

Disclosures

• I have <u>no</u> financial disclosure or conflicts of interest related to the content of this presentation.



Learning Objectives

- Identify common parent complaints regarding pediatric feeding difficulties;
- Differentiate between potential causes of pediatric feeding difficulties;
- Describe individualized management strategies depending on specific pediatric feeding difficulty and most likely underlying etiology;
- Recognize considerations for further specialist consultation and/or therapeutic intervention.



Gagging/choking!

Gassy / constipated!

Prefers to graze!

Spits a DICIA Caterial tite:

Poor weight gain!

Worried about food allergies!



It is estimated that annually more than 2.3 million children under age 5 years are affected, and prevalence of parentreported feeding difficulties range from 25% to up to 80% among children with developmental disabilities.1



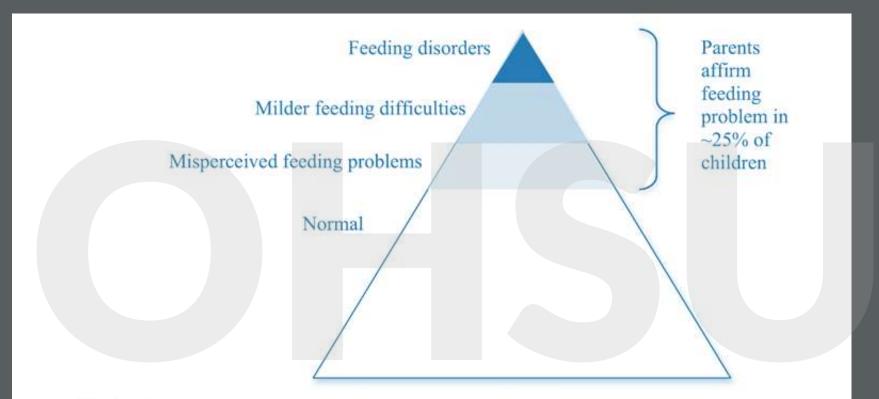


FIGURE 1

Pyramidal representation of young children's feeding behaviors.



Feeding problems are stressful!

- Less affection/physical closeness³
- Less unintentional touch, engaged in less play
 - Higher need for control, forceful touch⁴
- Increased parental anxiety⁵
- Lower self-efficacy, feelings of rejection, increased self-doubt in parental capabilities, increased stress⁶
- Parental stress correlates with negative behaviors by child during feeding⁷



Potential short- and long- term effects¹

- Cognitive impairment
- Emotional dysfunction
- Malnutrition
- Growth retardation
- Reduced energy
- Heightened susceptibility to illness
- Risk factors for future eating disorders (i.e., bulimia, anorexia nervosa)
- Death



Current nomenclature

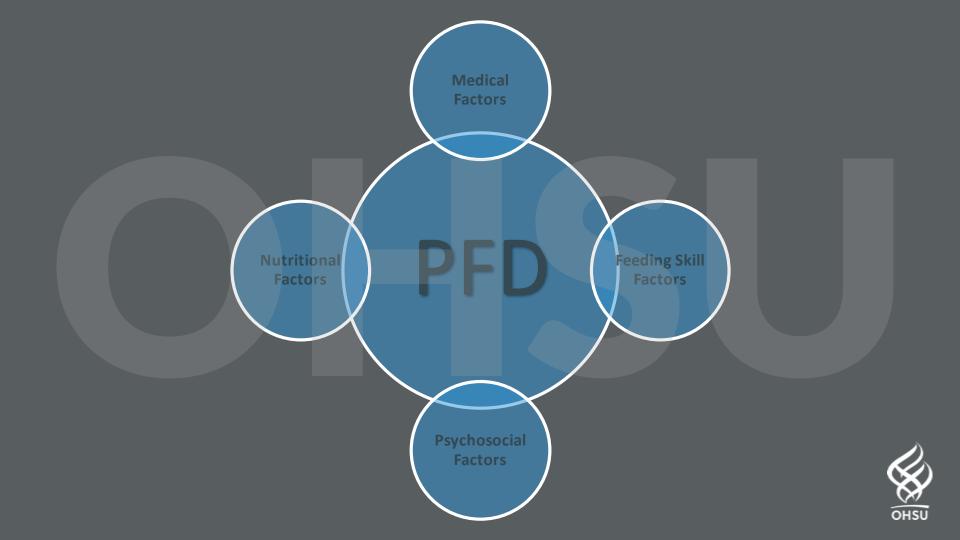
- Other feeding disorders of infancy and childhood
- Picky eater
- Feeding difficulties
- AR-FID
- Dysphagia

