

# Paediatric Nutrition: Tips when Feeding your Child

Dr Tan Li Nien Michelle

Consultant

Department of Paediatrics

Division of Gastroenterology, Hepatology, Nutrition and Liver Transplantation

National University Hospital

# Complementary Feeding

- WHO definition:
  - The process when breast milk alone is no longer sufficient to meet the infant's nutritional requirements so other foods & liquids are needed, along with breast milk
- Necessary for child's nutrition & development
- Period of marked changes in the diet with exposures to new foods, tastes and feeding experiences

# Complementary Feeding (CF)

- Should not be introduced before 4 months but should not be delayed beyond 6 months
  - Renal and GI functions are mature to metabolize nutrients from foods by 4 months, and GI maturation is driven by foods ingested
- Continued breastfeeding is recommended along with CF
- Cow's milk/ Fresh milk should not be used as the main drink before 12 months

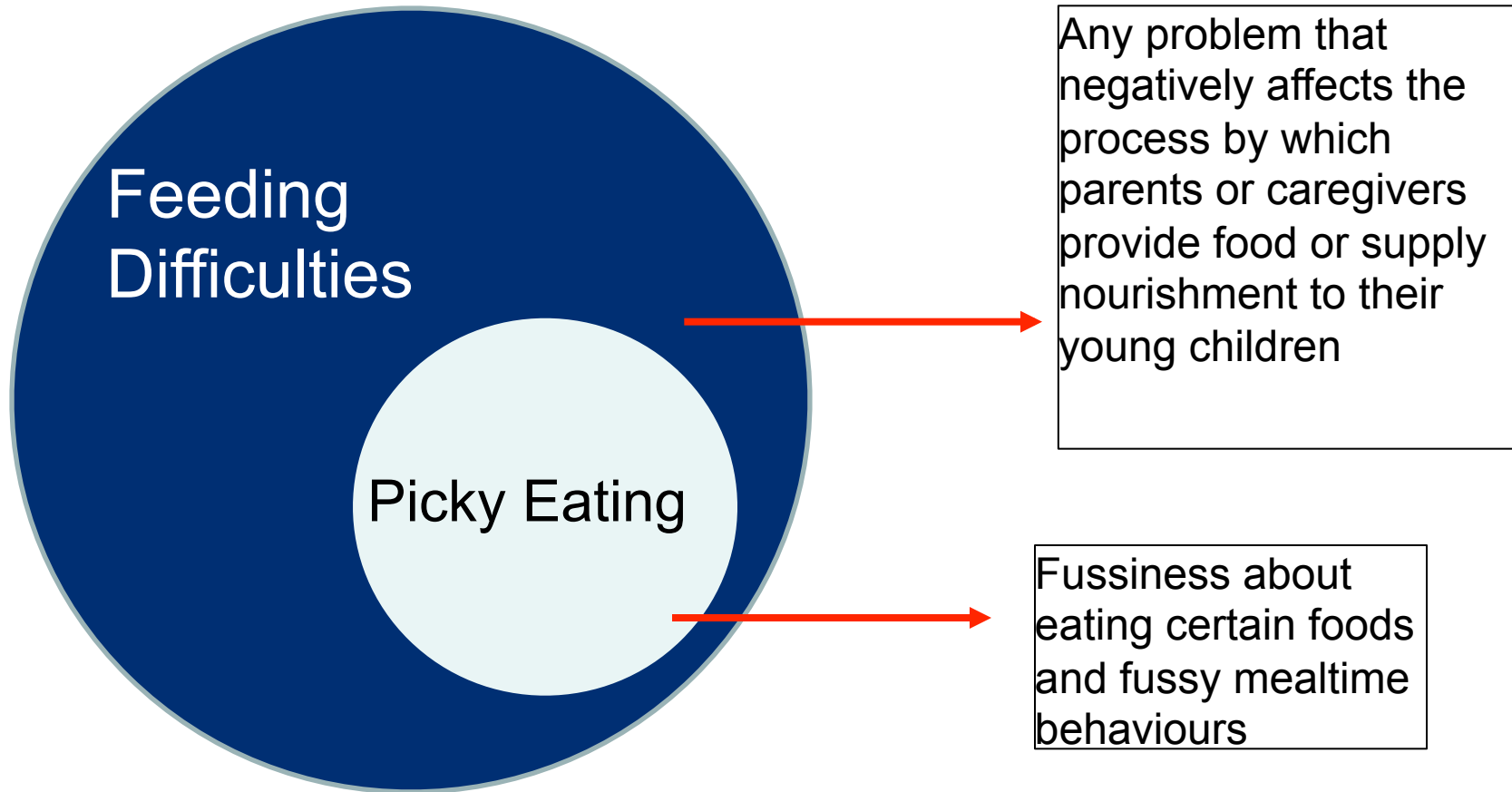
# General Rules for CF

- High protein intake during CF may increase risk of subsequent overweight, esp in predisposed children
- Mean intake of 15 PE% (energy % from protein) is advised
- Fat intake is an important energy supply in 1<sup>st</sup> year of life
- Fat should constitute 40% of energy intake from 6-12 months old
- LCPUFA, esp DHA, plays an important role in brain development

# General Rules for CF (Iron)

- Infants & young children at risk of iron deficiency as their rapid growth leads to high iron requirements
- Endogenous iron stores used up by 6 months
- At risk groups: Premature infants, low birth weight infants, maternal iron deficiency
- All infants should receive iron rich CF
  - Eg: Meat products, iron-fortified foods (cereals, formula), egg yolk, green leafy vegetables, legumes

# Definitions



Kerzner B. Clinical investigation of feeding difficulties in young children:  
A practical approach. Clinical Pediatrics July 2009

# Other terms – feeding related

---

- **Neophobia**
  - Rejection of new foods
  - Normal, protective response
  - Resolves with repeated exposure (8-10x)
- **Feeding disorder**
  - Results in substantial organic, nutritional or emotional consequences
  - Connotes a severe problem

