Feeding Styles & Practices: The Influence on Kids’ Food Preferences & Eating

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Texas Academy Annual Conference and Exhibition
April 1, 2017
In a perfect world...

- Kids are fed in ways that...
  - Minimize picky eating
  - Minimize unhealthy eating
- Maximize food variety
  - Encourage a broad palate
- Maximize health
  - Set healthy eating patterns for a lifetime
The Reality

- Poor relationship with food
- Narrow food preferences
- Low food variety
- Unhealthy eating
- 1 in 3 kids are overweight or obese
- Eating disorders on the rise, especially in boys and children under 12 years
- Picky eating lasts longer (> 6 years)
Feeding Styles & Practices
Overview of Feeding Styles

- **Authoritarian** (Controlling)
- **Permissive** (Indulgent)
- **Neglectful** (Uninvolved)
- **Authoritative** (Love withLimits/Monitoring)

- We use all four; one is predominant; they reflect our own upbringing

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Trust-based Feeding or Trust Model of Feeding

- Parent believes child can self-regulate food intake
- Parent believes child can recognize own hunger & satiety
- Child trusts parent provides pleasant, structured meals/snacks

- Low Trust $\rightarrow$ More Controlling
- High Trust $\rightarrow$ Relaxed, Diplomatic, Structure, Boundaries
Authoritarian Feeding Style

Low sensitivity to hunger, fullness; food preferences Demanding

- “Do as I say, not as I do” approach
- “clean your plate”
- High structure, rule-based

- Poor Food Regulation
  - Out of touch with hunger/fullness
  - Correlation with overweight/obesity
  - Reduced fruit/veggie intake

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Rhees et al, Pediatrics 2006; Patrick et al, Appetite, 2005; Clark et al, J Pub Health 2007
Permissive Feeding Style

Highly responsive to appetite
Low demands, low monitoring

- “yes” parent
- Child takes the lead on food choice
- Little structure

- Increased intake of high fat foods & sweets
- Higher BMI (preschoolers)
- Associated with overweight in certain populations

Neglectful Feeding Style

Low responsiveness

Low demands, low structure

- Lack of rhythm with food/eating
- Unreliable meals, food
- ? Food insecurity

- **Food focus**
  - Twice as likely to have weight problems (under- & OW)
  - Emotional insecurity
  - Mistrust
- Low intake of nutrient rich foods

**Authoritative Feeding Style**

Highly responsive

High demands

- Love with Limits
- Structured feeding; boundaries with eating
- Reasonable choice
- Responds to hunger, fullness, food preferences

**Leaner**

*Eat more fruits, veggies, dairy*

*More active*

*Protect against emotional eating*

Patrick et al, Appetite 2005; Topham et al, Appetite 2011
# Feeding Style Outcomes

<table>
<thead>
<tr>
<th>Authoritarian</th>
<th>Permissive</th>
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<tbody>
<tr>
<td>✓ Poor food regulation</td>
<td>✓ Increased intake of high fat foods and sweets</td>
</tr>
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<td>✓ Out of touch with hunger/fullness</td>
<td>✓ High BMI (preschoolers)</td>
</tr>
<tr>
<td>✓ Correlation with overweight/obesity</td>
<td>✓ Predictive of OW in Mexican American children</td>
</tr>
<tr>
<td>✓ Reduced fruit/veggie intake</td>
<td>✓ Low whole grain intake in &lt; 5 years</td>
</tr>
<tr>
<td></td>
<td>✓ Low nutrient-density food intake</td>
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<td>✓ Food focused</td>
<td>✓ Leaner body composition</td>
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<td>✓ Twice as likely to have weight problems (both over- and under-weight)</td>
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The Relationship of Feeding Styles & Practices

**Authoritarian**
- Food Restriction
- Pressure to Eat
- Food Rewards

**Permissive**
- Catering
- Constant Feeding

**Authoritative**
- Structure
- Boundaries
- Choice
Food Restriction Outcomes

- Greater intake of & preference for limited food
- Eating in Absence of Hunger
- Poor self-regulation
- Increased risk for overweight
- Value restricted food

Pressure to Eat Outcomes

- Lower ability to regulate intake
- Decreased intake of fruit/veggies
- Increased satiety responsiveness; early fullness
- Slow & fussy eating
- Overeating

Fisher et al, AJCN, 2002; Webber et al. Acad Nutr & Diet. 2010
Food Reward Outcomes

55% of parents of 3 year olds use rewards to get them to eat healthier

- Disregards internal hunger regulation
- Reward food takes priority
- Food preferences change: devalue healthy food & favor less healthy food
- Gets kids to eat today, but may not get them to LIKE food tomorrow
- Non-food rewards: can get kids to taste new food

Catering Outcomes

- Allows child to take the lead on food choice
- Back up meal
- Poor nutrient intake
- Limited food variety
- Less likely to try new foods
Negative Practices Don’t Work

• 85% of parents try to get children to eat more at mealtime using praise, rewarding and prompting (*Appetite*, 2007)

• 50-60% of parents ask their MS and HS students to clean their plates; 40% asked them to eat more even when they stated they were full (*Pediatrics*, 2013)

• Project EAT (Eating in Teens and Young Adults): Young adults who use hunger & fullness to guide eating → healthier weights, less likely to have disordered eating (*Appetite*, 2013)
Authoritative Works

• Warm, involved, sensitive
• Encourages maturity, self-control
• Leaner, active kids who eat healthier

• Anchored in trust-based feeding
• Maternal monitoring (authoritative feeding) predicts decreases in food approach eating behaviors.

