Slide 1 Pediatric Feeding Disorders: A Multidisciplinary Approach to Assessment and Treatment Elements of Successful Children's **Feeding Treatment** Slide 2 Elements of Successful Feeding Treatment • Understand behavioral intervention - Utilizing behavioral interventions • Understand of the roll of the Nutritionist $- \, {\sf Nutrition} \ {\sf consult}$ Oral Motor • Sensory Sensitivities Slide 3 **Traditional Sensory Treatments** Sequential Oral Sensory Approach (S.O.S) Kay Toomey PhD Food Chaining Cheryl Fraker CCC/SLP Sensory Integrative activities/Sensory Diet implementation prior to food introductions Professionals often recommend treatments based on Sensory Integration (72% of feeding programs)

Slide 4 S.O.S. • Sequential Oral Sensory Approach Kay Toomey PhD - Child lead/ child paced If child refuses, the therapist halts attempts Social role modeling - Systematic desensitization - Cognitive learning through sensorimotor experiences Sensory processing disorders and phobias cause feeding difficulties (Lane, 2008; Toomey, 2010) GOAL: Expansion of the child's food repertoire Slide 5 Sensory-based Treatment • Sensory approaches work very well for some children; however, there is little to no empirical data to support our beliefs about a sensory integrative approach to feeding concerns • Behavioral/ABA approach to feeding concerns has mounting empirical support; however, remain controversial in the SLP/OT community of Feeding therapists

Slide 6

ABA v SOS

 A Comparison of the Sequential-Oral-Sensory Approach to an Applied Behavior Analytic Approach in the Treatment of Food Selectivity in Children with Autism

Kathryn M. Peterson, Valerie M. Volkert, Cathleen C. Piazza, Ashley M. Niebauer, & Kayla D. Broksle 2014 University of Nebraska Medical Center's Munroe-Meyer Institute

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Petersen et al, 2014

Overall Findings

- During ABA, acceptance and mouth cleans were high across foods for all participants
- During SOS, zero or low acceptance across foods for 3 of the 6 children
- More age-typical eating during ABA
- Participants were self-feeding bites of table-textured foods with utensils
- Increased bite size and variety
 - $-% \left(-\right) =\left(-\right) \left(-\right) =\left(-\right) \left(-\right) \left($

Slide 8

Assessment

- 1. a. Oral Motor Function
- b. Sensory Sensitivities
- 2. Behavioral components of feeding concerns
 Mealtime behaviors
- 3. Nutrition

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Slide 9

Assessment

- Beckman Oral Motor Evaluation
 - Debra Beckman CCC/SLP Beckman, D.A., 2007
 - Baseline function of oral structures for the purposes of speech and feeding; criterion referenced tool
- Oral Hypersensitivity Scale

Beckman, D.A., 2004

- 5 level rating scale
- profound, severe, moderate, mild, typical
- Subjective & objective descriptions of responses to food presentations and oral sensorimotor function

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Assessment

- Developmental/Global Pre-Feeding Checklist
 <u>Pre-Feeding Skills: A Comprehensive Resource</u>
 <u>for Mealtime Development, 2nd ed. (2000)</u>
 Suzanne Evans Morris Ph.D., CCC/SLP
 Marsha Dunn Klein, M.Ed., OT/R
 - Detailed check list of developmental skill/ sequential skill acquisition

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Slide 11



Slide 12

Data Collection: Oral Motor & Sensory Operational Definition Examples

• Diagonal / Diagonal-Rotary chew

- Rhythmical chew
- Lateralization of the tongue from mid-line
- Mid-blade elevation of the tongue
- Reduced occurrences of gagging
- Reduced occurrences of emesis

