



Nutrition in Europe: Room for improvement

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Nutritional challenges in Europe

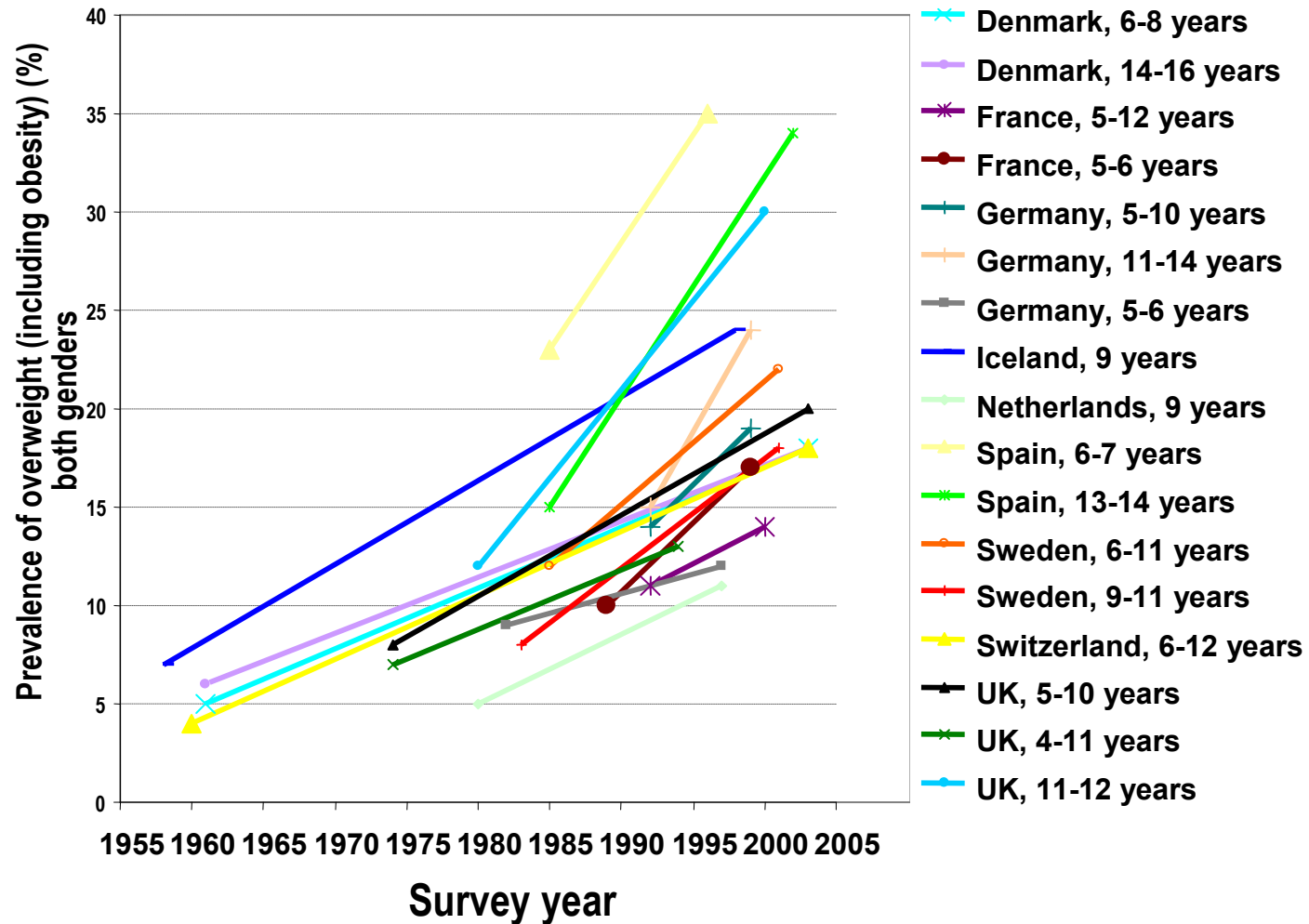
Obesity

Salt

Saturated fat

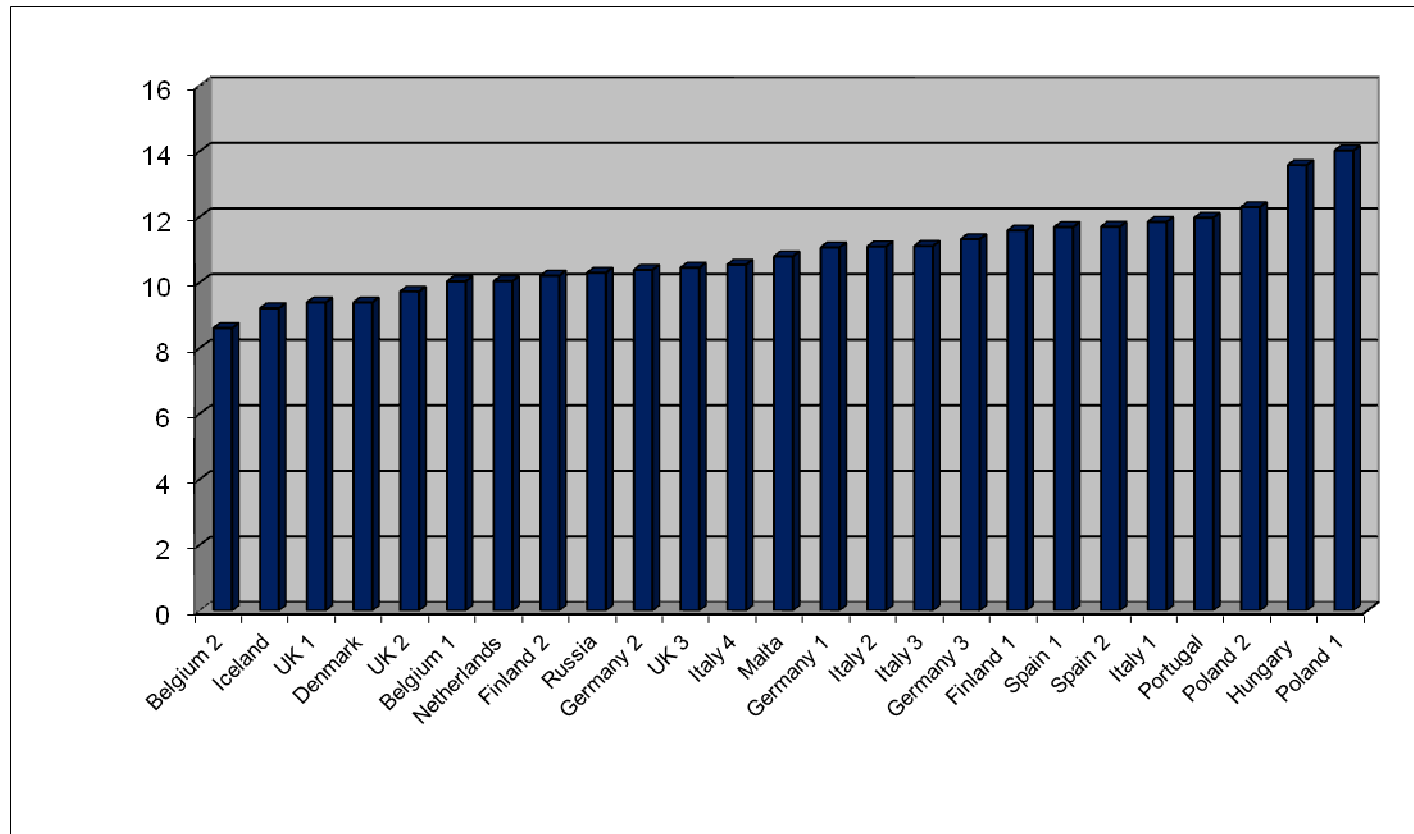
Simple sugars

Increasing overweight rates



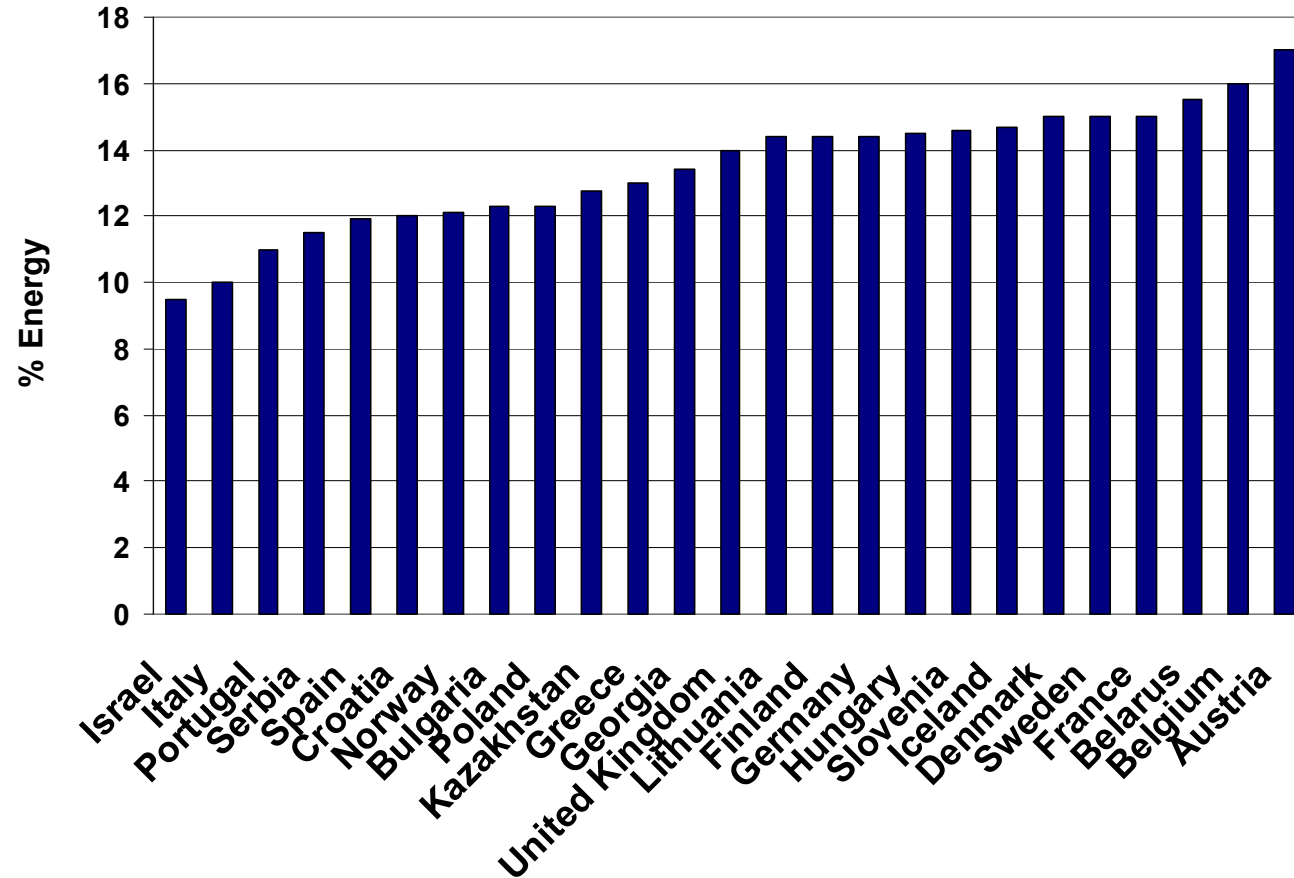
WHO Regional Office for Europe, 2006.

High levels of salt consumption



Source : Intersalt

High intake of saturated fats



High intake of simple sugars

Total EU Sweetener Demand

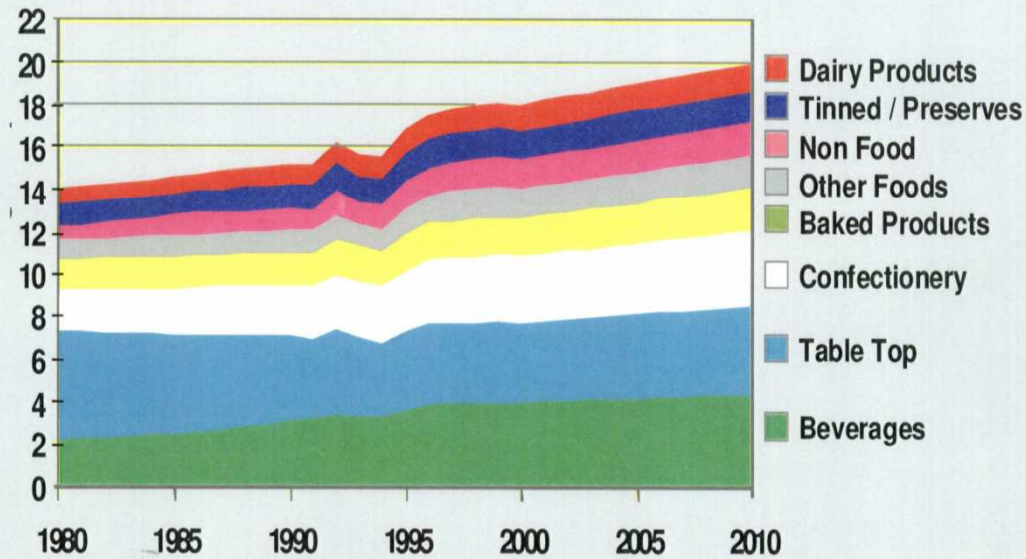
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Slide 26

