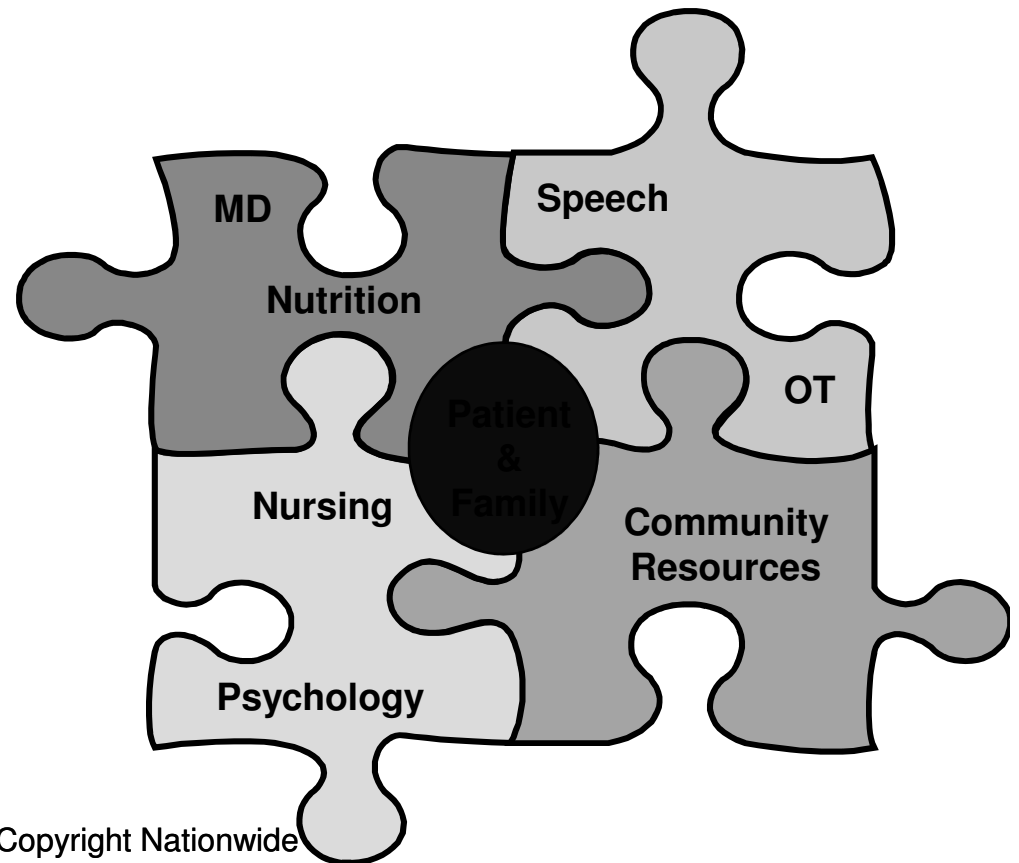


The Psychology of Feeding

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Developmental Progression

Feeding Skills

Oral Reflexes

- Suckling – 13 to 24 weeks gestational age through 32 weeks gestation
- Sucking – 6-9 months of age
- Gag – 26 to 27 weeks gestation and persists throughout life
- Phasic bite – 28 weeks; integrates around 9-12 months

Oral Reflexes - continued

- Transverse Tongue Reflex – emerges at 28 weeks gestation and persists through life
- Tongue Protrusion – evident at term; integrates at 4-6 months of age
- Root Reflex – emerges at 32 weeks gestation; integrates at 3-6 months of age

Feeding Skills

- 0 to 1 month – 6-8 feedings of breast milk/formula
- 2-4 months – 4-7 feedings of breast milk/formula
- 4 to 6 months – 4-6 feedings of breast milk/formula; introduce baby cereal at 6 months

Approximate Developmental Age & Type of Food

- 0-13 months Breast/bottle
- 5-6 months Thin baby food cereals
- 6-7 months Thin baby food purees (Stage 1)
- 7-8 months Thicker baby food cereals and thicker baby food smooth purees (Stage 2)



Approximate Developmental Age & Type of Food

- 8-9 months Soft mashed table foods and table food smooth purees
- 9 months Meltable Solids (i.e. Towne House crackers, Biter biscuits, graham crackers)
- 10 months Soft Solids (i.e. bananas, Gerber Graduate fruits, avocado)



