

Pediatric Feeding Disorders

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Disclosures

I have no financial relationships or conflicts of interests to disclose

Overview

Background

Assessment

Treatment



Learning Objectives

1. Describe diagnostic criteria of pediatric feeding disorders.
2. List causes of feeding problems in children.
3. Describe assessment and treatment procedures across different disciplines involved in feeding intervention.
4. Identify children with possible feeding disorder to refer to treatment.



Pediatric Feeding Disorders

Background and Overview of Diagnosis



REMEMBER

I love my grandpa

- he plays ball with me!
- he let's me stay up late!
- he makes me giggle!



RABBY JOE'S



Papa Fishing



WRESTLE

WRESTLE

1 in 37

...children are affected by PFD.



~70%

...of children with autism

~43%

...of children with congenital heart disease

~42%

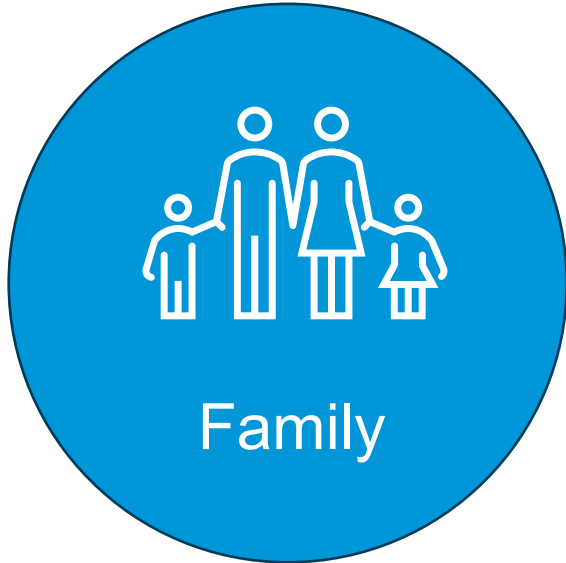
...of children born prematurely

40-70%

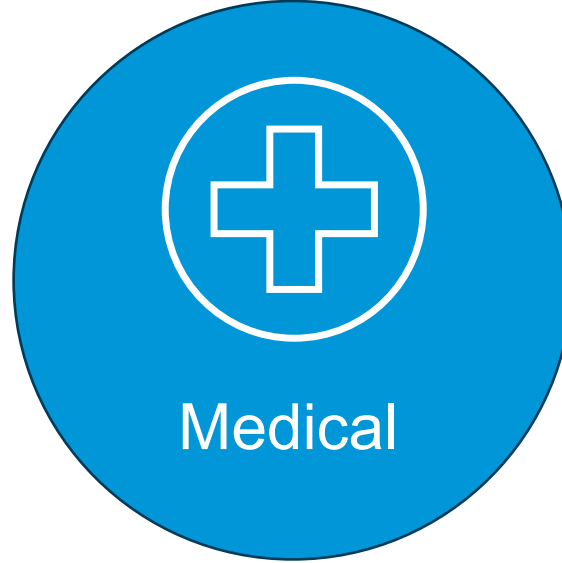
...of children with chronic medical conditions



Background



- Impact to daily life
- Higher parent stress
- Lower self-efficacy



- Nutrient deficiencies
- Weight loss/gain
- Physical and/or Cognitive impairments



- Limited number of providers

Parents are perceived as...

