Compliance with 5-2-1-0 Obesity Recommendations among Preschool-aged Children Attending Child Care

&

The Association between Caregiver Eating Behaviors and the Styles with which they Feed their Infants

Amrik Singh Khalsa, MD & Kristen A. Copeland, MD
Early Childhood Education Working Group - Webinar
Presented on: October 16th, 2017
Outline

- Attainment of ‘5-2-1-0’ Recommendations in Child Care Setting
- Examining the role of Caregiver Eating Behaviors on Infant Feeding Styles
PART 1:

Compliance with 5210 Obesity Recommendations among Preschool-aged Children Attending Child Care
5-2-1-0

• American Academy of Pediatrics (AAP) recommends pediatricians counsel families on preventative measures

• Adopted from “Let’s Go! 5210” and promoted locally and nationally,\textsuperscript{1-4} the 5210 message includes:

  5 – Consuming $\geq 5$ fruits/vegetables daily
  2 – Viewing $\leq 2$hrs of screen time
  1 – Getting $\geq 1$ hour of physical activity
  0 – Consuming 0 sugar-sweetened beverages

\textsuperscript{1.} Tanski 2010; \textsuperscript{2.} Nemours 2017; \textsuperscript{3.} Obama 2009; \textsuperscript{4.} Schweitzer Fellowship;
5210 Recommendations

• Few studies have examined adherence with 5210 recommendations in children\(^1\)-\(^9\)
  – Most studies in school-aged children/adolescents\(^1\)-\(^6\)

• Most studies based on parent self-reported data\(^1\)-\(^3\),\(^5\),\(^8\)

• No known studies examining attainment and predictors of 5210 in children who attend childcare

• Few studies examine association between 5210 adherence and obesity\(^9\)-\(^10\)

Methods

• Secondary analysis of the Preschool Eating and Activity Study (PEAS)
  – 24-hour observational study of 447 preschool children (36-72 months) from 30 child-care centers in Cincinnati, Ohio

• Data collection started at drop-off on Day 1 and ended at drop-off on Day 2
  – Data over 24hr truncated
PEAS Study

n=30 child-care centers, n=447 children

- **Drop-off: 24-hr study starts**
  - Dietary measures at child care
  - Screen time at child care
  - Physical Activity
  - Anthropometrics

- **Pick-up: child goes home**
  - Dietary measures at home
  - Screen time at home
  - Demographic Questionnaire

- **Drop-off: 24-hr study ends**

Day 1:
- 7am
- 10am
- noon
- 3pm

Day 2:
- 5:30pm
- 9pm
- 7am

Other Data:
- Other Data

- n=30 child-care centers, n=447 children
- Dietary measures at child care
- Screen time at child care
- Physical Activity
- Anthropometrics
- Dietary measures at home
- Screen time at home
- Demographic Questionnaire

Cincinnati Children’s
changing the outcome together
Methods

• At Child Care, trained study staff recorded:
  – Food and beverage intake at meals/snacks
  – Individual and classroom screen time
  – Anthropometric measurements

• At Home, parents recorded:
  – Food/beverage intake via estimated food record
  – Screen time (TV and computer)

• Physical Activity measured via Actical accelerometers
  – Worn at the hip by participants
PEAS Study

n=30 child-care centers, n=447 children

Drop-off: 24-hr study starts

Objectively measured physical activity

Child BMI z-score

All meals at child care
Breakfast Lunch PM snack

TV/media use

Pick-up: child goes home

All home meals/snacks: afterschool snacks, dinner, bedtime snacks, breakfast next morning

TV/media use, sleep diaries

via Actical accelerometers

Other Data

Parent Questionnaire: Child race/ethnicity, SES, household members

n=30 child-care centers, n=447 children

Day 1

7am 10am noon 3pm

Day 2

5:30pm 9pm 7am

Cincinnati Children's
changing the outcome together
Definition of Attainment

• 5 – Servings of Fruit & Vegetable Intake
  Consumption of 2.5 cups fruit/vegetable
  • Included 100% fruit juice (AAP 2010)
• 2 – Screen Time
  ≤120 min of Screen Time in 24hrs
• 1 – Physical Activity
  60 min of moderate to vigorous activity (AAP) &
  180 min of light to vigorous activity (NAM)
• 0 – Sugar-sweetened Beverages
  Consumption of 0 servings of sugar-sweetened beverages

