First Steps for Working with Children with Feeding and Swallowing Disorders in the Schools

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SLPs in the Schools

• SLP are the most qualified professionals to provide dysphagia services
  – We have the most knowledge and training
  – We are also the discipline recognized in the legislation as providing dysphagia services
    • (see Federal Registrar)

Dysphagia in the Schools

• Safety
• FAPE
  – Access to Curriculum
    • Health
    • Nutrition

Access to the Curriculum

• In 2014, how much do you think the US spent to feed school-age children in school-based programs? (not food stamps, etc.)
• Why is this relevant?

What are the effects?

• Effects of malnutrition on children
  – 7% lower on math tests¹
  – 19% less likely to read a simple sentence by 8 years,
    12% less likely to be able to write a simple sentence¹
  – 13% less likely to be in appropriate grade¹
  – Will go on to learn 20% less as adults²


What are the effects?

• Nutrition
  – Healthiness vs. illness
  – Specific deficiencies (Children's Hospital & Clinics, 2010; Milk Foundation 2011)
    • Concentration
    • Behavior
    • Learning/Academic Performance
• Adequate nutrition and hydration to attend and access the curriculum (ASHA, 2007)
Health and Attendance

• Health & Attendance (ASHA, 2007)
  – Aspiration and aspiration pneumonia
  • More of an effect in children with multi-system deficits (Weir et al., 2007)
• Progressive lung injury (Boesch et al., 2006)
• Wheezing (Boesch et al., 2006)

Efficiency

• Efficiency and ability to complete activities with peers in a timely manner (ASHA, 2007)
  – Improve efficiency for
    • Walking
    • Writing
    • Putting on coats, shoes
    • Does it prevent the child from accessing the curriculum??

OHI

• Generally broad to include school support being able to attend school
  – “limited strength, vitality… limited alertness with respect to the educational environment”
  – Includes:
    • Asthma
    • Heart conditions
    • Leukemia
  – There is not an educational benefit if the child cannot attend

Cases

  • “Bright line” of medical services vs. what is needed to attend school, OHI
  • ‘To benefit from special education environment’
  • Doesn’t *have* to be a physician
  • Dysphagia specifically mentioned, also trach care

New Mexico Department of Education 103 LRP, 57798, SEA NM 2003

• State-level hearing
• Involved modified diet (mech soft, thickened liquids) and strategies (positioning, reflux precautions)
• Modify the health plan to comply, provide adequate staff training to comply

Contoocock Valley School District, 41 IDELR 45, SEA NH 2004

• Denied FAPE because the school ignored safety as it relates to silent aspiration that lead to 2 separate hospitalizations
Team Members

- Parent/guardian
- Paraprofessional
- Private/patient specific nurse
- SLPs
- OTs
- Primary physician
- Sub-specialists
- PTs
- Psychologist
- Dietician
- School Nurse
- Social worker
- Various others

If you are not adequately trained:

- Disclose this, be honest!
- Be willing to learn
- Remember this is not a reflection on you personally; there is a challenge and it needs solved
- Be prepared to draw examples to help administration understand

Know Where to Locate Resources

- ASHA Practice Portal
  - Pediatric Dysphagia, Schools
  - Have to adapt materials

Feeding and Swallowing Disorders

- American Speech Language Hearing Association
  - Feeding disorder
    - “…In pediatrics, this term may be used to describe a failure to develop or demonstrate developmentally appropriate eating and drinking behaviors.” p. 186
  - Dysphagia
    - “A swallowing disorder… may involve the mouth, pharynx, larynx, and/or esophagus.” p. 186

Pediatric Dysphagia Framework

The Importance of History

- Medical History
  - Neurological
    - CP, Seizures, etc.
  - Pulmonary
    - PNA, CLD, recurrent URI
  - GI
    - GERD
  - Developmental
    - Shapes support for oral-motor skills
Signs/Symptoms of Aspiration

- Coughing
- Change in respiration
- Choking
- Gagging
- Changes in vocal quality
- Color changes
- Multiple swallows

Understanding Aspiration

- Incidence of silent aspiration, particularly in neurological disorders
  - Newman, Keckley, Peterson, & Hammer, 2001
  - Arvedson, Rodgers, Buck, Smart, & Msall, 1994
  - Weir, McMahon, Taylor, & Chang, 2011

- Importance of history in making determination for instrumental assessment

Instrumental Assessments

- VFSS
- FEES

- VFSS is still gold standard, but may want to consider FEES

Treatment of Pharyngeal Disorders

- Positioning
  - Flexion vs. extension
  - Neutral head position

- Texture changes
  - Thickening
  - Puree or thicker only
  - Know why changes are needed or recommended

