Helping Children with Autism and Restrictive Eating: An Interdisciplinary Approach to Improving Mealtimes

The Pediatric Feeding Program at Seattle Children's Hospital

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Common Problems in PFD's

Field et al., 2003

Symptoms

- Total food refusal
- Food refusal by type
- Food refusal by texture
- Food refusal following small intake
- Difficulty transitioning to self-feeding
- Oral motor problems
  - Chewing, tongue movements, lip closure, etc
- Dysphagia
  - Difficulties swallowing/aspiration VFSS
- Sensory sensitivities
- Rigidity/anxiety

Food refusal looks like:

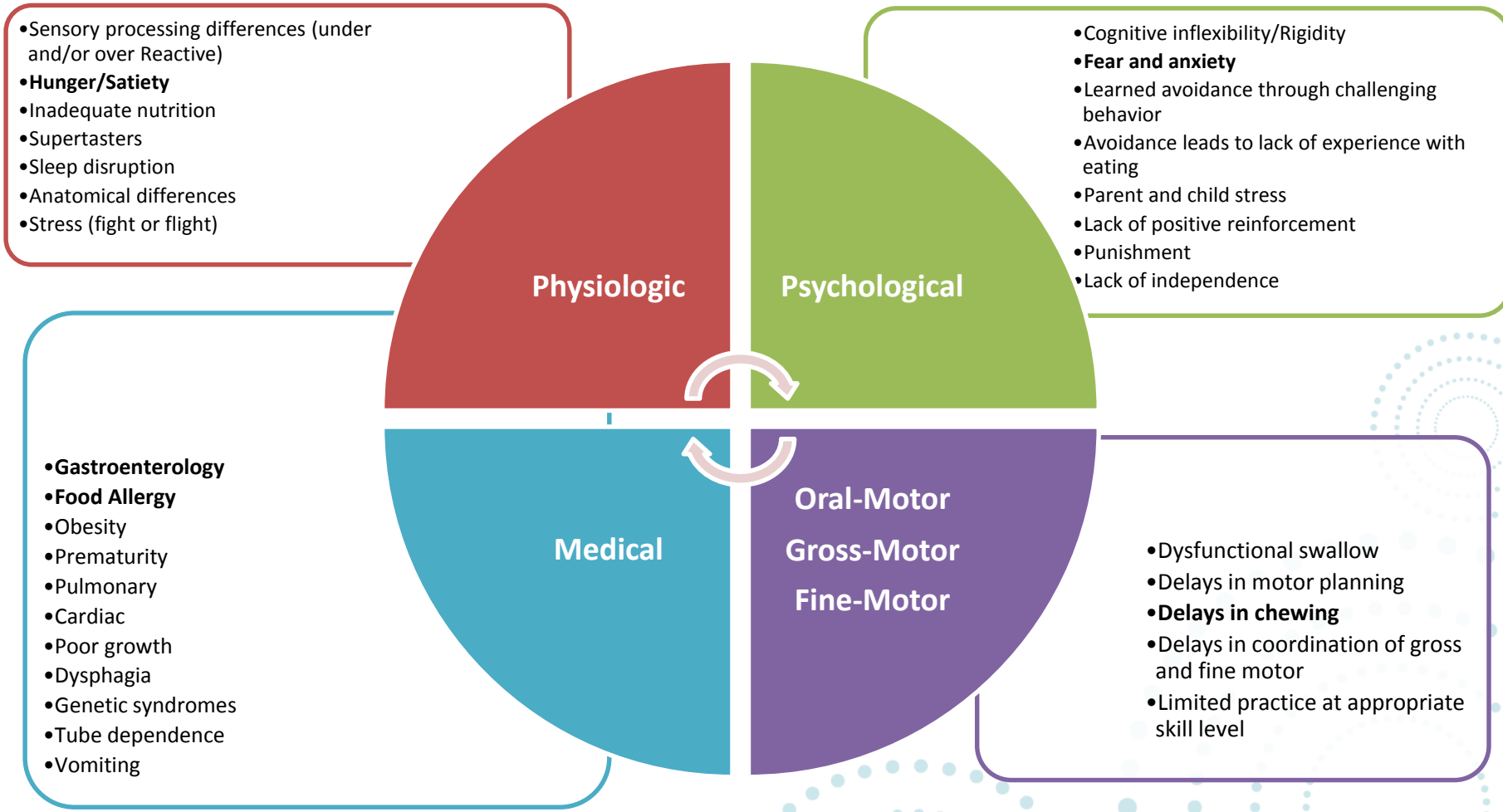
- Turning head, pushing food away, covering mouth
- Expelling food
- Packing food
- Gagging, coughing and vomiting
- Crying at meals
- Challenging behavior

- **Outcomes**
  - Chronic poor growth
  - Compromised nutritional status or malnourishment
  - Invasive medical procedures
  - Tube/Liquid dependence
  - Increased family stress
  - Anxiety and learned behavioral challenges
  - At-risk for poor outcomes due to variability in provider access, coordination and approaches
  - Disrupted Hunger/Satiety
  - Loss of developmental opportunities with feeding