Elements to Authoritative Feeding

| Structure          | Routine with Meals  
|                   | Systematic Snacks   
|                   | Location            
|                   | Timing              |
| Boundaries         | Ratio of healthy: unhealthy foods  
|                   | Parent in charge of food purchases  
|                   | Parent in charge of food decisions  
|                   | Parent in charge of kitchen        |
| Reasonable Choice  | Child has input on food choice, but not control  
|                   | Able to choose between 2-3 food options  
|                   | Allowed to refuse food            |
Essentials: Division of Responsibility

Parent determines:
- Location
- Meal or Snack content
- Timing

Child determines:
- Whether or not they are eating
- How much they will eat

When “jobs” are crossed, problems arise with feeding and eating
Positive Feeding Practices Work

- **Anticipatory Guidance** makes a difference in diet quality, food preferences, & eating behavior up to age 5; not in dietary intake (NOURISH Study)

- **Early feeding education** helps promote and sustain responsive feeding, self-regulation and may deter obesity development

- **Responsive Feeding**
  - Promotes self-regulation and shared parent-child responsibility for feeding → reduced incidence of childhood obesity
  - Non-responsive feeding is associated with wt/ht Z-scores, BMI z-score, overweight/obesity and adiposity
  - **Breastfeeding** may shape feeding practices through increased responsiveness to feeding cues.

Research on Food Preference Development
The Gene Pool

- 50% of children’s liking of food is attributed to genetics
  - Genetic influence is high for vegetables, fruit and protein

- The Rest: Environmental influences
  - Food availability and Exposure
  - Feeding
  - Parent preferences and practices
  - Shared environment influence is high for snacks, starches, and dairy and lower for vegetables, fruit and protein

- Genetic effects dominate for nutrient-dense foods
At Birth

• Babies are pre-disposed to sweet, fat, and salty flavors
  • Early preference for sweet and umami; dislike of bitter and sour
  • Flavor is present in amniotic fluid

• Breastfeeding introduces a wide variety of flavors, more so than infant formula
  • Breast-fed babies are more willing to try new foods later

• Breastfeeding for 6 months associated with less pickiness
  • Lower odds of developing preferences for specific food preparation methods, food rejection and food neophobia

• Prenatal diet, breast milk and complementary feeding
  • High food variety and repeated offerings → increased willingness to try new food within a positive social environment

Infancy

• Innate flavor preferences are modifiable through repeated exposure

• Flavor Window: between 4-18 months
  • Sensitivity between 4-6 months
    • Single food vs. three veggie blend at 6 mos → single food eaters ate less novel veggies
    • Rapid Variety: Daily new veggie x 5 days x 3 cycles → increased liking of new food

• Timing of Complementary Foods
  • Before 6 months → 2.5x more likely to be food neophobic
  • > 6 months associated with less pickiness
  • Breastfeeding + complementary foods at 6 months → less picky

• Variety at the Start
  • Early liking of fruits and veggies predicts higher intake later

Complementary Foods

- Homemade baby food → diet diversity was higher vs. commercial baby food eaters; 7% lower adiposity at 12 months, persisting to 36 months

- High variety of veggies during first year → higher acceptance of new foods, including veggies

- The Magic of “8”
  - Offering disliked veggies **8 subsequent times** → increased acceptance; persisted for several weeks
    - @ 15 mos: 79% still liked disliked veggie
    - @ 3 yrs: 73% still liked disliked veggie
    - @ 6 yrs: increased willingness to try; 57% still like disliked veggie

- Repeated Exposure to novel and previously rejected food is most powerful for food acceptance

Perceived Feeding Fussiness

- Twin Study
- Food Fussy Twin
  - Use of pressure and food rewards
- Moms adjust feeding practices based on perception of emerging food fussiness
- Need early guidance!

Food Refusal

• Study amongst Low Income Parents

• Themes
  • Parents don’t serve previously rejected foods
  • Parents value their child’s eating over liking a food
  • Rarely use the same feeding strategy more than once

• Drivers
  • Reduce waste
  • Save time

• More than 90% of caregivers offer disliked foods 3-5 times then give up

Goodell et al. Matern Child Health J, 2017
Feeding Practices are Powerful

• **They Influence:**
  • Early development of food preferences
  • Self-regulation skills (eating based on appetite)
  • Children’s reactivity to food cues
  • Satiety responsiveness
  • Picky eating

• Old and Negative Feeding Practices are maladaptive to our current food environment of highly available palatable foods
Keys to Success

- **Authoritative Feeding**
  - Satter’s Division of Responsibility

- **Positive Feeding Practices**
  - Responsiveness
  - Structure
  - Boundaries
  - Choice

- **Rapid Variety** during Complementary Feeding
  - Monitoring

- **Breastfeeding**

- **Repeated Exposure**
  - Persistence and Consistency
    - No Pressure, Food Rewards, Catering
Thank You!

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