What is the goal of this presentation?

- Identify risk factors for pediatric feeding disorders in young clients
- Consider assessment and intervention plans for a community setting
- List approaches and further training programs available for therapists
- Share resources

Why is it important to identify and treat pediatric feeding disorders?

- Risk of malnutrition and related health complications
- Risk of permanently impairing growth
  - Resistant eaters tend to be in low percentile for weight and height
- Can impair psychosocial development
  - Limited opportunities for positive social experiences at mealtimes
  - Potential to impair self-esteem
  - Linked to development of anxiety disorders
- Feeding disorders have been linked to later deficits in:
  - Cognitive development
  - Behavioural problems
  - Eating disorders

Chatoor, 2009
Ernsperger & Stegen-Hanson, 2004
Who is at risk for feeding problems?

• Approximately 20-25% of otherwise typically developing children
• Approximately 80% of those with developmental disabilities

Who is at risk for PFDs?

1. Sensory processing difficulties
2. Autism spectrum disorders
3. Behavioural issues
4. NICU history
   • Respiratory issues
   • Cardiac issues
   • GI development
   • Oral differences
   • History of intubation

Who is at risk for PFDs?

4. Food sensitivities/allergies
5. Craniofacial differences
   Eg. Clefts of the palates, lips, larynx.
6. Congenital developmental disabilities
   Eg. Down syndrome
8. Someone who had early feeding or growth problems
Definitions and terms to be aware of

A note on terminology and definitions:

• Be aware that terms and criteria used to describe the various feeding disorders of infancy and childhood are currently being updated to reflect ongoing research.

• Somewhat inconsistent use of terminology and inclusion criteria can make it difficult to compare research.

• When reading research, look carefully at the inclusion criteria and operational definitions used.

Feeding Issues and the Spectrum of Development

• Heterogenous characteristics among developing eaters can complicate identification of ‘typical’ vs. problematic eating patterns

• For example, the spectrum or pickiness may include

Robust eaters → Healthy Picky Eaters → Resistant Eaters/Feeding Disorders

Ernøe & Stagner-Hanson, 2004
DSM-V Classification of Feeding and Eating Disorders

“Feeding and Eating Disorders are characterized by a persistent disturbance of eating or eating-related behavior that results in the altered consumption or absorption of food and that significantly impairs physical health or psychosocial functioning.”

American Psychiatric Association, 2013

Avoidant/Restrictive Food Intake Disorder

307.59 (F50.89)

“An eating or feeding disturbance (e.g., apparent lack of interest in eating or food; avoidance based on the sensory characteristics of food; concern about aversive consequences of eating) as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:

1. Significant weight loss (or failure to achieve expected weight gain or faltering growth in children).
2. Significant nutritional deficiency.
3. Dependence on enteral feeding or oral nutritional supplements.
4. Marked interference with psychosocial functioning.”

American Psychiatric Association, 2013

Dysphagia

- **Definition:** When there is a problem in any of the phases of swallowing, from preparing food in the mouth to be swallowed, to swallowing it and moving it down into the stomach.

- **Dysphagia should be diagnosed by an clinician with specific training in diagnosing and documenting swallowing function following a clinical swallowing evaluation**
  - Two main instrumental tests for dysphagia are modified barium swallow (MBS), also known as VFSS, and fiberoptic endoscopic evaluation of swallowing (FEES).

- **Further reading:** Pediatric Dysphagia page from ASHA:

- **Referral form for swallowing evaluation at BC Children’s Hospital:**
  - [http://www.bcchidrens.ca/our-servicesclinics/feeding-swallowing](http://www.bcchidrens.ca/our-servicesclinics/feeding-swallowing)

ASHA, 2018
Aspiration

• When food or liquid travels into the airway instead of into the stomach.
• Red flags are:
  • Coughing, wet sounding voice or cry, respiratory illnesses including pneumonia.
• Possible safer swallowing solutions may be suggested by a swallowing evaluation, for example:
  • Eating in a certain position
  • Eating a certain texture and thickness of liquid
  • Giving liquids at a certain pace

Tube Feeding

• When a person receives nutrition through a tube placed medically along the digestive tract, bypassing the need to take food orally and swallow.
• Tubes used for feeding have different names depending on where they are placed on the body. Some examples include:
  • Nasogastric (NG) feeding tube
  • Nasojugal (NJ) feeding tube
  • Gastro (G) feeding tube
• Different types of nutritional supplements and even blended/food foods can be delivered, depending on placement of tube and person’s digestive needs.
• People may receive part or all of their nutrition via a tube, and some people require tube feeding for life.
• For children learning to feed orally, may keep tube placed during the gradual transition towards total oral feeding.