Feeding Disorders and ASD

- Prevalence of feeding problems is estimated to be as high as 89% in children with ASD
  - Cermak et al 2010; Ledford & Gast, 2006; Matson & Fodstad 2009 for reviews
- Feeding problems are more common in children with ASD versus typically developing children (Schreck et al 2004)
  - Refused more food
  - Required more specific utensils to eat
  - Required food presented in specific ways
  - More likely to consume lower textured foods
  - Eat a narrower range of foods

Multifactorial Influences to Feeding Disorders



**Often what sets the occasion for feeding difficulties is not what maintains the difficulty overtime

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Dolezal et al., 2016

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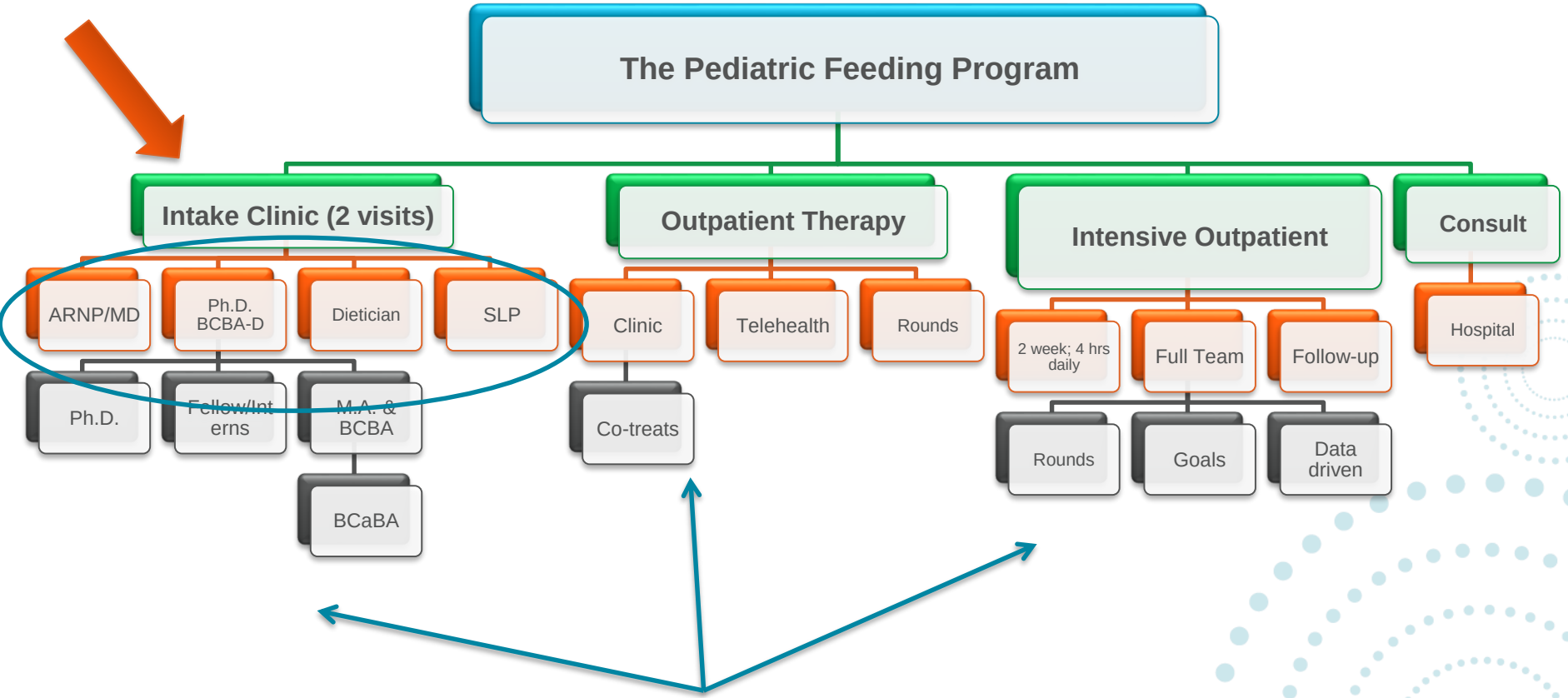
The Pediatric Feeding Program at the Autism Center

