ILSI Europe

Addition of Nutrients to Food Task Force

Present activities

Patterns of Micronutrient intake across Europe

Objectives

Provide scientific basis for nutritional risk assessment in Europe. For example, setting maximum levels for the addition of nutrients to foods.

Recent activities

Collect unique data on intake patterns across Europe for base diet, fortified foods and food supplements in order to:

- analyse patterns of high intake across Europe
- review of best methodological practices for future nutritional surveys
- address the use and misuse of upper levels in public health policy

Expert Group to systematically analyse national intake data for dietary surveys in Denmark, Finland, Germany, Ireland, Italy, Poland, the Netherlands, Spain and United Kingdom.

Comparison of intakes in the European Union (EU) different countries and age groups for minerals: calcium, copper, iodine, iron, magnesium, phosphorous, selenium, zinc and vitamins: vitamin A, vitamin B6, vitamin D, vitamin E, folic acid and nicotinamide.

An example of the results for calcium intake in women are shown in Figures 1 & 2.

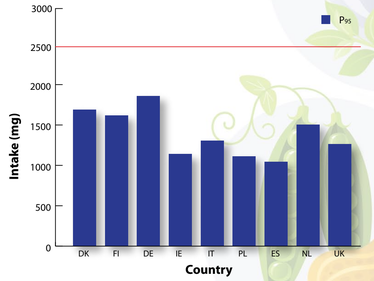

Figure 1. Calcium intake from the base diet (women)

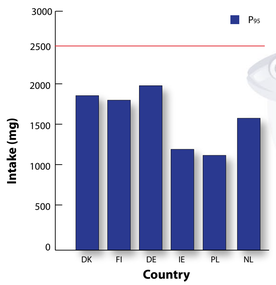

Figure 2. Calcium intake from the base diet plus supplements (women)

Workshop in Gubbio (IT) April 2008;
"the Micronutrient Landscape of Europe" – Daily Recommended Values (DRVs) for Risk Assessment:

- Most nutrients for high consumers come from foods in the base diet in all countries
- In some cases food supplements are responsible for significant differences in total intakes between countries
- Risk of intakes above UL is low for most nutrients; exceptions: retinol, zinc, iodine, copper and magnesium
- Different intake methodologies used in each country
- More precise food intake methods may be required for the future, especially for food supplements

The summary report of this Workshop has been published in the *ILSI Europe Report Series* and all data collected will be published in the on-line journal *Food Research and Nutrition* in 2009.

The Gubbio Formula for estimating safe maximum levels (MSL)

The EU will set MSLs for nutrients added to foods and food supplements. Current methods to estimate MSLs apply highly (possibly over-) conservative safety factors to compensate for lack of good intake data.

The new formula uses actual data to enable more accurate estimates MSLs.

MSL for in **fortified foods** (MA_{FF}) for a nutrient is calculated by:

$$MA_{FF} = \frac{UL - (CI + FF)_{95} \text{ per 100 kcal}}{(EFF_{95}/100)}$$

Where
UL = upper safe level for the nutrient
$(CI + FF)_{95}$ = current actual intakes non-fortified foods and fortified foods in the highest 5% consumers
EFF_{95} = actual energy intake from foods fortified with the specific nutrient in high consumers

For the MA_{FS} in **food supplements** for a nutrient is calculated by setting the relationship between the MA for fortified foods and the MA for dietary supplements. It is given by the expression:

$$MA_{FS} = \frac{UL - (CI + x\text{RDA})_{95}}{(EI_{95}/100)}$$

Where
*x*RDA is a multiple of the RDA per daily dose of the nutrient

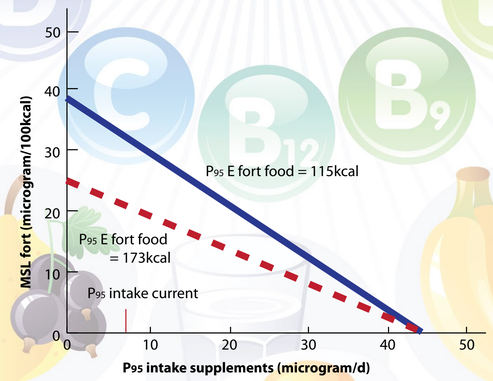

Figure 3. Graphical representation of estimated MSL for vitamin D in fortified foods in relation to P_{95} intake from supplements, based on data for Irish adults

Future activities

Micronutrients' Bioavailability

Bioavailability may have a major impact on the micronutrient status, especially at the lower end of nutrient intake. A workshop will be organised in June 2009 to review the current state-of-the-art in the field.

Methodology for Monitoring Micronutrients Intake

New legislation harmonising the addition of micronutrients to foods and food supplements, requires the European Commission to evaluate the impact of micronutrients intakes across Europe. In 2009 the Expert Group will consider effective methods to monitor changes of micronutrient intakes in the European Countries. This activity will aim to:

- review intake methodology for food fortification and supplements
- recommend the optimal methodology for food and supplement intakes

Patterns of Low Micronutrient Intake

The Expert Group is now focusing on patterns of low intake in order to:

- map micronutrient deficiencies and status in population subgroups across Europe (women, children and other potential risk groups)
- address strengths, weaknesses & limitations of current intake methodology for estimating low levels of intake
- recommend an optimal methodology for data analysis

Impact

The European Commission and Member States, showed particular interest in the work of the task force in the context of setting of maximum levels of micronutrients in Europe (Regulation (EC) n° 1925/2006 of the European Parliament and of the Council of 20 December 2006 on the addition of vitamins and minerals and of certain other substances to foods).

Collaborators

DG SANCO, University College Cork (IE), Robert Koch Institute (DE), National Institute for Public Health & the Environment (NL), National Food and Nutrition Institute (PL), Technical University of Denmark (DK), National Public Health Institute (FI), Nutrition Research Foundation – Barcelona Science Park (ES), Instituto Nationale di Ricerca per gli Alimenti e la Nutrizione (IT).

Task Force Members

AkzoNobel, BASF, Coca-Cola Europe,
Cereal Partners Worldwide, DSM,
Groupe Danone, Kellogg Europe,
Kraft Foods, Mars, Nestlé,
Red Bull, Unilever.

info@ilsieurope.be
www.ilsi.eu
February 2009