

Assessment & Treatment of Pediatric Feeding Disorders

Thomas M. Reimers, Ph.D.

Center for Behavioral Health

Boys Town



In One End and Out the Other, or not

Thomas M. Reimers, Ph.D.

Behavioral Health Clinic

Boys Town



In one end...



Confucius says:

- I hear and I forget. I see and I remember.
I do and I understand.
- Ignorance is the night of the mind, but a night without moon and star.
- It does not matter how slowly you go, as long as you do not stop.
- NEVER follow Friman.

Assessment and Treatment of Pediatric Feeding Disorders

Thomas M. Reimers, Ph.D.

Center for Behavioral Health
Boys Town





Spaghetti Head



“Actually, choking on Ethel's cooking is the body's early warning system.”

Feeding is a learned behavior!



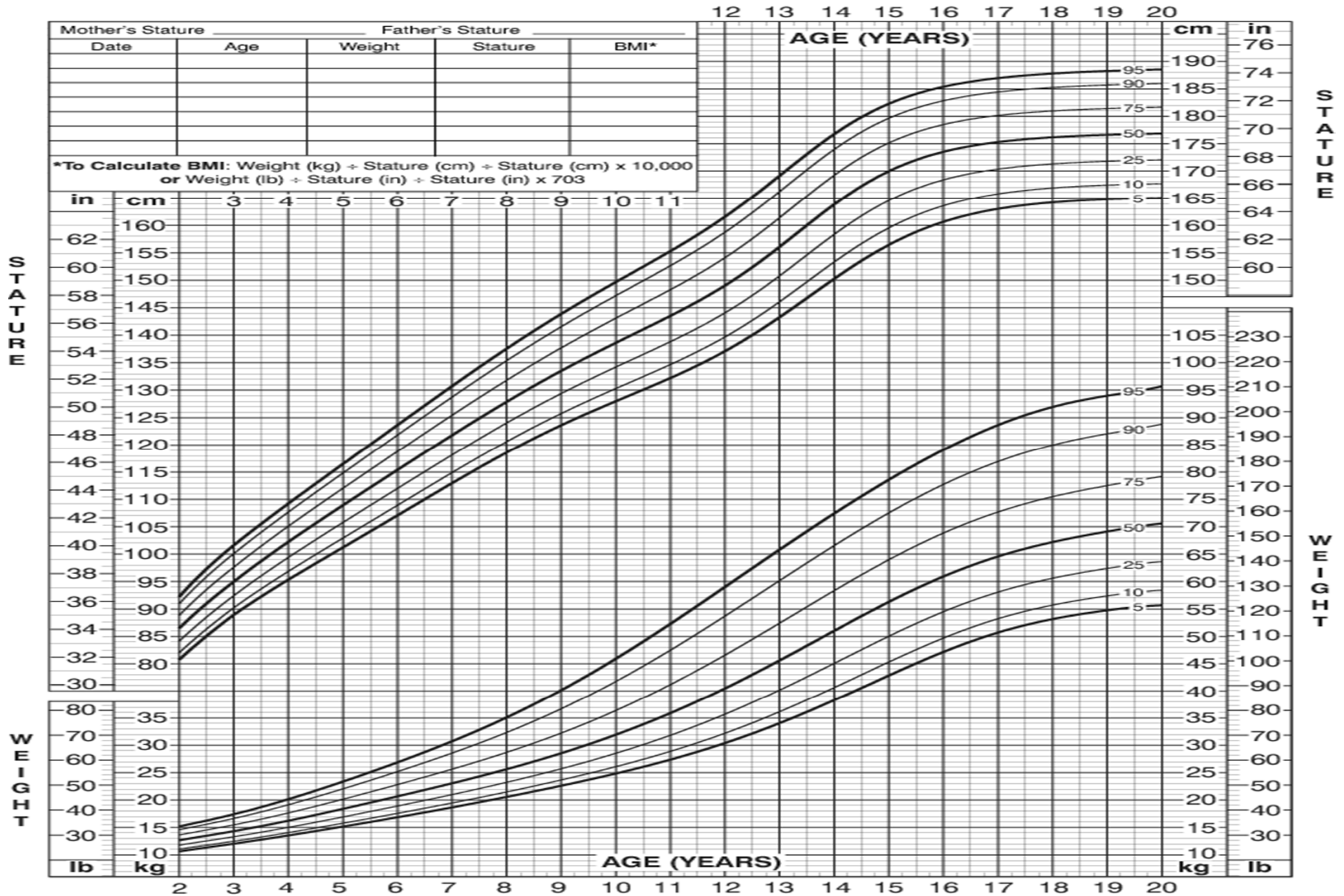
Feeding Problem?: Warning Signs

- Weight is persistently below the 5%
- Failure to advance texture/taste (they are stuck)
- Dependent on a single source of calories
- High rates of resistive behavior at meals
- Consecutive months of weight loss
- Crossing major weight percentiles
- Flattening of growth curve

2 to 20 years: Boys Stature-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>



Feeding Problems: Demographics

- Age range of 2-5 is typical
- Gender: 2/3rd male
- 40% of children with developmental delay
- 15% of typically developing children
- 50% of children hospitalized for FTT

Feeding Disorder of Infancy or Early Childhood (DSM-IV-TR)

- A. Feeding disturbance as manifested by persistent failure to eat adequately with significant failure to gain weight or significant loss of weight over at least 1 month.
- B. The disturbance is not due to an associated gastrointestinal or other general medical condition.
- C. The disturbance is not better accounted for by another mental disorder (e.g., Rumination Disorder) or by lack of available food.
- D. The age of onset is before age 6 years.