Our Continuum of Care



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Medical Considerations

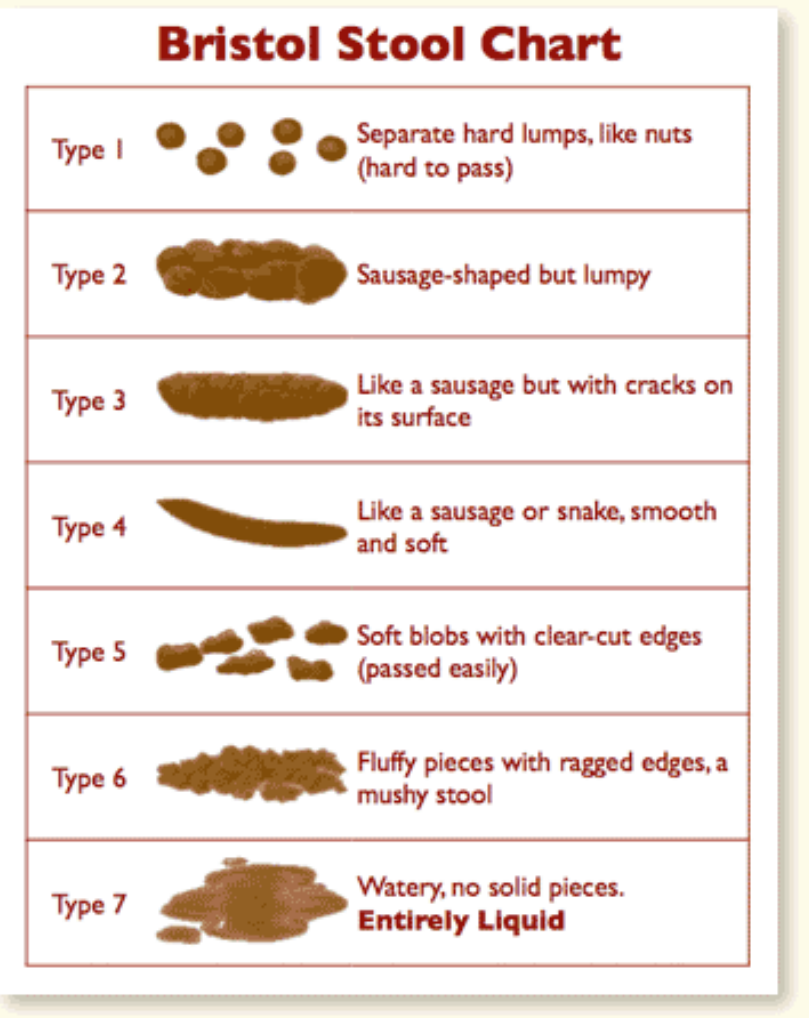
Head to Toe Screening and Evaluation

Pre-Treatment Medical Screening

- Hearing or vision impairment
- ADHD, anxiety, autism, speech delays, etc.
- Mouth problems (malocclusion, cleft palate, tongue-tie, cavities)
- Swallowing difficulty (dysphagia)
- Gastroesophageal reflux
- Cardiac or pulmonary issues
- Obstructions (cystic fibrosis, gallstones)
- Constipation
- Celiac or inflammatory bowel disease
- Allergies or intolerances
- Seizures
- Fine/gross motor dysfunction
- History of prematurity
- Surgical history
- Nutritional deficiencies
- Obesity or malnutrition
- Acute illness

Reference: Childhood Feeding Disorders (Kedesdy and Budd, 1998)

CONSTIPATION



- **Constipation is VERY common among our patient population.**
- **Signs and Symptoms:** infrequent bowel movements, hard stools, large stools, straining with bowel movements, abdominal pain (can be severe), retentive posturing, encopresis (stool leakage), decreased appetite.
- **Home Treatment:** behavioral changes, dietary changes, PRN treatment with pear juice, apple sauce, prunes, or OTC laxatives.
- **When home care isn't enough: More aggressive treatment (which may include a "cleanout" phase) may be necessary.**

Reference: Current Diagnosis & Treatment: Pediatrics, 20th ed. (Hay et al., 2011)

Medical Evaluation Goal: To maximize overall health and set the child up for a safe and successful feeding treatment.