Catering **Stubborn** Uneducated **Lazy** Incompetent

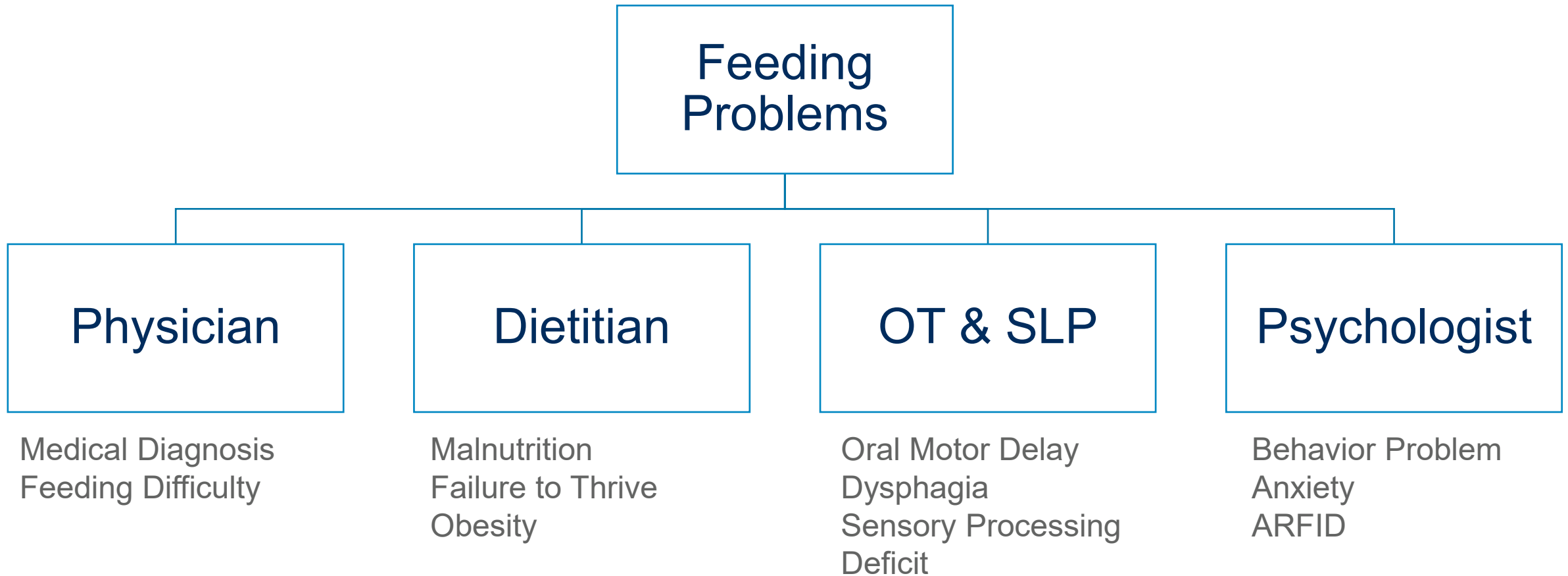
Incompetent **Difficult** Catering Busy

Catering Lazy Stubborn

Uneducated **Incompetent** Difficult

Overprotective Stubborn **Busy**

Past Diagnostic Classifications



Limitations of Undefined Diagnostic Criteria



IMPACT

Late or absent identification of feeding dysfunction

Ineffective management

Limited research

Lack of funding

IMPAIRED HEALTH; DISABILITY

Limitations of Undefined Diagnostic Criteria



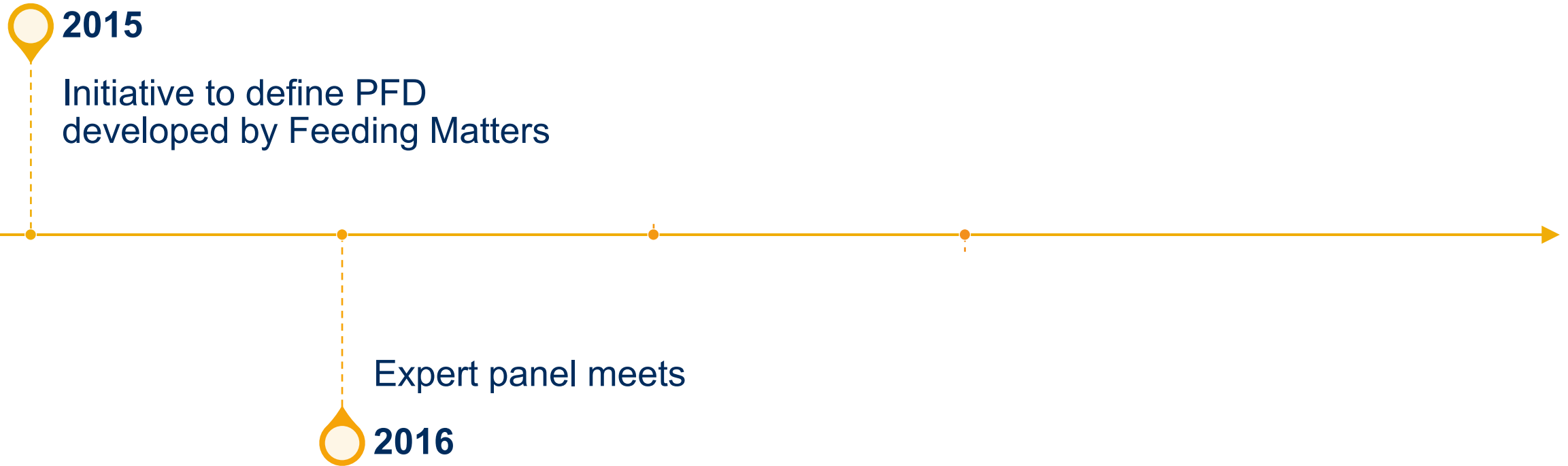
IMPACT

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IMPAIRED HEALTH; DISABILITY

Origins of PFD



Origins of PFD



Origins of PFD



REVIEW ARTICLE: NUTRITION

OPEN

Pediatric Feeding Disorder—Consensus Definition and Conceptual Framework

**Praveen S. Goday, ††Susanna Y. Huh, *Alan Silverman, §Colleen T. Lukens, †Pamela Dodrill, *Sherri S. Cohen, *Amy L. Delaney, #Mary B. Feuling, **Richard J. Noel, ††Erika Gisel, ††Amy Kenzer, §§Daniel B. Kessler, †††Olaf Kraus de Camargo, *††Joy Browne, and ††††James A. Phalen*

