“Pediatric Aero-Digestive Disorders in the New Century”

A Valley-Mount Sinai Kravis Children's Hospital educational symposium.

Valley Health System

Mount Sinai

CHILDREN’S HEALTH

Feeding Concerns in the Pediatric Population;

When to refer for feeding therapy along the way

Lori Sperduto Cox MS CCC SLP IBCLC

Faculty Disclosure

- There are no commercial products or services being discussed
- No financial disclosures
- No unlabeled use of a product is being discussed

The Valley Hospital
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Objectives:

- Introduction
- Physiology of the normal swallow
- Muscular and neurological anatomy relevant to the oral phase of the swallow
- Strategies and ideas for successful feeders
- Appropriate referrals
- Final tips & takeaways

Fun Facts

- There are 43 muscles in the face
- It takes less muscles to smile than to frown
- The tongue is the only muscle in the human body that works without support from the skeleton
- The masseter is one of the top 5 strongest muscles in the body
- Humans are capable of making 10,000 unique facial expressions

PHYSIOLOGY OF THE NORMAL SWALLOW

Combination of voluntary and involuntary control

3 functional phases of the swallow:

- *Anticipatory or oral stage*
- *Pharyngeal stage*
- *Esophageal stage*

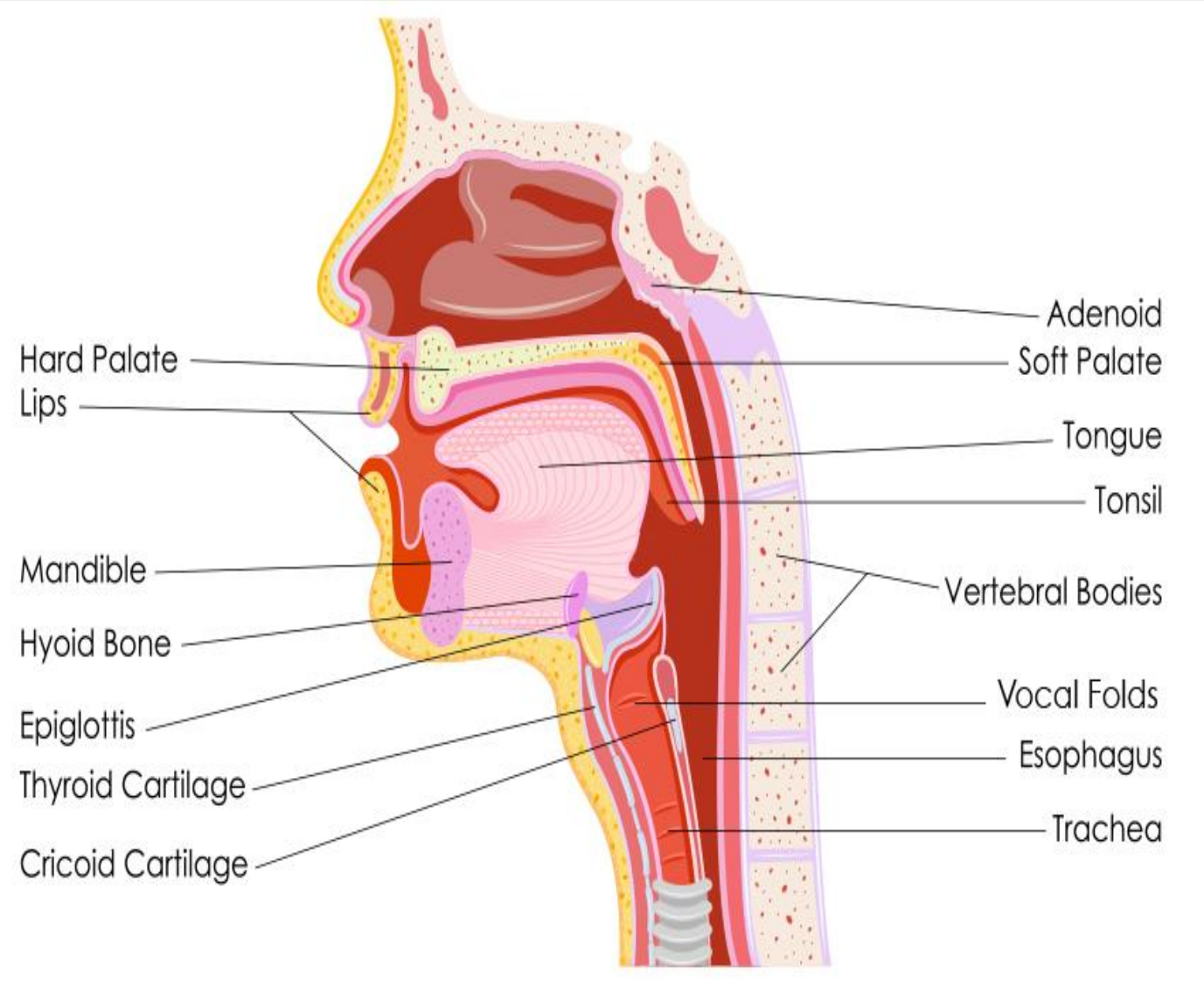
All stages are functionally connected and dysfunction in one stage will impact function in all the others.

Problematic feeding in children

46% of infants born less than 28 weeks gestation have a prevalence of feeding difficulties

42% of infants born between 28-32 weeks gestation have a prevalence of feeding difficulties

38% of infants born between 32-37 weeks gestation have a prevalence of feeding difficulties



All stages of the swallow are functionally connected, therefore dysfunction in one stage can negatively impact function in all the other stages.