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Nutrition Considerations

Nutrient Intake

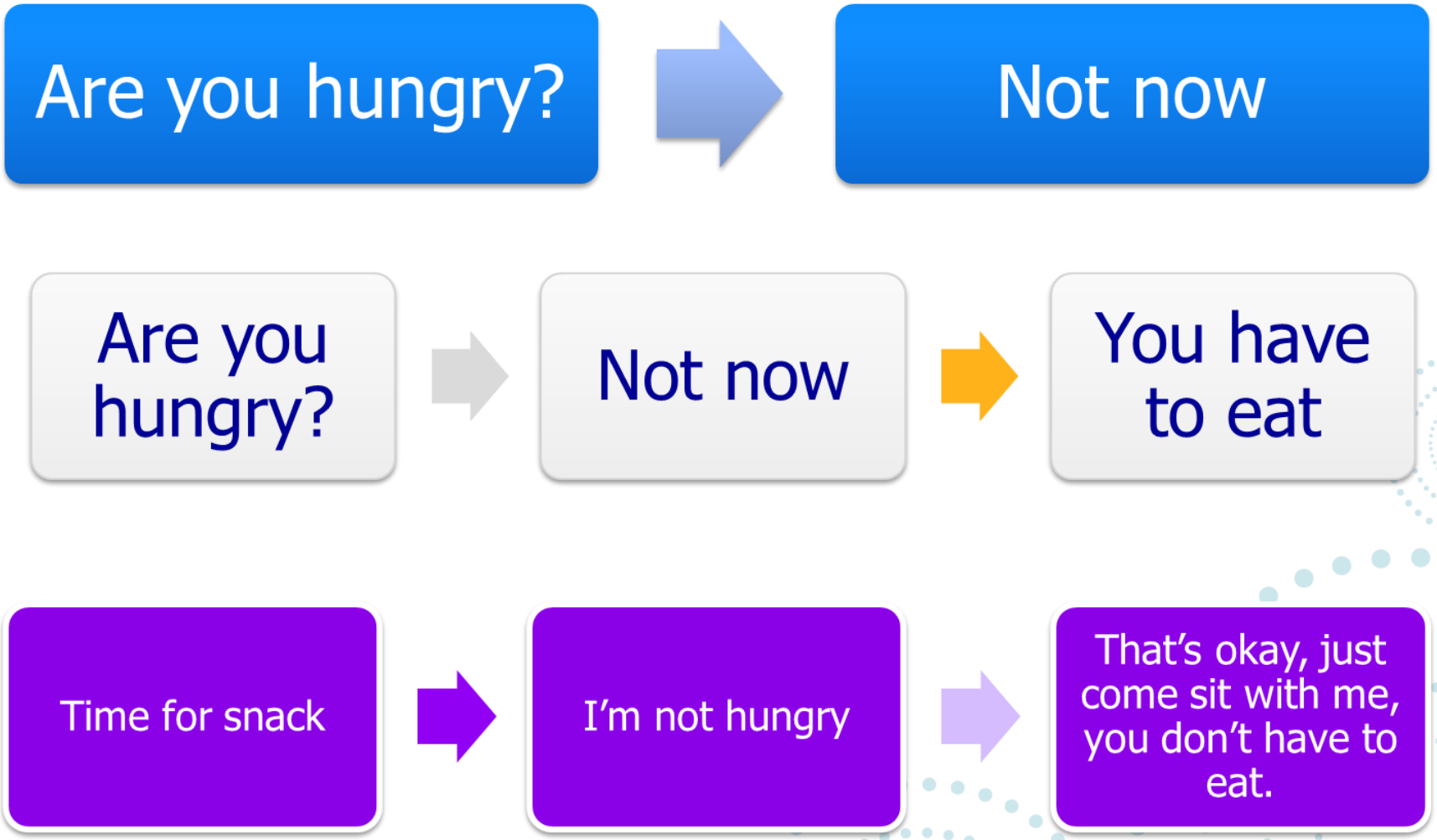
Hunger Regulation

Barb York, MS, RD, CD

Hunger and Satiety Regulation -- A Foundation for Larger Intervention Goals

- Interest in eating
- Focus on eating
- Engaged in feeding session
- Consistent intake (balance and quantity)
- Flexibility
- Interest in new foods (variety)
- GI function
- Tolerance of G-tube feedings