AAP, American Academy of Pediatrics; NAM, National Academies of Medicine
PEAS Recruitment
77% of eligible children consented

Children consented
n=447

- Not present on day of observation (n=32)
  - Children withdrew/refused (n=10)
  - Children at center < 5 hrs & no other data collected (n=7)

Children participated in PEAS
n=398

- Children at center < 5 hrs & no other data collected (n=7)

Children with valid Actical data
n=386

- Children at center < 5 hrs (n=6)
  - Actical malfunction (n=3)
  - Actical not returned (n=1)
  - Actical data < 10 hrs (n=2)

Children partook in PEAS
n=398

- No dietary data, home (n=22)
  - No dietary data, center (n=30)
  - No dietary data, center & home (n=2)
  - Incomplete records (n=37)

Children with complete dietary data
n=307

Children with complete screen time data
n=379

- Missing ST data, center & home (n=1)
  - Missing ST data, home (n=18)

Children with complete ‘5-2-1-0’ data
n=293

- Missing ST data, home (n=18)
<table>
<thead>
<tr>
<th>Child Characteristics</th>
<th>Means (SD)</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>195 (49)</td>
<td></td>
</tr>
<tr>
<td>Age, years</td>
<td>4.3 (0.7)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>164 (43)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>157 (41)</td>
<td></td>
</tr>
<tr>
<td>Other*</td>
<td>63 (16)</td>
<td></td>
</tr>
<tr>
<td>Hispanic Descent</td>
<td>14 (4)</td>
<td></td>
</tr>
<tr>
<td>Child BMI, percentile</td>
<td>64 (27)</td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>7 (2)</td>
<td></td>
</tr>
<tr>
<td>Normal Weight</td>
<td>269 (72)</td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>52 (14)</td>
<td></td>
</tr>
<tr>
<td>Obese</td>
<td>48 (12)</td>
<td></td>
</tr>
</tbody>
</table>

*Other = Asian, American Indian, Mixed Race, or “Other” category
<table>
<thead>
<tr>
<th>Child Characteristics</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACFP eligible</td>
<td>219 (58)</td>
</tr>
<tr>
<td>Household composition</td>
<td></td>
</tr>
<tr>
<td>2-parent household</td>
<td>196 (52)</td>
</tr>
<tr>
<td>1-parent household</td>
<td>184 (48)</td>
</tr>
<tr>
<td>Household income, dollars</td>
<td></td>
</tr>
<tr>
<td>&lt; $25,000</td>
<td>142 (39)</td>
</tr>
<tr>
<td>&gt; $25,000 – 50,000</td>
<td>84 (23)</td>
</tr>
<tr>
<td>&gt; $50,000 – 100,000</td>
<td>58 (16)</td>
</tr>
<tr>
<td>&gt; $100,000</td>
<td>82 (22)</td>
</tr>
<tr>
<td>Parent education</td>
<td></td>
</tr>
<tr>
<td>&lt; High school</td>
<td>72 (18)</td>
</tr>
<tr>
<td>Associate’s/Technical Degree</td>
<td>158 (42)</td>
</tr>
<tr>
<td>College Graduate/Graduate School</td>
<td>152 (40)</td>
</tr>
</tbody>
</table>
### Summary of Findings