Pic of child mbs still

- Pic of adult mbs still

Muscular and neurological anatomical features relevant to the oral phase of the swallow

Physiology

- Willingness to eat, behavior
- Appetite
- Empty stomach
- Pleasurable smell (sensory)
- Taste/temperature (sensory)


StopShop


EXIT

Muscular and neurological anatomical features relevant to the oral phase of the swallow

Anatomy

Ability to close lips to suckle and suck

Jaw mobility

Tongue mobility

Coordination of the lips, jaw, and tongue to produce the appropriate timing necessary for a swallow to proceed normally

Failure of poor physiology

Poor initiation

Limited intake

Limited motivation

Small bite size

Dysfunctional oral motor skills

Behaviors can stem from poor willingness to eat and determining cause for poor physiology is necessary to treat it

Muscle Tone

Functional Muscle Tone

**add taya pic normal tone

Hypotonia

Decreased muscle tone or low muscle tone

Hypertonia

Increased muscle tone or lack of flexibility of the muscle

ORAL MOTOR SKILLS AND MOTOR SKILLS DIRECTLY AFFECT THE PROGRESS AND DEVELOPMENT OF FEEDING MILESTONES

Interruption is skill development can lead to behavior problems which will further impact progress

Add video of Chi crying on other side

Attach 2 vidoes… one normal one dysfunctional

(video of chi with bite of banana holding, and video of baby led weaning success)

Failure of Poor Anatomy

- Leaking of contents out of the mouth
- Loss of labial (lip) seal
- Ineffective action of the tongue to propel the food toward the back of the mouth
- Weak or absent discoordinated suck
- Inability to accept adequate volume

Failure of poor anatomy(continued)

**add chewing video- chi with high chair

Ineffective chew

Increased duration of the oral phase of the swallow

Ineffective timing of the next phase of the swallow

Behaviors can stem from poor anatomy and figuring out where the breakdown in the oral phase is necessary to treat efficiently

Clinical cues of a possible feeding problem

- Prolonged feeding times (>30 minutes)
- Stress during or following feeding for the child and/or parent
- Poor suck, difficulty latching onto the nipple
- Loss of liquid or food around lips
- Excessive tongue retraction or protrusion

ORAL MOTOR SKILLS AND MOTOR SKILLS DIRECTLY AFFECT THE PROGRESS AND DEVELOPMENT OF FEEDING MILESTONES

Interruption is skill development can lead to behavior problems which will further impact progress

Clinical cues of a possible feeding problem (continued)

- Holding food in mouth or prolonged chewing before swallowing
- Excessive drooling
- Indication of respiratory distress during oral feeds
- Wet vocal quality
- Difficulty making transition to a new texture at developmentally appropriate stages (sensory information drives motor response)

Clinical cues of a possible feeding problem (continued)

- Coughing or gagging while eating
- Frequent vomiting or excessive spitting up during or after meals
- Poor weight gain

Example of Medical conditions that impact feeding

- Cardiac defect
- Diaphragmatic hernia
- Gastrointestinal tract problems
- Prematurity
- Respiratory difficulties
- Central nervous system dysfunction
- Gastro-esophageal reflux
- Allergies
- Developmental delays
- Chromosomal abnormalities

Strategies for successful feeders

- Family mealtimes
- Exposure to non familiar foods without pressure
- Presentation matters
- Small bite size to increase oral motor success and management

Insert video of taya with the big spoon outside at pool

Strategies for Successful feeders continued

Increase sensory information through taste and temperature

- lemon
- cinnamon
- garlic
- dipping sauces

Build trust with the child through consistent bite placement

Model “yaya” when child is chewing to provide visual feedback

Build on small wins rather than focusing on “he/she didn’t eat it” (exploration is the first step)

Appropriate Referrals

Coughing during bottle drinking

Consistent vomiting during/after eating

Excessive drooling

Messy bottle feeds

Poor spoon anticipation

Excessive oral loss during spoon feeding

Gagging during mealtimes

Poor behaviors with bottle, spoon, or solids

Difficulty transitioning to early table foods

Poor transition to tablefoods

Picky eaters

Difficulty with straw drinking or open cup drinking

- Reliance on a nasogastric tube to meet nutrition and hydration
- Reliance on a gastrostomy tube to meet nutrition and hydration
- Poor weight gain
- Developmental delays effecting tone and oral development
- Medical diagnosis that impacts success of feeding development

Appropriate referrals continued

Responsive Feeding is Embedded in the Theoretical Framework of Responsive Parenting

(Black & Aboud, 2011)

Prompt-responding to cues of hunger and satiety

Emotionally Supportive-no pressure, focus on learning and love, feed patiently and slowly

Contingent- acknowledge the child's communication, experiment with different combinations, tastes, textures

Developmentally Appropriate-support self feeding, model positive mealtime behaviors, expose to new foods, tastes, and textures

Final tips & takeaways

Feeding is multifactorial

A team approach is necessary

Children with complex medical histories are at increased risk for delays in their feeding development

Using a systematic approach to target feeding deficits and breaking down the behavior is most successful

Feeding development should be considered transactional or bi-directional, in context of a long-term relationship between parent and child

(Walton, Kuczinski, Haycraft et al., 2017)

THANK YOU

Lori Sperduto Cox MS CCC SLP IBCLC

201-612-1006

Center for Child Development, Valley Hospital

lsperdu@valleyhealth.com

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