Beyond Picky Eating: Identifying When to Get Concerned

Goldie Markowitz, PNP-BC, CRNP
Valerie McCormick, PNP-BC, CRNP

Objectives

- Describe the developmental process of eating
- List common risk factors for feeding problems in children
- Identify red flags for a picky eater versus a child with a feeding disorder
- Discuss common medical, nutritional, and behavioral treatment strategies for select feeding concerns

Feeding is a Development Process

Sucking-Swallowing-Breathing Coordination
- Usually established by 32—34 weeks of gestation
- Consistent by 37 weeks gestation
- The pharynx is a shared pathway:
  - To the esophagus
    - Allows passage of food and liquid during swallowing
  - To the trachea
    - Allows for gas exchange during respiration

Development

- 0-3 months
  - Oral reflexes for suckling & swallowing
  - Bottle or breast fed
- 4-6 months
  - Voluntary sucking
  - Active lip movement to clear spoon
  - Introduction of spoon feedings
- 6-9 months
  - Munching
  - Introduction of dissolvable solids, ground or lumpy foods

- 13-15 months
  - Improvement in biting skills
  - Circular chew patterns
  - Straw or regular cup drinking
- 16-18 months
  - Can chew meats and vegetables
  - Chew with mouth closed
- 19-24 months
  - Cup drinking with little to no spillage
  - Manage all food types

Disclosure Statement

GOLDIE AND VALERIE REPORT NO FINANCIAL INTEREST OR POTENTIAL CONFLICTS OF INTERESTS
## What Increases Risk for Feeding Difficulties?

### Comorbidities

- **Prematurity**
  - Higher incidence of feeding disorders
  - Lower gestation age (GA) = greater risk
  - Supplemental tube feedings
    - Infants < 28 weeks GA
  - These conditions can impact:
    - Oral motor function
    - Absorption
    - Increased caloric demand

### Comorbidities

- **Gastrointestinal**
  - GERD (most common)
  - Constipation
  - Food allergy (EoE)
  - Functional and Motility disorders
  - Short Bowel Syndrome
  - These conditions can impact:
    - Oral acceptance
    - Satiety
    - Enteral feeding tolerance
    - Absorption of food, vitamin and minerals

- **Respiratory**
  - Chronic Lung Disease of Prematurity
    - Higher rates associated with lower GA
  - Congenital Anomalies, Pulmonary Hypoplasia
  - Prolonged course of mechanical ventilation
  - These conditions can impact:
    - Suck-swallow-breathe
    - Oral experience
    - Work of breathing
    - Caloric needs

- **Cardiac**
  - Congenital Heart Disease, s/p surgery
  - These conditions can impact:
    - Calorie needs
    - May damage left recurrent laryngeal nerve
    - Vocal cord paralysis
    - Swallowing difficulties

- **Development**
  - Autism Spectrum Disorder
  - ADHD/ODD
  - Sensory issues
  - These conditions can impact:
    - Variety
    - Volume
    - Feeding skills
    - Meal length
Comorbidities

- **Neurologic**
  - Intraventricular Hemorrhage (IVH), Hydrocephalus, Encephalomalacia
  - Seizure disorder
  - Abnormal muscle tone, Cerebral Palsy
  - Genetic Syndromes

- These conditions can impact:
  - GI issues higher: GERD
  - Suck-swallow
  - Posture, texture development

Feeding: Takes 2

- Division of responsibilities between child and caregiver

Questions to Ask Families

- How long does it take you to feed your child?
- Are meals stressful to the child and/or parent?
- Are there signs of respiratory problems?
- Do you feel pressured to get food and/or drinks into your child for weight gain?

Questions for Ask Families

- Does your child show or indicate hunger?
- Does your child seem afraid to try new foods?
- Does your child seem to be in pain when eating?
- Does your child have a best or worse meal?
- Do you feel frustrated or angry when feeding your child?

McCormick, V, Markowitz, G (2013)

Case Study #1

- 4 month old female with CHARGE Syndrome
- Failure to thrive
- Previous hospital admissions for pneumonia
- Nutrition
  - Enfamil Gentlease (24 cal/oz)
  - Drinks 4 ounces every 3-4 hours (28 oz/day)
  - Coughs and chokes with bottle feeds
  - Drinks 4 ounces over 45 minutes

Joan. Arvedson, PhD, CCC-SLP,SHA, Monterey, 2010
Case Study #1:

- Diagnostic studies
  - UGI: normal anatomy, GE reflux noted on study
  - VFSS
    - Aspiration with thin liquids
    - Penetration but no aspiration with nectar thick consistency

- Picky eater or feeding disorder?