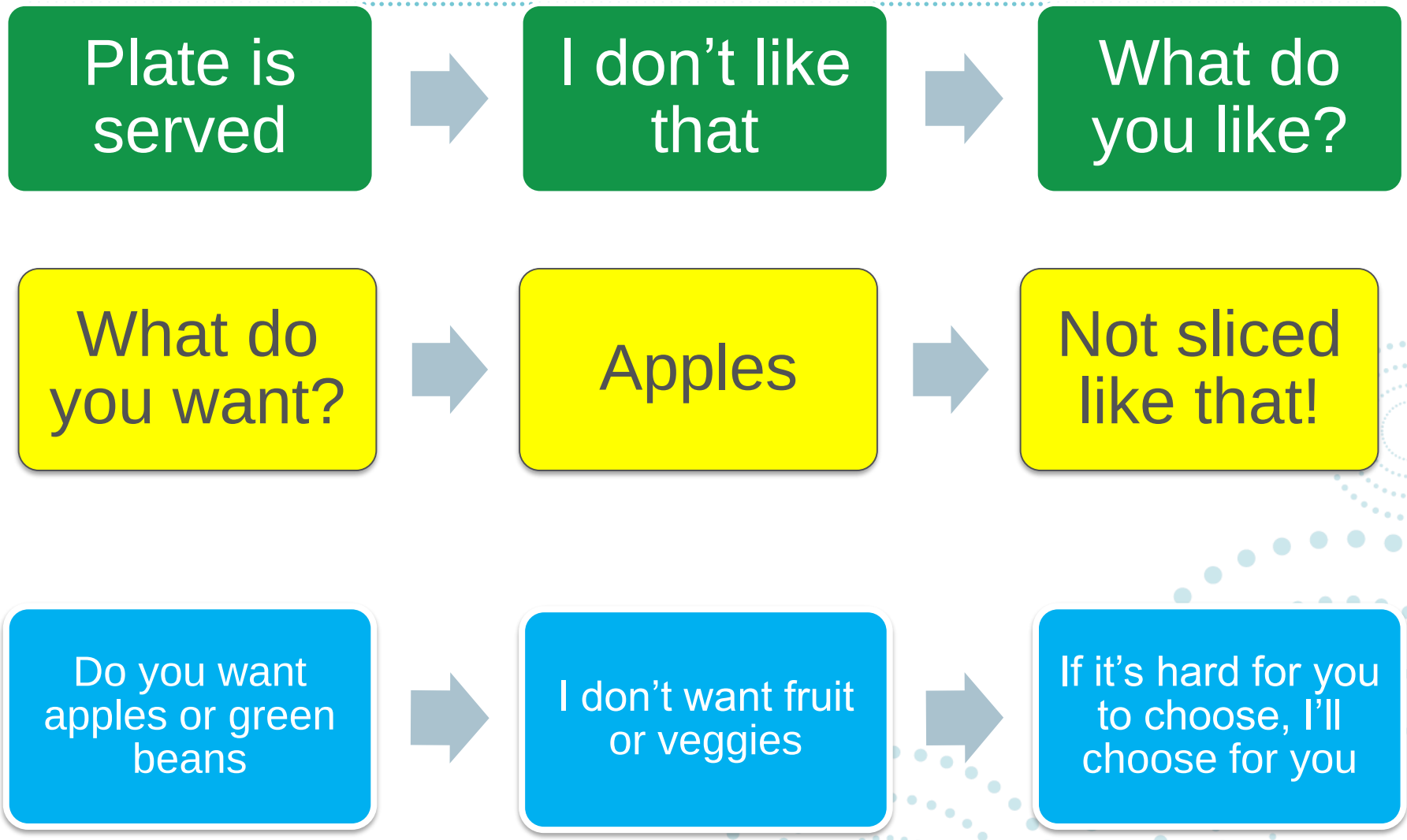
Presentation: Prompt and Response



Initial Hunger/Satiety Regulation Goal: Focus on Preferred Foods

Preferred Foods	Moderately Preferred Foods	Novel Foods
Potato Chips	Yogurt 2x per week	
Goldfish	Applesauce	
Pizza 3x per week	Carrots	
Chocolate Milk		

Presentation: Cater or Consider



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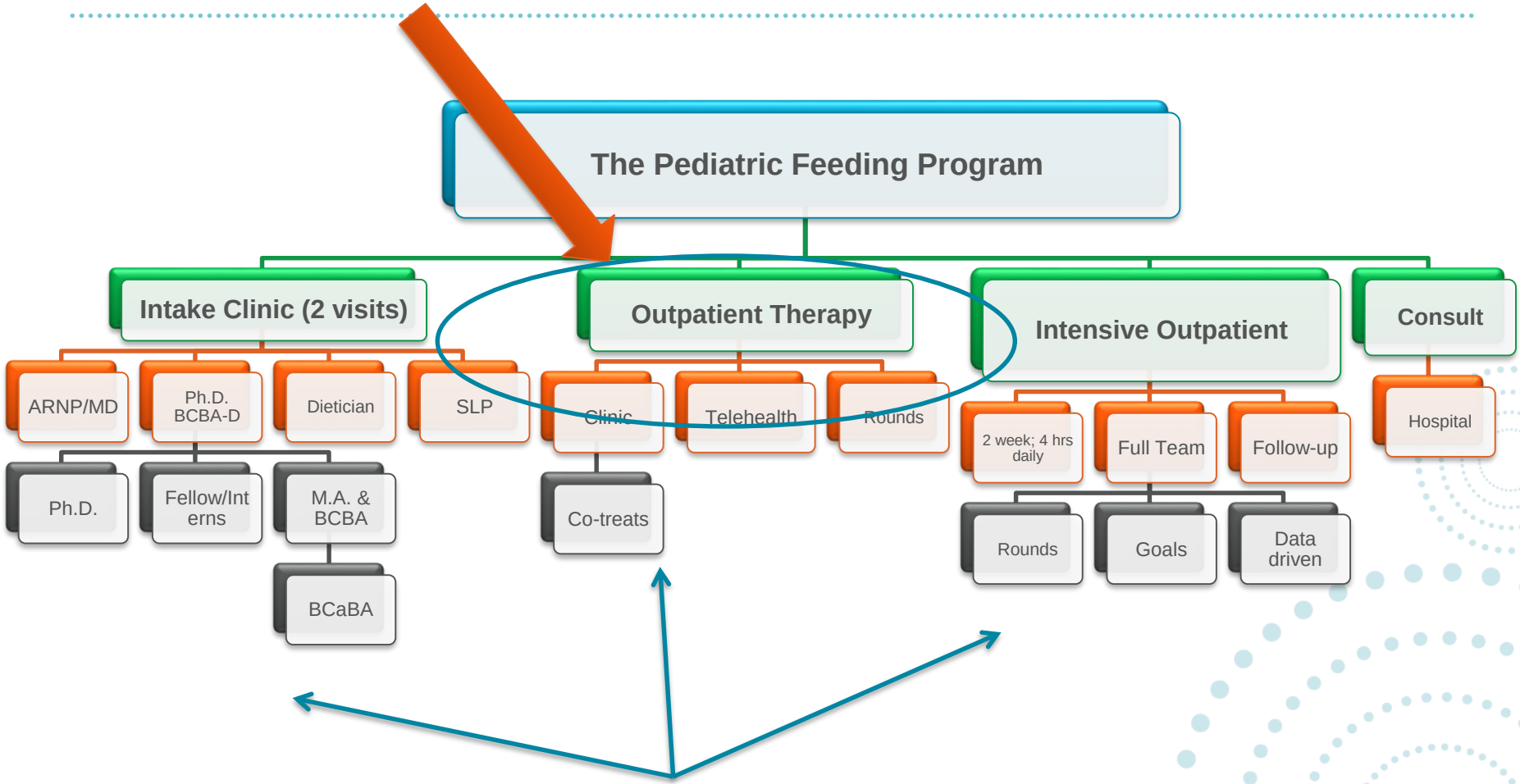