Failure to Thrive

• Failure to thrive (FTT) - a medical term used when infants don’t meet growth expectations necessary for health and development.
• Now mostly considered a ‘symptom’ rather than a diagnostic category on its own.
• Note: Many parents take issue with the term ‘failure to thrive’, as it emphasizes failure, and therefore can be taken as criticism of parental ability.

Chatoor, 2009
Food Neophobia

- Some worry or anxiety around new foods is a normal developmental stage in typically developing 2-4 year old’s ("neophobic stage")
- It is typical for 2-4 year old’s to avoid new foods, and not like when foods touch.
- These behaviours are considered problematic when:
  - The child shows extreme reactions including crying, gagging, vomiting, or difficult to manage problem behaviour
  - Child is unwilling to try new foods after age 5.

Food Jags

- When a child insists on eating only the same foods in the same manner beyond a few days
- Can occur in typically developing eaters or resistant eaters
- In typically developing eaters, a child may insist on one food for a few weeks, then change to another preferred food, and then be willing to go back to the previous food
- A food jag may be considered problematic when:
  - Opportunities to experience any new foods are limited by extreme preference
  - Child isn’t meeting requirements for balanced nutrition (over time)

Picky eating

What is "normal" picky eating?

- A period of selective eating is often seen in children who are developmentally age 2-3
- May be a combination of fear of new foods, asserting emerging independence, and taste sensations that are heightened compared to older children and adults
- "Normal" picky eating tends to balance over time without intervention
- Despite certain restrictions in what they will eat, "normal" picky eaters will still eat enough of a variety to maintain an overall healthy diet
- Picky eating of any degree can cause a great deal of stress for parents. Parent education and support can help!

Ernsperger & Stegen-Hanson, 2004
Rowell & McGlothlin, 2015
When do variations in feeding development become a feeding disorder?

- Serious aversions that prevent the child from eating a diet sufficient to maintain health
- Underlying oral sensorimotor dysfunction that limits food selection
- Total of 10-20 foods or less
- Refuses one or more food groups entirely
- Child demonstrates anxiety or problem behaviours around foods
- May gag or throw up when presented with food

Ernsperger & Stigen-Hanson, 2004

Red Flags for Feeding and Swallowing Disorders

These suggest there may be a problem with swallowing (dysphagia), or an urgent medical problem so a referral for a swallowing evaluation should be made

- Frequent coughing or throat clearing during or soon after eating
- A “wet” or “gurgly” sounding voice or cry after eating
- Frequent gagging / coughing / choking episodes
  - Keep in mind that parents can confuse these, so make sure to ask specific questions to differentiate.
- Spitting up or vomiting after eating
  - May require assessment with GI specialist to assess for reflux, or an allergy specialist
- Breast or bottle refusal in an infant, or a baby 'refusing' to eat
- Difficulty gaining or keeping on weight.
  - Pediatrician should be consulted, as there may be an underlying medical issue

Red Flags for Feeding Disorders (cont’d)

- A history of breastfeeding difficulties
  - Breastfeeding difficulties may be related to underlying physical issue within the baby that may or may not have resolved. Assess for underlying issues such as oral structural abnormality.
  - Difficulty in early feeding can impede feeding development down the line, even if original issues appear resolved.
- Difficulty transitioning to straw or cup (away from breast or bottle)
- Difficulty transitioning to solid foods
  - Assess for oral sensory or motor reasons why child has difficulty managing a change in liquid delivery method or managing solid foods.
  - Child may not be interested in change due to cognitive or social delays.
Red Flags for Feeding Disorders (cont’d)

• Spitting out food
• Refusing to eat certain textures or temperatures of food
  • Could suggest difficulty with oral-motor management or a sensory problem
  • Could be behavioural if child is reinforced with attention, preferred item, or escape from a situation.

• Disorganized looking food management in mouth, child loses most food or liquids from mouth.
• Pocketing of food.
  • Could suggest difficulty with oral-motor management or low sensory responsiveness to food in mouth
  • May be related to child’s attention if they are eating while walking or doing other things.

Red Flags for Feeding Disorders (cont’d)

• Difficult and severe behavior issues at mealtimes
  • Determine if child is being reinforced with attention, preferred item, or escape from a situation.
  • Ask about when difficult behaviours started and assess further to rule out underlying medical or sensory-motor reason for food refusals.
  • Consider making a behaviour specialist a part of the child’s team
  • Search the RASP for BCBA who work with children under 6
    [http://autisminfo.gov.bc.ca/rasp/search/](http://autisminfo.gov.bc.ca/rasp/search/) (parents can search here, even if the child doesn’t have ASD)
Resources for feeding and oral-motor milestones

- When evaluating children under 3, compare progress to reliable milestone charts to avoid over or under treating.
- Feeding and motor development changes rapidly, especially in the first 18 months of life.