- Alternating solids and liquids
- Slowing flow rate and limiting bolus size
- Electrical stimulation
  - Freed, Freed, Chatburn, & Christian, 2001

Modifications of Liquid Viscosity

- Consistencies: Thin, Nectar, Honey, Pudding
  - Know why thickening

- Commercial Thickeners
  - Powdered: Thick-It, Thick-n-Clear
  - Gel: Simply Thick
  - Gel vs. powder
    - Gel maintains consistency, is harder to mix.
    - Powder is generally cheaper and easier to mix, gets thicker over time.
  - Ask parents to provide drinks; may not work.
  - More challenging if the parents won’t provide thickener
  - Be careful of allergies, constipation
  - May need to give staff in-services

Training the Staff

1) Make it clear why this is important
   - Most people want to help, not harm students
2) Use visuals
   - https://www.youtube.com/watch?v=8scI0vmb28
3) Provide a formal training. Ask administration to attend.
4) Ensure that multiple people are trained; build a redundant system
5) Have multiple measuring scoops/cups
6) Have staff try thickened liquids
Positioning School

1) Positioning
   - Team
   - Wheelchair modifications
   - May need to be a person

Goal with positioning is...

- 90° feet
- 90° hips, slight flexion
- 90° chin; parallel with the ground
- In children with CP, be careful

Pacing/Single Sips

- Will most likely need to be implemented externally; train the team

- Normalize as much as possible
- Be careful not to hyperextend the head; may need a nosey cup

Stability is the precursor to all!

- Jaw stability
  - Dependent on head, trunk stability
  - In typical children develops through oral experiences
Special Cases

• High Tone
  – We cannot change tone in the long term
  – Temporarily slightly alter? Possibly, but at what cost
  – Remember that tone does not equal strength

Lip Closure

• Typical pattern
  – Minimal closure
  – Upper lip assists
  – Upper and lower lip

Lip Closure

• Tone activities
  – Hyper-
  – Hyper-
• Whistles
  – Shape
  – Use as a utensil
• Cups
  – Nosey cup, cut out cup
• Tongue depressors
• Spoons
• Straws (Morris & Klein, 1987)

Spoon Feeding

• Bolus formation and posterior transfer
  – Treating anterior tongue movement
    • Jaw strength and stability
    • External support
    • Spoons
    • Lip closure patterns and/or sucking (Morris & Klein, 1987)
  – Posterior transfer
    • Liquids via spoon
    • Liquid chaser

Stability for Biting, Chewing, Cup Drinking...

• Jaw stability
  – Dependent on head, trunk stability
  – In typical children develops through oral experiences
  – Facilitate oral experiences!

Stability

• Treatment Goals
  – Mouthing
  – Biting
    • Anterior → lateral progression
  – Resistance activities with biting
Lip Closure
• Typical pattern with spoon
  – Minimal closure
  – Upper lip assists
  – Upper and lower lip

Stability
• Specific activities
  – “Old MacDonald,” animals
    • Tug-of-war
  – “Happy and You Know It”
  – Teeth marks
  – “No hands” (variety of foods, straws, anything)
  – Cups with no hands

Biting
• Treatment
  – Jaw strength and stability
  – “No hand biting”
  – Shoot the food- basketball in a cup
  – Pretend to be an animal; eating, tug of war
• Lateral placement
  – Teeth mark
  – “Strong side teeth”

Chewing
• For mature chewing patterns, need developed tongue movements and experience to develop patterns
• Tongue movements
  – Suckling
  – Sucking
  – Mashing
  – Lateralization
  – Diagonal transfer
  • Contribute to rotary chew
  (Morris & Klein, 2000)

Chewing Progression
• Chewing Patterns
  – Munching
  – Diagonal
  – Rotary
  – Refines until 8 years of age
  (Gisel, 1988)

Chewing
• Munching pattern
  – Anterior placement to lateral placement
  – Counting
  – Singing
  – Teeth marks
  – Animals
  – Dinosaurs
Chewing
- Diagonal/Rotary
  - Coordinated movement
  1) Tongue lateralization
     • Initial food placement
     • Hide and seek
     • Push on the finger-exaggeration
     • Race the fish/sprinkles/puff
  2) Movement pattern
     • Back and forth movement
     - Directly understand