Million tonnes, sugar equivalents



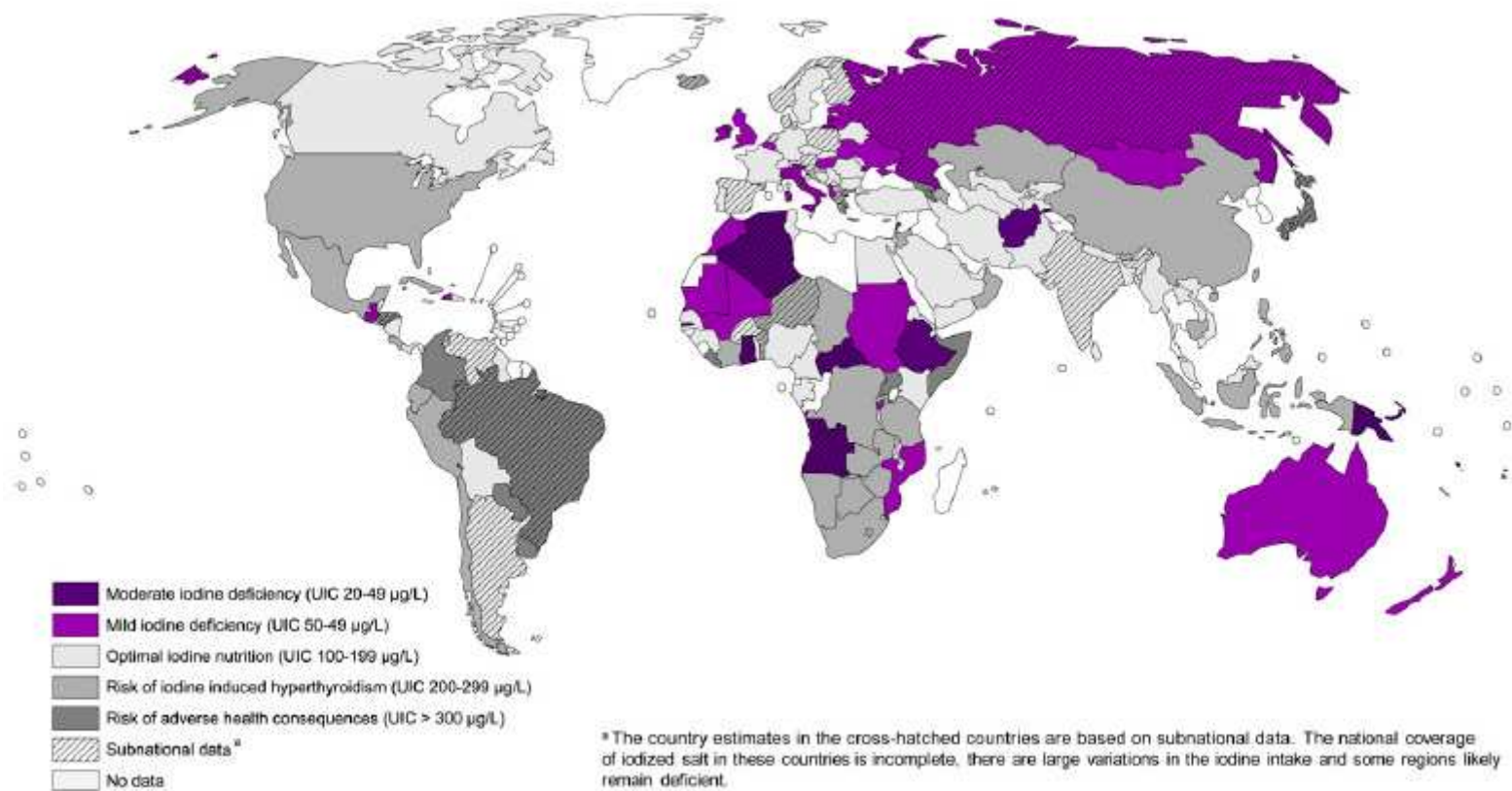
Source : LMC International, 2001



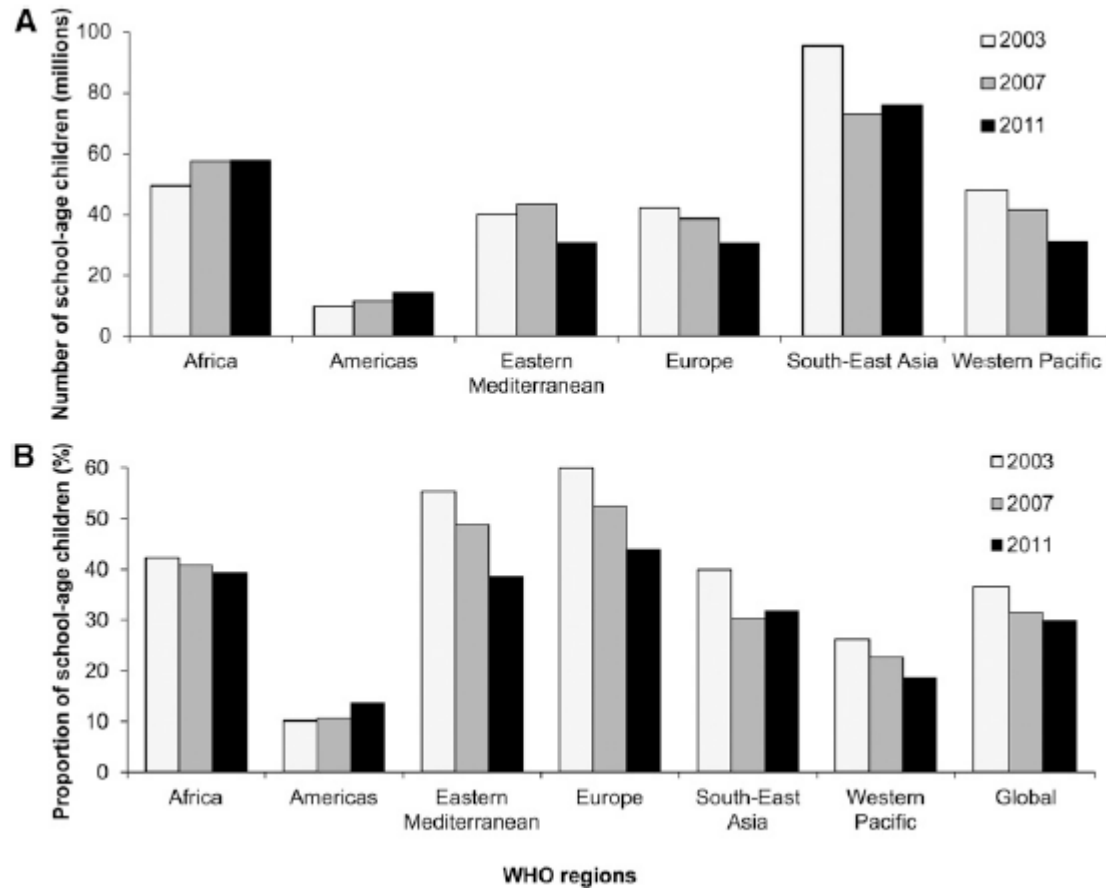
Recognized micronutrient deficiencies

Iodine
Iron
Folic acid

Degree of public health importance of iodine deficiency (2011)

