeding program.

What do you do when the child's doctor doesn't think the issue is reflux but you are still getting signs of discomfort when you feed the child?

- I call the doctor and discuss the signs/symptoms I am seeing, I explain what we have tried and where we are in terms of progress. If I feel strongly I ask for a one month trial or a referral to a GI doctor.
- I know the literature well enough to justify my request.

What do you do with a child who continues to self-limit volume or amount of intake (and is on GI meds)?

- I work with the GI doctor to determine if the child needs further testing or medication trials. Look at stooling patterns, GER and emptying.
- If I feel the child is medically managed , I would use a behavioral program to encourage increased volume.

What do you do to help fade a hyper-active gag reflex? (Gag so strong child won't advance textures, lumps=gag and vomit)

Let me make this very clear: I NEVER desensitize a gag.

- I believe that a hypersensitive gag is related to the stomach and GI issues. I would work with the medical team and treat them for reflux.
- A hypersensitive gag is a symptom of something else. Think of adults with a stomach bug or reflux, they are often gaggy and avoid foods.

How do you wean a child from breastfeeding to cup or bottle?

- Introduce the cup or bottle regularly with positive reinforcement.
- Don't cut the child off the breast until they can take liquids from a cup or they are risk to become dehydrated.

What do you do when a child refuses to drink from a cup, but easily drinks juice and water from cup? Demands milk via bottle or breast only?

- This sounds behavioral, I would use behavioral techniques to encourage acceptance from of milk from the cup. Perhaps use it at meals and reward the child when they accept a sip from the cup.

Lots of our feeding kids also have reported sleep issues. Any guidance in how to deal with sleep issues and self-soothing (as they relate to eating, weaning bottle/breast, frequent waking at night to eat, etc.)

- Sleep issues may be related to reflux and GI issues or obstruction of the upper airway or sleep apnea. I would rule out these types of medical problems first. Then look at the child's schedule and wean some of the night feedings if appropriate.

What do you do when a child begins feeding therapy and then begins to refuse all solid foods?

- Try and figure out why the child is refusing solids. Your question implies the refusal has something to do with the beginning of therapy? You would need to assess when this started, the pattern of eating and then make a treatment plan to increase acceptance of solids.

What do you do when a child gets a feeding tube (bolus feeding intermittently), but continues to show poor weight gain and severely limits volume of oral intake?

- If a child has a feeding tube and they are not gaining weight, they are either not receiving enough calories or there is a medical reason for the child to not be gaining weight such as a metabolic problem or growth hormone issue.
- First establish weight gain then work on a plan to transition off the feeding tube.

Transitioning off the tube

- My preference is to go from continuous feeds at night to oral feeds, skipping bolus feeds which many of our kids can't handle.
- If I have a child on bolus feds with good tolerance, I use a structured behavioral feeding program to increase acceptance of oral foods and then slowly decrease the tube feedings.

What are the signs of a food intolerance/allergy? How do you do elimination trials/figure out what is going on?

- This is a big question which I can't answer in a single slide but here goes. There are many different signs of food allergy or intolerance.
- The most common intolerances I see are to milk and soy protein, eggs, corn, wheat, and gluten.
- Depending on the age of the child I would intervene differently.

- For infants that are displaying signs of intolerance; GI discomfort, rashes, dry skin etc, I would change their formula to something that has broken down milk protein or no milk or soy.
- Older kids, I might have them tested or do a 3 day to a week trial of taking certain foods out of their diet.

- The only way to be sure of an intolerance is to eliminate it from the diet.
- Having said that, it is very difficult to eliminate something from the diet when the child is living on it. For example, dairy. Many of our kids that have difficulty with dairy crave it and live on a diet mainly of dairy protein.

Signs of allergy.

Respiratory Tract: nasal congestion, runny nose, itchy, red eyes, earaches, asthma, laryngeal edema

Skin: eczema, hives, swelling of the mouth and face, itching of skin, eyes, ears, mouth, rash

Digestive tract:diarrhea, constipation, nausea, vomiting, abdominal bloating, pain, indigestion, belching

Nervous system:migraine, headache, hyperactivity, lack of concentration, irritability, dizziness, listlessness

Other: frequent urination, bed wetting, hoarseness, muscles aches, low grade fever, sweating, pallor, dark circles

Michael: 2 years old

Diagnosis: Down's syndrome, feeding difficulty, poor weight gain

Feeding difficulty:

- Bottle dependence

(bright beginnings)

- Total food refusal
- Poor weight gain

Michael

- 1.**Oral Motor:** Normal structures (low tone) and immature oral motor pattern (midline pattern with emerging chewing skills).
- 2. **Swallowing**: No clinical signs of swallowing difficulty reported.
- 3. **Respiration**: WNL.
- 4. **Gastrointestinal Issues:** (may effect feeding) history of GER/spitting the first year of life, recent episode of diarrhea, oral aversion, food refusal, volume limiting with liquids, slow/poor weight gain, coughing at night, maternal grandmother has a history of difficulty with dairy as well as diagnosis of Down's syndrome and possible tendency toward motility problems.
- 5. **Motor**: Delayed motor skills (not walking), slightly out of postural alignment. Sits well but uses posterior pelvic tilt.
- 6. **Nutrition**: On Downs's chart, Michael plot around the 25th-50th%ile for weight and between the 50th-75%ile for height. Parents report that he has been the same weight since one year of age.
- 7. **Behavior**: Demonstrates aversive feeding behavior (food refusal, spitting food out, verbally refusing food, pushing spoon away). (From 1-2 years of life, slowly eliminated all foods)

Michael

Recommendations:

1. **Medical**: Consider GI management/intervention to assist with oral acceptance of solids. Consider trial of an acid blockade to determine if it decreases coughing at night and oral aversion. Michael may benefit from a prokinetic or appetite stimulant as well as an allergy test or further GI wok up to assess motility.
2. **Nutrition**: I will consult with dietician for accurate calorie needs. It appears that Michael is 10.5 kilos and is receiving about 1000 calories per day from formula with poor weight gain. He may need approximately 1200 calories per day. It is recommended that Michael's parents be given a calorie goal.
3. **Motor:** Continue to work on improving trunk control and strength. Postural alignment will be important for oral control during eating.
4. **Behavioral feeding therapy:** after GI intervention, Michael may benefit from a structured behavioral feeding program to increase acceptance of solids.
5. **Oral-motor**: After Michael's acceptance of food improves, therapy can assist with improving oral motor pattern.
6. Recommend feeding therapy weekly.

Michael: Therapy

1. Prevacid and distraction during meals (video). Parents feeding purees - in 2 weeks Michael was eating 6-9 ounces of puree 3 - 4 times per day.

Idea: go back to easy texture to improve success, use distraction to reduce refusals

2. Allergy testing - diagnosed with celiac disease (transitioned off dairy, soy, wheat, gluten)

Idea: history of ? Celiac, also immediate diarrhea with dairy

3. Feeding - continues with distraction, taking thin and thick puree, off bottle/using a cup, therapy focusing on chewing, has gained 5 lbs.