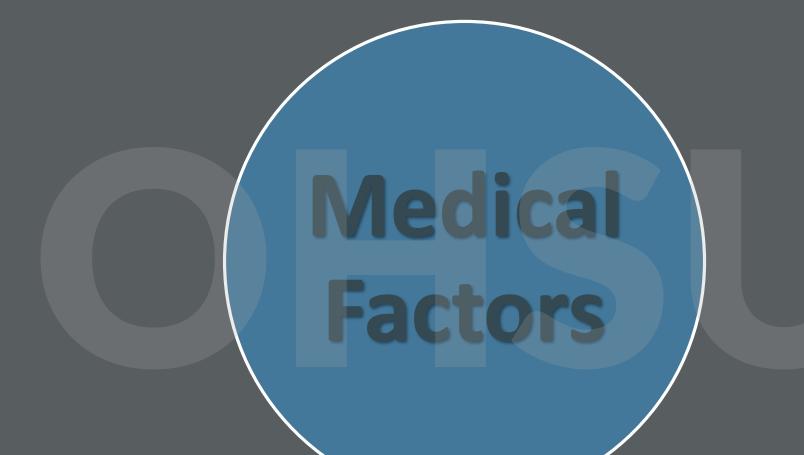


"Pediatric Feeding Disorder (PFD) is defined as *impaired oral intake* that is not age-appropriate, and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction."

—Goday et al., 2019⁸





















Screening Tools

- PediEAT (+NeoEAT bottle / NeoEAT breast)9
 - Download Our Tools Feeding Flock
- STEP-CHILD¹⁰
 - Medical Home Portal Tools for the Practice
- Infant and Child Feeding Questionnaire (ICFQ)¹¹
 - Feeding Matters Infant and Child Feeding
 Questionnaire© | Feeding Matters



Case study #1 - Geoffrey*

- Referred d/t swallowing difficulties and food selectivity
- 14 months old
- Born full-term via induced vaginal delivery (meconiumstained ROM). Prenatal history was remarkable for use of anti-nausea medication (1st trimester only). B. W. 8 lbs 7 oz. Postnatal history was unremarkable.



 As infant, was difficult to feed and had excessive spit up. Mom eliminated dairy from her diet, and continue breast feeding until age 6 months (at that point, excessive spit up resolved). Parents started supplementing with Enfamil soy formula at age 3 months. He also previously had issues with choking while drinking, but this resolved at 7-8 months.



- Introduced purees at around 4-5 months. Feeding concerns with solids started at age 6 months. Specifically, he started having "choking" episodes with almost any solids offered to him.
- At age 8 months, he started chewing and spitting out about 75% of his food and sometimes his formula as well.
- Currently, he will chew and spit out most foods except fruits that already have skin/peel removed. After eating most meals, he will put his fingers in his throat and attempt to gag himself. He will also often burp and vomit a small amount and re-swallows this. Not usually not associated with any visual discomfort, although he doesn't like the taste of this.



- Sits in high chair for meals.
- As soon as he is brought his food, he often will sign for "all done" and displays avoidant behaviors.
- Provided 3 meals with snacks between consistently throughout his day.
- Family does not have a dining room table, but at least one of his parents are eating with him (variably eating the same thing, although mom is vegetarian).



ROS

- Possible environmental allergies
- Has 2-3 BM's daily (soft, non-painful/non-bloody/non-mucousy). He will have loose BM's/diarrhea if exposed to dairy.
- Eczema (no current flares)
- Takes up to an hour to fall asleep (with parents walking around with him, until he falls asleep). Seems to cry and arch in his sleep. No snoring, no apnea.
- Otherwise, unremarkable.