*For very young infants who are experiencing difficulties establishing breastfeeding, refer to IBCLC as soon as possible if parent has a desire to improve breastfeeding.
  - [http://www.bclca.ca/Find-a-BCLA-Lactation-Consultant](http://www.bclca.ca/Find-a-BCLA-Lactation-Consultant)

Milestones Guides

Developmental Pre-Feeding Checklist.

Available in Pre-Feeding Skills for Infants and Toddlers book by Morris and Dunn Klein

These are very detailed milestones checklists that can be used as part of ongoing assessment.

Milestones Guides

Developmental Stages in Infant and Toddler Feeding up to about 2 years

Available for free from [www.infanttoddlerforum.org](http://www.infanttoddlerforum.org)

Includes related skills in the domains of:
- Cognitive
- Motor and oral motor
- Interaction and communication
- Self-feeding
- Sensory aspects of food and food progressions
- Appetite regulation
Milestones Guides

Booklet with table available for free download Feeding Infants and Toddlers: Strategies for Safe, Stress-free Mealtimes

Available at: https://www.asha.org/Events/convention/handouts/2008/1884_McCarthy_Jessica_L/

Compare milestones of physical communication and feeding/swallowing development up to 3 years.

Helpful when explaining physical pre-requisites of feeding to parents.

Online screening questionnaire for pediatric feeding disorders

- Feeding Matters developed the Infant and Child Feeding Questionnaire as an evidence-based tool to promote early identification of feeding disorders.
- Can be used to help refer at-risk infants and children on your caseload who you, or parents, have concerns about.
- The questionnaire was developed by feeding experts to help parents better understand their child’s feeding development.
- Provides age-relevant information about typical feeding development, and can help identify if there are any areas of concern regarding a child’s feeding.
- Takes 10-15 minutes to complete.

Access the Infant and Child Feeding Questionnaire here: http://questionnaire.feedingmatters.org/questionnaire

Structuring an Assessment or Screening

You will need:

- Details of the child’s health and feeding history
- List and details of currently accepted foods
- An understanding of the family’s mealtime routine, structure, and expectations (best if you can observe directly)
- Oral sensory-motor and structural assessment
- Direct observation of child eating
  - Preferred and easy foods and attempts at non-preferred, or more challenging foods
  - Foods you think might pose a choking risk
- The child’s usual utensils, cups/bottles from home
- Anything else the child uses regularly to eat successfully (e.g. behavioural supports, positional supports)
Social & emotional state, and learning needs

Behaviour
Motor Skills
Sensory

These factors are related in development and affect each other

Health Status

Health Social & emotional state, and learning

Behaviour
Motor Skills
Sensory

Health Status

Eating skills include
- Sucking
- Chewing
- Swallowing,
- Manipulating food in the mouth

And Feeding Skills
- Ability to sit independently
- Use utensils and cups

Influenced by mouth structures
eg. shape of the mouth, muscle tone, teeth eruption

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Sensory

- Like other sensory domains, child may be over or under responsive to food and objects (e.g. toothbrushes, spoons) in their mouth
- Includes sensory preferences (e.g. favourite flavours) and challenges (e.g. difficulty tolerating certain textures or flavours).
- Also includes awareness of food in the mouth and ability to detect food during stages of oral prep.
- Assess: are sensory skills sufficient to elicit the desired/expected motor response?
Red flags for oral sensorimotor difficulty

- Gagging frequently
  - Some gagging is expected when babies are first introduced to solids, new textures, and stimuli.
- Choking episodes (when food blocks airway totally or partially)
- Excessive drooling (beyond stage of teething)
- Difficulty transitioning to new food types, flavors, or textures
- Difficulty or delay in sucking, chewing, and swallowing in a well-timed, efficient, and coordinated way
  - Child may take longer than expected to finish a meal
  - Child may fatigue and lose interest in meals (babies often fall asleep while bottling or breastfeeding)
- Resistant eating, especially with limitations or strong preferences for textures, tastes, and temperatures.
- Low or high muscle tone or any difficulty with postural control

Further resources for oral sensory and motor skills

- Nobody Ever Told Me (or my Mother) That!: Everything from Bottles and Breathing to Healthy Speech Development. Book by Diane Bahr,
- A Sensory Motor Approach to Feeding. Book by Lori Overland & Robyn Merkel-Walsh
- Feeding and Nutrition for the Child with Special Needs: Handouts for Parents Paperback, Book by Marsha Dunn Klein

