Sensory/Behavioral Feeding & Texture Progression

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Primary Domains of Eating
Oral-Motor
Oral-Sensory
Swallowing
Behavior

Presenting Complaints
- Choking
- Gagging
- Coughing/congestion with intake
- Emesis/vomiting
  - With or without precursory gagging
  - During vs after intake
- Limited volumes or complete refusals of developmentally appropriate foods
- Resistance or refusal to transition to age appropriate utensils

Presenting Complaints
- Poor weight gain
- Rigidity in food preferences (flavor, texture, brand)
- Limited food repertoire
  - May be limited by food group, texture group, food feature
  - May be limited to a very small list of preferred items
  - May be inconsistent
- Difficult mealtime behaviors
- Slow eater
- Pocketing/overstuffing
- Drooling

Diagnosis Based Considerations
ENT/Airway
- atypical breathing patterns
- mouth breathing
- forward tongue posture
- chronic congestion

Allergy
- can result in congestion
- esophageal inflammation (discomfort)
- specific dietary requirements

Cardiac
- increased caloric demands
- more likely to fatigue with PO intake
- interrupted feeding development

GI
- history of discomfort with intake
- negative internal consequences of intake
- altered hunger/satiation experiences
- specific dietary requirements

Prenatal drug exposure
- increased risk for sensory integration issues

Born late-term
- increased risk for sensory integration issues

Prematurity
- interrupted feeding development
- may have issues with regulation
- respiratory/GI issues
Diagnosis Based Considerations

Complex medical history
interrupted feeding development
respiratory, GI, neuro considerations

Neuromotor deficits
can affect oral-motor, oral-sensory and/or swallowing

Craniofacial anomalies
altered respiratory patterns
oral-motor difficulties
oral-sensory issues

Failure to gain weight
medical implications
reduced strength/endurance
may indicate history of underlying issues impacting feeding

Developmental Delays/Disabilities
sensory/motor difficulties
behavioral considerations
cognitive considerations

Aspiration
aversion behaviors may be observed
specific texture/consistency requirements

Picky Eaters vs. Problem Feeders
(Toomey 2002)

Picky Eaters
- Decreased range or variety of foods that will eat (>30 foods)
- Foods lost due to “burn out” because of food jag are usually re-gained after a 2-week break
- Able to tolerate the presence of new foods (may even touch or taste)
- Eats at least one food from most all texture groups
- Will add new foods to repertoire in with less difficulty

Problem Feeders
- Restricted range or variety of foods (typically <20 foods)
- Foods lost due to food jags are NOT re-acquired
- Cries and/or tantrums when presented with new foods
- Refuses entire categories of food textures
- Takes more effort to add new foods to repertoire

Reasons Children May Avoid Intake

- Pain/discomfort
- Motor difficulties
- Sensory issues
- Aspiration
- Anxiety/fear
- Lack of hunger
- Medical
  - Airway/respiratory
  - Gastrointestinal/digestive discomfort
  - Allergy
  - Autism Spectrum Disorders
  - Cardiac
  - Neuro

GER

- Clinical signs of GER can look like aspiration.
- Apnea, pneumonia, coughing, congestion, asthma exacerbation and wheezing can all be associated with GER.
- Structural and sensory changes stemming from reflux can lead to aspiration risk.
- GER frequently yields increased gagging and emesis.

GER

- Patient may benefit from environmental and/or medical interventions for GER.
- Not all children with feeding problems have reflux, and not all children with reflux have feeding problems.
- GER is not the only GI issue that can impact feeding.
Food Textures (IDDSI)

- Level 0 (thin liquid)
- Level 1 (thin-nectar)
- Level 2 (nectar)
- Level 3 (liquidized; honey consistency)

Runny puree
- Much variation in this group
- Level 4 (puree)
- Level 5 (minced and moist)
- Level 6 (soft)
- Level 7 (regular)
Solid Textures

- Remember that regular table foods can vary in texture.