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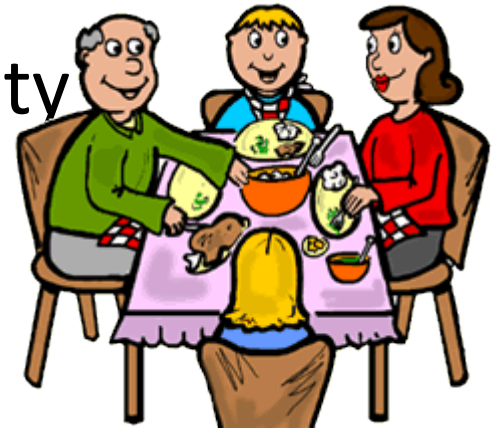
Education- Motivational Interviewing

- Feeding Relationships
- Eating patterns, hunger and satiety
- Food selection
- Target foods, behaviors
- Parenting skills, vocabulary
- Reading and responding to hunger
- <u>Highly collaborative intervention process!!</u>



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What do Occupational Therapy (OT) and Speech-Language Pathology (SLP) Contribute?

Primary Factors Considered in Evaluation

- Swallowing Function/Aspiration Risk
- Oral-Motor Feeding Skills
- Sensory Awareness
- Gross and Fine Motor Skills
- Positioning and Environmental Factors

- OT and SLP can both address oral feeding. Each has different areas of focus/expertise.
    - OT often addresses gross and fine motor skills for self-feeding, equipment needs to maximize positioning, and sensory processing.
    - SLP tends to specialize in evaluation of swallowing, and may also address cognitive, speech, language, and social communication skills.

The Driving Questions:

- How do we help progress this child's oral feeding in a way that is safe?

- What are the specific factors for this particular child that we will target in therapy and as a part of the team that will improve this child's overall progress with eating/drinking?

Swallowing Function/Aspiration Risk

- Two types of Swallowing Evaluation
  - VFSS
    - Radiographic picture of swallowing
    - Must be able to sit in radiology booth
    - Must consume barium

  - Clinical Swallowing Evaluation
    - Evaluates for clinical signs/symptoms of aspiration
    - Can use real food/drink in a less threatening environment
    - Cannot rule out silent aspiration
    - Can also evaluate oral-motor feeding

Oral-Motor Skills

- Teeth, tongue, palate, lips, jaw, cheeks: Strength, range of motion, planning, and coordination? Are they symmetrical in form and movement?
- Ability to move bolus in an organized fashion to back of mouth to initiate swallow
- Lip seal, suck, liquid management within mouth, spoon clearance
- Stages of development of ability to move food bolus around within mouth (mashing, anterior-posterior tongue pump, lateralization, rotary chew)

Sensory Processing/Integration

- Sensory awareness and response to food/drink in the mouth
  - **Hypo-**sensitive (under-reactive): Child may stuff mouth with food in order to feel the food (over-stuffing/pocketing). May then hold food in mouth and cheeks and not swallow, or gag/vomit upon attempting to swallow.
  - **Hyper-**sensitive (over-reactive): Child may find common smells, tastes, textures, sounds, movements highly aversive. Gagging is a common response to this. As a result, may accept only a very restricted range of foods in order to avoid particular smells, tastes, or textures.

- OT may complete further evaluation of Sensory Processing using: parent report, clinical observations of mealtime and playtime, review of child's food diary and accepted foods list, and the Sensory Profile questionnaire

Gross and Fine Motor Skills

Fine Motor Skills

- Pincer grasp for picking up small items
- Force gradation
- Utensil grip (power grip)
- Other hand skills: Rotation for opening containers, pronation/supination for positioning spoon correctly to get food to mouth, ability to bring cup to mouth.

Gross Motor Skills

- Posture, foot support, seating support
- Proximal stability (core strength) needed for distal mobility (arms and hands) and oral-motor ability

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Psychological and Behavioral Considerations