# Feeding vs Eating



***Feeding involves an interaction between the child and the caregiver<sup>1,2</sup>***



***Eating reflects only the child's actions<sup>1,2</sup>***

1. Chatoor I, *Diagnosis and Treatment of Feeding Disorders in Infants, Toddlers, and Young Children*. Washington DC: Zero to Three; 2009.
2. Kedesdy JH, Budd KS. *Childhood Feeding Disorders*. Baltimore: Paul H Brookes; 1998.



# Parenting Feeding Styles

Controlling



Responsive



Neglectful



Indulgent

Hughes SO, et al. Appetite. 2005

# Feeding Difficulties : Clinical Approach

## 1. Assess Growth

## 2. Assess Nutritional Intake

- Total / Type of Calories
- Energy expenditure



## 3. Identify the Feeding Issue

- Nutrition & Behaviour / Interaction

# Diagnostic Approach

Assess Calorie Intake

Sufficient

- Type of calories consumed
- 4 Main Food groups
  - ✓ Dairy
  - ✓ Cereals / whole grains
  - ✓ Meat (Protein)
  - ✓ Fruit / Vegetables

Insufficient

- “Picky Eater”
  - Limited Appetite
  - Selective
  - Fear of Feeding
- Chronic Medical Illness

# Red Flags

## Organic Red Flags

- Dysphagia
- Aspiration
- Apparent pain with feeding
- Vomiting and diarrhea
- Developmental delay
- Chronic cardio-respiratory symptoms
- Growth failure (Failure to thrive)

## Behavioral Red Flags

- Food fixation (selective and extreme dietary preferences)
- Noxious (forceful and /or persecutory) feeding practices
- Abrupt cessation of feeding following a trigger event
- Anticipatory gagging
- Failure to Thrive

Levine et al JPGN

**Investigate & Refer as needed**

# Introduction of Solids

- 4-6 months; child develops truncal control
- Thickened purees
- One new food at a time
  - watch for allergic reactions
  - allow child to get used to the food
- May take up to 10x exposures on multiple days

# Transition to Self-Feeding

- Influenced by child's temperament and family's cultural practices
- Child becomes interested to self-feed between 9 months - 2 years old
- 9-10 months: Sit independently, pincer grasp, grabbing utensils etc

# Transition to Self-Feeding

- High chair
- Bowl with suction base to keep in place on feeding tray
- Use two spoons
  - 1 spoon for child to manipulate & practise getting into mouth
  - Guide his hand to his mouth if he allows
  - Or allow him to feed you!
- Tolerate mess
- At most 3-4 different foods per meal

Eg: “This is all I have for this meal. You can have it at another time.”