Aspiration

- Clinical Signs
  - Cough or choking when drinking or eating
  - Increased congestion
  - Increased work of breathing
  - Frequent colds and respiratory infections
  - Pneumonia
  - Uncontrolled GERD
  - Asymptomatic
    * high incidence in developmental delay

Aspiration

- Diagnosis:
  - videofluoroscopic swallowing study (VFSS)

Aspiration

- Treatment
  - Infants <12 months
  - Compensatory Strategies
    - Pacing
    - Nipple flow and rate
  - Positional Strategies
  - Supplemental tube feeding
  - Speech therapy

Case Study #1

Treatment

- Continue Enfamil Gentlease (24 cal/oz)
- Goal: 4 ounces every 3-4 hours (28 oz/day)
- Thicken formula to nectar thick consistency
- Limit bottle feedings to 20-30 minutes
- May need to consider NG supplemental feeds if oral intake insufficient to meet caloric needs

Case Study #2

- 4 year old female presents to ED after fall on playground
  - Right arm pain and swelling posterior to elbow
Case Study #2

- PMHX:
  - VSD s/p repair (in infancy)
  - Cardiac status stable
- Growth/Development/Nutrition
  - Selective, refuses most fruits and vegetables
  - Drinks approximately 8 oz of whole milk daily
  - Age appropriate weight gain and linear growth

- Diagnostic studies
  - X-ray of right arm
  - Serum studies
    - CBC and Vitamin D level
- Diagnosis
  - Right arm supracondylar fracture
  - Vitamin D level: 45 ng/ml
  - CBC: WNL

Picky eater or feeding disorder?

Picky Eater

National random sample of 3,022 infants and toddlers

- Percentage picky eaters increased:
  - 19% at 4 months
  - 50% at 24 months
- No difference in sex, ethnicity, ranges of household income

Prevalence of Picky Eating

What is a Picky Eater

- Limited variety (selective)
- Refusal of certain foods groups
- Failure to meet parents expectations for variety and volume
- Usually less than 10 years of age

Parent presents food at mealtime but child is not hungry or more interested in playing

↓
Child does not eat
↓
Parent offers a different food, more attention
↓
Child still does not eat
↓
Parent offers a different, better tasting food
↓
Child accepts the food

Thomas R. Linscheid, Ph.D., 2010
Result of Picky Eating

- Child learns that food refusal is good
- Child is reinforced
- +rewarded

Parent learns that child gains weight
- Parent is reinforced
- +rewarded

---

Red Flags Picky Eater

- Impacts weight gain or linear growth
- Impacts developmental progression of feeding
- Impacts feeding behaviors
- Impacts structure or coping

---

Behavioral Strategies: Do’s

- Establish consistent mealtime routine
- Limit meals to 30 minutes
- Offer new food 10 times
  - Role model
  - Encourage independent feeding
- Serve age-appropriate food
- Child-appropriate equipment

---

Behavioral Strategies: Don’t

- Short order cook
- Allow grazing
- Empty/filling calories between meals
- Give attention to negative behaviors
- Allow access to distractions

---

Case Study #2: Treatment

- Recommended consistent mealtimes
- Offer at least one serving of fruit and/or vegetable at every meal and at snacks
- Present new foods a minimum of 10 times
- Increase milk intake to 16 ounces per day
- Recommend chewable complete multivitamin daily
- Parents role model healthy nutritional habits

---

Signs of a Picky Eater

- Camouflage foods
- Child eats preferred foods
- Child drinks his/her calories
- Grazes throughout the day
- Drinks bottle at bedtime or while asleep
- Use of distraction
- Stressful mealtimes

---

Food Rules of Ellyn Satter
Irene Chatoor
Case Study #3

- 27 month old, ex-34 week premature male infant
- PMHX
  - AV canal defect s/p repair
  - Trisomy 21
  - Gastroesophageal reflux
  - s/p Nissan fundoplication and gastrostomy tube placement
- Medications
  - Zantac
  - Lansoprazole
  - Erythromycin

Growth/development/nutrition:
- Gastrostomy tube feeding dependent
  - 4 bolus feeds and overnight feed
- Dipped spoons offered three times a day
  - Gagging and turning away from spoon

Anthropometrics:
- Weight: 7.33 kg (50th percentile)
- Height: 71.4 cm (75th percentile)
- Head circumference: 43.4 cm (50-75th percentile)

Picky eater or feeding disorder?

