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Pediatric Feeding Difficulties

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Role of Speech-Language Pathologists

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- Speech-language pathologists are knowledgeable about normal and abnormal anatomy, physiology, and neurophysiology of the upper aerodigestive tract responsible for respiration, swallowing, and speech. Their educational and clinical background prepares speech-language pathologists to assume a variety of roles with expertise related to evaluation and treatment of individuals with swallowing and feeding disorders. Appropriate roles for speech-language pathologists include, but are not limited to:
  - Performing clinical feeding and swallowing evaluations.
  - Performing instrumental assessments that delineate structures and dynamic functions of swallowing.
  - Defining the abnormal swallowing anatomy and physiology and diagnosing swallowing disorders.
  - Identifying additional disorders in the upper aerodigestive tract and making referrals to appropriate medical personnel.
  - Making recommendations about management of swallowing and feeding disorders.
  - Developing treatment plans for individuals with swallowing and feeding disorders.
  - Providing treatment for swallowing and feeding disorders, documenting progress, and determining appropriate dismissal criteria.
  - Teaching and counseling individuals and their families about swallowing and feeding disorders.
  - Educating other professionals regarding the needs of individuals with dysphagia, and the speech-language pathologists' role in the evaluation and management of swallowing and feeding disorders.
  - Serving as an integral part of a multidisciplinary and/or interdisciplinary team as appropriate.
  - Advocating for services for individuals with swallowing and feeding disorders.
  - Advancing the knowledge base on swallowing and swallowing disorders through research activities.
- ASHA, 2002

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Role of Occupational Therapy

"Feeding, eating, and swallowing are strongly influenced by psychosocial, cultural, and environmental factors. As part of the evaluation and intervention process, occupational therapists and occupational therapy assistants under the supervision of an occupational therapist consider comprehensive management of feeding, eating, and swallowing problems..." (ibid).

"Feeding, eating, and swallowing are within the domain and scope of practice for occupational therapy. Occupational therapist and occupational therapy assistants have the knowledge and skills necessary to take a lead role in the evaluation and intervention of feeding, eating, and swallowing problems. Further, occupational therapist have the entry-level knowledge and skills to evaluate oral and pharyngeal swallowing function".

American Occupational Therapy Association. (2007). Feeding, eating, and swallowing knowledge & skills paper. Retrieved 4/21/2011 from www.aota.org

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Referral: Speech or OT?

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- Speech and occupational therapy can treat all aspects of feeding, however each site or clinician may delineate roles based on experience.
- Specific modalities may need specialized training and certifications.
  - Vital Stim
  - Fiber optic endoscopic evaluation of swallow (FEES)
  - Modified Barium Swallow Study

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What is Dysphagia?

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- Difficulty moving food/liquids from mouth to stomach
- Also includes all behavioral, sensory, and preliminary motor acts in preparation for the swallow, including cognitive awareness of the upcoming eating situation, visual recognition of food, and all of the physiologic responses to the smell and presence of food such as increased salivation. (Logemann, 1998)

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Oral Dysphagia

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- Deficits in a person's ability to control liquids and foods in the oral cavity (oral phase of swallow)
- These include but are not limited to:
  - Decreased oral motor coordination (lips, cheeks, tongue, jaw)
  - Low tone or weakness (lips, cheeks, tongue, jaw)
  - Oral stasis/residue (food/liquid coating left over after the swallow)
  - Pocketing of foods- often occurs with hyposensitivity and low tone
  - Tongue retraction/tongue hunching- thick, humped tongue, often do as protective response
  - Anterior loss of foods or liquids outside of the mouth (result of weakness, decreased sensation or poor coordination)
  - Decreased oral coordination with suck-swallow-breath with bottle feeding
  - Premature transfer