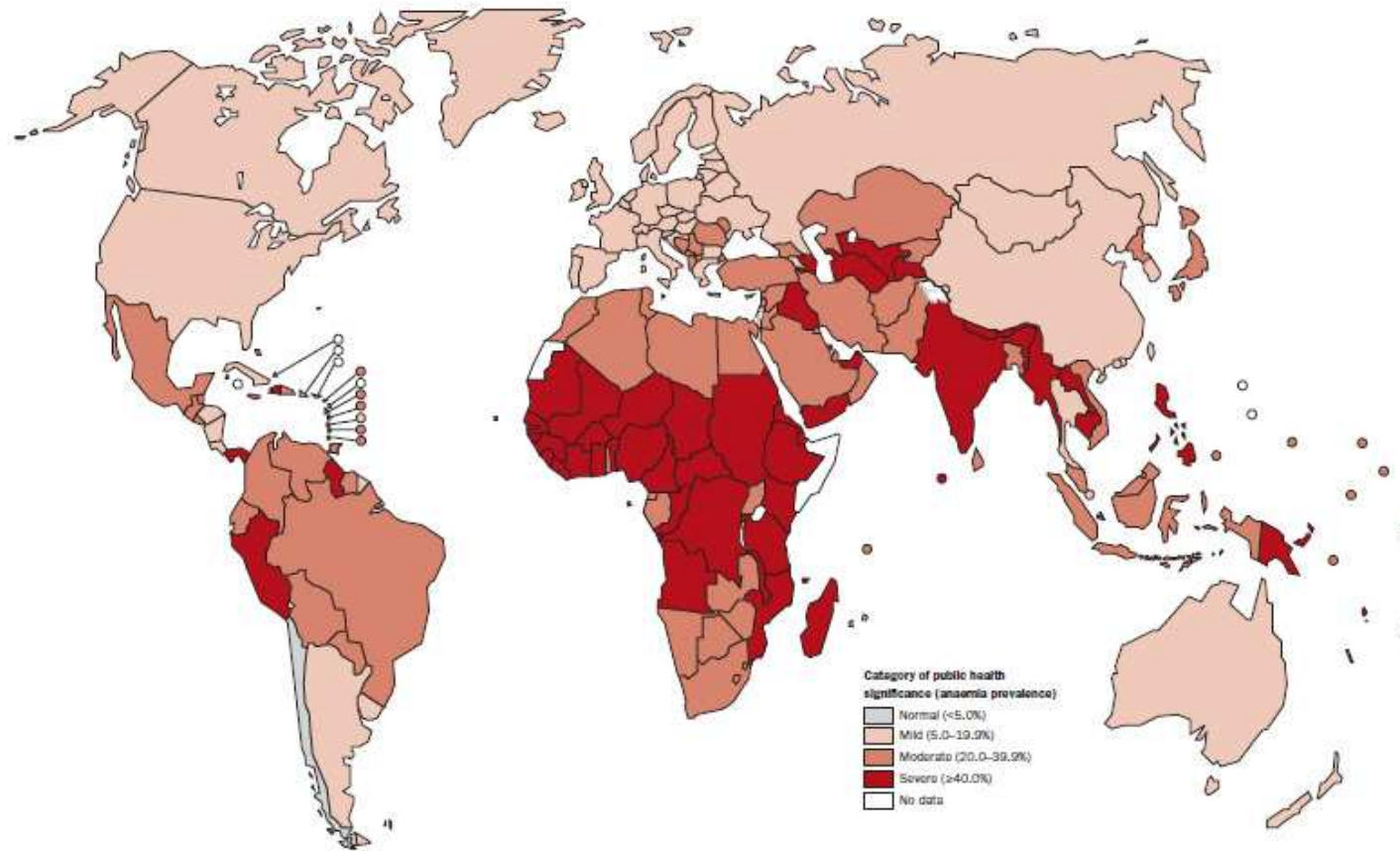


Insufficient iodine intake (UIC <100 mg/L) in school age children



Andersson et al., J Nutr. 2012

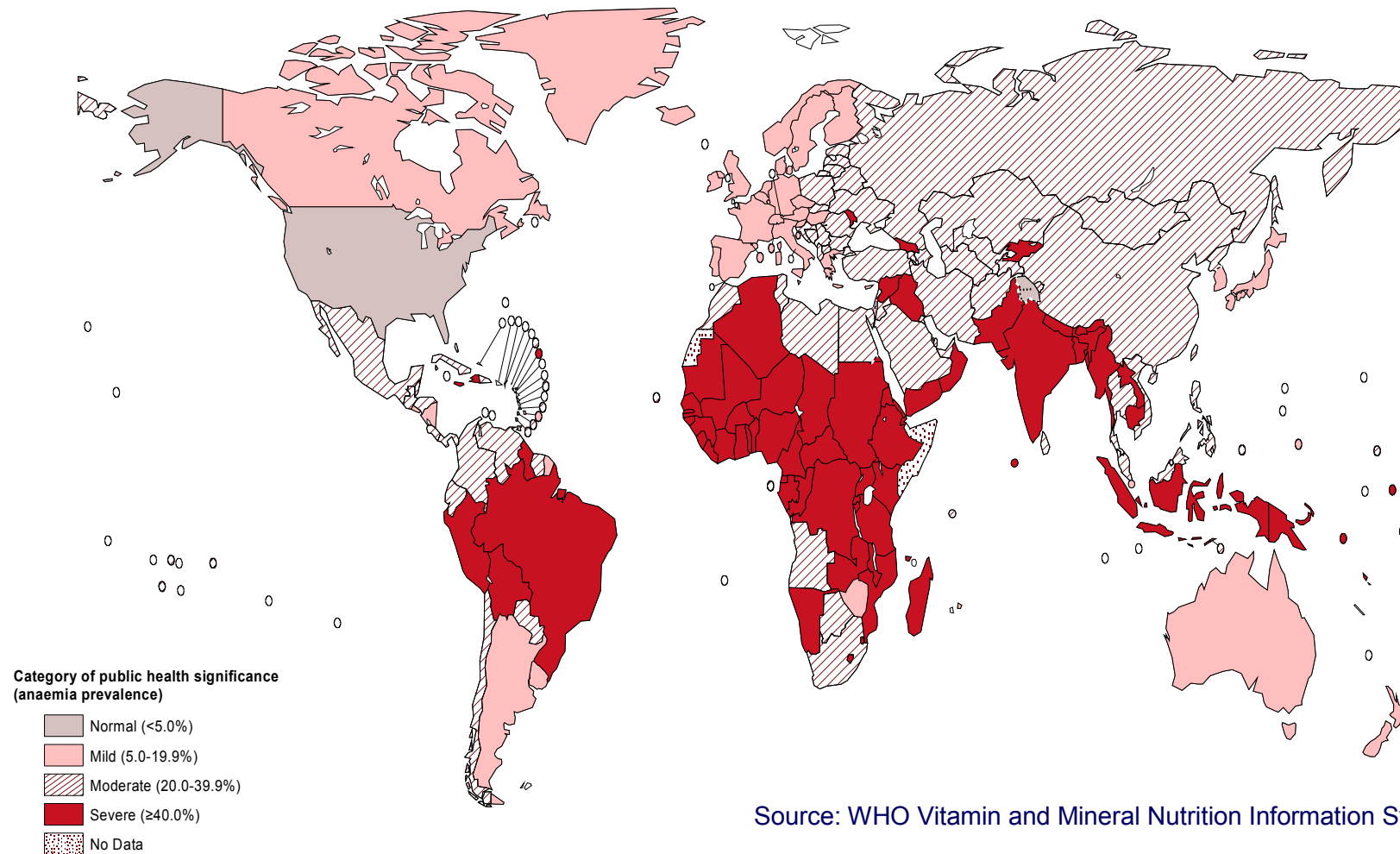
Over 500 million women of reproductive age affected by anemia