<table>
<thead>
<tr>
<th>‘5-2-1-0’ Definition</th>
<th># of children who met guideline (%)</th>
<th>Demographic Predictors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat ≥ 5 servings of fruits and vegetables</td>
<td>53 (17%)</td>
<td>Children had $0.16 \pm 0.08$ servings higher intake of fruits and vegetables in households with an annual income between $25-50,000</td>
</tr>
<tr>
<td>View ≤ 2 hours of screen time</td>
<td>308 (81%)</td>
<td>No demographic predictors of screen time attainment</td>
</tr>
<tr>
<td>Partake in 1 hour of physical activity</td>
<td>3 (&lt;1%)</td>
<td>No demographic predictors of moderate-to-vigourous physical activity</td>
</tr>
<tr>
<td>Consume 0 sugar-sweetened beverages</td>
<td>152 (50%)</td>
<td>Children had a 0.31 odds (95% CI 0.10; 0.93) of consuming sugar-sweetened beverages in households with an annual income &gt; $100K</td>
</tr>
</tbody>
</table>
## Associations between ‘5-2-1-0’ Attainment, BMI z-score, & Weight Status

<table>
<thead>
<tr>
<th>‘5-2-1-0’ Component (n)</th>
<th>BMI Z-score</th>
<th>Overweight/Obese (BMI ≥85th percentile)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>SE</td>
</tr>
<tr>
<td><strong>Fruit/Vegetable/Juice</strong> (282)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servings</td>
<td>0.057</td>
<td>0.031</td>
</tr>
<tr>
<td>≥ 5 servings</td>
<td>0.017</td>
<td>0.168</td>
</tr>
<tr>
<td><strong>Fruit/Vegetable</strong> (282)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servings</td>
<td>0.038</td>
<td>0.040</td>
</tr>
<tr>
<td>≥ 5 servings</td>
<td>0.165</td>
<td>0.245</td>
</tr>
<tr>
<td><strong>Screen Time</strong> (344)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours</td>
<td><strong>0.112</strong></td>
<td>0.057</td>
</tr>
<tr>
<td>&lt;120 minutes</td>
<td>-0.119</td>
<td>0.141</td>
</tr>
<tr>
<td><strong>Physical Activity</strong> (341)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MV, hours</td>
<td>-0.040</td>
<td>0.245</td>
</tr>
<tr>
<td>LMV, hours</td>
<td>0.041</td>
<td>0.043</td>
</tr>
<tr>
<td><strong>Sugar-sweetened beverages</strong> (282)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servings</td>
<td>0.081</td>
<td>0.078</td>
</tr>
<tr>
<td>0 servings</td>
<td>-0.217</td>
<td>0.132</td>
</tr>
<tr>
<td><strong>5-2-1-0 Score</strong> (n=268)</td>
<td>-0.085</td>
<td>0.082</td>
</tr>
</tbody>
</table>

Models adjusted for sex, income, race, and household composition. Fruit and vegetable intake additionally adjusted for total energy.
Summary of Findings

• Only 1 child met all four 5210 recommendations
  – Consistent with previous studies in children¹-⁶
    • < 2% met all 4 guidelines and 1/3 met none¹,⁵

• When defining physical activity as 180 min of any activity (including light), 23 (7.8%) met the guideline

• No consistent demographic predictors of 5210 attainment

• Only screen time related to BMI z-score
  – Every hour increase in screen time had a 0.11 ± 0.06 increase in BMI z-score

Limitations

• Data collected only captures 24h of data → can not establish usual dietary habits or physical activity levels
  – However, we had a relatively larger sample size, large representation of children who attend child-care, and objective measures

• A cross-sectional examination of correlation between attainment and BMI & weight status
  – Longitudinal studies are needed
Significance and Impact

• Many opportunities for improvement
  – Particular areas of improvement could include diet and physical activity

• 5210 behaviors have other health benefits

• Behavior change is difficult in preschooler but paramount given that habits set early

• Food for thought: What setting is the most effective to intervene on these behaviors?
PART 2: The Association between Caregiver Eating Behaviors and the Styles with which they Feed their Infants
Feeding style: specific goal-directed behaviors that influence a child’s eating: ¹,²

- **Restrictive**: Parent limits quantity and quality of foods consumed.

- **Pressuring**: Parent cajoles to increase the amount of food consumed.

- **Responsive**: Parent monitors quality of food & is attentive to hunger cues.