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Pharyngeal Dysphagia

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- Starting the swallowing reflex, difficulty with squeezing food down the throat, and closing off the airway to prevent food or liquid from entering the airway (aspiration) or to prevent choking
- This includes but is not limited too
  - Weakness of pharyngeal musculature
  - Decreased base of tongue retraction
  - Reduced laryngeal elevation
  - Residue in valleculae, pyriform sinus, throughout the pharynx
  - Penetration or aspiration before/during/after the swallow

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Signs and Symptoms of Aspiration

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- coughing during or right after eating or drinking
- tearing during eating
- wet or gurgly sounding voice during or after eating or drinking
- extra effort or time needed to chew or swallow
- food or liquid leaking from the mouth or getting stuck in the mouth
- recurring pneumonia or chest congestion after eating
- weight loss or dehydration from not being able to eat enough

- As a result, a child may have:
  - poor nutrition or dehydration
  - risk of aspiration (food or liquid entering the airway), which can lead to pneumonia and chronic lung disease
  - less enjoyment of eating or drinking
  - embarrassment or isolation in social situations involving eating

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Differences between adults and children

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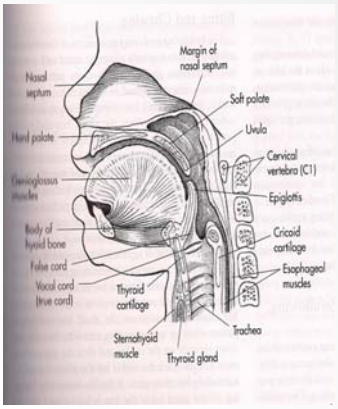

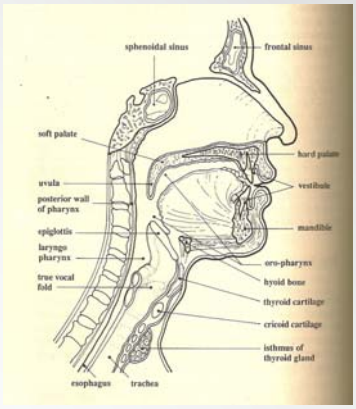

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Developmental Milestones

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- Suck Reflex
  - Reflex for approximately the first 2-3 months of life
  - Becomes voluntary 3-4 months of life
- 6 months: begin transition to solids
- 7-8 months: begin to see tongue movement and jaw movement appropriate for chewing

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Positioning

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- Use as strategy facilitate improved control of liquids/solids
  - Reflux positioning
  - Bottle feeding positions
  - Positioning for transition to solids

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Solid Diet Levels

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- Level 1: Puree
  - Mashed potatoes, baby foods
- Level 2: Mechanically altered
  - Very moist and cohesive foods
- Level 3: Mechanical Soft
  - Pasta, ground moist meat
- Regular: all foods

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Liquid Consistencies

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- Pudding thick
- Honey thick liquids
- Nectar thick liquids
- Thin liquids

- Commercially based thickener recommended after the age of 1: SimplyThick, Thick It
- Rice cereal used for babies under 1 to thicken breastmilk or formula.

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Sensory Components of Feeding

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- **Touch**- food, utensils, cups provide touch input via lips, palate, gums, cheeks and tongue
  - Hypersensitive gag- many parents view this as “choking”
  - Pain, temperature and light touch are on the same pathway
- **Temperature**- manipulating temperature might help with oral awareness. Cold/warm temperatures can be perceived as painful in hypersensivity.
- **Taste**- a child may be hypersensitive or seeking high flavors
- **Smell**-/infants are very sensitive to smell of the formula versus the smell of mother. Older children may gag/retch with the smell of food or cooking smells
- **Vision**-Often older children may be attached to labels (Only eat certain brands). The amount on the plate may start a stress response or have difficulties with mixed or different presentations.
- **Proprioception**- how much pressure does it take to bite and chew? How much pressure to swallow?

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Mealtime Behaviors

Often maladaptive behaviors form around eating as mealtimes can be emotionally charged for parents and children.