ABSTRACT

Pediatric feeding disorders (PFDs) lack a universally accepted definition. Feeding disorders require comprehensive assessment and treatment of 4 closely related, complementary domains (medical, psychosocial, and feeding skill-based systems and associated nutritional complications). Previous diagnostic paradigms have, however, typically defined feeding disorders using the lens of a single professional discipline and fail to characterize

What Is Known

- Pediatric feeding disorders lack a universally accepted definition.
- Previous diagnostic paradigms have defined feeding



Origins of PFD



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Diagnostic Criteria for PFD (R63.3)

Disturbance in oral intake of nutrients, inappropriate for a child's chronological age (vs. developmental age), lasting 2 weeks and associated with 1 or more of the following:

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Disturbance in oral intake of nutrients, inappropriate for a child's chronological age (vs. developmental age), lasting 2 weeks and associated with 1 or more of the following:

1. Medical dysfunction

- **Cardiorespiratory compromise during oral feeding**
- **Aspiration or recurrent aspiration pneumonitis**

Diagnostic Criteria for PFD (R63.3)

Disturbance in oral intake of nutrients, inappropriate for a child's chronological age (vs. developmental age), lasting 2 weeks and associated with 1 or more of the following:

1. Medical dysfunction
2. **Nutritional dysfunction**
 - **Malnutrition**
 - **Specific nutrient deficiency or significant restricted intake of one or more nutrients resulting from decreased dietary diversity**
 - **Reliance on enteral feeds or oral supplements to sustain nutrition and/or hydration**

Diagnostic Criteria for PFD (R63.3)

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1. Medical dysfunction
2. Nutritional dysfunction
3. **Feeding skill dysfunction**
 - **Need for texture modification of liquid or food**
 - **Use of modified feeding position or equipment**
 - **Use of modified feeding strategies**

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1. Medical dysfunction
2. Nutritional dysfunction
3. Feeding skill dysfunction
4. **Psychosocial dysfunction**
 - **Active or passive avoidance behaviors by child when feeding or being fed**
 - **Inappropriate caregiver management of child's feeding and/or nutrition needs**
 - **Disruption of social functioning within a feeding context**
 - **Disruption of caregiver-child relationship associated with feeding**

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Acute PFD (<3 months' duration; R63.31) vs chronic PFD (>3 months' durations; R63.32)

The impaired oral intake occurs in the absence of the cognitive processes consistent with eating disorders. The patterns of oral intake is not due to lack of food or congruent cultural norms.

Screening in Primary Care

Infant and Child Feeding Questionnaire[®] (ICFQ) Screening Tool

6-QUESTION SUBSET

Does your baby/child let you know when he is hungry?	YES	NO	
Do you think your baby/child eats enough?	YES	NO	
How many minutes does it usually take to feed your baby/child?	<5	5-30	>30
Do you have to do anything special to help your baby/child eat?	YES	NO	
Does your baby/child let you know when he is full?	YES	NO	
Based on the questions above, do you have concerns about your baby/child's feeding?	YES	NO	

Red flag answers are in orange. If 2 or more of your answers are orange please contact your pediatrician.

- Concerns will likely be brought to pediatrician
- Screen early
- ICFQ is a quick questionnaire that assesses for possible feeding concerns.
 - 2 or more orange → refer for assessment

Silverman AH, Kristoffer BS, Linn C, et al. Psychometric Properties of the Infant and Child Feeding Questionnaire. *Journal of Pediatrics*. 2020 August;223:81-86.e2. DOI: 10.1016/j.jpeds.2020.04.040

Lucas

- 2-year-old male
- Parents concerned with feeding
 - Limited variety
 - Limited volume
- Slow weight gain, hx of reflux
- Feeding difficulties since 3-months-old
 - Back-arching when eating as baby
 - Emesis
 - Difficult to find preferred formula
- Formula supplement since 15-months-old
- Parents have tried different strategies to feed



Lucas

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Assessment

Referral to Plan of Care

Coordinated Care Model



Assessment: Medical

- PCP, GI, NP, RN
- Associated with...
 - Prematurity
 - Cardiopulmonary disease
 - Genetic/chromosomal anomalies
 - Craniofacial anomalies
 - Neurodevelopmental disorders
 - GI disorders



Assessment: Medical



Labored breathing

Color changes in lips or face when eating

Sweating when eating or drinking

Gurgle or squeaking sounds

Reoccurring upper respiratory infections

Crying, arching, coughing, grimacing when eating/drinking

Suspected food allergies

Multiple formula changes

Vomiting

Never seems hungry

Physical discomfort when eating/drinking

Assessment: Nutrition

- Pediatric registered dietitian
- Assess diet to identify missing nutrients
- Assess daily intake
 - Food logs
- Develop food list