- **Laissez-faire**: Parent does not set limits on quantity/quality of foods consumed; little interaction with child.

- **Indulgent**: No limits on the quantity/quality of foods consumed.

¹ Shloim 2015 ² Thompson 2009
Feeding Styles

• Controlling feeding styles (Restrictive and Pressuring) in preschool and school aged children are associated with:
  – Increased eating in the absence of hunger\(^1\)
  – Decreased self-regulation of food intake\(^2\)
  – Weight gain and future obesity risk\(^3,4\)

A Predictor of Feeding Styles?

• Maternal Eating Behaviors
  – Maladaptive eating behaviors (like restrictive eating, bulimia, binge eating disorder) associated with restrictive feeding styles
  – **Intuitive Eating**¹ (mothers who eat when hungry and follow satiety cues) **are less likely** to exhibit controlling feeding practices in their preschool children²
  – Less is known about Laissez-faire and Indulgent Infant feeding styles

1. Tylka 2013 *J Couns Psychol* 2. Tylka 2013 *Eat Behav*
Current literature predominately focuses on feeding styles in preschool or school aged children and upper-income families\(^1,2\).

Few studies have examined the role of maternal/caregiver intuitive eating on infant feeding styles.

Infant feeding styles and their correlation with obesity risk are unclear.

- Many cross-sectional studies\(^2\)
- Two longitudinal ones have contradictory findings\(^3,4\).

Specific Aims

• AIM 1: Determine the relationship between *caregiver intuitive eating behaviors* and *infant feeding styles* in infants aged 6-12 months.

• **Hypothesis:** There is an inverse relationship between caregiver *intuitive* eating behaviors and both *controlling* infant feeding styles (*restrictive and pressuring*)
  – (e.g. Parents who follow their hunger and satiety cues will be less likely to pressure or restrict their infant when feeding them)
Specific Aims

- AIM 2: Identify associations between infant feeding styles and BMI z-scores over a 6 month interval.

- **Hypothesis:** Infants (6-12 months) exposed to predominately a *Pressuring* infant feeding style will be more likely to have a higher BMI z-scores after a 6 month interval compared to infants predominately exposed to another feeding style.
Research design

• Conducted a cross-sectional study with longitudinal follow-up

• Target: primary caregivers and their infants
  – Primary caregiver (primary feeder) at home
  – Infants aged 5.5 – 12.5 months
  – Recruited at pediatric well child visits in two large urban academic primary care clinics
  – Recruited via convenience sampling

• Recruited 210 caregiver-infant dyads
Measures

Multi-part survey

• Caregiver Intuitive Eating Survey-2 (IES-2)\textsuperscript{1}
  – Measures intuitive eating behaviors of adults

• Infant Feeding Style Questionnaire (IFSQ)\textsuperscript{2}
  – Categorizes predominate infant feeding style:
    • Restrictive
    • Pressuring
    • Responsive
    • Laissez-faire
    • Indulgent

• Other feeding practices Survey
  – Questions on breastfeeding, age child introduced to solid food, if and when child introduced to “junk food”

1. Tylka 2013  2. Thompson 2009
## Intuitive Eating Scale-2 (IES-2) Subscales

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td></td>
</tr>
<tr>
<td><strong>Unconditional permission to eat</strong></td>
<td>Allowing oneself to eat when hungry</td>
</tr>
<tr>
<td><strong>Eating for physical rather than emotional reasons</strong></td>
<td>Eating to satisfy a physical hunger</td>
</tr>
<tr>
<td><strong>Reliance on hunger and satiety cues</strong></td>
<td>Trusting hunger and satiety cues</td>
</tr>
<tr>
<td><strong>Body-Food choice congruence</strong></td>
<td>Matching food choice to their bodies’ needs</td>
</tr>
</tbody>
</table>

**Note:**
- Scores for each based on 5-pt Likert scale with higher numbers reflecting higher intuitive eating, following hunger and satiety cues and eating nutritiously