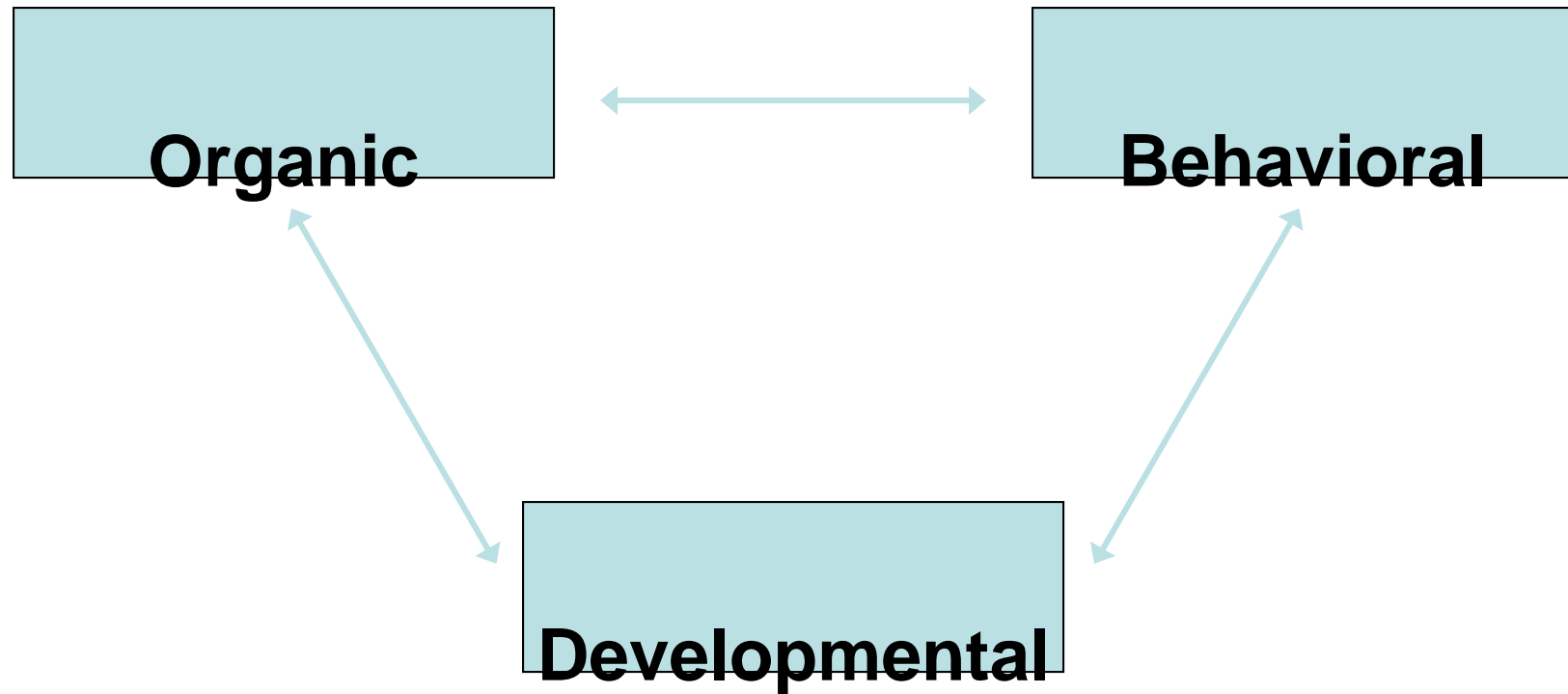
Problems with the DSM-IV Dx

- Organic vs. non-organic
- Cause vs. contribution of medical disorders
- Feeding problems are usually multi-factorial
- Feeding problems go beyond weight

Chatoor's Diagnostic Classification of Feeding Disorders

- Feeding disorder of state regulation.
- Feeding disorder of caregiver-infant reciprocity.
- Infantile anorexia.
- Sensory food aversions.
- Feeding disorder associated with concurrent medical condition.
- Feeding disorder associated with insults to the gastrointestinal tract.