Development

• No h/o delays or related concerns. Rolling over at 4 months; sitting without support at 5 months; playing social-reciprocal games at 6 months; babbling/first words and using proto-imperative pointing at 8 months; walking independently at 14 months. He is also using some short/rote phrases.

• He is working on using a spoon. He drinks from a straw, 360-and soft spout sippy cups.



Family & Social History

- Father with IBS, GERD
- Mother with h/o anorexia nervosa, anxiety, borderline personality disorder.

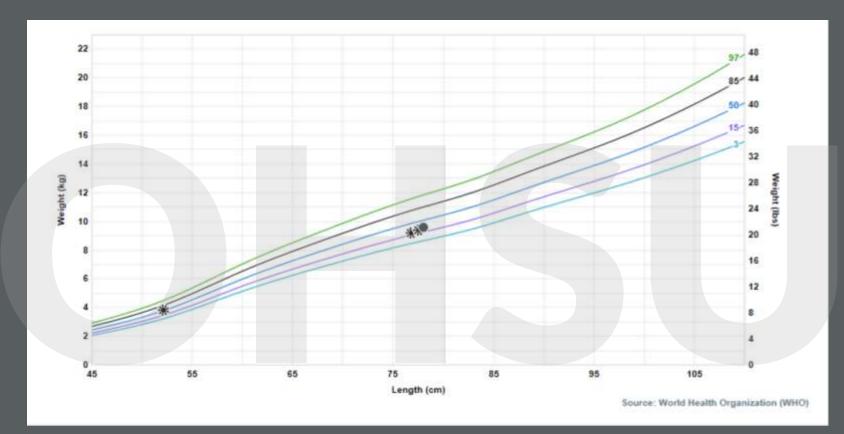
- Lives with biological parents.
- Family is eligible for WIC; mom denies any issues with food insecurity.



Physical Exam / Growth Parameters

- Ht 78 cm (39th%-tile) | Wt 9.594 kg (28th%-tile) | HC 48.5 cm (91st%-tile) | BMI 15.77 kg/m² (28th%-tile)
- Observed eating puffs and diced fruit and drinking from straw cup without gagging/choking/coughing. Once feeding trial complete, observed to burp, and per mom, had small volume of vomit in his mouth, which he then swallowed.
- Otherwise, unremarkable.







Esophageal issues¹

- Coughing / Choking
- Vomiting/excessive spit up
- Gagging
- Delayed swallowing
- Multiple swallows
- Drooling
- Difficulty handling oral secretions
- Frequent respiratory infections



TABLE III. Comparison of EE and GERD

Characteristic features	EE	GERD
Clinical		
Prevalence of atopy	Very high	Normal (possibly increased)
Prevalence of food sensitization	Very high	Normal (possibly increased)
Sex preference	Male	None
Abdominal pain and vomiting	Common	Common
Food impaction	Common	Uncommon
Investigative findings		
pH probe	Typically normal	Abnormal
Endoscopic furrowing	Very common	Occasional
Histopathology	1000	
Involvement of proximal esophagus	Yes	No
Involvement of distal esophagus	Yes	Yes
Epithelial hyperplasia	Severely increased	Increased
Eosinophil levels in mucosa	>24/hpf	0-7/hpf
Treatment		E. Custasi
H2-blockers	Sometimes helpful	Helpful
Proton pump inhibitors	Sometimes helpful	Helpful
Glucocorticoids	Helpful	Not helpful
Specific food antigen elimination	Sometimes helpful	Not helpful*
Elemental diet	Helpful	Not helpful*

^{*}Unless co-occurring food allergy exists.



Red Flags for EoE¹³

- Chronic vomiting
- Food refusals / learned avoidant behaviors
- Prolonged chewing without swallowing
- Extensive use of "dips" and/or dipping foods in water
- Foods getting stuck / impactions
- Combination of eczema, asthma, and GERD



Reflux management¹⁴

- For infants:
 - Reduce volume / increase frequency
 - Consider thickening bottle feedings
 - If breastfeeding, 2-4 week trial of maternal exclusion diet
 - Keep upright for minimum of 30 minutes after feedings
 - Avoid seated position in car seat / infant carrier
- For older children:
 - Avoid spicy and high-fat/fried foods, carbonated beverages and caffeine
 - Avoid excessive activity immediately following meals
 - Avoid eating 2-3 hours before bedtime
 - Avoid tight-fitting clothes