Further resources for oral sensory and motor skills

- Food Chaining: The Proven 6-Step Plan to Stop Picky Eating, Solve Feeding Problems, and Expand Your Child’s Diet
  - Book by Cheri Fraker, Laura Walbert, Mark Fishbein, and Sibyl Cox
- Adventures in Veggie Land: Help Your Kids Learn to Love Vegetables
  - Book by Melanie Potock
- Sensational Kids: Hope and Help for Kids with Sensory Processing Disorder (General book on SPD)
  - Book by Lucy Jane Miller
- The Out of Sync Child: Recognizing and Coping with Sensory Processing Disorder (General book on SPD)
  - Book by Carol Kranowitz and Lucy Jane Miller
- Building Bridges Through Sensory Integration
  - Book by Ellen Taub
### Health Status

- Child's current health status will affect behaviour, skill, alertness, and sensory responses.
- Previous health concerns can limit opportunities for skill acquisition.
- Health concerns also affect mood, interactions with others, and openness to new experiences.

### Social & emotional state, and learning

#### Behaviour

Include what the child does with food and behaves around mealtime.

Negative behaviours often begin as a natural response to foods a child can’t manage – but can progress from there and include additional behavior-based issues that may require behavior intervention and strategies for the family.

#### Motor Skill

#### Sensory

### Resources for Information about Specific Health Conditions

- **Academy of Breastfeeding Medicine** [http://www.bfmed.org/protocols](http://www.bfmed.org/protocols)
  - Offers best practice guidelines (ABM Protocols) for supporting infant feeding with different health conditions in the infant or mother.

- **American Academy of Pediatrics Journal and Medical Home Portal** publishes Health Supervision Guidelines for various medical conditions, many of which can be downloaded for free and searched here: [https://www.medicalhomeportal.org/diagnoses-and-conditions](https://www.medicalhomeportal.org/diagnoses-and-conditions)

- See example for Down syndrome here: [http://pediatrics.sagepub.com/content/pediatrics/128/2/393.full.pdf](http://pediatrics.sagepub.com/content/pediatrics/128/2/393.full.pdf)

- **Optimizing Feeding and Swallowing in Children with Physical and Developmental Disabilities**, a free clinical guidebook from Holland Bloorview Hospital available to download at: [https://hollandbloorview.ca/assets/website/documents/Teaching%20And%20Learning%20Documents/Evidence%20To%20Care/HollandBloorview_FeedingSwallowing2017.pdf](https://hollandbloorview.ca/assets/website/documents/Teaching%20And%20Learning%20Documents/Evidence%20To%20Care/HollandBloorview_FeedingSwallowing2017.pdf)
Health Status

Social & Emotional State, and Learning
- Eating is a skill learned, in part, by paying attention and learning from others.
- Stress or fear associated with eating impact success.
- Learning and communication challenges affect skill acquisition.

Behaviour

Skill

Sensory

Resources for Supporting Social & Emotional Development, Learning, and Behaviour
- Child of Mine: Feeding with Love and Good Sense
- Book by Ellyn Satter
- Families and Positive Behavior Support: Addressing Problem Behavior in Family Contexts.
  - Book by Lucyshyn, Dunlap, and Albin
- It Takes Two to Talk, and More Than Words.
  - Books about communicating with young children with language delay (ITTT) and social learning needs (MTW) from the Hanen Center
  - These books have a focus on using visual supports, creating routines, and fostering effective communication with young children.

Case example:
Andy, 3.5 years old
Diagnosis: Down syndrome
Parents primary concern: Still getting nutrition primarily from a bottle. Eats only very smooth purees (yogurt with no pieces and ice cream)
Social & emotional state, and learning needs

Behaviour

Motor Skills

Sensory

Health Status

Behaviour

Motor Skills

Sensory

• Independent mobility and sits unsupported
• Self-feeds from a high-flow bottle with no delay, good lip seal (not losing liquid)
• Can self-feed yogurt with spoon, but slowly. Mom usually spoon feeds (scrapes spoon on his upper teeth as he can’t clear the spoon with his lips)
• High, narrow palate, short, fibrous lingual frenum
• Poor imitation with mouth movements, attempts look very awkward (motor planning?)

