Overview

- A Planning Conundrum
- Using End Points
- Statistical adjustment question
- Testing the group planning methodology
- Shape of the target intake distribution
- Conclusion

Group Planning Targets: A Conundrum

- The DRI Planning report methodology for groups suggests selecting the target usual intake distribution by selecting the target percent inadequate.
  - An example is given for 2.5% inadequate
- The EARs for children are mostly determined indirectly: extrapolated from findings on adults or through the factorial method.
  - We need to improve this methodology
- There are approximately 50 million children in the U.S. attending schools that participate in the National School Lunch Program
- Please do not expect to hear a government official state that the government is planning on allowing 2.5% of school children (about 1.25 million children) to have inadequate nutrient intake.
End Points

• The basis for end points on which the EARs, RDAs and ULs are determined vary across the nutrients.

• Guidance is provided to check the potential impacts on the ULs when using the suggested Group Planning method.

• No guidance is provided on the relative importance (e.g., health and functional impacts) of reducing the percent inadequate for the various nutrients.

Does the statistical correction based on 2 days data correct for intra-individual variation equally across the nutrients?

Number of days required to estimate true group average

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Fat</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Iron</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Thiamin</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>33</td>
<td>31</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>59</td>
<td>44</td>
</tr>
<tr>
<td>0  10  20  30  40  50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Vitamin C Nutrient Density

Teens Age 12/15-18

<table>
<thead>
<tr>
<th>Year</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989 RDA 60</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2000 DRI 75</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>&lt;EAR 26%</td>
<td>44%</td>
<td></td>
</tr>
</tbody>
</table>

Approximation based on [(mean intake/mean energy)*1000]

Median values not readily available. All values exclude vitamin pill supplements.

Presentation: Jay Hirschman
Vitamin C Nutrient Density
Teens Age 12/15-18

Approximation based on [(mean intake/mean energy)*1000]
Median values not readily available. All values exclude vitamin pill supplements.

Zinc Nutrient Density
Teens Age 12/15-18

Approximation based on [(mean intake/mean energy)*1000]
Median values not readily available. All values exclude vitamin pill supplements.

Shape of the Target Intake Distribution

- Government programs frequently aim to shift the shape of the distribution by targeting greater benefits to those deemed to be at higher risk of inadequacy. For example:
  - Food stamp benefits increase as income decreases
  - School meal co-pay requirements prompt increased participation rates by the lowest income students
  - WIC has special provisions for more intensive nutrition education for high risk participants
- More research is needed to define reasonable assumptions on the impact of this targeting on the shape of the distribution, and how to best incorporate this into planning for groups
**Conclusion**

- Consider a coordinated research effort to review existing mammalian animal studies. Design and complete new mammalian studies to:
  - Improve the estimated standard deviation or coefficient of variation or 97th/98th percentile
  - Improve the methods for extrapolating from adult values to other groups, e.g., children, the elderly, pregnancy and lactation
  [Per Dr. Pencharz’ comments, select species with natural variation]

- Given that selecting a target percent inadequate is difficult, the shape of the distribution is intended to change, and the end points and uncertainty of intake estimates may vary across the nutrients, consider the need for a new publication:
  “Application of the DRIs in Planning: Health and Statistical Considerations in Selecting Targets for Percent Inadequate Across Nutrients.”

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**Thank you!**