468 M non pregnant + 56 M pregnant

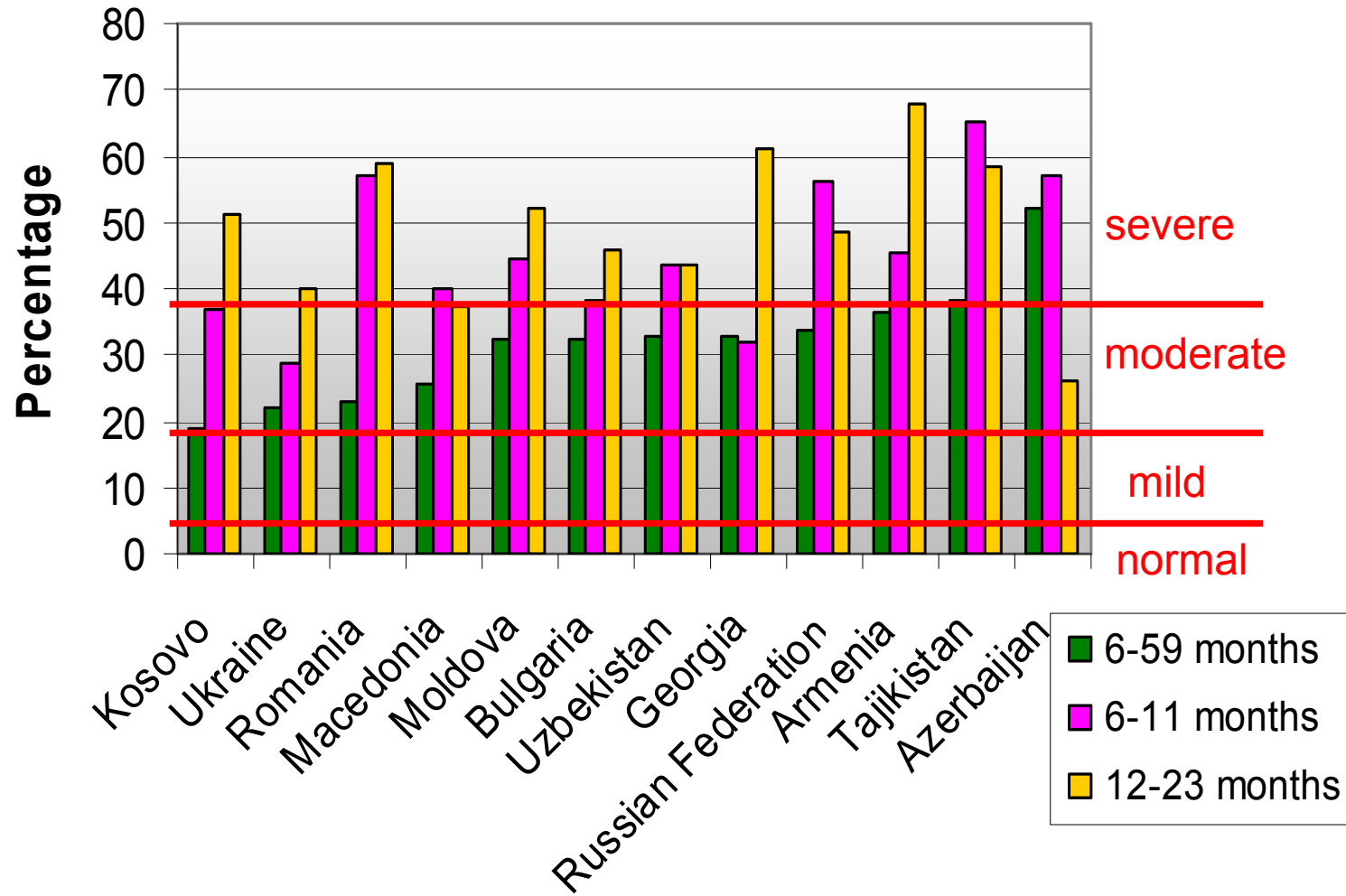
Source : WHO, 2008

47% of preschool children worldwide have anaemia



Source: WHO Vitamin and Mineral Nutrition Information System, 2007

Anaemia in children

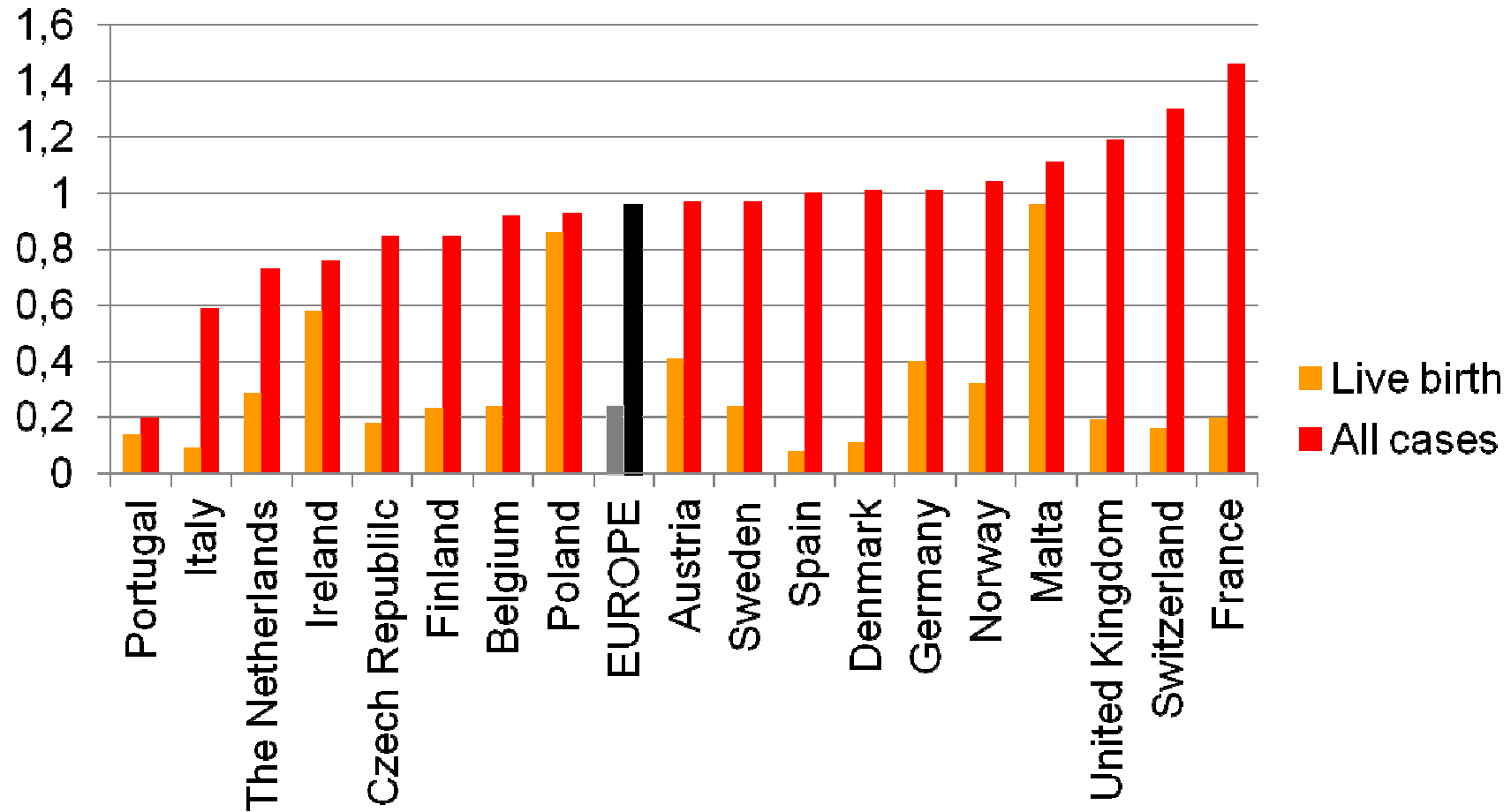


Iron status in European adolescents

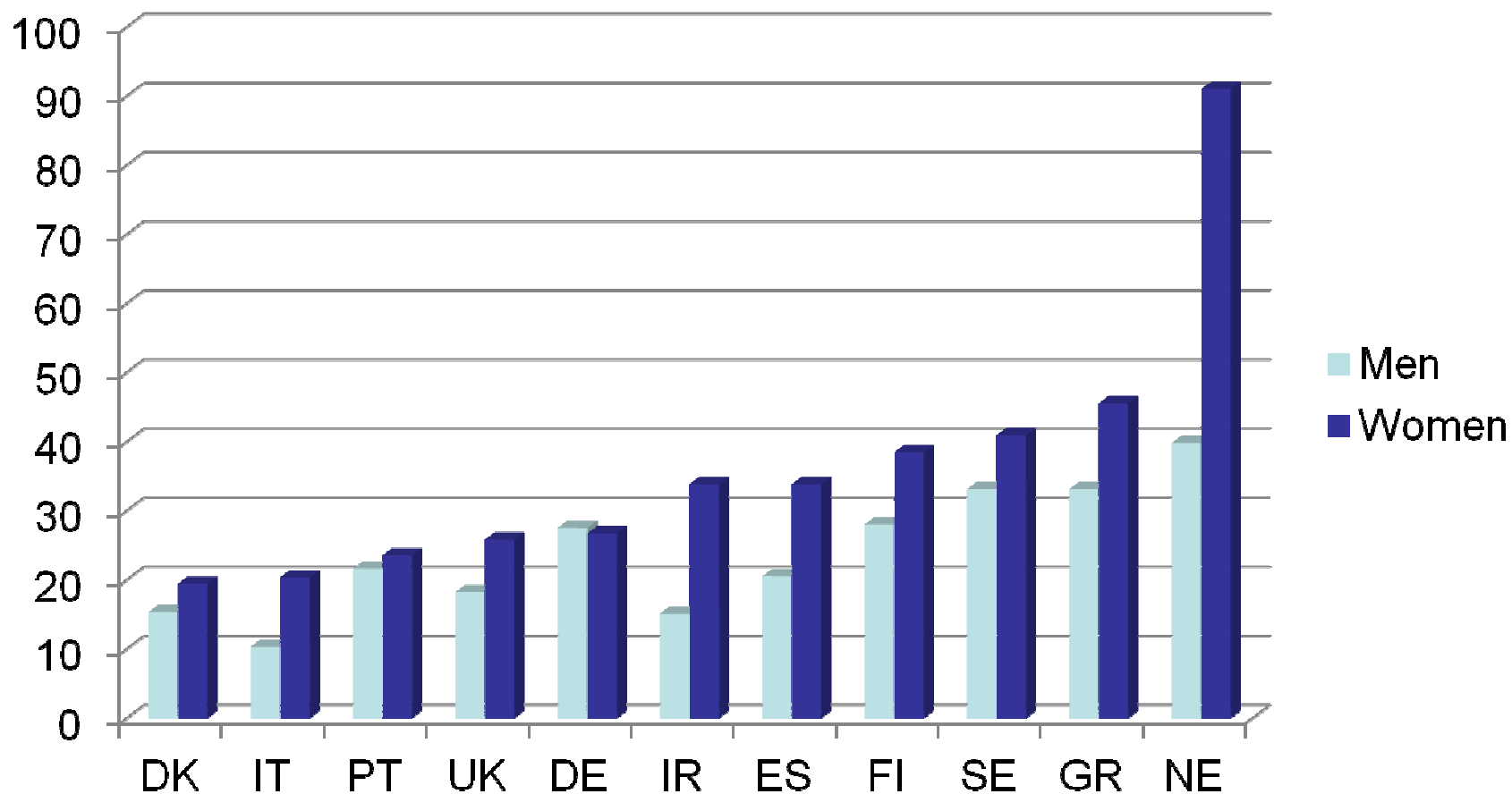
| | Total | Boys | Girls |
|----------------|-------|------|-------|
| | % | % | % |
| Low SF | 22.4 | 17.9 | 26.3 |
| High sTfR | 7.0 | 6.9 | 7.2 |
| Anaemia | 4.4 | 1.8 | 6.6 |
| Iron depletion | 17.6 | 13.8 | 21 |
| ID | 4.7 | 3.9 | 5.4 |
| IDA | 1.3 | 0.5 | 2 |
| | | | |

Ferrari et al. EJCN, 2011