<table>
<thead>
<tr>
<th></th>
<th>wet</th>
<th>dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>hard</td>
<td>Apple, Carrot stick, Crackers, Hard cookies</td>
<td></td>
</tr>
<tr>
<td>soft</td>
<td>Most fruits and vegetables, Pasta, Pancakes/waffles, Cakes</td>
<td></td>
</tr>
</tbody>
</table>

Additional Textures Categories

- Hard munchables
- Meltable solids
- Soft/mushy solids
- Chopped solids
- Ground solids
- Regular solids

How Does it Break Down?

- Cohesive Solid
- Particulate Solid
- Foods with skins (peas, corn, blueberries)
- Foods with seeds/beans (kiwi, green beans)
- Stringy/Fibrous foods (meats, pineapple, peaches)
- Mixed consistencies (includes juicy fruits)

If unsure, just try the pinch test.
Pinch Test

Obtaining the Patient’s Current Feeding Regimen
- History:
  - Birth
  - Medical
  - Developmental
  - GI
  - Respiratory
  - Feeding
  - Sleep

Obtaining the Patient’s Current Feeding Regimen
- Cognition
- Communication skills
- Therapeutic history
- Parent concerns: "What brings you here today?"

Obtaining the Patient’s Current Feeding Regimen
- List of preferred and non-preferred foods
- Volume of foods and liquids consumed
- Assistance or independence with feedings
- Mealtime behaviors
- Digestive tolerance of intake

Oberving the Parent
- Is the food preparation appropriate for patient’s age and skills?
- Are the texture, amount and size of bites appropriate?
- How does the parent interact with foods?
- Does the parent note the child’s stress cues and how do they respond?

Oberving the Parent
- What kind of modeling and/or cueing is provided?
- Is the interaction positive or negative?
- What kind of encouragement or strategies are the parents trying to implement?
Observing the Child
- Tolerance of general interactions
- Attention and focus
- Transition to the feeding environment and seat
- Postural stability
- Interactions with the parents

Observing the Child
- Developmental skill levels
- Oral-motor
  - reflexes
  - structure, strength, coordination
- Swallow function (r/o aspiration)
- Distress signals

Developmental Considerations
- Muscle tone (and reflexes)
- Postural stability
- Balance and coordination
- Fine motor skills
- Hand-eye coordination
- Proprioception

Developmental Considerations
- Oral-Motor/Sensory difficulties
- Speech production
- Breath support
- Self-calming abilities
- Tolerance of transitions
- Flexibility

(Toomey, 2002)

How does the child respond to...?
- Interactions with:
  - environment
  - parents and clinician
  - dry utensils
- Presence of foods
- Presentation of foods

How does the child respond to...?
- Touching foods with utensils
- Touching foods with hands/fingers
- Eating foods
- Direct modeling
- Cues and prompting
- Therapeutic strategies

(Toomey, 2002)
Eating Behaviors: What can they mean?

- Overstuffing:
  - oral-motor
  - oral-sensory
  - behavioral (e.g., impulsivity)
- Gagging:
  - before intake
  - upon oral contact
  - during mastication

Eating Behaviors: What can they mean?

- Open mouth breathing and mastication:
  - patency of upper airway
- Typical intake and/or mastication, then they spit it out:
  - GI/Allergy considerations
- Strong food preferences or avoidance:
  - Consider the texture
  - Is this sensory, motor, or both?
  - Aspiration

Eating Behaviors: What can they mean?

- Refusals:
  - Fear
  - Lack of hunger
  - Awareness of difficulties (motor, sensory or swallowing)
  - Negative consequences resulting from intake
  - Does this child want to eat?

Where do I start?

Treatment

Mealtime Modifications

- Mealtime/snack schedule (3 meals, 2-3 snacks)
  - Limit snacks to 10-15 minutes, meals to ~30 minutes
- No grazing
- Meals should include both preferred and non-preferred items
- Consider strategies to help transition the child to the meal (social stories, singing, etc.)