Creating a positive mealtime routine and setting expectations can decrease mealtime behaviors and improve family dynamics.

Mealtime routines must be individualize to the family so that the family can follow through. All routines have a beginning, middle and end.

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Medically Complex Considerations

- This population typically has a tube and needs a team to monitor caloric needs, tolerance of rates and formulas as well as stimulating hunger and balancing oral intake with tube feedings.
- Often times there are comorbities in this population such as cardiac, pulmonary, reflux, dumping syndrome etc which complicate feeding progress.
- Tube weaning is the ultimate goal, but there is a balance. It typically takes years for the child to have the oral skills, stable medically and show enough growth before the tube is removed.

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Selecting Foods

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- Food Chaining- term developed by Cheri Fraker which describes a technique of choosing foods based on the sensory properties of the child's preferred foods.
- Kay Toomey uses a similar approach she coined as food hierarchies.
- Choosing foods based on developmental milestones and the oral motor skills the child needs to develop.

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Autism and Sensory

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- These kiddos may be viewed as extremely picky, have poor growth and GI issues.
- Visual system is key for this population which is why there is such selectivity.
  - Small portions
  - Teach the similarities and differences
  - Teach strategies
  - Build categories of foods: yogurts, pizza instead of brands.
  - Alternate foods to avoid food jags

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Creating a Feeding Team

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- Communication is key for a feeding team to be able to deal with the variability of the feeding needs.
- Growth/Calorie needs: Pediatrician, Gastroenterologist and Dietician. The therapist and parent can communicate volume and quality, but they do not determine calorie needs, tube volume and rates, or formula changes.
- Medications- Gastroenterologist may attempt to manipulate motility, reflux and hunger with some medications.
  - Eosinophilic esophagitus- steriods are used to manage this condition.
- Behavior- typically the treating therapist (speech or occupational therapy) will treat behaviors around feeding. However, if a psychologist is involved, communication is necessary to have a consistent approach.

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Madonna's Comprehensive Feeding Clinic

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- After referral to our comprehensive feeding clinic, our nurse coordinator calls the family to complete a feeding screen.
- The feeding team (OT and ST) review the screen and determine if a team evaluation (OT, ST, gastroneterologist, and dietitian) is appropriate. If another gastroenterologist is involved or the child does not need the full team, the child is scheduled as needed.
- On clinic days, the child will be evaluated by OT and ST at the same time. During that evaluation the most appropriate clinician will be determined and will follow the child.
- After the clinical bedside evaluation, any instrumental evaluations (FEES, MBS) will be scheduled if appropriate.
- The gastroenterologist and dietitian will then evaluate and make formula and medication recommendations. At that time the gastroenterologist will set frequency of follow up appointments. Typically, 1 month-4 month periods are selected.

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Transition to Solids: Common Pitfalls

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- Gagging- the gag reflex is typically present at the mid-blade of the tongue in infants. Mouthing objects and eating foods typically desensitizes the gag and moves it to the back of the tongue.
- Too big of a scoop or dumping and scraping-no lip activation
- Pushing for more volume
- Using Stage 3 baby foods too soon
- Using puffs too early- use a stick they can hold
- Immature “licking tongue”-need to stimulate side movement

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Infant bottle feeding

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- Latch- the infant should take the entire nipple into their mouth. When you tug on the nipple you should feel counter pressure.
- Flow rate- if the nipple collapses-move up in flow- if the infant is coughing, wide glazed eyes, pulling off the nipple or sounds wet -the flow is too fast.
- The first defense is to correct with positioning, flow rate and external pacing. May need to schedule a modified barium swallow study to assess if the infant is aspirating.

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Positioning Flow Rate Problem

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Nipple Flow Rate Problems

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External Pacing

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Resources

- American Occupational Therapy Association. (2007). Feeding, eating, and swallowing knowledge & skills paper. Retrieved 4/21/2011 from www.aota.org
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