Contributing Factors



Interdisciplinary Approach

- Medicine
- Nutrition
- Speech Pathology
- Occupational Therapy
- Psychology

Medical Factors

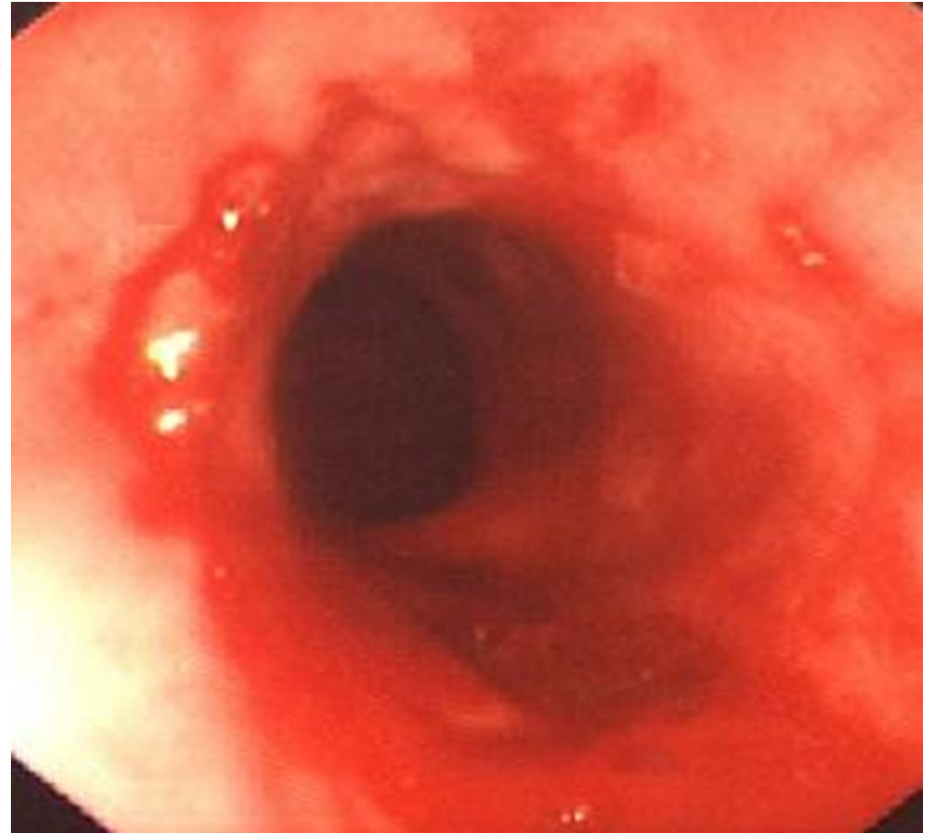
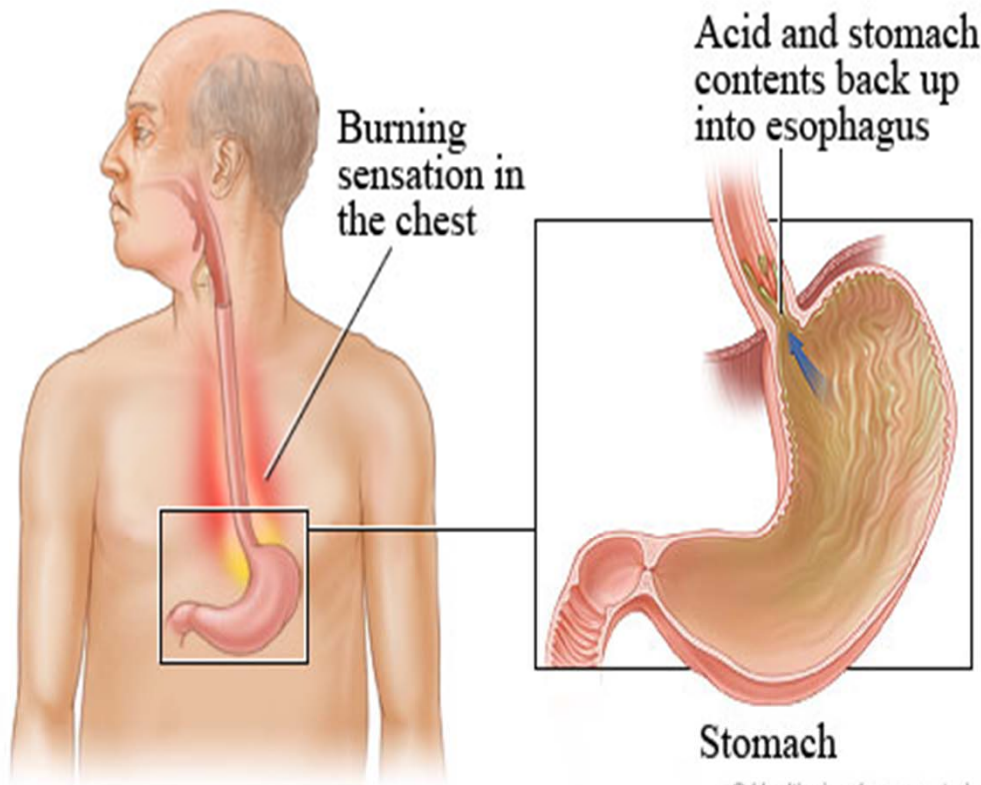
- Evaluation and treatment by a physician is critical to rule out potential medical factors
- Behavioral treatment for a child with medical conditions could worsen the feeding problem

* *Medical Factors can't always be completely treated before behavioral treatment begins*

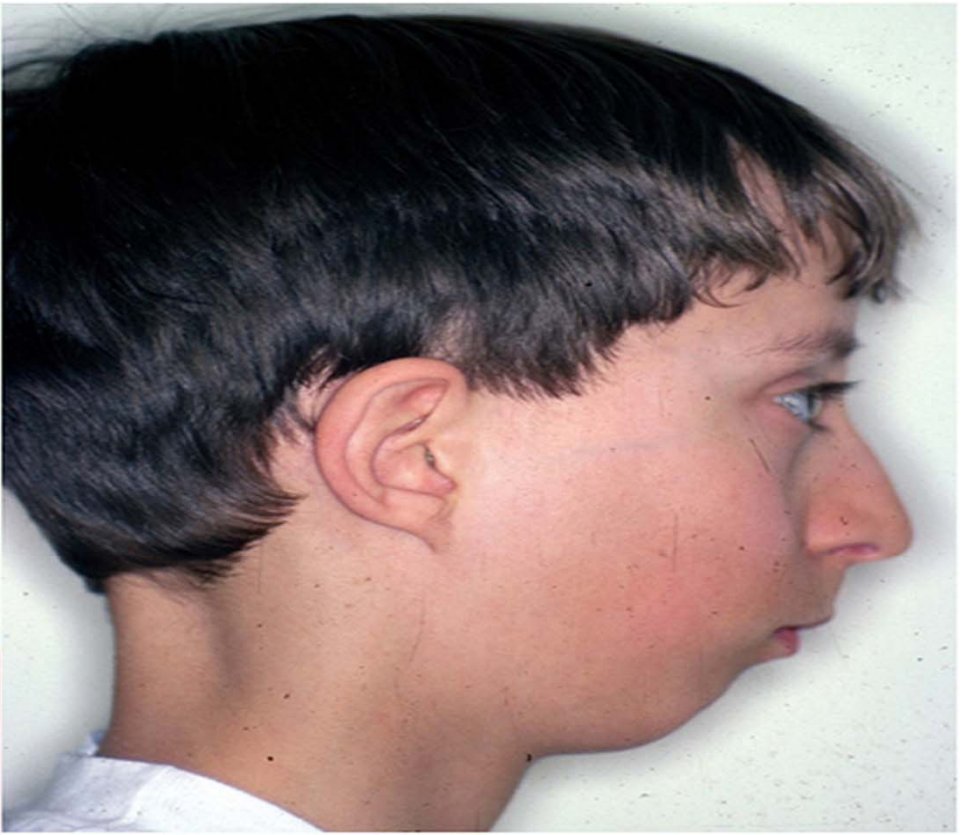
Factors Contributing to Food Refusal: Medical

- No physical sensation of hunger or thirst
- Child has not experienced that eating and drinking will produce pleasant tastes or reduce discomfort from hunger
- Physical discomfort when eating or drinking
 - Gastroesophageal reflux
 - Slow gastric emptying
 - Small window of time until satiation
 - Hypersensitive gag reflex