Approximate Developmental Age & Type of Food

- 11 months Soft Single Texture Solids (i.e. muffins, soft pastas, thin deli meat)
- 12 months Soft Mixed Texture Solids (Gerber Stage 3) (i.e. macaroni and cheese, French fries, lasagna)



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Approximate Developmental Age & Type of Food

■ 12-14 months Soft Table Foods



The Rules of Mealtime

Nutrition



- Offer foods from all basic food groups
- Dairy, fruits, vegetables, meats/protein, and starch/carbohydrates
- Offer drinks (preferably milk) after solids
- Offer age appropriate portion sizes
- Make sure textures are developmentally appropriate



Schedule

- Meals and snacks happen at roughly the same time every day
- No food or drink (except water) between meals and snacks.
- “No grazing”



Structure

- Everyone sits together at the table
- Appropriate seating
- Time limits
- Limit distractions



Choices

- Choices help children feel like they have control.
- Allow children to assist in menu planning, cooking, and preparing the table as able.
- Allow children to choose one food at each meal that they will eat.
- Allow the child to select a plate, cup and spoon.

Behavior Rules

- Put a “No thank you” helping (1 tsp- 1 tbsp) of a new food on his/her plate, even if they are not going to eat it.
- “Taste with our tongue, not with our eyes.”
- Ignore minor whining and complaining.
- Stay seated until the family is finished eating.



Make meals fun!

- We want meals to be a positive and fun experience.
- Provide lots of praise for all appropriate eating.
- Encourage your child to smell, taste and describe the foods s/he is eating.
- Schedule game time after the meal if s/he cleaned the plate, tasted all of the foods, etc.

Prevention

The most important thing that we need to do for our tube fed children is to make sure that there continues to be a connection between the child's mouth being used and the child's stomach getting full.

Failure to offer oral feeding experiences during the “critical period” between 6-10 months of age can result in:

- Child mistrusting of own oral abilities
- Child misses out on a step in the hierarchy of learning oral motor skills
- Abnormal or no family mealtimes are established

Feeding rules with feeding tube

- Child should be provided with developmentally appropriate non-nutritive oral stimulation
- Oral stimulation should be provide throughout day but definitely during tube feeding times to make the association of oral stimulation and feeling full
- Tube feeding pump should be out of sight in the idea of “out of sight/out of mind”
 - If the child is on bolus feedings the bolus bag and supplies should remain out of the child’s view and may require an additional person to perform the actual feeding.

- Provide interactions with food as medically appropriate



Infants on tube feedings

- Adult feeder can hold the infant in a secure face-to-face manner to promote a “normal feeding” situation
 - Emphasis should be placed on maintaining skin-to-skin contact, smiling, making prolonged and steady eye contact, and making soothing sounds
- Present pacifier with each tube feeding. If child is safe present tastes or dip pacifier in taste of breast milk/formula
- If child is not safe for tastes present smells of breast milk/formula



Older infants on tube feedings

- Should be done in an infant seat/high chair on a scheduled time

Toddlers on tube feedings

- Feedings should all be given in a consistent location preferably sitting upright in a high chair as child is physically able

For older children (18-24 months)

- Child should be seated at the family table in appropriate seating for the child's age/development (i.e. high chair, wheelchair)

- The goal is to keep oral experiences positive and naturally reinforcing for the infant/child in an effort to prevent oral aversion.
- The feeding environment should mimic that of children who do not need tube feeding.

- Children should be required to sit at the table during mealtimes and have face-to-face interactions with family members.
 - Teaches the child that meals are scheduled
 - Feeding occurs at the table
 - Serve as modeling for the child

- Even if the child is not actively eating by mouth, reinforcement can occur for behaviors that are related to structured mealtimes,
 - sitting in the chair/booster seat/high chair
 - having foods on the plate
 - touching/smelling foods
 - experience mealtimes as a pleasurable activity



Bolus feedings

- Boluses at scheduled family mealtimes
- Bolus is the meal
- Emphasis is placed on the child's participation in mealtime not the tube feeding

Hunger and Satiety

Appetite Manipulation

Regulatory systems

- Hunger is a regulatory system, as is our sleep-wake cycles.
- They are physiological clocks that need environmental regulation.
- If we do not impose restrictions on when we sleep and eat, all of our functioning would become out-of-sync and chaotic.