Mealtime Modifications

- Consider the setting (includes positioning/seating)
- Distractions
  - Avoid when possible
  - Eliminate as soon as possible
- Patient should be eating all meals along with the rest of the family
- Peer modeling can be a useful tool. Siblings can be the best therapists!
Mealtime Modifications

- Child should be using age-appropriate utensils when possible
- Self directed intake
- Messy play

Behavioral Strategies: General Reminders

- Do not force feed.
- Role-play and demonstrate good eating behaviors (kids love exaggerated or silly modeling, chewing with the mouth open, etc).
- Let the conversation be positive and encouraging.
  - Discuss the tastes, colors, textures and smell of the foods.
  - Compare and contrast with other familiar foods.

Behavioral Strategies: General Reminders

- Include the child in food shopping, food preparation and food presentation.
  - Talk about the foods during these activities.
  - If the child throws food, they should help pick it up off of the floor when possible.
  - Monitor your own responses to the child’s behaviors (“keep on smiling”).

Behavioral Strategies: General Reminders

- Keep mealtimes fun and playful.
- Repetition is important.
- Provide positive reinforcement.
- Consider behavioral reinforcement strategies.
- Be flexible.
- Therapy is always moving forward and back.
  - “Line in the sand”
  - Maintain trust

Food Selection/Modification

- Appropriate portion size and food textures
  - Placing a smaller amount on the plate allows the child to better see their progress as they eat their bites.
  - Providing less food at once can also help reduce overstuffing.
  - Too many choices at once can be overwhelming.
  - When planning foods, consider texture, color and smell.

Food Selection/Modification

- Offering larger portions of a food will be a greater sensory/motor challenge.
- Add artificial texture to foods via textured utensils.
- Add trace texture to foods via added food items (e.g., crushed cheerios, infant cereal)
- Make sure you’re offering foods in a developmentally appropriate manner.
Portions Are Important

Textured Utensils

Methods of Presentation

Aiming the Food

If the child will accept food from a caregiver, then try to aim the foods to the sides of the mouth.

- Stick shaped foods are easy to use.
- If the food can break or crumble, be careful of how large of a bite you provide.
- Use a gloved finger or Nuk brush to reposition food to the sides of the mouth if necessary.

Therapeutic Approaches

- SOS Approach
  - Toomey (2002)

- Food Chaining

Sensory changes to preferred foods:
- Use with caution; this can backfire
- Can be successful in children with rigidity in their preferences
It may seem easy to us, but to a child...

Therapeutic Approaches

- Sensory acclimation to new foods via gradual exposure
  - Occupational Therapy
  - Non-food sensory exploration
  - SOS Approach

Things to Remember

- Work with the child’s strengths.
- Start with a preferred food and build from there.
- Talk about what happens when you eat.
- Make gradual changes to the sensory properties of foods.

Things to Remember

- Help them learn.
  - “1, 2, 3 all done!”
  - Teach them how they can wipe themselves clean after completion of contact.
- Portion control
- Flavor changers
- Food/liquid “wash”

Things to Remember (cont)

- Be creative with utensils.
  - "If it goes in their mouth, it is a spoon."
  - Foods can be utensils
- If you are making a change that they will visibly notice, then allow them to help with the process. If the change is not visible, try to modify the food outside of their view.
- Remember, no one has to like everything. It is okay for a child to have some foods that they simply do not like.

Addendum: My Favorite Games and Activities

- Tug of war with a food
- Eating or moving food without using the hands
- Spitting contest
- The sneeze
- Putting on food lipstick/chapstick
- “Give it a kiss”
- Snake Tongue
- Food moustache
- Face painting
- Food Peek-a-Boo
- “Magic trick” (take one piece and turn it into two)
- Making teeth marks in foods
- Biting foods into different shapes
- Swipes/tastes
References