Assessment: Nutrition



Unable to eat or drink enough to grow or stay hydrated

Insufficient or too rapid of a change in weight or height

Lack of certain nutrient

Need for nutrition supplements

Reliance on certain food for nutrition

Need for tube feeds

Constipation

Limited variety for age

Assessment: Feeding Skill

- Pediatric SLP or OT
- Safe eater/feeder
- Sensory responses during meals
- Aspiration risk
- Choking risk



Assessment: Feeding Skill



Issues with breastfeeding

Labored breathing or gasping

Gurgles or wet breaths

Coughing, gagging, choking, retching

Loud swallows

Unable to eat/drink enough for growth

Excessively short or long mealtimes

Need to thicken liquids

Need for modified texture

Need for special bite presentations

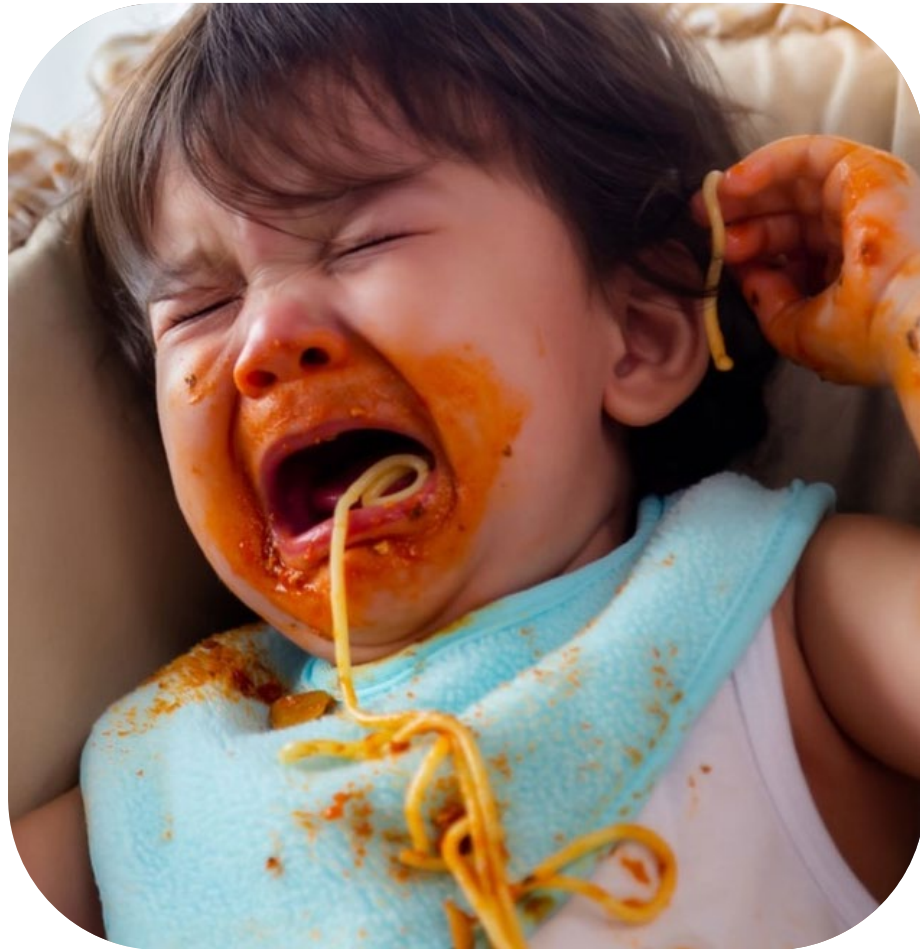
Need for special positioning

Assessment: Psychosocial

- Psychologist, social worker, behavior analyst
- Meal



Assessment: Psychosocial



Unable to come or stay with family at meals

Refusal to eat what is offered or to eat at all

Disruptive mealtime behaviors

Unable to eat with others present during mealtimes

Child exhibits stress or fear during meals

Caregiver stress during meals

Presence of bribes, threats, or yelling during meals

Need for distraction and/or rewards during meals

Unpleasant mealtime interaction

Lucas

- Medical
 - Manage reflux
 - assess for other dx
- Nutrition
 - What % of oral intake meets his needs
 - Nutrient deficiencies
- Skill
 - Difficulties with self-feeding
 - Drinking from cup
- Psychosocial
 - Establish good meal hygiene
 - Address refusal behavior