Medical Factors: Reflux



Medical Factors: Genetic



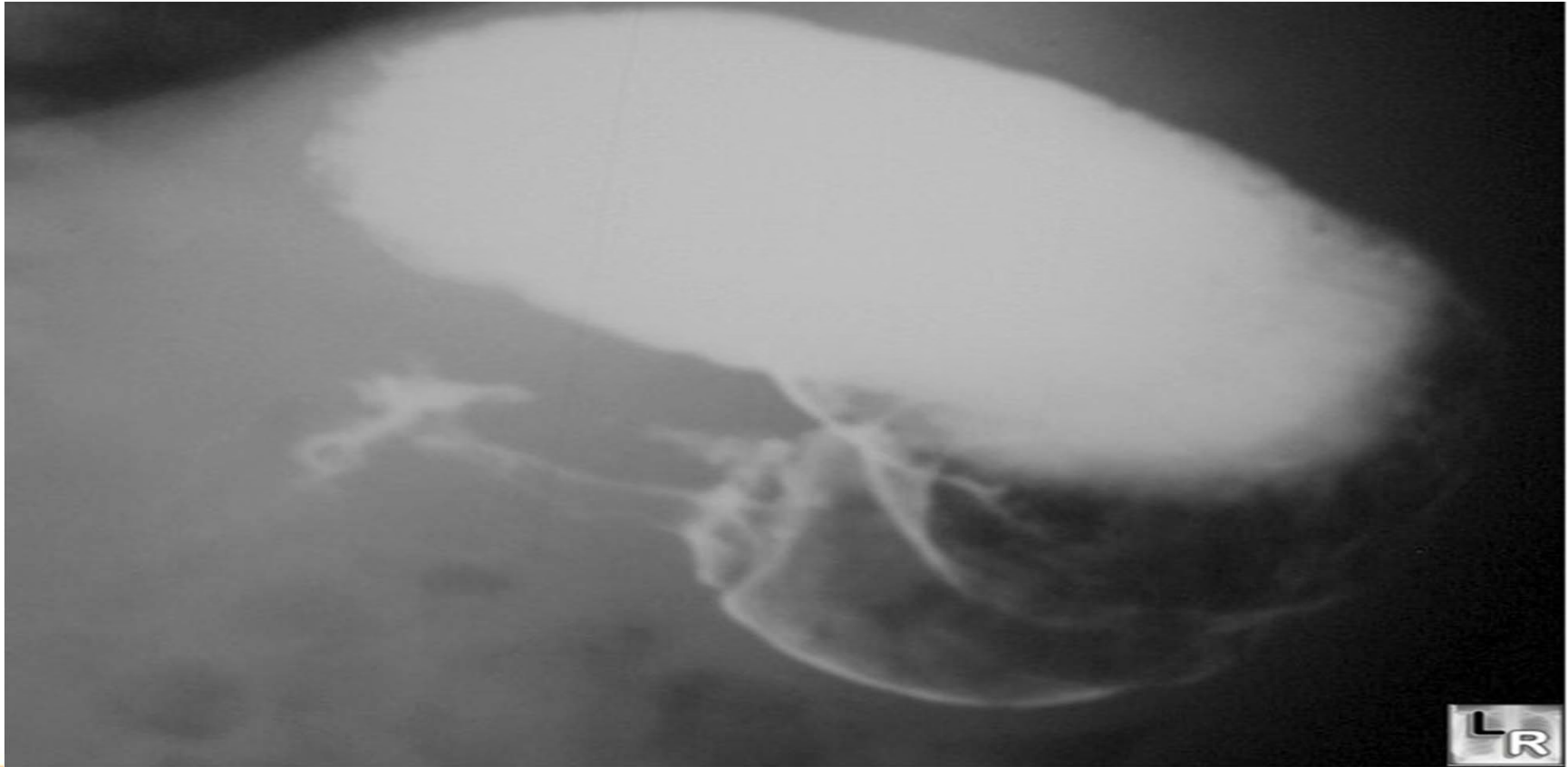
Medical Factors: Prematurity



Medical Factors: Allergy



Medical Factors: Delayed Gastric Emptying



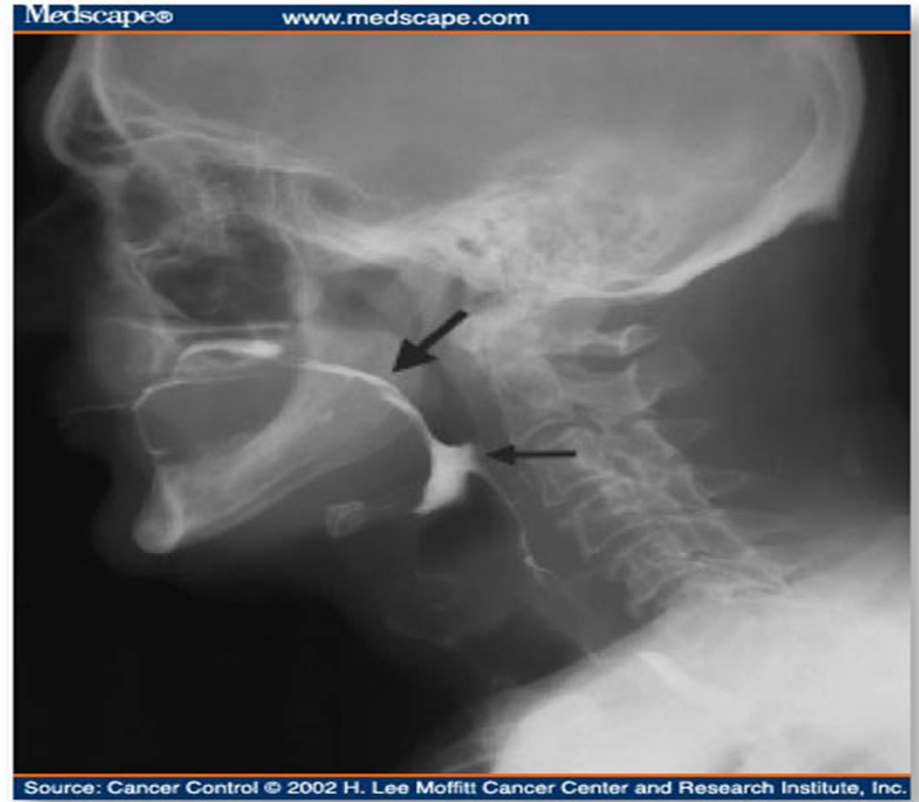
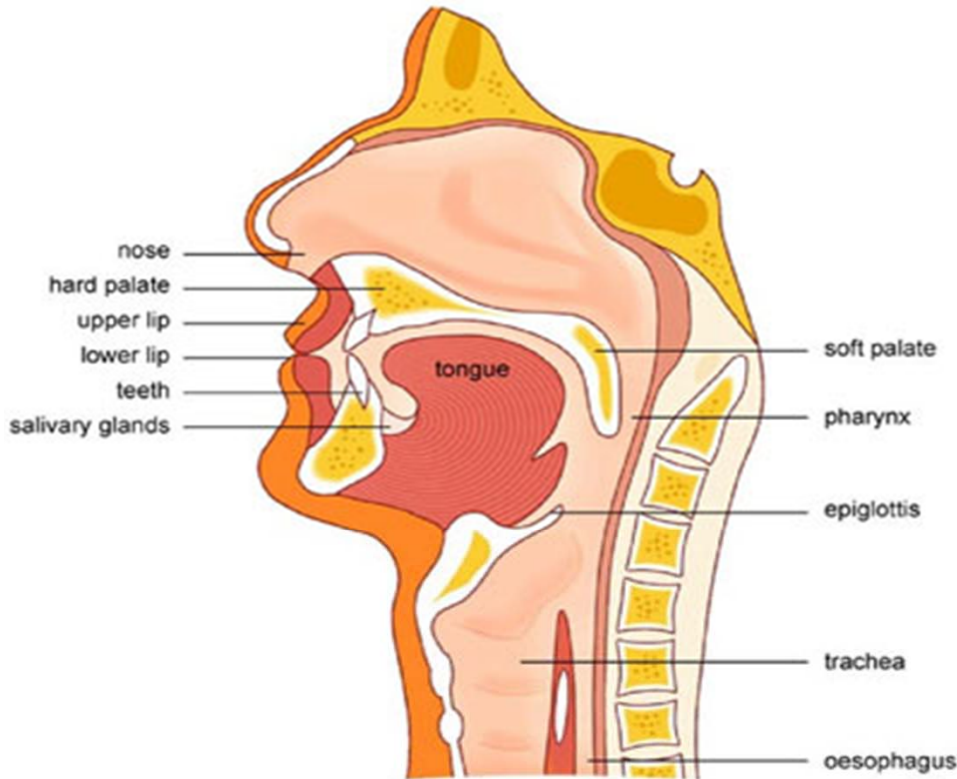
Oral Motor Factors

- Evaluation and treatment by an OT or Speech Pathologist is critical if aspiration or other oral-motor factors are evident
- Aggressive behavioral treatment for a child with aspiration or other oral motor problems could worsen the problem or be deadly

Factors Contributing to Food Refusal: Oral Motor

- Texture Aversion (prefer liquid/smooth)
- Taste Aversion
- Weak Suck
- Unsafe Swallow/choking - gagging
- Delayed oral-motor skills

Developmental Factors: Dysphasia



Developmental Factors: Texture Aversion



Feeding Skill: Stages and Timing

skills	0-3m	3-6m	7-11m	12-24m
Feeding (motor)	sucks	Sucks/bites	Munches	Chews
Texture (sensory)	Liquid	Purees	Chopped	Table
Speech	Coos	Babbles	Syllables	Words
Fine motor	Fingers	Reaches	Transfers	Releases
Gross motor	Lifts head	Turns/sits	Stands	Walks