Medication Management

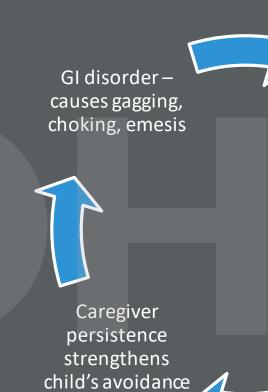
- Consider trial of H2 receptor antagonist (works by primarily inhibiting both the concentration and volume of gastric secretion):
 - Famotidine
 - 0.5 mg/kg QD for age < 3 months;
 - 1 mg/kg/day divided BID for ages 3 months to 16 years for up to 8 weeks.
 - 20 mg BID for > 40 kg
- If fail H2 blocker, consider trial of proton-pump inhibitor (works by suppresses gastric acid secretion by specific inhibition of the hydrogen-potassium –ATP enzyme system):
 - Omeprazole
 - 2.5 mg QD for 3-5 kg; 5 mg QD 5-10 kg; 10 mg QD 10-20 kg all for up to 6 weeks
 - 20 mg QD for >/+ 20 kg for up to 4 weeks



Eosinophilic Esophagitis^{13, 15}

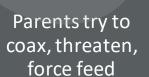
- Diagnosis confirmed via EGD with biopsies
- Management:
 - Swallowed topical steroids
 - Elimination diets and/or amino acid-based formulas
 - Strongly recommend referral to RD!
 - If advanced/causing strictures, may require endoscopic dilation





behaviors

Food refusals to avoid negative consequences





Follow-up on Geoffrey

- Referred to GI for further evaluation (pending lab work)
- Started on aggressive PPI therapy (omeprazole)
- Based on therapeutic response and lab results, will consider whether to proceed with EGD and biopsies



Case study #2 - Greyson*

- Referred due to coughing/choking with water
- 14 months old
- Greyson was born at 34 weeks gestation via spontaneous vaginal delivery. Prenatal history was remarkable for no prenatal care, fetal drug exposure (methamphetamine, opiates). B.W. 5 lbs. Postnatal history was remarkable for NAS, feeding difficulties (had NG), and jaundice (required phototherapy). He was discharged with biological mother but at age 2 months was placed in foster care.



- Struggles with thin liquids (coughing/choking with water) nearly every time he is drinking. He does well with tolerating thickened fluids with Thick It (to nectar consistency). He drinks from straw cup and bottle with the standard nipple it came with.
- Previously treated with ranitidine and omeprazole because of GERD symptoms, which have since resolved, but his coughing/choking on thin fluids has persisted.



- Will gag or swallow too soon on solids if he's not able to chew this thoroughly. He does better when foster mom cuts things into small pieces. No issues with overstuffing.
- He eats on a consistent routine and generally is accepting of various foods/textures.



ROS

- Diagnosed with astigmatism and farsightedness (no intervention currently necessary)
- Has BM x 1 daily (soft but intermittently firmer, non-painful improved with increased fluids)
- H/o right head tilt and plagiocephaly; using cranial orthosis (23 hrs/day); will likely continue this until he grows out of his current helmet.
- Has 6 teeth currently; still does not like for foster mom to clean his teeth.
- Otherwise, unremarkable.



Development

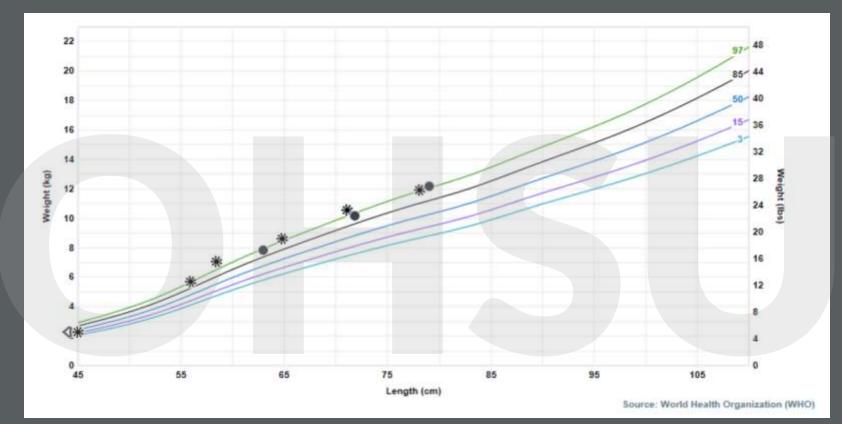
- Walking independently, although still fairly clumsy for age and right-side seems weaker, per foster mom. Described as very social/chatty. Using a few purposeful words now.
- Still mostly finger-feeding and drinks from straw cup or bottle.