Hunger–Satiety Cycles

- Our Hunger-Satiety cycle runs about every 4 hours.
- This gives our stomach time to fill up with food, process it for our bodies, and empty it out.
- We recognize our hunger and satiety cues by pains in our stomach – growling for hunger, low throb for fullness.
- Scheduling meals helps establish hunger.

Grazing and Hunger

- Adults eat small frequent meals throughout the day to lose weight.
- It takes the edge off our hunger so we never feel really hungry or full.
- Affects children in the same way.
- Milk alone can curb hunger and keep a child from eating their meal.
- Kids can hold out for preferred foods.

Hunger and Tube Feedings

- What happens to this cycle when continuous tube feedings are introduced?
- Food is run continuously into the stomach leaving no opportunities to experience hunger or thirst.
- Do they constantly feel full?
- Not hungry, even when off tube feedings.

Adjusting Tube Feedings

- Child must be at acceptable weight.
- Ideally, switch from overnight to bolus feedings.
- Keep feeding tube behind child.
- Offer bolus feedings after meals to associate fullness with eating by mouth.
- Can begin to adjust bolus feedings based on amount eaten by mouth.

Offering Food and Oral Stimulation

- Exploring food, tasting it, making food pleasurable is most important.
- Non-Nutritive oral stimulation as prescribed by a trained feeding therapist.
- Allow finger feeding, scooping with utensils, food play during meals. Let them be messy!
- Stay positive and praise all attempts.
- Make sure foods are safe for current oral motor skills.

Adjustments with picky eaters

- Cannot cut tube feeding altogether and expect child to begin eating new and larger volumes of food without intervention.
- Run the risk of poor energy, weight loss, increased sleepiness, dehydration and vomiting.
- Typically need medical supervision via hospital admission to do this.

Building a Food Repertoire

Insure a high degree of success

- Select foods that offer a "just right" challenge
- Make sure to select foods that child has the oral skills to manage

Change.....

- Location
- Change by color
- Change by shape
- Change texture
- Intensify the taste

Location

- Take food out of the original container
 - Put baby food jar in the bowl
 - Have child help take out of container to bowl
 - Have child take out of container to bowl
 - Remember not to overwhelm the child by expecting too much too soon

Change by Color

- Pick preferred food and “bridge” to non preferred food by choosing a food similar in color
 - Go from bananas to applesauce
 - Go from carrot to sweet potatoes



- Make sure you are only changing color- could also be changing texture and food group
 - Strawberry yogurt to strawberry applesauce
 - Change in texture, food group and potentially color



Change by Shape

- Pick preferred food and “bridge” to a new food by changing shape
 - Chicken nuggets from Wendy’s versus my freezer or smaller versus larger sizes



- Applesauce from grinding apple bits
- Cheese cut into strips similar to string cheese

Change by Texture

- Add small bit of smashed meltable/graham cracker to puree
- May need to transition slowly
 - Put large amount of puree on spoon with “tiny amount” of textured puree on tip of spoon
 - Decrease amount of puree and increase amount of textured puree
 - This may take only a few bites
 - or maybe a few days



- Can gradually increase amount smashed meltable/graham cracker in with puree until puree is more of a “lumpy puree”
- To transition from “lumpy puree” to ground presentations
 - Change texture by putting through grinder
 - Present in similar way as described with puree

Intensify

- Add small amount of salt or pepper to pureed vegetables
- Add small amount of sugar to fruits
- Add gravy powders to meats
- Add small amounts of spices to foods
 - tarragon, garlic, dill, Italian herbs



Add a new developmental food

- Begin working on tolerating a Hard Munchable such as a biter biscuit
 - Encourages side to side tongue movement,
 - Moves the gag reflex back
 - Improves jaw strengthening.
 - You can use the hard munchable as a spoon in puree presentations



Rule of 10

- Try a new food 10 times before you can say you don't like it.
 - This means actually ingesting it not just interacting with it



Summary

- Follow developmental progression
- Mealtime Structure and Rules
- Prevent problems before they start
- Carefully transition tube-feeding to oral feeds
- Step wise transition from baby food to table food purees

IFEC

- Interdisciplinary Feeding Evaluation Clinic
- Nationwide Children's Hospital- Dublin campus
- Every Thursday morning
- http://www.nationwidechildrens.org/gd/applications/controller.cfm?page=237&pname=sprofile&service_id=174&gsection=pfv
- Contact Christina Doelling for more information at (614) 722-3979 or christina.doelling@nationwidechildrens.org