Behavior/Feeding
- Language
- Environment
- Texture
- Behavior
- Modeling
- Skills
- Parent-child Intervention/Education

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Texture Classification
- IDDSI
- Developmental Food Continuum (Toomey & Ross, 2004)
- Developmental progression described by Morris & Klein (2000)
- Commercial products (Stage 1, Stage 2, Stage 3)
  - Gerber expanded to include Graduates, Meltables, etc.
Developmental Food Continuum (Toomey & Ross)/ Texture Consideration

- Puree
- Hard Muchable
  - Goal is exploration, not consumption
- Meltable Hard Solids
- Soft cubes
- Soft mechanical
- Mixed textures

Texture Progression

- What textures were trialed at the evaluation?
- Not necessarily this order; do what the child can!
  - Puree
  - Meltable solids
  - Mechanical soft (soft but need chewing)
  - Hard foods
  - Chewy
  - Mixed textures

Behavior/Feeding

- Language
- Environment
- Texture
- Behavior
- Modeling
- Skills
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Feeding Behaviors

- Feeding disorders
  - “...In pediatrics, this term may be used to describe a failure to develop or demonstrate developmentally appropriate eating and drinking behaviors.” (ASHA, p. 186)
- Common descriptions include:
  - Food refusal
  - Food selectivity
  - Disruptive behaviors
  - Extended meals

Oral and Sensory Defensiveness

- Whole body approach to reducing oral defensiveness is recommended
- Graded approaches to activities are a must
- What is that?
- Work distal to proximal, lateral to midline, out to in
  (Arvedson & Brodsky, 2002)

Oral Defensiveness

- Do not stress the child
- They should be incorporated into a routine and not be lengthy
  - Have to fit within the routines
  - Can be aggravating to the child if they go on and on
  - Use routine hygiene as an opportunity to incorporate activities
  (Arvedson & Brodsky, 2002)
Sensory/Behavioral Approaches

- Role of texture  
  - Sensory vs. Motor
- SOS
- Food Chaining

SOS Approach

- Sequential Oral Sensory  
  - 1) parallels the developmental sequence of eating (oral-motor and sensory)  
  - 2) systematic desensitization  
  - 3) developmentally appropriate play  
  - 4) therapeutic goals most efficiently obtained with actual food (not tools/objects)

Toomey, K. A. & Ross, E. S. (2011); Redle-Creath et al. (2004)

<table>
<thead>
<tr>
<th>Goal</th>
<th>Stimulus</th>
<th>Feeding Examples</th>
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<tbody>
<tr>
<td>Positive reinforcem.</td>
<td>behavior</td>
<td>(desired +)</td>
</tr>
<tr>
<td>Negative reinforcem.</td>
<td>behavior</td>
<td>(non-desired -)</td>
</tr>
<tr>
<td>Differential attention</td>
<td>behavior</td>
<td>(desired +)</td>
</tr>
<tr>
<td>Extinction/Flooding</td>
<td>behavior</td>
<td>(desired + until goal achieved)</td>
</tr>
<tr>
<td>Physical guidance</td>
<td>behavior</td>
<td>(non-desired -)</td>
</tr>
<tr>
<td>Shaping</td>
<td>behavior</td>
<td>(desired + as behaviors closer to target)</td>
</tr>
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General Behavioral Strategies

- Structure the environment  
  - Appropriate stimulation  
  - Consistent structure
- Establish a trusting relationship with the child
- Use all resources available

General Treatment Principles

- Maintain a consistent routine
- MODEL EATING (OR THE STEPS TO EATING) YOURSELF
- Provide the child with an opportunity to be successful
- Use "you can" language
- Connect food properties
- FULL TEAM education and involvement is an ESSENTIAL component

Families of Children with Feeding and Swallowing Disorders Report:

- Difficulty working with and communicating with professionals (Rouse, Herrington, Assey, Baker, & Golden, 2002; Craig, Scambler, & Spitz, 2003; Franklin & Rodger, 2003)
- Emotional distress (Franklin & Rodger, 2003; Rouse, Herrington, Assey, Baker, & Golden, 2002)
- Chronic stress (Franklin & Rodger, 2003; Rouse, 2007)
  - Amount of care
  - Number of appointments
- Strained parent-child relationships (Franklin & Rodger, 2003)
- Limited social opportunities for the family and child (Craig et al., 2003)
- Fear of feeding child (Rouse, 2007)
- Fear of long-term impact of feeding and swallowing disorder (Rouse, 2007)
- Increased parenting responsibilities (Franklin & Rodger, 2003)