# Transition to Self-Feeding

## 1) Use praise

Eg: “What a big boy you are; you can get the spoon in your mouth & feed yourself.”

Eg: “Good job. You got it into your mouth.”

- **Avoid** praising for how much was eaten nor express concern about how little was eaten
- Do not make “amount” an issue as child can use eating/not eating to manipulate the caregiver



# Transition to Self-Feeding

2) Creating awareness about tastes & textures

Eg: “Was that sweet/sour etc”

3) Presentation of foods

# Transition to Self-Feeding

- Move high-chair to family table & join in meals
  - Allow toddler to watch how & what the rest eat
  - Seeing others enjoy food makes toddler curious & interested to try
- After 1yo (mature pincer grasp, babbling & gesturing)
- Ready to introduce finger foods
  
- Child tends to drop food/utensils onto the floor
  - Plastic mat under chair
  - Leave fallen food until meal time over
  - Offer only 1-2 pieces each time
  - Firmly say “No” & wait for 1-2 minutes before next attempt

# Meal-time discipline

- **Instil hunger; have meal-time structure**
  - *Eat in response to hunger cues*
- **20 minutes at the table (not >30minutes)**
  - Parents pace themselves to eat for ~20min & tell child to sit at table until Mummy & Daddy's tummies are full
  - Do not allow child to drag >30min. Child needs to learn that if he doesn't eat enough, he'll be hungrier next meal.
- **No distraction when eating**
  - Children distracted by TV/play have poor awareness of fullness or hunger.

# Nutritional Intervention

## Ways to increase Oral Intake

### 1. Feeding schedule that encourages hunger

- Feed 3 hour intervals
- ~5 - 6 feeds / day (main meals + snacks)

### 2. Build anchor foods into the diet

- 4 main food groups

### 3. Supplements if needed

- High calorie drink
- Multi-vitamins

# Dietary Recommendations (HPB)




Table 1: Recommended number of servings for children and teenagers

Food groups	Recommended number of servings per day				
	6 months (181 days) -12 months	1-2 years	3-6 years	7-12 years	13-18 years
<b>Rice and Alternatives</b> (Do include the recommended whole-grain serving as <u>part of</u> the Rice and Alternatives serving needs.)  <i>Whole-grains</i>	1-2	2-3	3-4	5-6	6-7
<b>Fruit</b> (Fruit should not be used to replace vegetables in the diet or vice versa because they contain different kinds of nutrients.)	$\frac{1}{2}$	$\frac{1}{2}$ - 1	1	2	2
<b>Vegetables</b>	$\frac{1}{2}$	$\frac{1}{2}$	1	2	2
<b>Meat and Alternatives</b>	$\frac{1}{2}$	$\frac{1}{2}$	1	2	2
<b>Milk</b> (Do include the recommended milk serving <u>in addition</u> to the Meat and Alternatives serving needs.)	750ml	750ml	500ml	250-500ml	250-500ml

## The Fat Exception

Children under the age of 2 years grow rapidly so food higher in fat will help meet their energy needs. Low fat food or diets are **not** suitable for them at this age.

Table 7: Recommended salt limits

Age	Recommended limit (grams)
6 months (181 days) -12 months	 1g
1-6 years	 2.5g
7-18 years	 5g

# Summary: Feeding Principles

1. Feed to encourage hunger
  - 3 meals + 2 snacks, min. eating/drinking between meals
2. Limit length of meal times (30min)
3. Avoid distractions
  - Feed in a high chair/at table; time-out if disruptive
4. Serve age-appropriate foods
5. Tolerate age-appropriate mess
6. Encourage self-feeding
7. Consistently offer new foods
8. Maintain a neutral attitude during meals



Thank You