Oral Motor

Health Status

• Gags very easily
• Rejects teeth brushing and has very decayed teeth (pain?)
• Grinds teeth throughout day
• Resists touch on face (will accept touch to legs, hands, and sometimes shoulders)
• Will touch and play with most foods if not asked to eat it, but quickly wipes sticky hands
• Prefers smooth, raspberry yogurt
Health: History of frequent respiratory infections requiring hospitalization since infancy, history of recurring pneumonia requiring antibiotics and inhaler

Social & emotional state, and learning

Behaviour
• Happy to drink bottle (enriched formula & supplements)
• Occasionally accepts very smooth, familiar yogurt and ice cream, sometimes rejects these and rejects all other foods
• Will hide under the table, run away, or push away presented food or drink other than formula in a bottle
• Parents have stopped pushing other foods, cups, or straws because behavior is disruptive

Motor Skill

Sensory

Health Status

• Minimal functional speech (yes, no, mama, papa), communicates using body language, facial expressions, sounds, behavior
• Understands and follows 2 part directions, can use Boardmaker picture symbols to request activities and objects
• Very socially motivated, interested in observing and interacting with others
• Showed signs of anxiety or fear around new foods
How did the assessment translate into therapy planning?

- **Health**: Referred for swallowing evaluation and dental care
- **Oral motor and sensory**: Oral desensitization program and chewing habilitation before progressing diet.
- **Social & emotional state, and learning**: Use visuals for all therapy activities including direct modeling and simplified language.
- **Behaviour**: Progress therapy demands gradually, starting with only accepted tasks and reinforced for participation. During meals, parents stopped demands for trying rejected foods to break negative behavior cycles.

**General Preventative Strategies**

- Include baby in mealtimes before starting solids
  - Bring high chair up to table or baby seated on parents’ lap to observe and socialize
- Give no-pressure (but safe) opportunities to practice skills
  - Offer cup of water for play and practice when they can sit upright
  - Offer baby sips of water from your own cup or straw if they show interest.
  - Offer spoons, cups, bowls and other baby safe eating utensils to play
  - Practice chewing on hard-munchable foods that baby can’t bite through yet, but can mouth and munch on. E.g. Broccoli stem, stiff celery) - with supervision

McCarthy, 2006
Preventative Strategies

• Avoid power struggles around food and eating
  • Don’t ‘short-order’ cook or give into demands for a certain food
  • Instead, parents take the role of providing appropriate and nutritious meal, children take the role of deciding what and how much to eat of what’s offered.
  • If necessary, try offering a choice (between two) in other aspects of the meal such as where to sit

• Offer small portions to start
  • Children considered ‘at risk’ of feeding disorders should be presented with frequent opportunities to explore and try new foods including new brands, and new presentations of foods from the early days of solid food introduction.
    • Make change a part of the routine!
    • Try to avoid establishing a habit that will be hard to break later, such as only eating off of one favourite plate, or eating all meals in front of an iPad or TV.

Workshops for Extra Training

• The AEIOU Systematic Approach To Pediatric Feeding
  • CAN EAT Approach
  http://www.carolinapeds.com/pediatric-feeding-can-eat-approach/
• Catherine Shaker’s courses at Shaker for Swallowing and Feeding
  https://shaker4swallowingandfeeding.com/
• Diane Bahr’s courses
  http://www.agesandstages.net/courses.php
• Feeding Matters conferences and webinars (they also list courses happening in the US)
  www.feedingmatters.org
• Sequential Oral Sensory (S.O.S) Approach to Feeding
  https://sosapproachconferences.com/
• A Sensory-Motor Approach to Feeding: www.talktools.com
• Melanie Potock’s courses
  www.mymunchbug.com
Books

- Adventures in Veggie Land. Book by Melanie Potock, 2018
- Child of Mine: Feeding with Love and Good Sense; Ellyn Satter, 2000
- Feeding and Nutrition for the Child with Special Needs; Handouts for Parents Paperback; Marsha Dunn Klein, 2006
- Happy Mealtime with Happy Kids: How to Teach Your Child About the Joys of Food by Melanie Potock
- Just a Bite: Easy and effective answers to food aversions and eating challenges. Lori Ernsberger and Tania Staggen-Hansen, 2004
- Nobody Ever Told Me (or my Mother) That!: Everything from Bottles and Breathing to Healthy Speech Development; Diane Bahr, 2010
- Pre-Feeding Skills: A Comprehensive Resource for Mealtime Development Paperback; Suzanne Evans Morris & Marsha Dunn Klein, 2000
- A Sensory Motor Approach to Feeding by Lori Overland; Robyn Merkle-Walsh, 2013

References


Thank you!
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Please feel free to contact me with questions, ideas, or more resources you'd like to share! Email: riley@dsrf.org