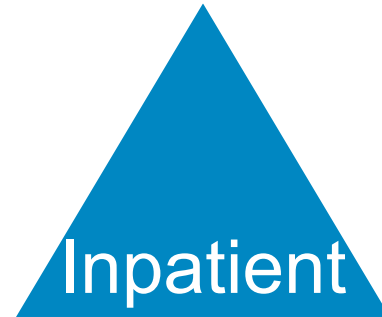
Treatment

A Multidisciplinary Approach to Care

Coordinated Care Model



Models of Treatment

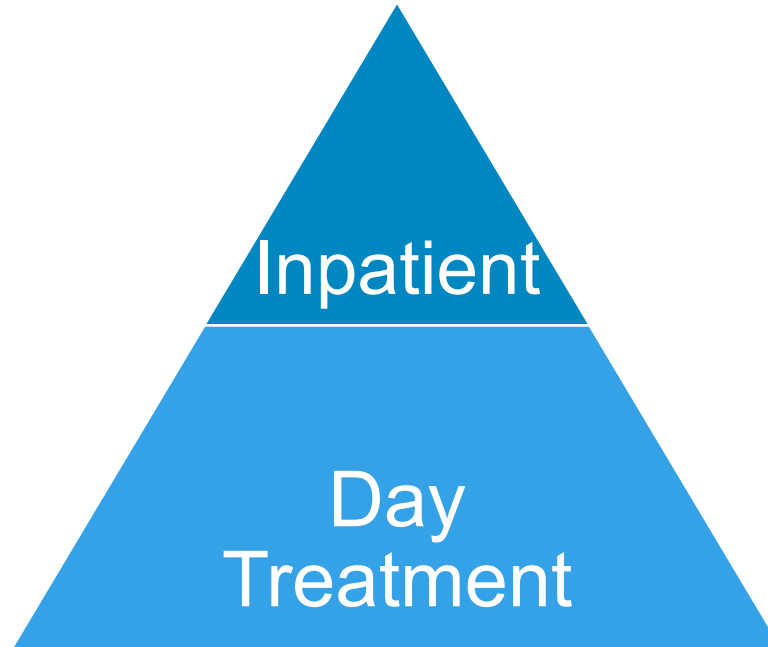


Inpatient Program



- Team of providers across four domains
 - Medical
 - Nutrition
 - Feeding skills
 - Psychosocial
- Multiple meals per day (e.g., 2 – 4)
- For children with severe feeding difficulties that require 24-hour nursing, medical supervision or fluid intake

