Dietary risk at 1-5 years of age is associated with child food neophobia and breastfeeding duration but not age of introduction to solids

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Background

- Early feeding (breastfeeding and solid introduction) can contribute to the development of inappropriate dietary patterns in young children1-3.
- Food neophobia, the rejection of unfamiliar foods4, peaks in early childhood5 and reduces dietary variety6.
- ‘Dietary risk’, measured using the Toddler Dietary Questionnaire (TDQ)7,8 and Preschooler Dietary Questionnaire (PDQ), is a term used to describe inappropriate dietary patterns may impair health9.
- Resultant dietary risk scores provide a useful means for understanding the influence of whole diet on health by examining the effect of combinations of foods and nutrients consumed together.
- The impact of early feeding and food neophobia on children’s dietary patterns, expressed as dietary risk, is unknown.

Methods

- Cross-sectional data were obtained via an online questionnaire completed by parents of children (n=234) aged 1-5 years living in Australia (n=159, 68%) and elsewhere (n=75, 32%).
- Dietary risk scores were calculated using a 19-item TDQ (1-3 years) or PDQ (3-5 years) which assess and evaluate the previous week’s ‘core’ and ‘non-core’ food-group intake against a scoring criteria (0 - 100; higher score = higher risk). For this study, subjects completing the TDQ or PDQ were combined.
- The TDQ has previously been shown to have good reliability and comparative validity5,9.
- The Child Food Neophobia (CFN) scale, a validated 6-item parent-report tool (2 excluded), was used to assess child neophobia (higher scores = stronger behavioural display of neophobia)10,11.
- Breastfeeding duration was defined as age in months that the child stopped breastfeeding.
- Age of introduction to solids was defined as age in months that the child was first given solid or semi-solid solid food regularly (i.e. more than twice a week).
- Associations between breastfeeding duration, age of introduction to solids and child neophobia with young children’s dietary risk.

Results

- Participants (93% biological parents) were on average 33.8±4.8 years, predominately university educated (74%), married (79%) and not working full time (70%).
- Children (n = 178, 52% female, 3.0±1.4 years) were on average breastfed until 10.6±4.8 months and first given solids at 5.5±1.4 months of age.
- The average neophobia score was 2.2±0.5 (range 1 strongly disagree to 4 strongly agree).
- The average risk score was 29.0±9.0 (moderate risk).
- Shorter breastfeeding duration and higher child food neophobia score were associated with higher dietary risk scores (Table 1).
- Age of introduction to solids was not associated with dietary risk scores (Table 1).

Table 1: Associations of breastfeeding duration, age of introduction to solids, neophobia with children’s (n = 178, 1-5 years) dietary risk scores

<table>
<thead>
<tr>
<th>Dietary risk score</th>
<th>Standardised Beta</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breastfeeding duration</td>
<td>-0.26</td>
<td>-8.52,-2.53</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Age of introduction to solids</td>
<td>-0.08</td>
<td>-22.69, 7.44</td>
<td>0.319</td>
</tr>
<tr>
<td>Child neophobia score</td>
<td>0.42</td>
<td>5.11, 9.85</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Multivariate analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding duration</td>
<td>-0.18</td>
<td>-0.33,-0.05</td>
<td>0.007</td>
</tr>
<tr>
<td>Child neophobia score</td>
<td>0.37</td>
<td>4.09, 8.75</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

(measured using the TDQ (1-3 years) or PDQ (3-5 years))

Discussion

- This study demonstrates that children breastfed for a shorter duration and who are more neophobic are likely to be at greater dietary risk in early childhood than those breastfed for longer and less neophobic.
- The association between breastfeeding duration and dietary risk suggests that longer exposure to flavours in breast milk12 may reduce children’s health risk. Successful strategies for encouraging and supporting mothers to breastfeed remain a high priority.
- Public health initiatives should focus on providing guidance to parents on strategies to deal with food neophobia in young children and resultant food refusal and fussy eating behaviours.
- In this sample, age of introduction to solids was not associated with young children’s dietary risk.
- Investigation in a larger, more generalisable sample is warranted.

Conclusion

Young children’s dietary risk is associated with the early feeding, reinforcing the need to support parents in feeding their children in the first years of life to promote long-term health.

References