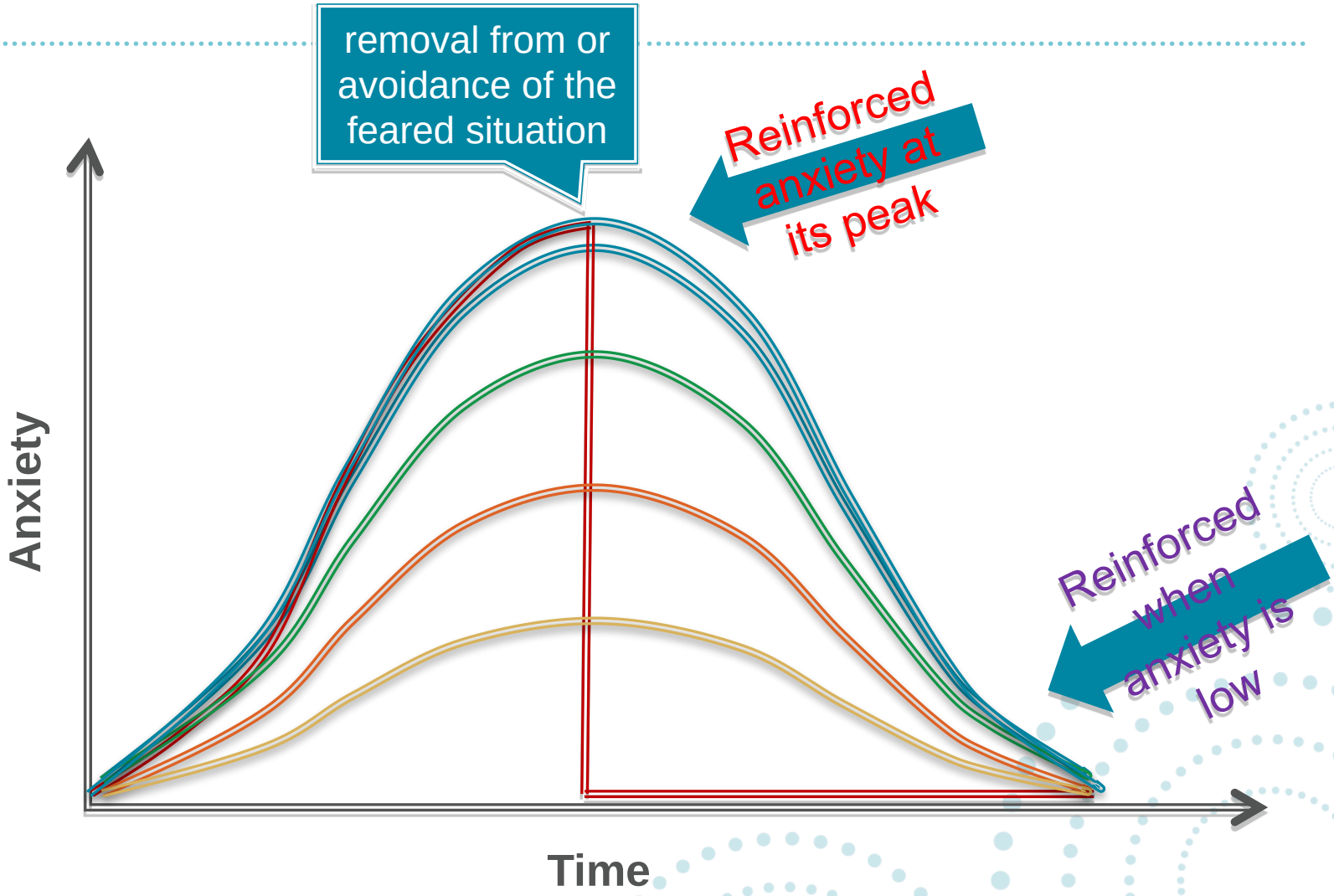
Danielle Dolezal, Ph.D., BCBA-D
Clinical Supervisor of the Pediatric Feeding Program

Why Refuse to Eat?

- **A child learned it was hurt or uncomfortable**
  - Aversive conditioning and biologic complications
    - Food Allergies, Pain, difficulties integrating multisensory information, GERD, swallowing delay, constipation, child is NOT HUNGRY, Supertasters,
- **A child feels like what you are asking is too hard**
  - Response Effort and Skill Deficits (Chewing/volume/bite size)
- **A child is scared even though they have the abilities**
  - Anxiety/Phobia related to swallowing (choking episode)
  - Adults sneaking bites of new foods in thus refuse anything novel
  - A child vomited when tried something new
- **A child has strong preferences for their favorites**
  - Food jags, patterns of restricted interests, rigidity
- **All lead to patterns of learning that don't support feeding goals**
  - A child developed avoidant behavior to gain access to favorite foods or escape eating all together (patterns of reinforcement)

Dolezal et al., 2015

What Maintains Anxiety?