Physical Exam / Growth Parameters

- Ht 79 cm (49th%-tile) | Wt 12.2 kg (94th%-tile) | HC 48.8 cm (93rd%-tile) | BMI 19.55 kg/m² (98th%-tile)
- H/o right plagiocephaly and head tilt (both improved/resolved)
- Mild anterior ankyloglossia
- Mild generalized hypotonia and bilateral pes planovalgus, but no right-sided weakness or abnormal reflexes noted on exam
- Alert, playful, and engaged. Good eye contact and social smile. Age-appropriate
 language. Some anxiety with physical exam, but easily consolable by foster
 mom. Observed snacking on chicken nuggets and green beans without difficulty. No
 gagging/choking/vomiting noted. One episode of brief cough while drinking water from
 straw cup.







Oral-motor Functioning Impairments

- Assessed via feeding evaluation, Modified Barium Swallow study (MBS), and/or Fiberoptic Endoscopic Evaluation of Swallowing (FEES)



Follow-up on Greyson

- MBS completed
- Referred to ENT
- Continue thickened fluids (to nectar consistency)
- Continue



Case study #3 – Emily*

- Referred due to poor weight gain
- 18 months old
- Born full term via Cesarean section d/t FTP. Mom has h/o seizures but was not on medication for this during pregnancy. Perinatal history was unremarkable except for caput succedaneum. B.W. 6 lb. 15 oz.



- She was introduced to pureed solids at around 10-11 months. Initially, she did not like these, and also struggled to transition to more table foods. Mom denies any issues with coughing/choking/gagging on solids or fluids.
- Started on PediaSure several months ago; currently, (4-5 bottles of PediaSure powder mixed with whole milk or half-and-half per day).
- She was drinking water throughout the day, but this was discouraged by PCP due to concerns that this was "filling her up".



- Parents offer table foods 2-3 times daily (will usually only take a few bites if fed to her), but otherwise, she will eat fruit/vegetable pouches and puffs several times throughout the day. She is interested in and happy to eat most foods offered to her (except broccoli).
- Emily sits in high chair with family for most meals and TV is usually on throughout the day (including meals).



ROS

- Alternates between constipation and diarrhea and frequently has distended abdomen (increased issues since switching to PediaSure mixed with milk/half-andhalf)
- Brushes teeth (does well with this and likes to do this herself)
- Goes to bed with cup of formula/milk/half-and-half
- Otherwise, unremarkable



Development

- Described as active and smart. She has achieved all of her early developmental milestones typically.
- She is not yet practicing with utensils (will play with these or make a mess instead of eating her food, so mom has stopped offering). Tends to do better if she is being fed by parents rather than finger feeding herself. She uses a sippy or straw cup.



Family & Social History

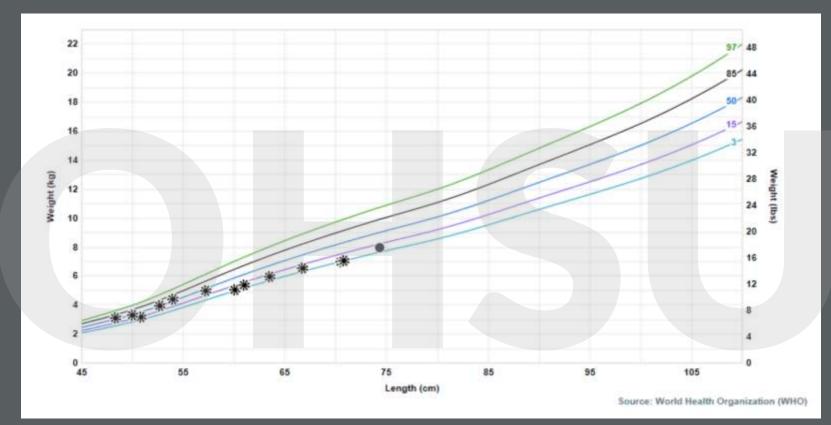
- Biological mother with h/o migraines and seizure disorder.
- Lives with biological mother, mom's boyfriend, and their adult roommate.
- Family receives WIC and food stamps; mom denies any issues with food insecurity.