Models of Treatment



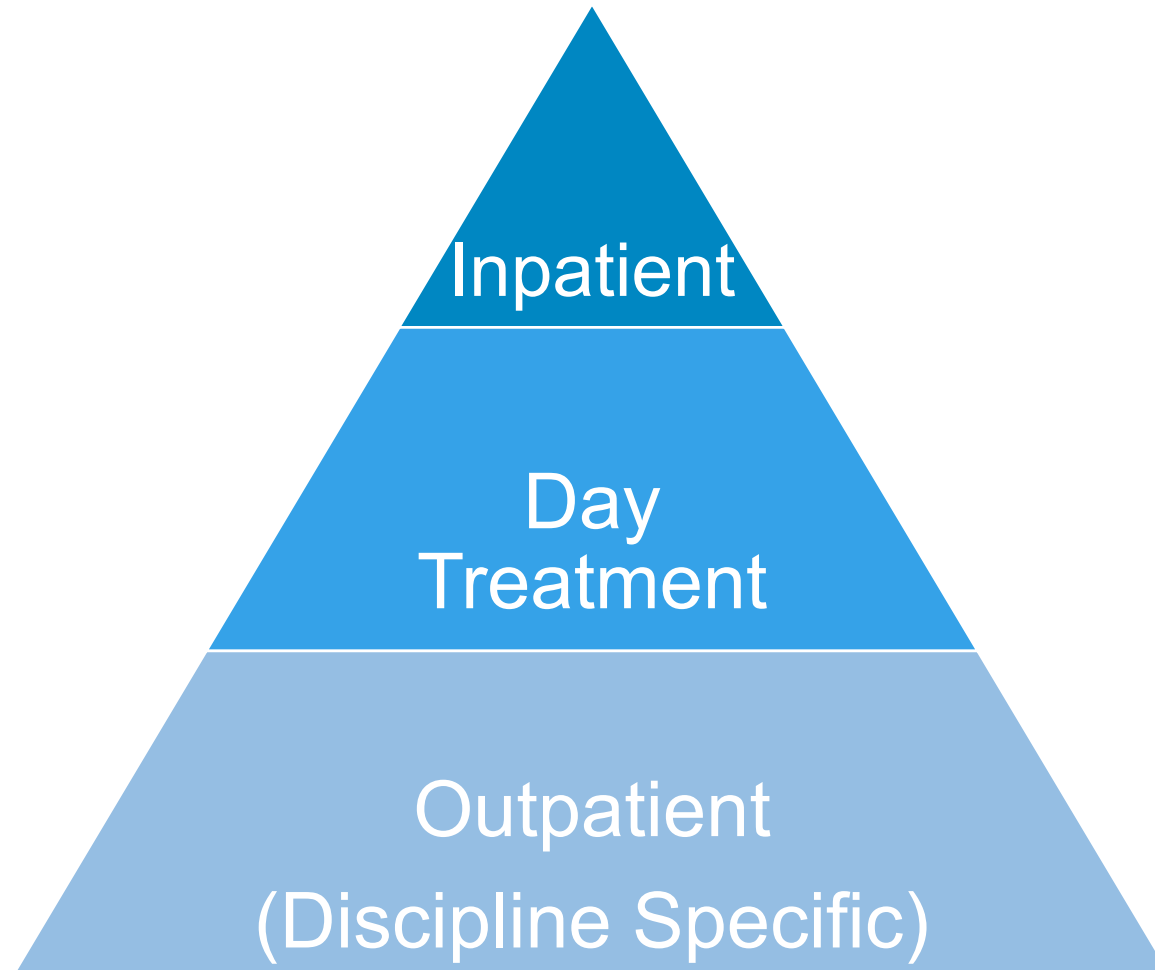
Day Treatment Program

Team of providers across four domains

- Medical
 - Nutrition
 - Feeding skills
 - Psychosocial
- Multiple meals per day (e.g., 2 – 4)
 - Multiple consecutive days in a week (e.g., Monday – Friday)
 - Children with feeding difficulties that require more intensive treatment and have not responded to traditional outpatient services.



Models of Treatment



Outpatient Program



- Assessment should include multi-disciplinary approach
- Intensive services are not recommended/needed
- Can be used as a trial to see whether more intensive therapy is needed
- Nutritional status is not severely impaired
- Can be used as follow-up from intensive services

Psychosocial Approaches

- Make table “fun”
- Start with a reasonable demand
- Differential reinforcement
 - Bites, swallows, etc.
- Choice
 - Food, size, etc.
- Bolus fading
- Variety fading
- Texture fading



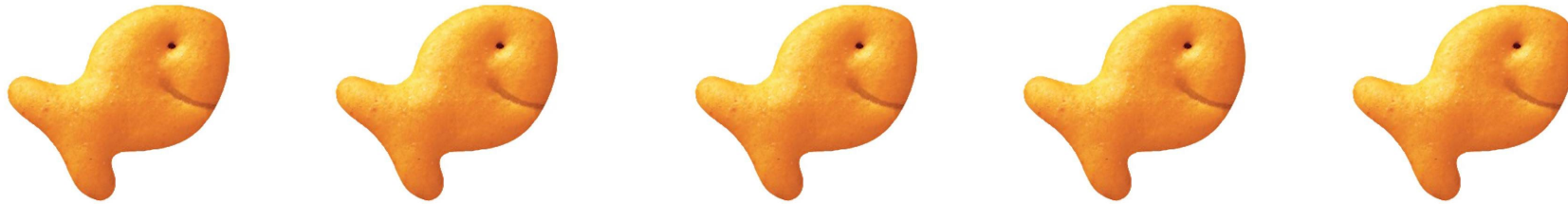
Psychosocial Approaches

- Bolus Fading



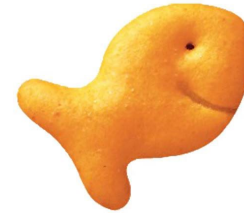
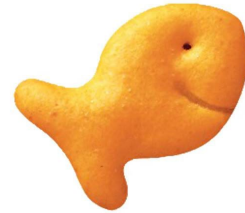
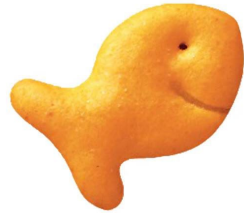
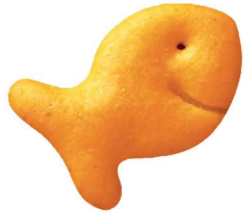
Psychosocial Approaches

- Variety Fading



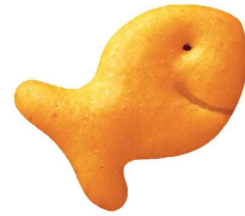
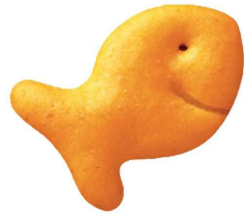
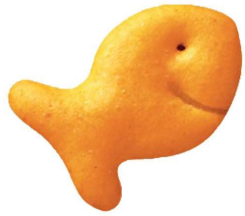
Psychosocial Approaches

- Variety Fading



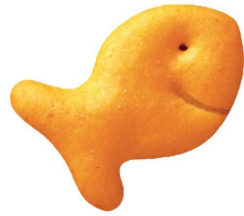
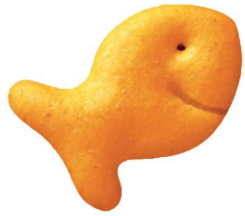
Psychosocial Approaches