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Slide 13	Operational Definition:	
	Diagonal Chew / Diagonal-Rotary chew	
	Example:	
	Diagonal/Diagonal-Rotary chew	
	, , ,	
	A rhythmical (1 chew/second), resistive /graded vertical	
	movement of the jaw with concomitant unilateral	
	and/or bilateral lateral and vertical movements of the	
	tongue (to push the bolus to the molars and re-collect the bolus on the tongue prior to swallow)	
	are botas on the tongue prior to strain thy	
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Slide 14	Operational Definition:	
	Lateralization of the Tongue	
	Example:	
	Lateralization of the tongue	
	A lateral (to the side) sweeping movement of the	
	tongue to the molars or lateral borders of the oral	
	cavity (cheeks)	
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Slide 15		
Silue 13	Decision Rule for Texture Advancement	
	Example minimal competency to advance from puree	
	to dissolvable solids	
	3-5 non-nutritive resistive chews (on chewing tool)	
	33%-66% lingual pressure matching to stimulus	
	(finger or probe)	
	3. Cheek strength at 2/5 x	
	Accepts food by mouth	
	5. Swallows puree without s/s aspiration	
	6. 20% or less gags and no emesis	
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Elements of Oral Motor Function

- Strength and range of movement of the lips, cheeks and jaw
- · Variety of lingual movement
 - Lateralization of the tongue to cheek, molars, and upper & lower gum line
 - Mid-blade elevation of the tongue
- Alignment of the jaw and dentition
- Oral Hypersensitivity
- Hard and Soft Palate

Slide 17

Elements of Feeding Deficits

Oral Motor Control

- Jaw strength
- Chewing Cheek strength & range of movement
- Pocketing
- Lingual Variety - Bolus control
- · Lip Strength & Range of movement
 - Bolus control
- Sensory Tolerance
- Sweet, salty, sour, bitter,
 Super taster
- Smell
- Food on plate, food
- nearby Touch
- Texture
- Visual
 - Food on plate/nearby,
 color, shape, size
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Slide 18

Oral Motor Target specificity

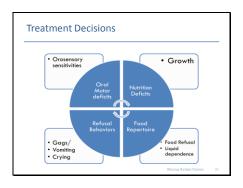
To increase bolus control during mastication

- Specifically, lateralization of a pea size bolus to the molars for 8-10 resistive, rhythmic chews (1/second) prior to the swallow
- OR
- Specifically, increase mid-blade elevation of tongue for 3/3 trials across 2 sessions

- Specifically, contain a pea size chewable bolus on molars for 8-10 resistive, rhythmical chews prior to swallow



Slide 20



Slide 21

Treatment Decisions

- Nutrition needs of the child guide initial p. o. food targets based on the child's current nutritional needs and growth deficits
 Fruits, Vegetables, Starch, Protein
 Liquids (nutritionally balanced supplement, water, milk)
- Liquids (nutritionally balanced supplement, water, milk)
 Volume tolerance per meal / balanced with enteral feeds
 Continuous enteral feeds vs boius enteral feeds
 It is within the scope of practice and the role of the Nutritionist to guide gastric tube weaning with the caregivers and to create a balanced enteral/p. o. feeding plan
 Oral Motor/ feeding skill guides:
 The texture of foods introduced i.e., puree, ground, mashed, X" table (each texture has different caloric density), and
 The quantity, viscosity, and vessel for p.o. Ilquids

 The SLP's scope of practice does not include tube weaning

Pediatric Feeding Disorders: Case Study

Rashelle Berry MPH, MS, RD, CSP Michele Cole Clark MED CCC-SLP Roseanne Lesack, PhD, BCBA-D, ABPP





Slide 23

Goal of Admission: Increase Texture of Foods from Puree to Chewable Solids

- HX: 38 week gestation, IUGR, Failure to Thrive, Liquid dependent
- 20 months at admission to day treatment and accepts all foods at puree texture, but unable to tolerate higher textures or changes in textures
- · Baseline OM eval:
 - Poor upper and lower lip strength , poor bilateral cheek strength, and poor Jaw strength-left side(3/20 chews @ 15%) and right side (4/20 chews @ 20%), Phasic bite pattern, moderately reduced variety of lingual movement
 - Severe oral hypersensitivity: unable to bear weight on molars and frequent gagging with emesis