Total reported prevalence of NTD in 18 European countries, 2004-2008

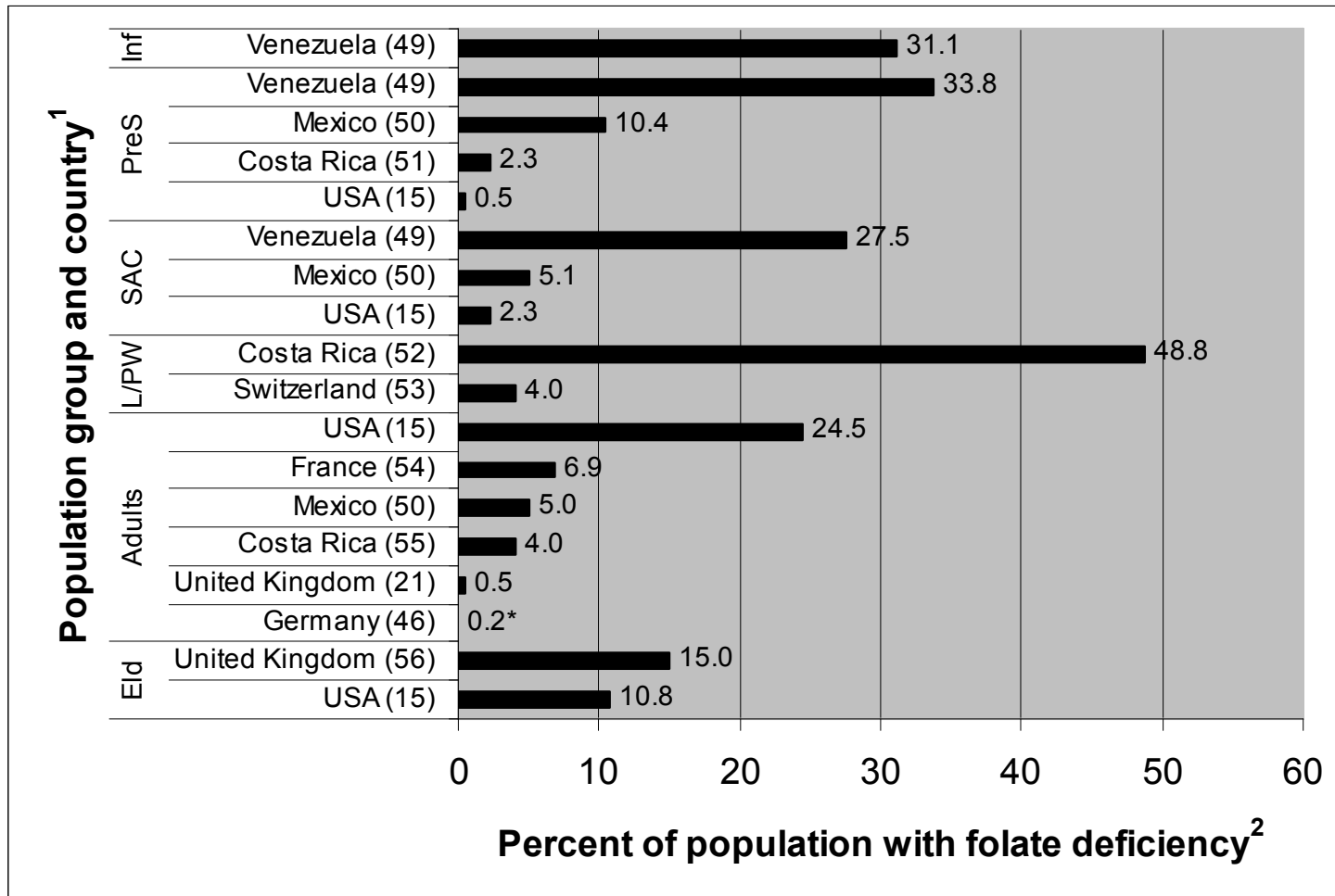


Projected dietary inadequacy of folic acid intake in Europe



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 nmo/L, >100 nmol/L

Worldwide prevalence of rickets

| Country | Year | Prevalence |
|----------------------------------|------|------------|
| Asia, Middle East, Africa | | |
| Mongolia | 1998 | 70 |
| Tibet | 1994 | 66 |
| Ethiopia | 1997 | 42 |
| Yemen | 1987 | 27 |
| Turkey | 1994 | 10 |
| Nigeria | 1998 | 9 |
| Europe | | |
| The Netherlands - macrobiotics | 1990 | 55 |
| UK – SE Asian minorities | 2002 | 1.6 |