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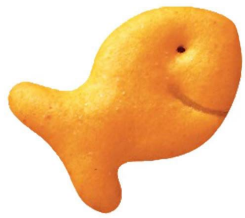
Psychosocial Approaches

- Variety Fading



Psychosocial Approaches

- Variety Fading



Psychosocial Approaches

- Standardized manuals are also being developed to increase care
- MealPlanR was developed for children with autism who present with moderate food selectivity.
- Can consume chewable food
- Can communicate
- No signs of serious malnutrition
- No significant dependence on supplements of tube feedings



Lucas

- Admitted into a multidisciplinary hospital day treatment program
 - Received 3 meals per day 5 days per week for 6 weeks.
- Goals:
 - Increase Volume
 - Decrease reliance on supplemental formula
 - Cup drinking instead of bottle feeding
 - Increase variety
 - Caregiver training in behavioral strategies



Lucas

- Medical
 - Medications:
 - An appetite stimulant
 - Reflux medication
 - Medication to facilitate motility
- Nutrition
 - Supplements increased
 - Monitored weight gain
 - Designed meal plan



Lucas

- Skill
 - No skill deficits or sensory issues found
 - Consults continued as needed
- Psychosocial
 - Differential reinforcement
 - Least-to-most prompting
 - Variety and texture fading
 - Parent training

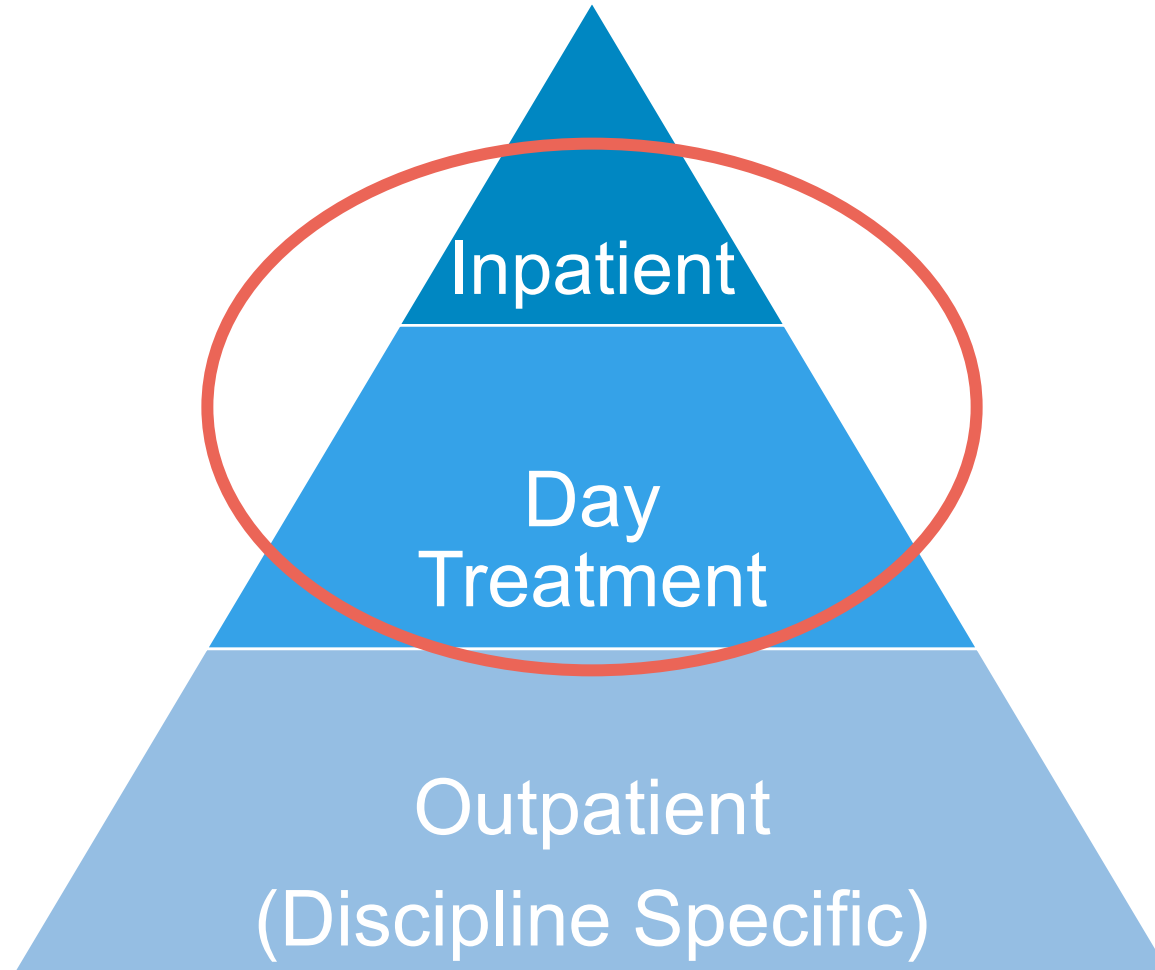


Lucas

- Outcomes
 - Meal hygiene established
 - Caregivers were proficient in feeding
 - Weight gain
 - Decreased formula dependence
 - Drinking from cup
 - Variety increased by 9 foods
 - Decreased caregiver stress



