Paediatric specificities of nutritional assessment

Swallowing assessment in children

L. Remijn (NL)
Swallowing in children

No conflicts of interest

Lianne Remijn PhD
Speech and Language Pathologist/Scientist/Lecturer
Feeding and swallowing problems need:

1. an interdisciplinary approach*
2. a personalized approach*

*Arvedson, 2013
Prevalence of feeding and swallowing problems*

• 25%-45% in healthy children (Arvedson, 2008; Lefton-Greif, 2008; Rudolph & Link, 2002);

• 33%-80% in children with developmental delays or chronic disease (Arvedson, 2008; Lefton-Greif, 2008);

• up to 80% of children with neurological disorders (Parkes et al., 2010; Reilly et al., 1996).

*American Speech and Hearing Association (ASHA)
Normal swallowing process
Pathologic swallowing process
Differences oral anatomy infant - adult
Four Key Questions to Ask Parents*

1. How long does it take to feed your child?
   • Longer than 30 minutes?

2. Are meal times stressful to child and/or parent?
   • Neurologically based skill & safety issues?

3. Is your child gaining weight OK?
   • If no weight gain for 2-3 months, sign of problem

4. Are there signs of respiratory problems?
   • e.g., congestion ↑ during feeding; gurgly voice

* Arvedson, 2013
Different stages and textures

Breast/bottle
Spoon feeding
Solid foods

Reflexactivity → Voluntary and coordinated movements
Feeding development in preterm infants

- Development of sucking and swallowing functions;
- Development of coordination sucking, swallowing and breathing*;
- Development of oral reflexes;
- Important to consider the relationship between sucking (oral stage), swallowing (pharyngeal and esophageal stage), and air way protection.

*Jadcheria (2017)
Assessments in children

- Standardized observation instruments
- Oral motor assessment
- Breathe and swallow coordination; rhythm, breathing stops during swallowing
- Cervical auscultation
- Video-observation (child-environment)
# Observation List Spoon feeding

*(van den Engel-Hoek et al., 2014)*

Score 5 bites. score + or –

<table>
<thead>
<tr>
<th>Oral motor behaviours</th>
<th>Numbers of bites</th>
</tr>
</thead>
<tbody>
<tr>
<td>The infant opens the mouth when the spoon reaches the mouth</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>The infant closes the lips around the spoon</td>
<td></td>
</tr>
<tr>
<td>The infant uses the upper lip to remove food from the spoon</td>
<td></td>
</tr>
<tr>
<td>The food remains in the mouth</td>
<td></td>
</tr>
<tr>
<td>The tongue remains behind the lips while transporting the food</td>
<td></td>
</tr>
<tr>
<td>The tongue remains behind the lips while swallowing</td>
<td></td>
</tr>
<tr>
<td>The food remains behind lips while swallowing</td>
<td></td>
</tr>
</tbody>
</table>
# Mastication Observation and Evaluation

*(Remijn et al., 2013, 2014)*

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tongue protrusion</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>2</td>
<td>Lateral tongue movement</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>3</td>
<td>Munching</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>4</td>
<td>Jaw movement</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>5</td>
<td>Chewing duration</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>6</td>
<td>Loss of food or saliva</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>7</td>
<td>Number of swallows</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>8</td>
<td>Fluency and coordination</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
Results MOE

Healthy

Cerebral Palsy
Interventions

• Food: amount, consistency, taste, structure
• Material: nipple, spoon
• How: rate, pauzes, posture
Take home message

1. Interdisciplinary approach
2. Personalized intervention (child-task-environment)
3. Alert to signs and signals; four red flags (mealtime duration, stress, weight gain, respiratory problems)
Thank you for attention

lianne.remijin@han.nl