Developmental Factors: Texture Aversion



Developmental Factors: Taste Aversion

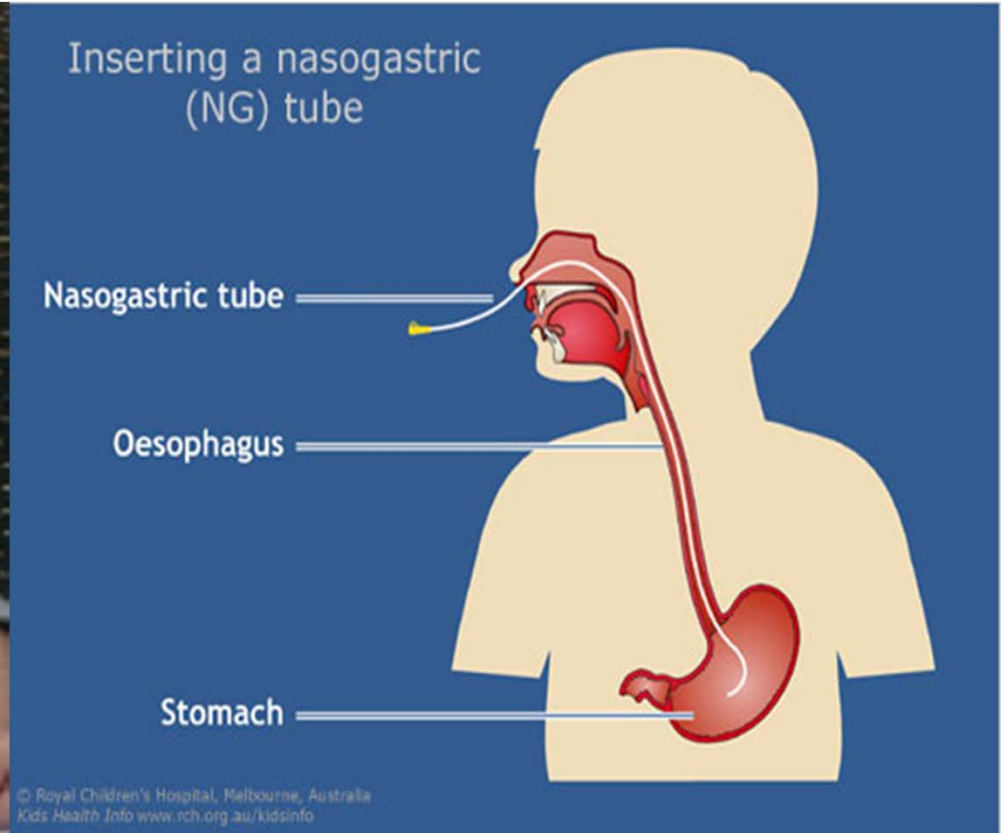


Non-oral Feeding

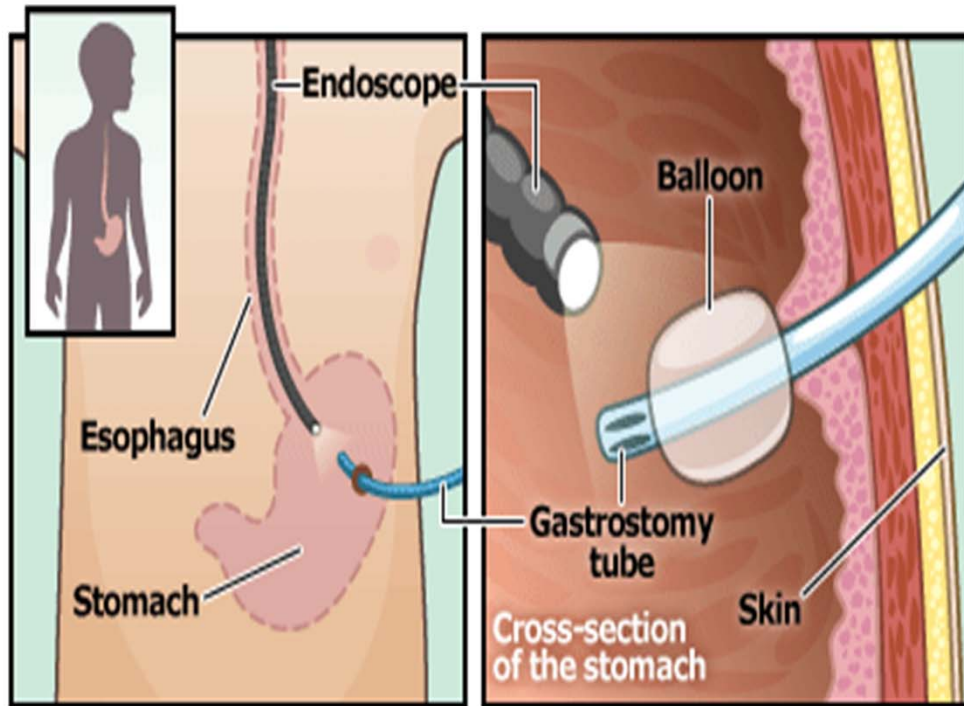
- NG Tube
- G-Tube/Button



Inserting a Nasogastric (NG) Tube



Inserting a Gastrostomy PEG



PEG Procedure



Factors Contributing to Food Refusal: Behavioral

- Emotional/physical discomfort due to unpleasant experience with eating or drinking
- Adaptive manipulation of environment to obtain something child wants
- History of aversive feeding routines
- Child eats successfully for one adult, but not for others
- Oppositional

Behavioral Factors: Previous Experience



Behavioral Factors: Inconsistency



Behavioral Factors: Past Feeding History



Behavioral Factors: Oppositional



Assessment of Feeding Problems



Task Analysis of Normal Eating Process

1. The child is sitting quietly and comfortably in a high chair or at a table.
2. Eating utensils are placed on the child's tray or in front of her on the table.
3. A plate or tray of food is placed in front of the child.
4. The feeder/child raises the spoon, fork, bottle, or cup from the tray or plate and approaches the child's mouth with the utensil.
5. The child opens her mouth to receive the utensil and food.

Task Analysis of Normal Eating Process (continued)

6. The child sucks, chews, or swallows what has been provided.
7. She eagerly awaits more food.
8. The child opens her mouth to receive another bite of food from the feeder, etc.
9. At the end of some predetermined length of time, the child has consumed the amount as well as the type of food that the feeder has intended.
10. The child leaves the feeding location, engages herself in some activity, and experiences no discomfort from feeding.

ASSESSMENT = TEAM APPROACH TO DETERMINE:

Skill

- sucking
- chewing
- swallowing
- tongue lateralization
- self-feeding

vs.

Performance

- quantity
- type
- acceptance
- length of meal

Types of Feeding Problems

- Selectivity by Type
- Selectivity by Texture
- Insufficient Quantity
 - Structural, medical impediments
 - Type/Texture
 - Positive reinforcement
 - Negative reinforcement

Target Behaviors Might Include:

- Texture
- Quantity (per meal, or total intake)
- Food type
- Cooperation
- Length of meal
- Weight

Incoming Information



Feeding
History

Medical
History

Observation
of Meal

Structured
Interview

Past
Treatments

Hypothesis Generation/Functional Assessment



Positive
Reinforcement

Positive/Negative
Reinforcement

Negative
Reinforcement



Treatment Selection

- DRO
- Token System

- Shaping

- Extinction
- Time-out

Informal Observation of Meal

- Child's feeding skills
- Parent's feeding approach
- Avoidance behaviors
- Physical response to eating
- Feeding environment
- Parent/child interactions
 - » Seating
 - » Visibility of food
 - » Utensils
- Window until satiation
 - » Length of meal

Functional Assessment of Feeding Disorders

Are disruptive feeding behaviors a function of?:

- Escape/Avoidance
- Attention
- Tangible

Characteristics Associated with the Behavioral Functions of Feeding Difficulties

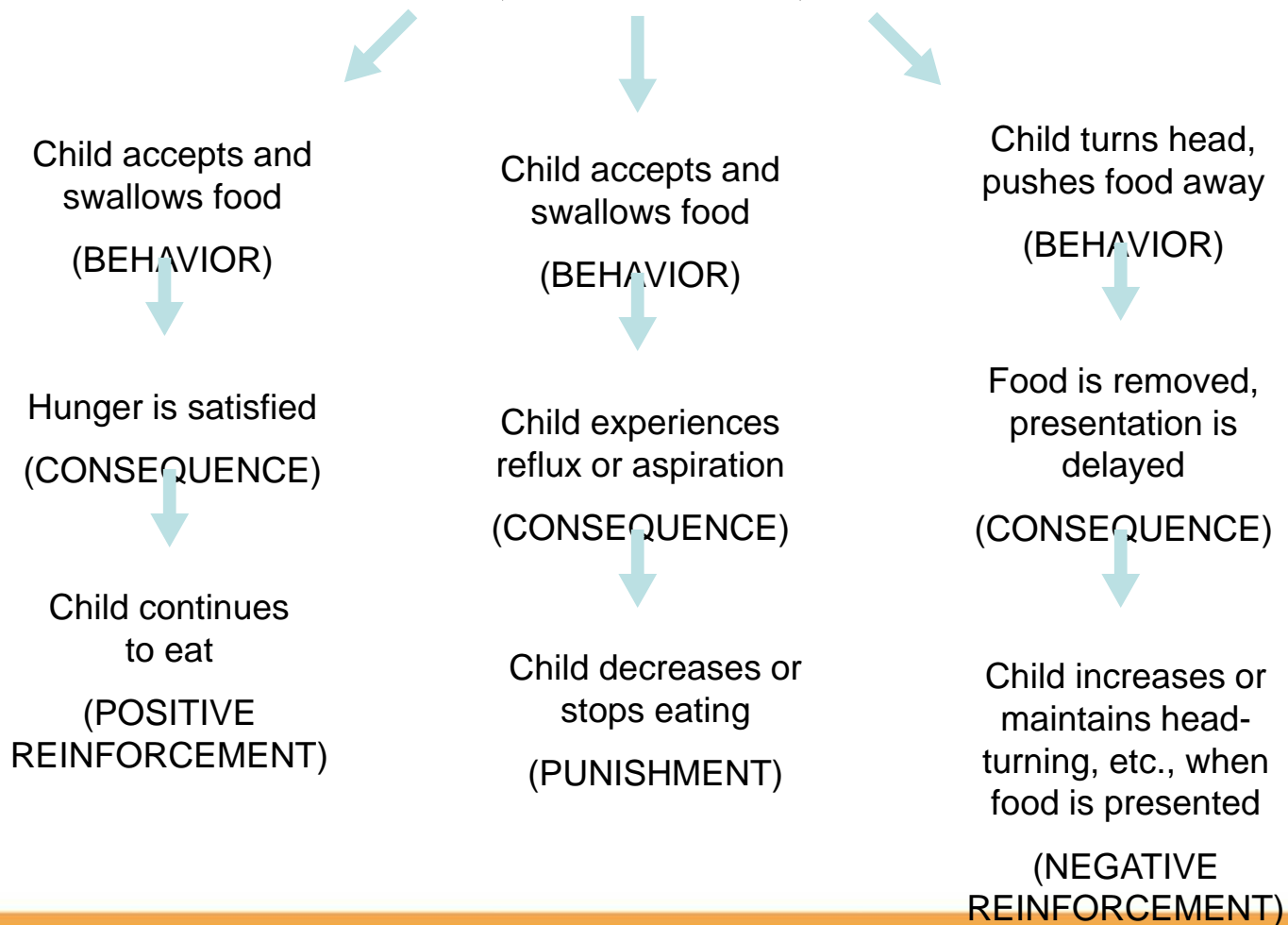
Positive Reinforcement

- Wider Range of Preferred Foods
- Fewer Negative Experiences with Eating
- Stimulus Control is a Factor
- Inappropriate Behavior Does Not Decrease When Meal is Avoided or Terminated

Negative Reinforcement

- Limited Range of Preferred Foods
- History of Medical/Motor Problems
- Stimulus Control is Less of a Factor
- Inappropriate Behavior Decreases When Meal is Avoided or Terminated

Food (Stimulus)



The Function of Avoidance

- Avoidance of eating is initially an adaptive behavior as it allows the child to avoid an activity that is painful, difficult, scary and potentially dangerous.
- Poor oral control and/or sensory aversion may lead to gagging which reinforces fear and promotes further refusal.
- The child will use a variety of behaviors to avoid placement of food into his/her mouth.
- Parents often unintentionally reward avoidance behaviors by responding with positive attention (playing, smiling, bargaining) or by removing the food.

Common Avoidant Behaviors

- Pushing food away
- Throwing food
- Turning away
- Crying
- Saying “No!”
- Refusing to open mouth
- Expelling foods from mouth
- Gagging/Vomiting

Structuring the Meal

- Allows for predictability and systematic changes
- Select 2-3 basic rules for child/feeder
- Identify food and liquid type
- Select beginning quantity (start small)
- Select meal length by time or bites
- Determine how to respond to behavior
- Caregiver vs. self-feed

Where's the Beef?



- Have a plan in place that outlines how the child will meet their caloric/nutritional needs while treatment plan is in place

Basic Behavioral Components

- Shaping
- Escape Extinction
- Premack
- Time-out

Shaping

- Definition: Gradually reinforcing “successive approximations” of a target behavior
- Gradually shape acceptance of larger quantities of food by type and/or texture

Escape Extinction

- Block reaching
- Ignore head turning etc.
- Hold bite or drink at mid-line
- Re-introduce expelled food
- Decrease avoidance behavior by monitoring texture, utensil size, bolus size
- Pair with DRA, etc.

