Nutrition in Europe: Room for improvement

Dr. Francesco Branca, World Health Organization, Director of Nutrition for Health and Development
Nutritional challenges in Europe

Obesity
Salt
Saturated fat
Simple sugars
Increasing overweight rates

WHO Regional Office for Europe, 2006.
High levels of salt consumption

Source: Intersalt
High intake of saturated fats

[Bar graph showing the percentage of energy intake from saturated fats in various countries, with the x-axis labeled with countries and the y-axis labeled as % Energy. The countries listed from left to right are: Israel, Italy, Portugal, Serbia, Spain, Croatia, Norway, Poland, Bulgaria, Greece, Kazakhstan, Georgia, Lithuania, Finland, Germany, Hungary, Slovenia, Iceland, Denmark, Sweden, France, Belarus, Belgium, Austria.]
High intake of simple sugars
Recognized micronutrient deficiencies

- Iodine
- Iron
- Folic acid
Degree of public health importance of iodine deficiency (2011)

*The country estimates in the cross-hatched countries are based on subnational data. The national coverage of iodized salt in these countries is incomplete; there are large variations in the iodine intake and some regions likely remain deficient.*
Insufficient iodine intake (UIC <100 mg/L) in school age children

Andersson et al., J Nutr. 2012
Over 500 million women of reproductive age affected by anemia

468 M non pregnant + 56 M pregnant

Source: WHO, 2008
47% of preschool children worldwide have anaemia

Anaemia in children

Percentage

- 6-59 months
- 6-11 months
- 12-23 months

Countries:
- Kosovo
- Ukraine
- Romania
- Macedonia
- Moldova
- Bulgaria
- Uzbekistan
- Georgia
- Russian Federation
- Armenia
- Tajikistan
- Azerbaijan

Severity:
- Severe
- Moderate
- Mild
- Normal

World Health Organization
## Iron status in European adolescents

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Low SF</td>
<td>22.4</td>
<td>17.9</td>
<td>26.3</td>
</tr>
<tr>
<td>High sTfR</td>
<td>7.0</td>
<td>6.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Anaemia</td>
<td>4.4</td>
<td>1.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Iron depletion</td>
<td>17.6</td>
<td>13.8</td>
<td>21</td>
</tr>
<tr>
<td>ID</td>
<td>4.7</td>
<td>3.9</td>
<td>5.4</td>
</tr>
<tr>
<td>IDA</td>
<td>1.3</td>
<td>0.5</td>
<td>2</td>
</tr>
</tbody>
</table>

Ferrari et al. EJCN, 2011
Total reported prevalence of NTD in 18 European countries, 2004-2008

EUROCAT data
Projected dietary inadequacy of folic acid intake in Europe

Vinas et al. Ann Nutr Metabolism 2011
Prevalence of folate deficiency in countries with nationally representative data
Emerging challenges

Vitamin D
Vitamin C
Vitamin B12
Health effects of vitamin D insufficiency

- Vitamin D deficiency: rickets in children and osteomalacia in children and adults
- Low vitamin D status: increased risk of osteoporosis, cardiovascular disease, diabetes, metabolic syndrome, some cancers, tuberculosis.

Vitamin D sufficiency? plasma 25OHD >50 nmol/L, >75 nmol/L, >80 nmol/L, >100 nmol/L
# Worldwide prevalence of rickets

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia, Middle East, Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mongolia</td>
<td>1998</td>
<td>70</td>
</tr>
<tr>
<td>Tibet</td>
<td>1994</td>
<td>66</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1997</td>
<td>42</td>
</tr>
<tr>
<td>Yemen</td>
<td>1987</td>
<td>27</td>
</tr>
<tr>
<td>Turkey</td>
<td>1994</td>
<td>10</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1998</td>
<td>9</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Netherlands - macrobiotics</td>
<td>1990</td>
<td>55</td>
</tr>
<tr>
<td>UK – SE Asian minorities</td>
<td>2002</td>
<td>1.6</td>
</tr>
</tbody>
</table>

OR (95% C.I.) of low level of 25OHD and the metabolic syndrome

<table>
<thead>
<tr>
<th></th>
<th>Univariate</th>
<th>+ Adj. for age, sex, season</th>
<th>+ Adj. for smoking, alcohol, PA, NCD, education</th>
<th>+ Adj. PTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>25OHD ≤50 vs. &gt;50 nmol/L</td>
<td>1.54</td>
<td>1.39</td>
<td>1.32</td>
<td>1.29</td>
</tr>
<tr>
<td></td>
<td>(1.23-1.94)</td>
<td>(1.08-1.79)</td>
<td>(1.02-1.71)</td>
<td>(1.00-1.68)</td>
</tr>
</tbody>
</table>

Oosterwerff et al. Clinical Endocrinology, 2011
25(OH)D levels in European adolescents (12.5-17.5 years)

Nutrition deficiencies in the elderly

- vitamin D : 47%
- vitamin B6 : 23.3%
- vitamin B12 : 2.7%
- vitamin E : 1.1%

(SENECA, 1988-1999)
Mean plasma concentrations of 25(OH)D in meat eaters, fish eaters, vegetarians and vegans by season

Crowe et al. Pub Health Nut 2010
Projected dietary inadequacy of vitamin D intake in Europe

Vinas et al. Ann Nutr Metabolism 2011
Projected dietary inadequacy of vitamin C in Europe

Vinas et al. Ann Nutr Metabolism 2011
Effects of socio-economic differences on food consumption patterns
Differential intakes in foods in Lithuanian children of different SES (2002-2010)
Tajikistan

- 91% of the households are net food buyers
- Severe food insecurity caused by last year’s shock
- In 2009 the majority of food insecure households have improved their food access mostly thanks to the return of migrants and the transfer of remittances
- Mostly negative coping strategy e.g. skipping entire days without eating or eating seeds
- Households contract new debts to buy food and stock food
- The majority of households in rural areas cannot afford to pay the cost of minimal food basket

Source: WFP/WHO, 2009
Low dietary diversity

Source: WFP/WHO, 2009
Summary

• Micronutrient deficiencies are still a challenge for Europe.

• Some countries are vulnerable to specific nutrient deficiencies.

• Some population groups are vulnerable to specific nutrient deficiencies because of their socioeconomic situation, dietary habits, or other population characteristics.

• Current economic trends in Europe may thus further negatively affect micronutrient status.
WHO's contributions to surveillance and prevention
Nutrition databases in WHO

- Growth
- Vitamin and Mineral Nutrition Information System (VMNIS)
- Body Mass Index
- Global database on the Implementation of Nutrition Action (GINA)
- Nutrition Landscape Information System (NLIS)
WHO launches the e-Library of Evidence for Nutrition Actions

10 August 2011 | WHO today launched the electronic Library of Evidence for Nutrition Actions – or eLENA – in Colombo, Sri Lanka. As part of a global effort to improve maternal, young child and infant health, eLENA brings together the latest evidence-informed WHO guidelines, commentaries and evidence resources on the broad topic of nutrition. The aim of this new e-library is to stimulate effective nutrition actions and guide programme and policy design.