Physical Exam / Growth Parameters

- Ht 74.3 cm (9th%-tile) | Wt 7.98 kg (6th%-tile) | HC 45.5 cm (43rd%-tile) | BMI 14.46 kg/m² (12th%-tile)
- Alert and engaged. Good eye contact. Ageappropriate language. Euthymic mood and appropriate affect. Observed eating mac and cheese, yogurt bites, and rice wafer all without gagging/choking/vomiting but also minimal chewing noted.
- Otherwise, unremarkable.







Parenting styles r/t feeding²

- Controlling
- Indulgent
- Neglectful
- Responsive



Satter's Division of Responsibility¹⁶

- **Parents** are responsible for:
 - Controlling what food comes into the house.
 - Making and presenting meals.
 - Insisting that children show up for meals.
 - Making mealtimes pleasant.
 - Teaching children to behave at the table.
 - Regulating timing and content no running with food, no food 2 hours before next mealtime.
- **Your child** is responsible for:
 - How much s/he eats.
 - Whether s/he eats.
 - How her/his body turns out.



Screening Questions for Parents

- How anxious are you about your child's eating?
- How would you describe what happens during mealtime?
- What do you do when your child won't eat?



General Recommendations²

- Avoid distractions during mealtimes
- Maintain pleasant neutral attitude throughout meal
- Feed to encourage appetite
- Serve age-appropriate foods
- Systematically introduce new foods
- Encourage self-feeding



Follow-up on Emily

- Reviewed general recommendations and Division of Responsibility
- Referral to RD



Case study #4 – Joshua*

- Referred due to severe food selectivity
- 14 years old
- Joshua was previously diagnosed with autism spectrum disorder, anxiety, and disruptive behaviors



- He always had a limited diet but seem to be getting worse. Food has to be cut in a certain size in a certain place with a specific plate (only paper plates).
- He prefers to eat alone even when it's just him and mom at home eating at the same time. He is unable to tolerate the smells of other's food near him.



• Current preferred foods include any fruit juices, hot chocolate with water, chicken nuggets (brandspecific), pepperoni pizza (brand-specific), plain tortillas, bacon, donuts, rarely pancakes. He has eaten apples and plums off of trees at his dad's house, when he's "starving".

• Mom has started him on several supplements (including calcium, B12, MVI with iron, probiotics), and he is taking fluoxetine for his anxiety (although dose seems to be sub-therapeutic).



ROS

- Multiple diagnosed food allergies (peanuts, pistachios, pineapple, carrots, soy)
- Has 1 firm BM several times per week and more rarely may have loose BM's (denies pain; taking daily probiotic)
- Eczema (no current flares)
- Brushes teeth (with reminders). Has braces. Sees dentist regularly
- Up late on electronics; frequently c/o daytime somnolence
- Otherwise, unremarkable.



Social History

- Lives with biological mother.
- Parents separated in 2018. Father still struggling with acceptance of Joshua's autism diagnosis. He had minimal involvement for about a year after parents separated. When visits resumed, Joshua refused to eat altogether while at dad's. Dad then requested for mom to provide Joshua's preferred foods when he went to visit him.
- Mom denies any issues with food insecurity in her home.



Physical Exam / Growth Parameters

- Ht 180.3 cm (98th%-tile) | Wt 63.1 kg (85th%-tile) | BMI 19.41 kg/m² (54th%-tile)
- Alert and intermittently engaged when initiated by other adults in room. Fleeting eye contact. Normal speech quantity, rate, and amplitude with slightly unusual prosody. Age-appropriate language. Euthymic mood but flat affect. Smelled/licked non-preferred foods presented and ate muffin with freeze-dried grapes without gagging/choking/vomiting but voiced his displeasure with doing so.