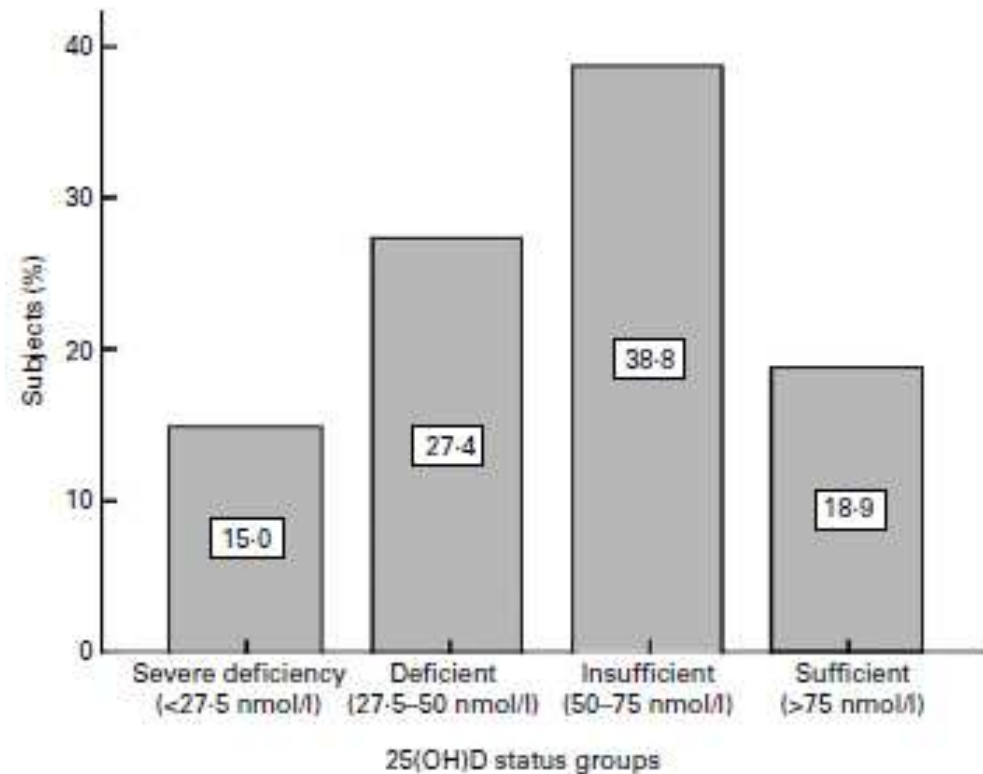
Prentice et al. Proc Nutr Soc, 2006

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

| | Univariate | + Adj. for age, sex, season | + Adj. for smoking, alcohol, PA, NCD, education | + Adj. PTH |
|--------------------|-------------|-----------------------------|---|-------------|
| 25OHD | 1.54 | 1.39 | 1.32 | 1.29 |
| ≤50 vs. >50 nmol/L | (1.23-1.94) | (1.08-1.79) | (1.02-1.71) | (1.00-1.68) |

Oosterwerff et al. Clinical Endocrinology, 2011

25(OH)D levels in European adolescents (12.5-17.5 years)



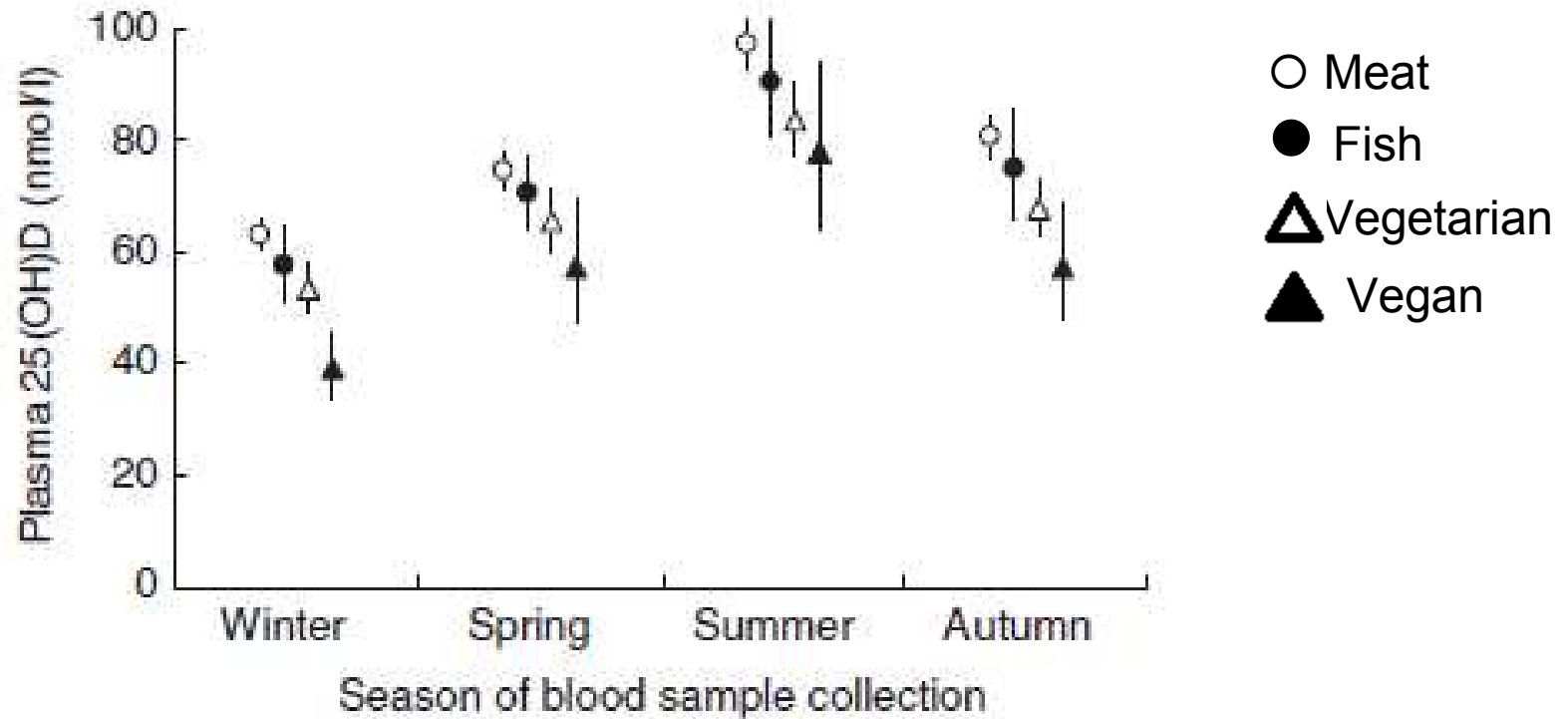
Gonzalez-Gross et al. British Journal of Nutrition (2012), 107, 755–764

Nutrition deficiencies in the elderly

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

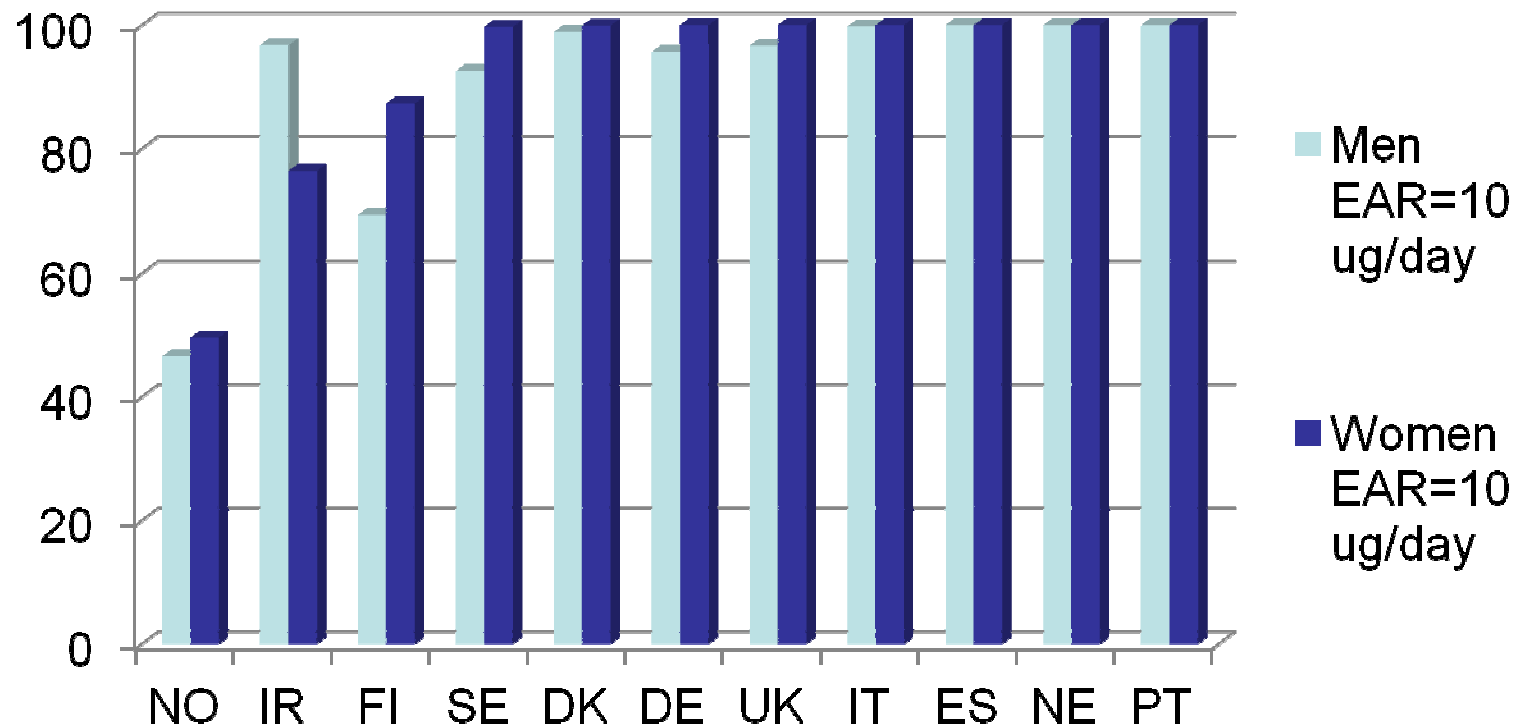
(SENECA, 1988-1999)