Pairing Preferred with Non-Preferred Foods

- Premack
- Texture fading
- Reward tastes vs. bites
- Combine type/texture then fade preferred

Time-Out

- Definition: Providing time-out from reinforcement either by removing the child or the environment
- Use will likely be non-traditional

Use Time-Out for Children Who:

- Enjoy several foods
- Have a normal hunger-satiety routine
- Enjoy social attention
- Exhibit highly disruptive mealtime behaviors

Avoid Time-Out with Children Who:

- Are tube dependent
- Are highly avoidant
- Have limited potential for oral intake

Factors Suggesting That Intensive Behavioral Programming May Be Contraindicated (or that medical interventions should precede/coincide with behavioral intervention)

- Gagging/choking
- Turning blue
- Expelling food through nostrils
- Indication of stomach discomfort
- Physical discomfort midway through eating process
- Arching of back
- Persistent colic/irritability

Chance

- Born 29 weeks gestation via c-section
- NG (Nasogastric tube) shortly after birth
- G-button (Gastrostomy) tube placed at 10 mos.
- At referral:
 - 2 y.o.
 - completely tube dependent
 - receiving 4 bolus feeds/day and nighttime drip
 - tastes of cereal and formula
- Tx
 - Structured mealtime routine and rules
 - Gradually shaped acceptance of textures and liquids
 - Increased solid and liquid intake by mouth
 - Faded and eventually eliminated drip feeds (then boluses)
 - Escape extinction plus DRO

The Picky Eater

- Picky eaters are made – not born
- Function: Avoidance/escape vs. access to preferred
- Positive change will take time



Characteristics of the Picky Eater

- Early texture/taste sensitivity
- Hx of oppositional behavior **and/or** high permissiveness by parent
- Diet becomes more restrictive
- Multiple failed 'interventions'
- Inconsistent to negative mealtime behavior
- Lack of consistent mealtime routine



Expanding the Diet of the Picky Eater

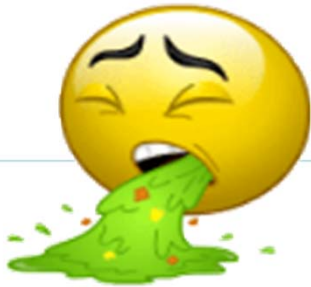
- Exposure is the key



Expanding the Diet of the Picky Eater

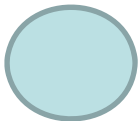
- Leave grazing to the cattle
- Fade temperature and texture
- Modify preferred foods
- Stick to the schedule
- Grandma's Rule
- One taste/bite rule (at start of meal)
- Require set time at the table (use a timer)

Rating Taste and Bite Size



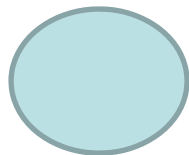
Yuk

1



1

2

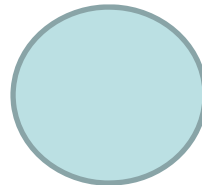


2



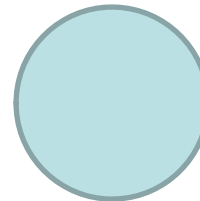
Ok

3



3

4

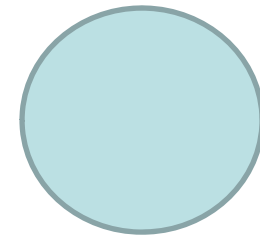


4



Yum

5



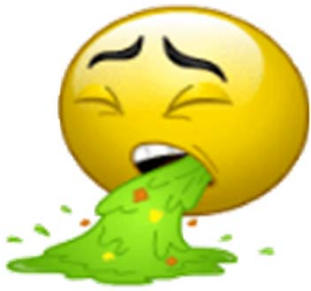
5

Behavioral Strategies (one example)

- Generate list of foods to try
- Give permission to start small
- Have clear contingencies
- Actively involve the child
- Measure taste preference and bite size
- Short term and long term rewards



Rating of Taste



Yuk

1

2



Ok

3

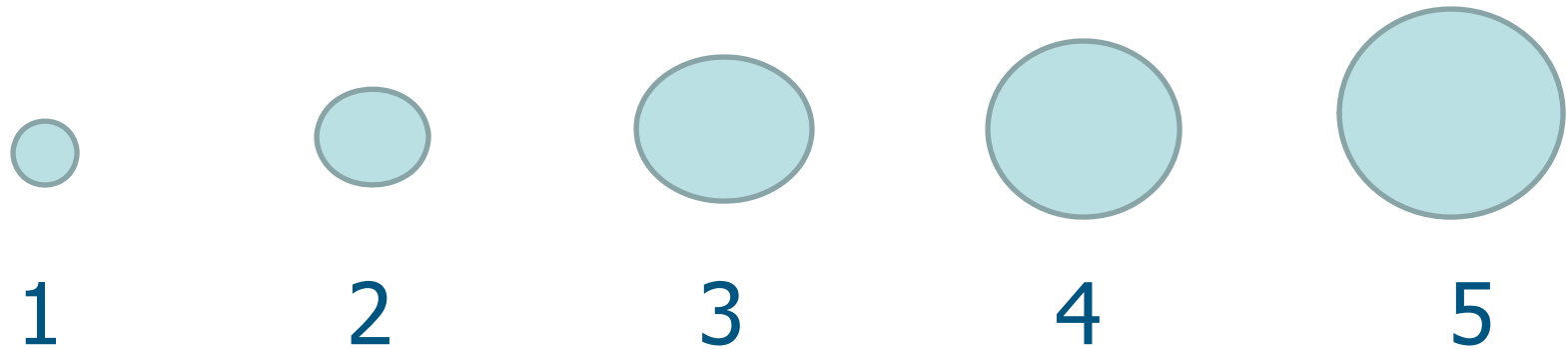
4



Yum

5

Rating of Bite Size



Recording of Tastes

Date	Food Item	Taste Rating	Bite Size	# of Bites
6-17-11	Carrot	3	2	2
6-17-11	Mac & Cheese	5	3	5
6-18-11	Apple	2	1	1
6-19-11	Tuna Casserole	4	4	3
6-20-11	Hot Dog	1	1	1
6-21-11	Broccoli	2	2	3
6-22-11	Broccoli with cheese	5	3	10

Reward Jar

- One token per bite – initially
- Use masking tape to have levels of rewards
- Fade by providing one token for increasingly more bites



Tips for Healthy Eating

- Present a wide range of foods before the child reaches 15 to 18 months of age
- Present preferred as well as non-preferred foods
- Stick to a consistent schedule; keep meals, naptime, and bedtime at same times daily
- Avoid grazing
- No short order cooks allowed
- Make healthy foods readily available and unhealthy foods less available
- Model healthy eating behaviors and discuss good eating habits



“I do like vegetables... That’s why I hate to see them brutally killed and eaten.”