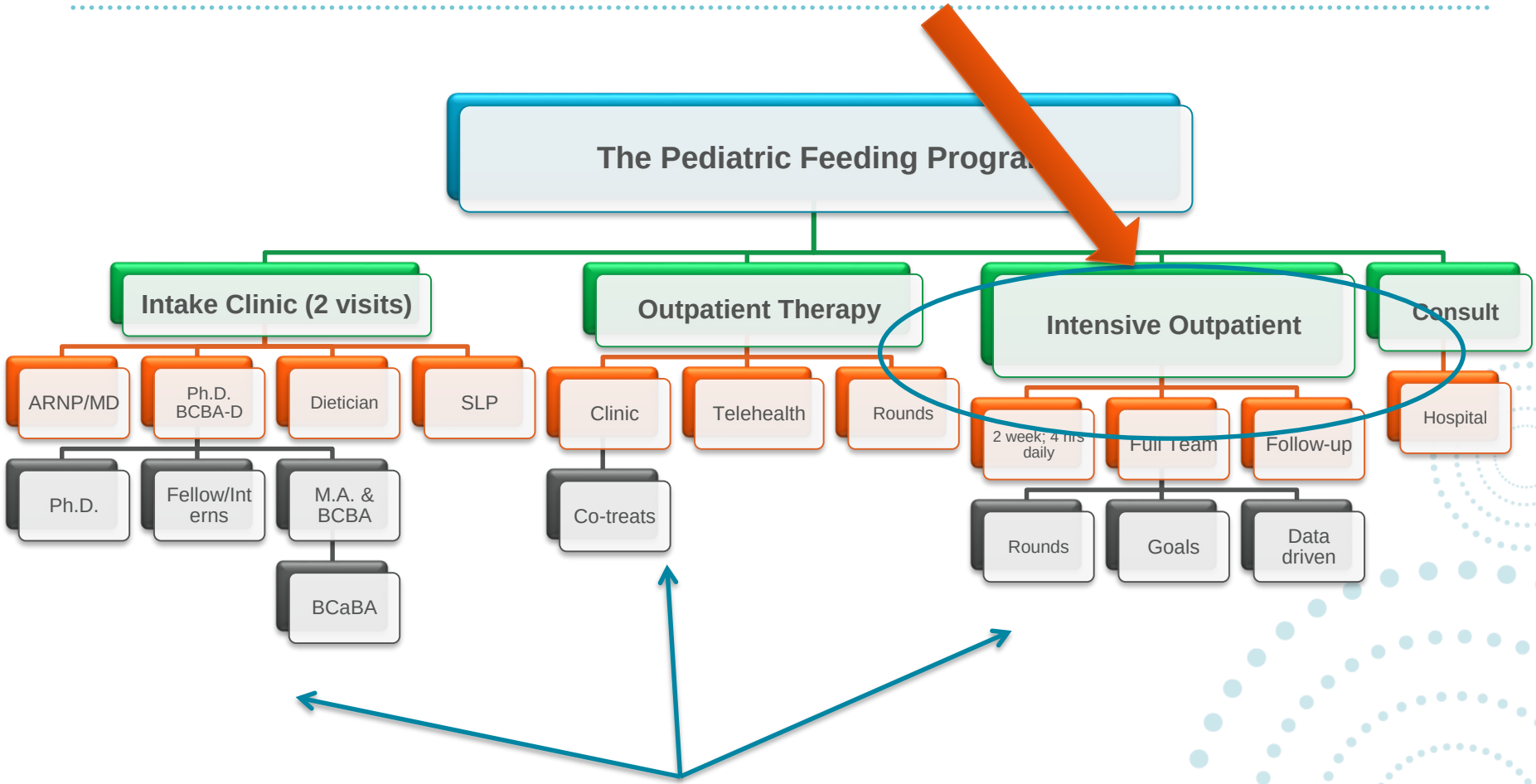


Variety of Approaches

- **Applied Behavior Analysis Methodology & Interventions**
  - Use of behavioral principles to improve mealtime and outside of mealtime behavior while also measuring child/parent change in response to these interventions
    - Interventions utilized include: positive reinforcement procedures, shaping, fading, and antecedent-based interventions (visual schedules, alterations in effort/quality of food types, bite size, utensil, choice, etc)
- **Cognitive Behavioral Therapy (CBT) Programs:**
  - For Child: *Facing Your Fears* and Exposure work
  - For Parents: *Optimistic Parenting* and Parenting Groups/Partners
- **Biobehavioral Interventions Combined with ABA**
  - **Hunger Regulation** to increase motivation and intrinsic positive reinforcement for eating coupled with ABA, sensory, and skill-based treatments. These might include systematic alterations in g-tube feeds or high-calorie beverage.
  - **Skill and Sensory-Based** to increase motivation and skills to be successful with eating targeting parent/child goals while also reducing a child's desire to escape or avoid mealtimes coupled with ABA and other nutritional intervention.

Dolezal et al., 2015

Our Continuum of Care



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Intensive Outpatient Program

- Biopsychosocial Model
- Parents implement all assessment and treatment
- 2-3 weeks, M-F, 4-7 hours daily
- Interdisciplinary team involved throughout
- Goal setting and data-based evaluation and monitoring
- Family Satisfaction Measures

Dolezal et al., 2015

The PFP Intensive Outpatient:
Feeding Subtype

Subtype of Feeding Difficulty	%	n
Total Food Refusal *90% g-tube or bottle dependence*	44%	11
Selectivity by Type	40%	10
Selectivity by Type and Texture	16%	4
G-tube Dependence	52%	13
Liquid Dependent	12%	3

Dolezal et al., 2015

The PFP Intensive Outpatient:
Medical and Developmental Concerns

Medical and Developmental Concerns	%	n
Autism	52%	13
Developmental Disability	68%	17
Genetic Syndrome	16%	5
Prematurity with NICU stay	40%	10
GERD	60%	15
Chronic Constipation	88%	22
Pulmonary disorder/dysfunction	48%	12
Food Allergy	32%	8
Cardiac Impairment	24%	6
Tube use prior to 1 year of age	81%	13
Disruptive Behavior Disorder	60%	15

Dolezal et al., 2015

The PFP Intensive Outpatient:
Behavioral Outcomes

Type of Goal	Average at Baseline	Average at Discharge	Range at Discharge
Food Refusal (*n*=25)	73.5%	6.26%	(0-21%)
Variety (*n*=21)	5.76	26.88	(4-62)*
Texture (*n*=10)	40% 20% 40%	Puree to Junior Puree to Fork Mash Puree to Chopped Fine	
Goals Set (*n*=25)	10.52	10.32	98% of goals achieved
G-tube (*n*=13)	90% of kcal	9.6% kcal	

Dolezal et al., 2015

Conclusions

- Etiology of feeding disorders is complex and the initial factors that set the occasion for the difficulty don't often explain its maintenance (e.g., GERD and respondent conditioning)
- Work with your team to isolate the functional factors for continued feeding difficulties to prioritize treatment
- Be systematic; ask questions, take data, one change at a time
- AutismPFP@seattlechildrens.org

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