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1. Tylka 2013
## Prelim Results (n= 201)

<table>
<thead>
<tr>
<th>Parent characteristics</th>
<th>Mean ± SD or n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, female</td>
<td>182 (91)</td>
</tr>
<tr>
<td>Primary caregiver, mother</td>
<td>181 (91)</td>
</tr>
<tr>
<td>Age, years</td>
<td>27.2 ± 5.7</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>142 (70.6)</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>28 (13.9)</td>
</tr>
<tr>
<td>Other</td>
<td>31 (15.4)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>&lt;HS</td>
<td>19 (9.5)</td>
</tr>
<tr>
<td>HS/GED</td>
<td>89 (44.7)</td>
</tr>
<tr>
<td>Some college</td>
<td>72 (36.2)</td>
</tr>
<tr>
<td>College/graduate degree</td>
<td>26 (13)</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>28.6 ± 6.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, female</td>
<td>100 (49.8)</td>
</tr>
<tr>
<td>Age, months</td>
<td>8.8 ± 2.0</td>
</tr>
<tr>
<td>Gestational Age, weeks</td>
<td>38.8 ± 3.0</td>
</tr>
<tr>
<td>Birth Weight, kg</td>
<td>3.26 ± 0.48</td>
</tr>
<tr>
<td>Ever breastfed</td>
<td>120 (60.3)</td>
</tr>
<tr>
<td>Age introduced solid foods, months</td>
<td>5.2 ± 2.0</td>
</tr>
<tr>
<td>Introduced junk foods</td>
<td>102 (51.5)</td>
</tr>
<tr>
<td>Age introduced junk food, months</td>
<td>6.7 ± 2.1</td>
</tr>
</tbody>
</table>
# Caregiver IES-2 Scores (Range 1-5)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td>3.7 ± 0.4</td>
</tr>
<tr>
<td>Unconditional permission to eat</td>
<td>3.1 ± 0.7</td>
</tr>
<tr>
<td>(allowing oneself to eat when hungry)</td>
<td></td>
</tr>
<tr>
<td>Eating for physical rather than emotional reasons</td>
<td>3.9 ± 0.7</td>
</tr>
<tr>
<td>(eat to satisfy a physical hunger)</td>
<td></td>
</tr>
<tr>
<td>Reliance on hunger and satiety cues</td>
<td>3.8 ± 0.7</td>
</tr>
<tr>
<td>(trusting hunger and satiety cues)</td>
<td></td>
</tr>
<tr>
<td>Body-Food choice congruence</td>
<td>3.7 ± 0.7</td>
</tr>
<tr>
<td>(matching food choice to their bodies’ needs)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- Higher scores reflect higher intuitive eating, following hunger and satiety cues and eating nutritiously.
### Infant Feeding (IFSQ) Scores (Range 1 - 5)

<table>
<thead>
<tr>
<th>Feeding Style</th>
<th>Description</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrictive</td>
<td>(Parent limits quantity and quality of foods consumed)</td>
<td>3.9 ± 0.6</td>
</tr>
<tr>
<td>Pressuring</td>
<td>(Parent cajoles to increase the amt of food consumed)</td>
<td>2.5 ± 0.7</td>
</tr>
<tr>
<td>Responsive</td>
<td>(Parent monitors quality &amp; is attentive to hunger cues)</td>
<td>4.3 ± 0.4</td>
</tr>
<tr>
<td>Laissez-faire</td>
<td>(Parent does not set limits on quantity/quality of foods consumed; little interaction with child)</td>
<td>1.9 ± 0.6</td>
</tr>
<tr>
<td>Indulgent</td>
<td>No limits on the quantity/quality of foods consumed</td>
<td>1.4 ± 0.5</td>
</tr>
</tbody>
</table>

**Note:**
- Higher scores reflect dominate feeding style
- Each caregiver has a score for each infant feeding style, the highest score is the predominate feeding style
Correlations between Caregiver Intuitive Eating Behaviors and Infant Feeding Styles