Feeding Disorder

Classification of Feeding Disorders

- DSM-IV-TR Definition
- Feeding Disorder (FD) of infancy and early childhood
  - Persistent failure to eat adequately to gain or maintain weight for at least 1 months
  - Not directly due to a medical condition or another mental disorder
  - Onset before 6 years of age

Classification of Feeding Disorders

- DSM-V
  - Avoidant/Restrictive Food Intake Disorder (ARFID)
    - Persistent disturbance in eating that leads to:
      - weight loss or inadequate growth
      - significant nutritional deficiency
      - dependence on tube feedings or nutritious supplements
      - impaired psychosocial functioning

Classification of Feeding Disorder

- ARFID (expanded criteria)
  - Inadequate intake based on restricted types of foods or restricted caloric intake without weight loss or poor growth
  - Reduced food intake due to emotional disturbance related to eating
  - Reluctance to eat following an eating-related adverse event

http://www.dsm5.org
**Prevalence of FD**

- **Incidence**
  - 25-35% in typically developing children
  - 40-80% in developmental disabilities

Ramasamy, M, Perman, J. (2000)

**Cerebral Palsy and FD**

- Oxford Feeding Study: 440 children with CP
  - 89% needed assistance with feeding
  - 56% concerned with choking
  - 43% concerned with stressful & prolonged meal
  - 12% concerned with vomiting
  - Dysphagia 92%, silent aspiration common
  - GERD 79-90%, FTT, food refusal
  - Severe CP & fed orally → malnutrition and/or growth failure


**Red Flags for Feeding Disorder**

- **Medical risk factors**
  - Prematurity
  - Respiratory disease, GI disease
  - Limited cognition
  - Development, CP, ASD
  - Genetics (anatomic)
  - Intravenous

- **Nutritional risk factors**
  - Failure to thrive, underweight
  - Overweight
  - Iron deficiencies
  - Vitamin deficiencies (D and Zinc)

**Red Flags for Feeding Disorder**

- **Oral-motor-sensory risk factors**
  - Prolonged tube feeding (inexperience)
  - Poor trunk control (unable to hold head)

- **Parental risk factors**
  - Problem solving skills
  - Parental eating disorders

- **Social risk factors**
  - Limited food availability
  - Limited nutritional food

**Treatment of FD**

- **Identify medical concerns**
  - Diagnostic testing
  - Pharmacological management
  - Referrals to medical specialties

- **Treat nutritional deficiencies**
  - Monitor anthropometrics
  - Calorie boosting
  - Formula supplementation
  - Supplemental tube feeding

- **Referral to ST, OT, Psychology, Feeding**
Case Study 3: Treatment
- Continue current medications: zantac, lansoprazole, erythromycin
- Continue gastrostomy tube feeding
- 4 bolus feeds and overnight feed
- Dry/dipped spoon protocol
  - Offer dry spoons alternated with dipped spoons
  - Goal: to increase oral acceptance

Case Study #4
- 3 year old male presenting for well visit
  - Anthropometrics
    - Weight plots at 75th percentile (15.5 kg)
    - Height plots at 25th percentile (92 cm)
    - Ideal Body weight: 115%
    - BMI 95th percentile
  - Nutrition
    - Drinks 40 ounces of chocolate whole milk daily
    - Only eats foods that are white, yellow, or brown
    - Prefers carbohydrates

Case Study #4
- 3 year old male presenting for well visit
  - Behavior
    - Difficulty transitioning between tasks
    - Appears to have a speech delay
    - Lengthy meals/leaves seat frequently during meals
    - Bowel movement once a week, hard formed, straining

Case Study #4
- Physical Exam
  - Excessive stores
  - Makes minimal eye contact
  - Uncooperative with exam
  - Rest of exam normal
- Findings:
  - Overweight
  - Selective eater with preference for food color
  - Constipation
  - Suspicion for Autism Spectrum Disorder
- Picky eater or feeding disorder?
Case Study #4: Treatment

Nutritional recommendations
- Decrease intake of milk to 16 ounces per day

Behavioral recommendations
- Mealtime structure
- Increase variety in diet

Management of constipation
- Increase fiber in diet
- Stool softeners

Referral to EI and/or feeding team

In Summary

Goal of feeding team
- To determine if a child is safe to eat orally
- To determine safest & most efficient method to maintain nutrition and hydration
- To determine the most appropriate type of foods to offer
- To expand volume and variety

Strategies: Medical Management

Strategies: Nutritional Management

Strategies: Oral-Motor
Strategies: Adaptive Equipment

Strategies: Sensory

Strategies: Behavioral

Questions/Contact

- The Children’s Hospital of Philadelphia
  - Markowitz@email.chop.edu
  - McCormick@email.chop.edu

- The Feeding and Swallowing Center
  - 215-590-7491

- Website:
  - http://www.chop.edu/service/pediatric-feeding-and-swallowing-center

Reference

Feeding Disorders


- Aspiration


- Picky Eating


References

- McCormick, V., Markowitz, G. (2013) Picky Eater or Feeding Disorder? Strategies for determining the difference, Advance for NPs and PAs, March (4) 18-23.

Thank you!