Children With Autism Spectrum Disorder Who are Picky Eaters May Consume More Ultra-Processed Food Than Non-Picky Eaters

Acadia W. Buro, MS; Astha Kakkad, MBBS, MSPH; & Heewon L. Gray, PhD, RDN
College of Public Health, University of South Florida

**Background**

- Ultra-processed foods may induce high energy intake that leads to excess weight gain
- Prevalence of obesity is higher in children with autism spectrum disorder (ASD)
- Picky eating is also more common in children with ASD
- It is unknown how picky eating is associated with types of food that children with ASD consume

**Objective**

To examine associations between picky eating and food categories by NOVA classifications (unprocessed foods vs. ultra-processed foods) among youth with ASD

**Methods**

- **Study Design**
  - Cross-sectional
  - 24-hour food diary and phone call
  - Validated mealtime behavior survey

- **Sample**
  - Parents of 42 children with ASD ages 2 to 17 years

- **Analysis**
  - Foods coded based on NOVA classifications:
    - Group 1: Unprocessed or minimally processed foods
    - Group 2: Processed culinary ingredients
    - Group 3: Processed foods
    - Group 4: Ultra-processed foods
  - Percent energy from each food category calculated using Nutrition Data System for Research (NDSR) Pilot-Pack
  - Descriptive statistics and Mann-Whitney U tests performed in SPSS

**Results**

**Ultra-processed foods** accounted for the majority of the children’s energy intake.

- Picky eaters had greater percent energy intake from ultra-processed foods and lower percent energy intake from unprocessed foods compared to non-picky eaters.
- Among the picky eaters, five were also considered as binge eaters, which was associated with greater percent energy intake from ultra-processed foods and lower percent energy intake from unprocessed foods compared to picky, non-binge eaters and non-picky eaters combined.

<table>
<thead>
<tr>
<th>NOVA Category</th>
<th>Mean Percent Energy Intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprocessed or minimally processed</td>
<td>29.4 ± 17.8</td>
</tr>
<tr>
<td>Processed culinary ingredients</td>
<td>2.1 ± 5.5</td>
</tr>
<tr>
<td>Processed foods</td>
<td>5.8 ± 6.9</td>
</tr>
<tr>
<td>Ultra-processed foods</td>
<td>62.6 ± 20.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOVA Category</th>
<th>Picky Eaters (% Intake)</th>
<th>Non-Picky Eaters (% Intake)</th>
<th>p-value</th>
<th>Picky and Binge Eaters (% Intake)</th>
<th>Non-Picky Eaters &amp; Non-Binge Eaters (% Intake)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra-processed foods</td>
<td>68.7</td>
<td>48.0</td>
<td>0.004</td>
<td>79.4</td>
<td>60.0</td>
<td>0.032</td>
</tr>
<tr>
<td>Unprocessed or minimally processed</td>
<td>23.4</td>
<td>44.7</td>
<td>0.001</td>
<td>14.8</td>
<td>32.1</td>
<td>0.041</td>
</tr>
</tbody>
</table>

**Conclusion**

- Among youth with ASD, picky eaters may selectively eat more ultra-processed foods
- Nutrition education for children with ASD and their parents should address both picky eating behaviors and types of foods
- Further intervention may be necessary for children with disordered eating behaviors such as binge eating

**Funding Source**: This work was supported by the University of South Florida Research and Innovation Internal Awards Program under Grant No. 0128126.

**Contact**: Acadia Buro, MS
Doctoral Student and Research Assistant
College of Public Health, University of South Florida
acadia@usf.edu