<table>
<thead>
<tr>
<th>Caregiver Intuitive Eating Behavior (IES-2)</th>
<th>Infant Feeding Practices (IFSQ)</th>
<th>Restrictive</th>
<th>Pressuring</th>
<th>Responsive</th>
<th>Laissez-faire</th>
<th>Indulgent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td></td>
<td>0.13</td>
<td>0.03</td>
<td>0.12</td>
<td>-0.14</td>
<td>-0.13</td>
</tr>
<tr>
<td>Unconditional permission to eat</td>
<td></td>
<td><strong>-0.19</strong></td>
<td>0.11</td>
<td>-0.04</td>
<td><strong>0.20</strong></td>
<td><strong>0.23</strong></td>
</tr>
<tr>
<td>Eating for physical rather than emotional reasons</td>
<td></td>
<td>0.15</td>
<td><strong>-0.13</strong></td>
<td>0.03</td>
<td><strong>-0.19</strong></td>
<td><strong>-0.19</strong></td>
</tr>
<tr>
<td>Reliance on hunger and satiety cues</td>
<td></td>
<td>0.08</td>
<td>0.02</td>
<td><strong>0.18</strong></td>
<td>-0.11</td>
<td>-0.13</td>
</tr>
<tr>
<td>Body-Food choice congruence</td>
<td></td>
<td><strong>0.27</strong></td>
<td>0.03</td>
<td>0.06</td>
<td><strong>-0.20</strong></td>
<td><strong>-0.21</strong></td>
</tr>
</tbody>
</table>

*Bold* entries are significant (p<0.05), Values are Spearman correlation coefficients
Association between infant feeding style and three infant feeding practices

<table>
<thead>
<tr>
<th>Total IFSQ scores</th>
<th>Ever Breastfed OR [95% CI]\textsuperscript{a}</th>
<th>Introduced Junk Food OR [95% CI]\textsuperscript{a}</th>
<th>Age Introduced Solid Food $\beta \pm SE$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrictive</td>
<td>0.53 [0.30, 0.93]</td>
<td>0.54 [0.31, 0.94]</td>
<td>-0.18 $\pm$ 0.28</td>
</tr>
<tr>
<td>Pressuring</td>
<td>0.61 [0.40, 1.05]</td>
<td>1.31 [0.81, 2.13]</td>
<td>-0.43 $\pm$ 0.25</td>
</tr>
<tr>
<td>Responsive</td>
<td>1.38 [0.64, 3.00]</td>
<td>1.19 [0.55, 2.56]</td>
<td>0.63 $\pm$ 0.40</td>
</tr>
<tr>
<td>Laissez-faire</td>
<td>0.86 [0.48, 1.55]</td>
<td>1.97 [1.07, 3.63]</td>
<td>-0.09 $\pm$ 0.30</td>
</tr>
<tr>
<td>Indulgent</td>
<td>0.65 [0.31, 1.35]</td>
<td>3.19 [1.28, 7.98]</td>
<td>-0.15 $\pm$ 0.37</td>
</tr>
</tbody>
</table>

\textbf{Bold} entries are significant ($p<0.05$)

Odds per 1 unit increase in IFSQ score
Preliminary Conclusions

- Overall, intuitive eating behaviors do not strongly correlate with any particular infant feeding style.
- Caregivers who ate unconditionally were more likely to indulge their infants.
- Caregivers who ate when hungry and who desired nutritious foods were more likely to restrict their infants’ diets.
Limitations

• Both IES-2 and IFSQ are self-reported measures

• Population predominately low-income African American
  – IES-2 not validated in low-income populations

• Direct and interactive effects of other caregivers not included (i.e. fathers, grandparents, childcare)
Next steps

• Determine the correlation between caregiver intuitive eating (IES-2), infant feeding styles (IFSQ) to anthropometric data

• Determine if both the IES-2 and IFSQ are accurately measuring what parents self-report
  – Direct observation of feeding styles at home

• Determine the relationship between infant feeding styles and nutritional quality
  – Including types and amounts of food offered
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Questions?