Picky Eater	Problem Feeder
Decreased range/variety; >/= 30 foods	Restricted range/variety; < 20 foods
Food jags; re-gain foods after break	Foods lost are not re-acquired
Tolerates new foods on plate (reluctant but can touch/taste new food)	Cries/falls apart when presented new food; complete refusal
Eats at least 1 food from most texture/nutrition groups	Refuses entire categories of texture/nutrition groups
Frequently eats different foods than rest of family, but eats with everyone else	Almost always eats different foods than rest of family, and often not with family
Will add new foods to repertoire with repeated exposures	Takes more intensive supports/introductions to add new foods
Sometimes reported as "picky eater" by parents	Persistently reported as "picky eater" across multiple visits

Feeding Issues and Autism

- Up to 90% of autistic children have feeding problems²
- Lower intake of calcium and protein
 - No significant difference in growth parameters 18



- Often resistant to treatment;
- Best managed with multidisciplinary approach including hunger inducement, nutritional supplementation, and sensory integration/ABA approaches.¹⁹



Practice Meals w/Rating Scale at home

- Incorporate this into week (1-2 times), as tolerated.
 - Used shared decision-making so that older child can make a choice as to when s/he wants to do the food trials (ie: after school, before dinner, on Monday....etc.)
 - Often giving these kinds of choices will allow child/adolescent to feel that s/he has some control
 even though the goal is to get her/him to take bites of foods.
- It may take up to 15 trials of a new food for her/him to accept that he may like it.
- Have a 2 bite rule for every food on child's plate and an "all done" bowl where s/he can put food when s/he doesn't like it or needs to spit it out.
- Recommend rating the foods when bites of new foods are tried.
 - It can be empowering for kids to rate taste/texture of foods as "I like it" "It's OK" or "I don't like it."
 By keeping track of tastes on a sheet of paper, and keeping these sheets in a notebook, you can keep track of how many times a food is tried and if likes/dislikes change over time.
- Bring back foods marked as OK or can put in her/his lunch or offer small quantity during a mealtime.



Follow-up on Joshua

- Fluoxetine dosage was increased
- Recommended to start clinic-based OT and/or ABA services
- Start practice meals with rating scale at home



Summary of Referral Considerations

• Medical factors:

- Infant cries/arches at most meals
- Persistent/chronic vomiting
- H/o eating and breathing coordination problems w/recurrent respiratory illnesses

Feeding skills factors:

- Choking/gagging/coughing during meals
- H/o traumatic choking incident
- Delayed feeding transitions (purees by 10 months; table solids by 12 months; to cup for liquids by 16 months)

Psychosocial factors:

- Parent report of "picky" eating at 2 or more well-child visits
- Mealtimes are often battle; child is difficult for everyone to feed
- Parental history of eating disorder

Nutritional factors:

- Ongoing poor weight gain or weight loss
- Aversion/avoidance of all foods in specific texture or nutrition group
- Food range of less than 20 foods (especially if foods are being dropped with no new foods being added)



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Resources

- Chatoor I. When Your Child Won't Eat or Eats Too Much.
- Ernsperger L, Stegen-Hanson T. <u>Just Take a Bite: Easy Effective Answers to Food</u>
 <u>Aversions and Eating Challenges.</u>
- Fraker C, Fishbein M, Cox S, Walbert W. <u>Food Chaining: The Proven 6-Step Plan to Stop Picky Eating, Solve Feeding Problems, and Expand Your Child's Diet.</u>
- Jana LA, Shu J. <u>Food Fights: Winning the Nutritional Challenges of Parenthood Armed With Insight, Humor, and A Bottle of Ketchup.</u>
- Feeding Matters (Feeding Matters Serving Kids with Pediatric Feeding Disorder)
- Parent Tips / Picky Eaters (Sensational News from the Sensory Processing Disorder Foundation (spdfoundation.net))
- Feeding and Swallowing Disorders in Children / ASHA (<u>Feeding and Swallowing</u> Disorders in Children (asha.org))



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Thank You

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