THE BENEFITS OF COMMUNITY BASED BREAKFAST PROGRAMS FOR CHILDREN AND YOUNG PEOPLE IN EUROPE?

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Project goals

1. Dietary Assessment of Lower Socioeconomic Status Groups in Europe

2. Assessment of potential contribution of foods provided via Breakfast Programmes to nutrient intakes & health
Dietary Assessment of Lower Socioeconomic Status Groups in Europe*

- Overweight prevalence
- Micronutrient intakes/status
- Macronutrient intakes
- Food group intakes
- Breakfast skipping

*Ireland, UK, Spain, Germany, Sweden, Italy
Overweight – Higher prevalence in low SES groups (measured)

<table>
<thead>
<tr>
<th>Country</th>
<th>Low SES</th>
<th>High SES</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK (10-11 yrs)</td>
<td>25%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Ireland (M 9 yrs)</td>
<td>29%</td>
<td>19%</td>
</tr>
<tr>
<td>Ireland (F 9 yrs)</td>
<td>38%</td>
<td>18%</td>
</tr>
<tr>
<td>IDEFICS (Europe, 2-9 yrs)</td>
<td>29%</td>
<td>12%</td>
</tr>
<tr>
<td>Spain (M 10-15 yrs)</td>
<td>32%</td>
<td>23%</td>
</tr>
<tr>
<td>Spain (F 10-15 yrs)</td>
<td>23%</td>
<td>13%</td>
</tr>
<tr>
<td>Sweden 6 yrs</td>
<td>28%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Micronutrients – Evidence of low intakes/status across Europe

Ireland – 5-12 yr. old girls 52% (iron), 37% (calcium), 36% (folate), 13% (riboflavin) have inadequate intakes

UK – Evidence of low intakes/status of vitamin D (2-18 yrs.), riboflavin & iron (11-18 yrs., girls)

Germany – 61% of 6 to 10 yr. old girls have low iodine intakes

Spain – > 90% have low vitamin D intakes, 40% insufficient calcium intakes, 9.3% low folate intakes (girls) (≤11yrs.)

Italy – 59% deficient vitamin D status, 2-17 yr. olds

Micronutrients – Differences across socioeconomic groups

<table>
<thead>
<tr>
<th>Study Type</th>
<th>Geography</th>
<th>Population group</th>
<th>Key finding</th>
<th>Reference</th>
</tr>
</thead>
</table>
| Systematic review (18 studies, Intakes &/or status) | Western Europe             | Adults, Children, Elderly | • Lower values for all micronutrients examined (folate, vitamin B12, iron, zinc, iodine, vitamin C, vitamin D, calcium, selenium and copper) in the lower vs. higher SES category, with the exception of vitamin B12.  
• Largest relative differences between SES groups observed for calcium, vitamin C, folate and vitamin D (2–29%, 5–47%, 7–22% and 4–31 %, respectively). | Novakovic et al, (2014) |
| Literature Review (Global)                      | Multiple European countries, Canada, Australia, USA | All               | • Higher SES groups had consistently higher intakes of most vitamins and minerals and fibre vs. lower SES groups.  
• SES did not affect either total energy intakes or the macronutrient composition of the diet. | Darmon and Drewnowski (2008) |
Food groups – Lower fruit & vegetable intakes in lower SES groups

e.g. UK National Diet and Nutrition Survey, 4 to 10 year olds (Bates et al, 2014)

![Bar chart showing intake by quintile for boys and girls](chart.png)

Q1 (lowest), Q5 (highest) quintile of equivalised income, * Significantly higher (P<0.05)

Similar trend reported in Ireland (9 yr. olds) (Kelly et al, 2012), Germany (≤ 17 yr. olds) (Finger et al, 2015) Spain (2-24 yrs) (Aranceta et al, 2003), Sweden (6 yr. olds) (Safasten et al, 2016)
Breakfast skipping

Association of daily breakfast consumption with family affluence: OR (95 %CI)

<table>
<thead>
<tr>
<th>Country</th>
<th>Medium Family Affluence</th>
<th>Low Family Affluence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>0.95</td>
<td>0.7</td>
</tr>
<tr>
<td>UK</td>
<td>0.93</td>
<td>0.79</td>
</tr>
<tr>
<td>Spain</td>
<td>0.87</td>
<td>0.78</td>
</tr>
<tr>
<td>Germany</td>
<td>0.79</td>
<td>0.55</td>
</tr>
<tr>
<td>Italy</td>
<td>0.97</td>
<td>0.87</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.93</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Adapted from: Breakfast consumption and its socio-demographic and lifestyle correlates in schoolchildren in 41 countries participating in the WHO Health Behaviour in School aged Children (HBSC) study, 11-15 yrs, Base category – high family affluence, Bold denotes significance (Vereecken et al, 2009).
Case study – 11 year old girl from lower SES group in Spain

Prevalence of inadequate intakes among 11 to 17 year old girls in Spain (Mensink et al, 2013)*

% contribution of a bowl of Kellogg’s Corn Flakes and milk to DRVs for an 11 year old Spanish female

*Calcium values obtained from Ortega et al, 2012, 7-11 year old representative sample
Case study – 11 year old girl from lower SES group in Spain

% contribution of a banana (100g) to selected DRVs for an 11 year old Spanish female

% contribution of 2 slices of wholegrain bread (61g), olive oil (7g) and tomato (75g) to selected DRVs for an 11 year old Spanish female
Conclusion

Lower compared to high SES groups may have:

Higher levels of overweight
Lower fruit & vegetable consumption
Lower daily breakfast consumption
Lower micronutrient intakes

Foods provided via Kellogg’s Breakfast Programmes may make important contributions to intakes of key nutrients that are lacking among children & young people in Europe.
References

Ahrens et al. (2014) Prevalence of overweight and obesity in European children below the age of 10. Int. J. Obes. 38: S99