Slide 24

Maddie- 20 months

Oral Motor Control

- Poor bilateral cheek strength (less than 35%)
- Poor Jaw strength- left side(3/20 chews @ 15%) and right side (4/20 chews @ 20%)
- Phasic bite pattern
- Moderately reduced variety of lingual movement (35%-80%)

Sensory Tolerance

- Unable to bear weight on molars
- No mouthing of toys/fingers
- Frequent gagging with

MADDIE'S 8-wk Sensorimotor Goals

- Maddie will bite off a pea size bolus from a dissolvable solid with molars, chew 5x, and swallow without gag, 2 out of 3 trials
- Maddie will demonstrate lateral lingual shift in response to pressure probe/non-nutritive chewing, 2 out of 3 trials
- Maddie will demonstrate emerging diagonal chew in session.
- Maddie will reduce emesis with texture introduction to 1/5x in 4, 5 bite sessions
- Caregiver will be compliant and proficient with home program assigned by therapist.

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Slide 26

Maddie: Introduction of Texture

Treatment Elements

- A. Introduction of dissolvable solid at molars
- 1. Crumbled dissolvable solid on Soft EZ spoon
 - Pseudo-nutritive (organza wrapped dissolvable solid bolus) for bolus control and tolerance of texture b/w molars, Goal: 5 chews/presentation
- 2. Pea size dissolvable solid on Soft EZ spoon
- B. Introduction of soft chewable solids
- Pea size soft chewable solid Pseudo-nutritive (soft chewable solid in organza) Goal: min. 5 8 chews
- 2. Pea size soft chewable solid on the Soft EZ spoon, Goal: min. 5 8 chews

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Slide 27

Task breakdown

- ✓ Determine REASONABLE DEMAND w/each task
- Tolerance of pressure/weight bearing on molars using NN chewing task (home program)
- b. Intro of solid using a crumbled dissolvable solid presented to molars on EZ spoon
- C. Tolerance of NN lingual lateralization tasks to engage tongue in bolus control
- d. Addition of pseudo-nutritive /sham bolus (organza wrapped 1 pea size dissolvable solid)
- e. Home program involving practice 5 min, 3x/day

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Maddie's Home Program

 3 times per day, no more than 5 minutes



- Parent Home program implemented:
- Resistive non-nutritive chews with Chewy T
- Lingual lateralization exercise
- Munching with Soft EZ spoon with dissolvable crumbles
- Parent return
 demonstration weekly

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Slide 29

Maddie- 4 weeks later

- Munching dissolvable solids with 5 munches prior to the swallow and the swallow is timely (no packing/pocketing) independently
- Demonstrating a diagonal chew with a pseudonutritive (organza wrapped chewable bolus) at 50% on her better side
- * Chewing chicken nugget $\mathcal{H}''x~\mathcal{H}''$ strip on better side (L) with cued chews up to 12, packing at anterior lingual sulcus, and swallowing after redistribution back to tongue

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Slide 30

Discharge- 8 weeks later

Maddie met all goals and accomplished chewing foods in her meals:

- Chews with 5-8 chews with a pea size chewable solid – raisin, chicken nugget, soft fruits in meals
- Diagonal chews to her better/preferred side (L)
- Demonstrating a lingual shift of a chewable solid from mid-line to her left molars at 80-100%

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Slide 31	Nutrition Evaluation]		
	Nutrition Evaluation			
	• 14 months old			
	 Dependent on breast milk via bottle feedings to meet 100% of caloric and nutritional needs 	-	 	
	 In behavioral feeding therapy to increase intake of pureed foods (was starting to make progress) 			
	- Anthropometrics:	_		
	 <3rd percentile weight for age <3rd percentile length for age 			
	 <3rd percentile weight-for-length 			
		-	 	
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Slide 32	Nutrition Evaluation, cont.	_	 	
	Difficulty breastfeeding			
	No maternal dietary elimination Poor growth since birth	-		
	 Diagnosis of "idiopathic short stature" 			
	Regular BMs, no report of GI pain	_		
		-		
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Slide 33	Nutrition Evaluation	_	 	
	Initial recommendations: Catch up growth needs			
	Increase food variety (with additives)	-		
		_	 	
		-		
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