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



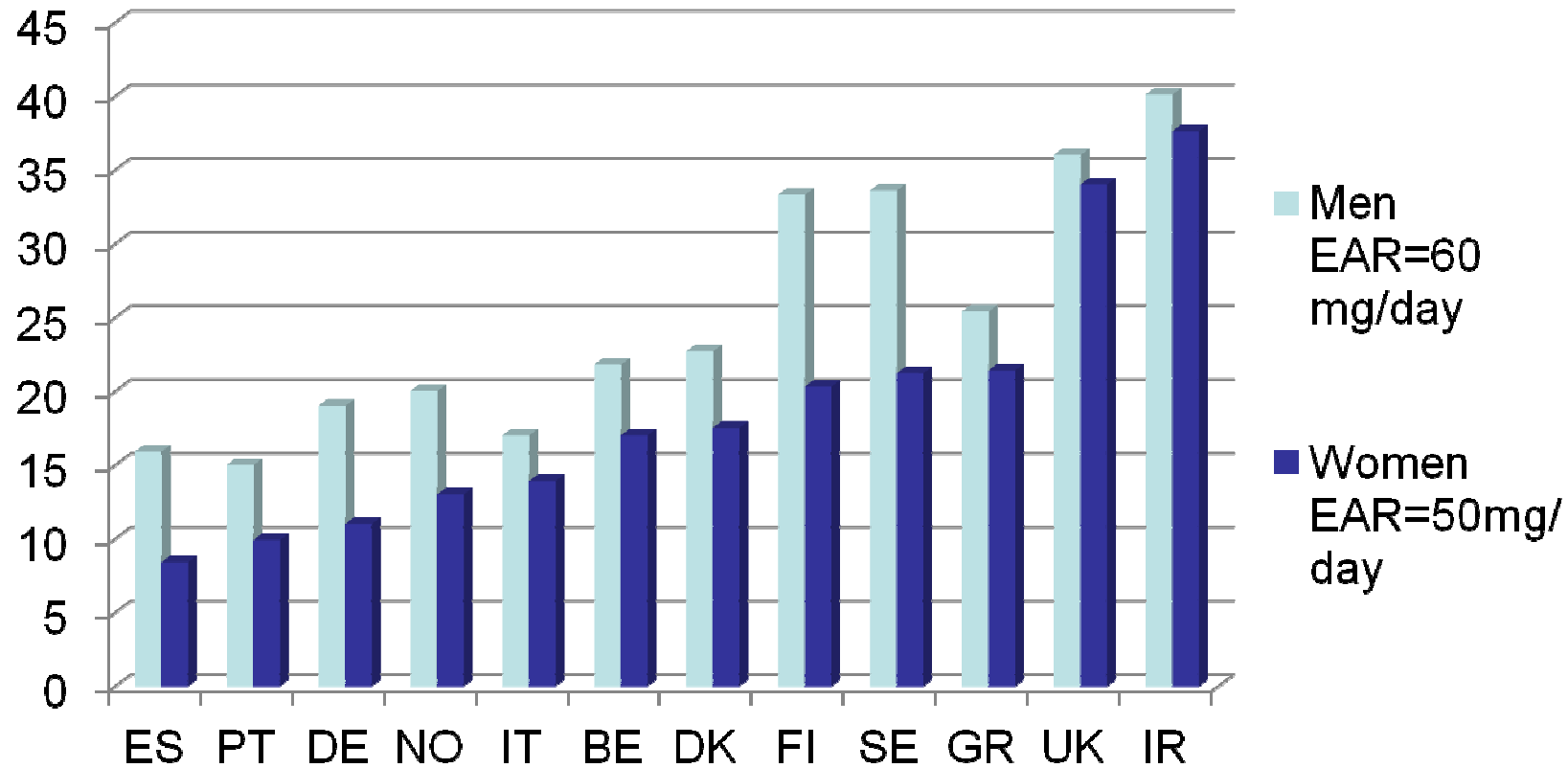
Crowe et al. Pub Health Nut 2010

Projected dietary inadequacy of vitamin D intake in Europe



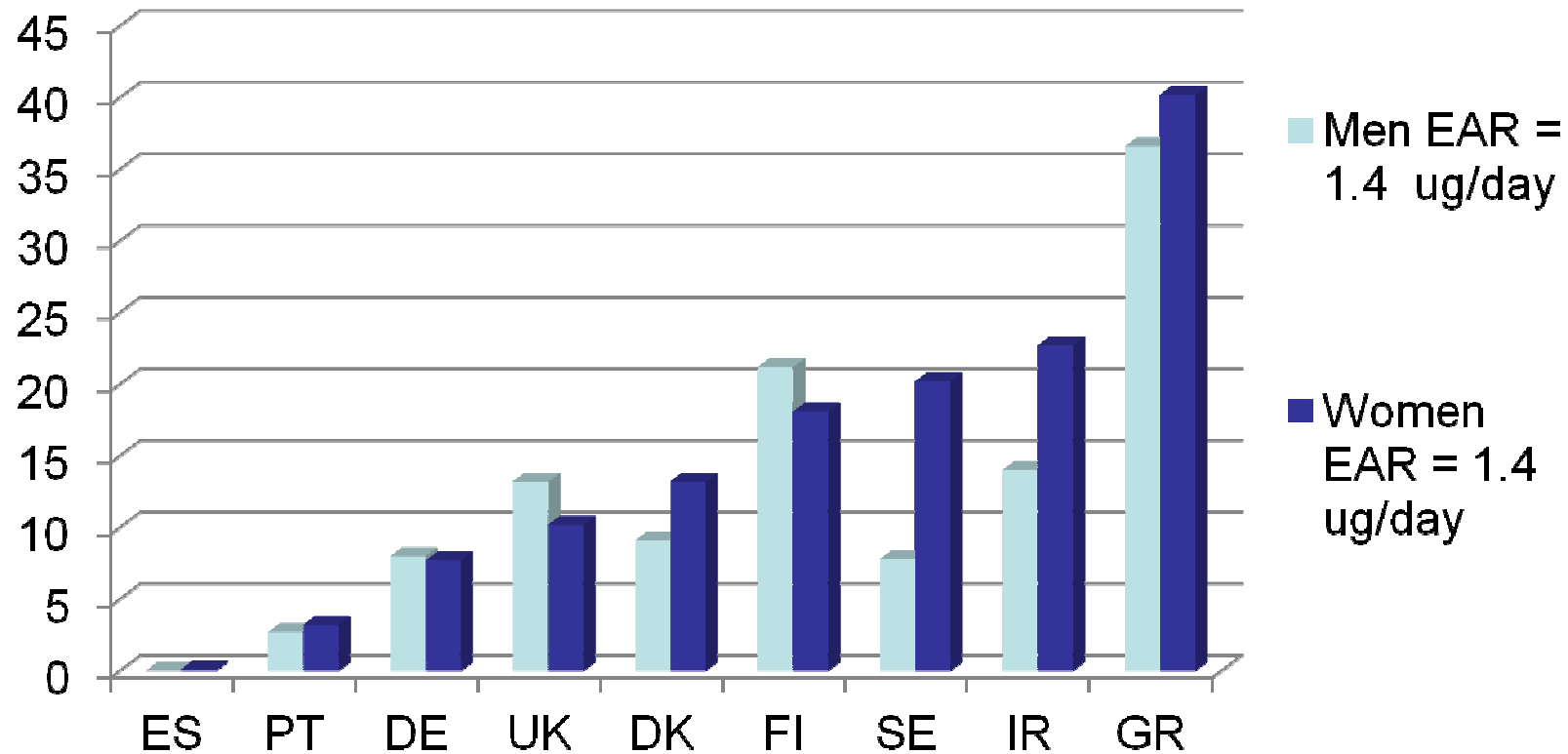
Vinas et al. Ann Nutr Metabolism 2011

Projected dietary inadequacy of vitamin C in Europe



Vinas et al. Ann Nutr Metabolism 2011

Projected dietary inadequacy of Vitamin B12 in Europe

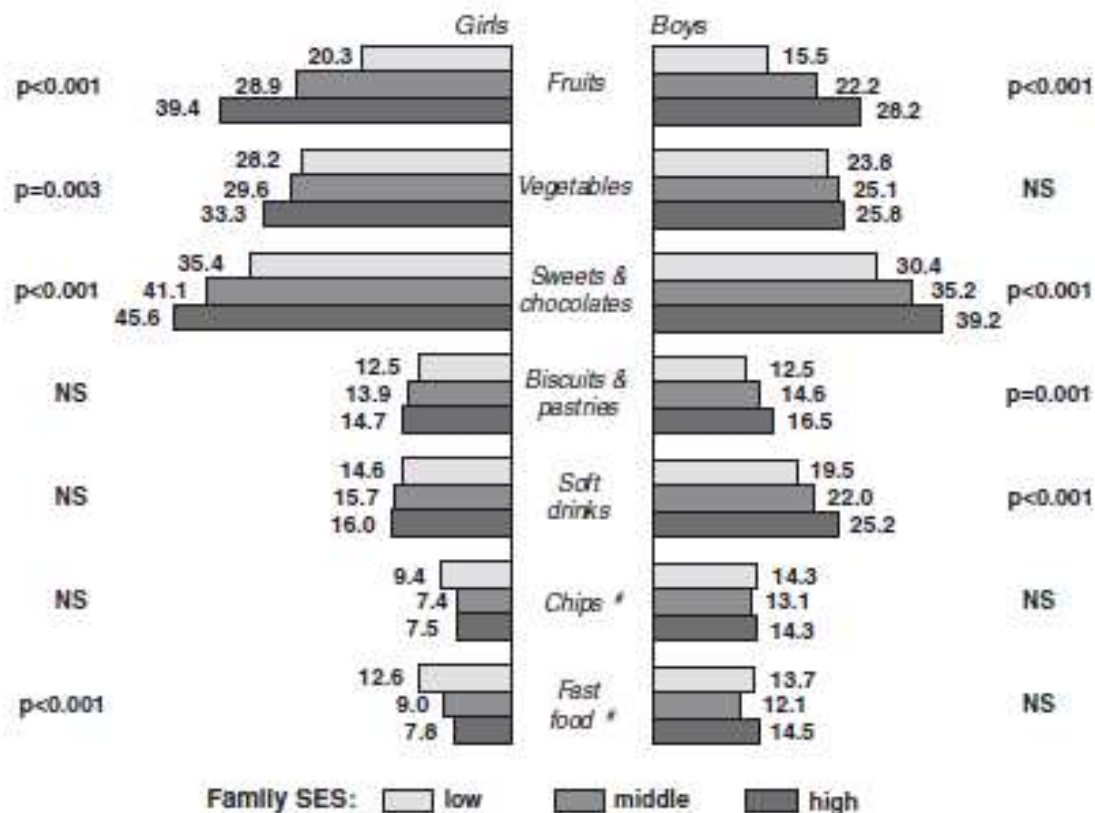


Vinas et al. Ann Nutr Metabolism 2011

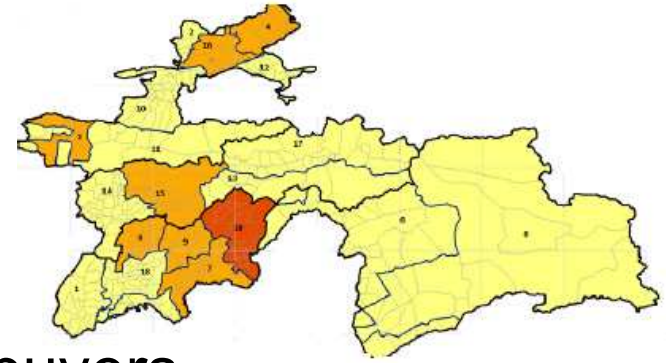


Effects of socio-economic differences on food consumption patterns

Differential intakes in foods in Lithuanian children of different SES (2002-2010)



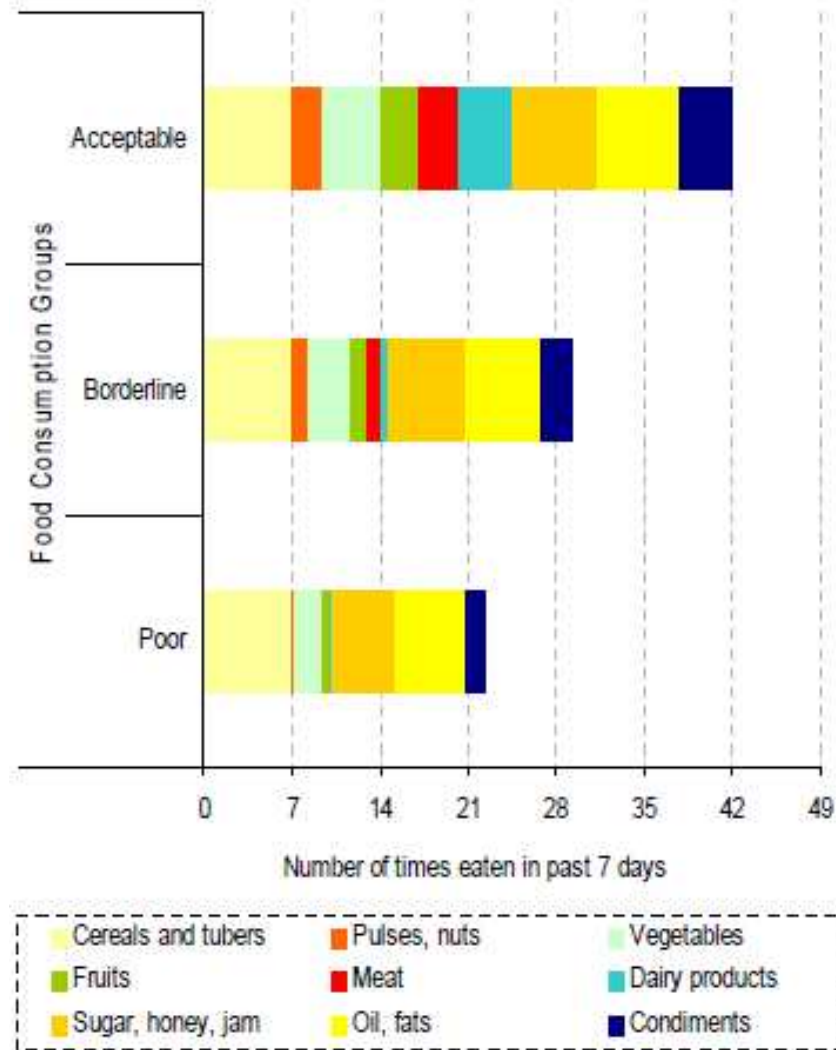
Tajikistan



- 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

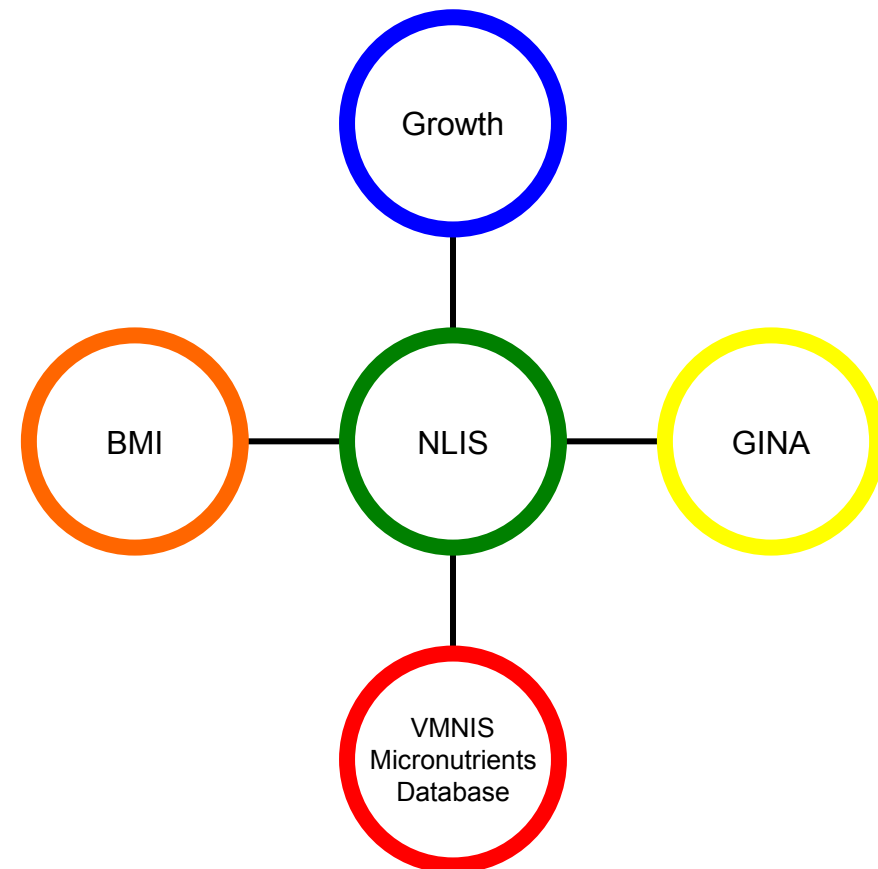
- Micronutrient deficiencies are still a challenge for Europe.
- Some countries are vulnerable to specific nutrient deficiencies
- Some population groups are vulnerable to specific nutrient deficiencies because of their socioeconomic situation, dietary habits, or other population characteristics.