Standard of Care



Standard of Care

ORIGINAL ARTICLES

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A Systematic Review and Meta-Analysis of Intensive Multidisciplinary Intervention for Pediatric Feeding Disorders: How Standard Is the Standard of Care?

William G. Sharp, PhD^{1,2}, Valerie M. Volkert, PhD^{1,2}, Lawrence Scahill, MSN, PhD^{1,2}, Courtney E. McCracken, PhD¹, and Barbara McElhanon, MD^{1,2}

Objective To assess models of care and conduct a meta-analysis of program outcomes for children receiving intensive, multidisciplinary intervention for pediatric feeding disorders.

Study design We searched Medline, PsycINFO, and PubMed databases (2000-2015) in peer-reviewed journals for studies that examined the treatment of children with chronic food refusal receiving intervention at day treat-

Standard of Care

- Average of 71% of children no longer dependent on tube feeds
- Increased oral intake
- Improved mealtime behavior
- Reduced parenting stress

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Standard of Care

Sharp et al. (2017) provided guidelines for standard of care:

1. Multidisciplinary intervention should involve the four domains of PFD
2. Behavioral intervention is a central treatment element for increasing oral intake
3. Treatment should include the active participation and involvement of caregivers
4. Transition plan for outpatient follow-up

“Treatment Landscape”

- What programs are available?
- Requirements:
 - Team of providers from 4 domains of PFD
 - Multiple meals per day across consecutive days (Day Treatment Model)

“Treatment Landscape”



“Treatment Landscape”



“Treatment Landscape”



Conclusions

So.....what now?

“Wait and See”

“Grow out of it”

“Eat when hungry”

Advancing the Care for Children with PFD



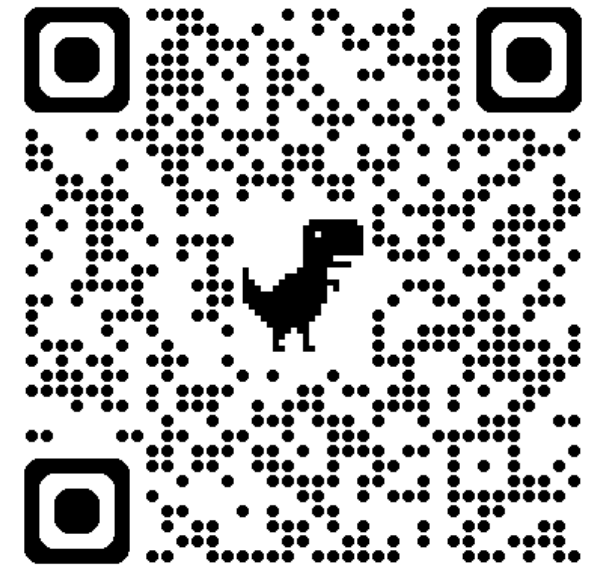
- Use the ICD-10 Codes
 - R63.31 PFD acute < 3 months
 - R63.32 PFD chronic > 3 months
- Call it PFD
 - Diagnose, document, and define PFD in practice
- Refer to the 4 domains
 - Medical, nutrition, feeding skill (SLP/OT), and psychosocial
 - The Boh Center Feeding Program

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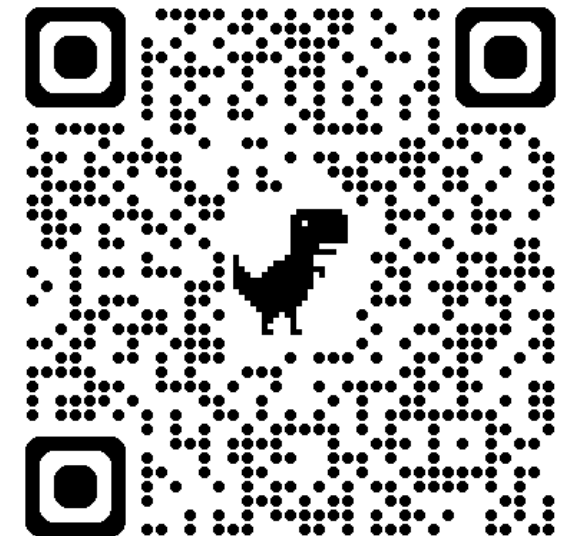
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Join Us September 19-21
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Thank you!



feeding matters