- Current 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)



[Advanced search](#)

e-Library of Evidence for Nutrition Actions (eLENA)

[eLENA home](#)[A-Z list of interventions](#)[Health condition](#)[Life course](#)[Nutrient](#)[Intervention](#)[About eLENA](#)

WHO launches the e-Library of Evidence for Nutrition Actions



WHO/Christopher Black

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, e-LENA 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.

New in eLENA

[WHO launches the e-Library of Evidence for Nutrition Actions](#)

[New guidelines on vitamin A supplementation](#)

[New guidelines on the use of micronutrient powders and iron supplements](#)

Profiled interventions



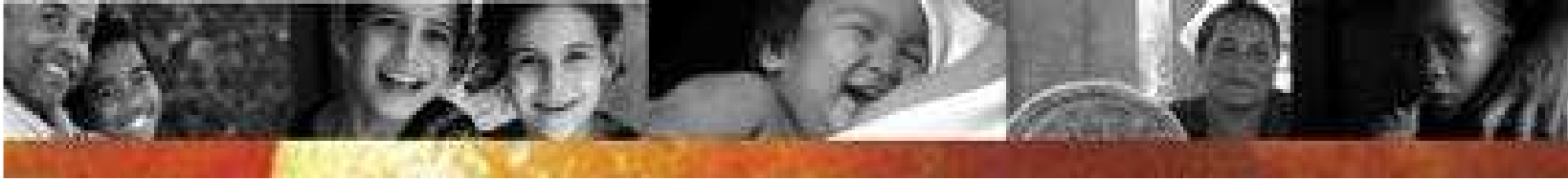
[Use of multiple micronutrient powders for home fortification of foods consumed by children 6–23 months of age](#)



[Intermittent iron supplementation for preschool and school age children](#)



[Vitamin A supplementation in infants 1–5 months of age](#)



<http://www.who.int/nutrition/en/index.html>