



EFSA's work on Dietary Reference Values and related activities

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- Dietary Reference Values
- Advice on establishing Food-Based Dietary Guidelines
- Advice on setting nutrient profiles for foods bearing nutrition and health claims
- Tolerable Upper Intake Levels for Vitamins and Minerals
- Scientific evaluation of health claims
- Specific requests
 - Advice on trans fatty acids in food
 - Advice on labelling reference intake values

- Scientific advice on nutrient intakes is an important basis for Community action in the field of nutrition, e.g. basis for nutrition labelling
- Almost all countries of EU derive values for nutritional recommendations based on dietary reference values (DRV)
- For most nutrients the derived recommendations are fairly similar across the Community, but some recommendations differ owing to divergent DRVs
- EFSA to establish a set of DRV that can be used across the Community for establishing nutritional recommendations

Dietary Reference Values – background and mandate

EC request to review existing scientific advice of Scientific Committee for Food (SCF, 1993) on Dietary Reference Values for energy, nutrients and other substances with a nutritional or physiological effect

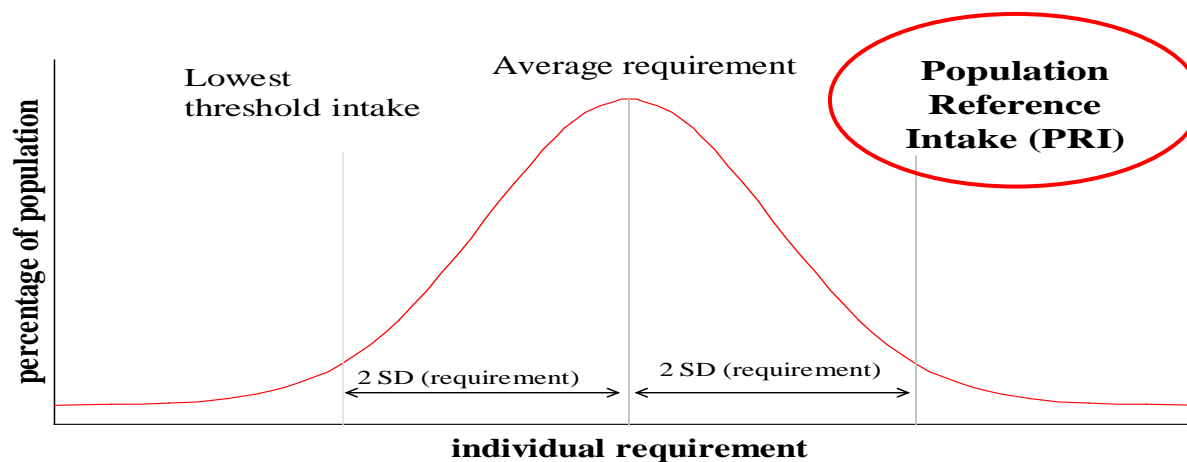
- ✓ SCF Report 1993 did not include certain substances of physiological importance, e.g. dietary fibre
- ✓ New scientific evidence
- ✓ Since then new reports from national scientific advisory, Eurodiet Project, USA, WHO 2003 report (on *Diet, nutrition and the prevention of chronic diseases*) have provided advice on nutrient reference intakes

- Reviewing scientific evidence for beneficial and adverse effects of nutrients
- Establishing relationships between intake of nutrients and defined outcomes related to health
- Giving scientific advice on nutrient-health relationships, including (where possible) as DRVs (e.g., Population Reference Intake, Adequate Intake), that may be used by risk managers for different purposes

- Applying scientific advice on nutrient-health relationships and taking into account other aspects (e.g., food and nutrient intake and health status of specific populations) in order to establish
 - Recommended nutrient intakes for individuals
 - Nutrient intake goals for specific populations
 - Food-based dietary guidelines

- **Average requirement (AR):** the level of (nutrient) intake that is enough for half of the people in a healthy group, given a normal distribution of requirement
- **Population reference intakes (PRI):** the level of (nutrient) intake that is enough for virtually all healthy people in a group ($AR + 2 SD$)
- **Lower threshold intake (LTI):** the level of intake below which, on the basis of current knowledge, almost all individuals will be unlikely to maintain metabolic integrity, according to the criterion chosen for each nutrient
- **Adequate Intake (AI):** the value estimated when a PRI cannot be established because an average requirement cannot be set
- **Reference intake ranges for macronutrients (RI):** the recommended intake range for macronutrients, expressed as % of the energy intake

Population Reference Intakes and Average Requirement, if the requirement has a normal distribution and inter-individual variation is known



EFSA requested to review existing advice on DRVs for:

- Macronutrients
 - fat including saturated, mono- and polyunsaturated fatty acids and *trans* fatty acids (published)
 - carbohydrates + dietary fibre (published)
 - Protein (ongoing)
- Water (published)
- Guidance on the translation of nutrient-based dietary advice into Food-Based Dietary Guidelines (FBDG) for the EU population (published)
- Energy (ongoing)
- Micronutrients (to start)

**Principles for deriving Dietary Reference Values
(published)**

- A WG on PRI was established composed of recognised experts in the fields of establishing Dietary Reference Values (DRVs)
- Data on dietary intakes in the EU is reviewed
- For each nutrient existing (inter)national dietary recommendations are reviewed
- Relevant publications are identified by the experts and reviewed
- Endpoints and key evidence/data on which to base DRVs are identified
- Appropriate DRV are based on critical and independent judgement on criteria (consistency, strength and quality of the studies, available evidence obtained with the various methods, mechanism linking nutrient intake and the occurrence of chronic disease)

Which values are set for each nutrient and the criteria that are used are decided on a case by case basis

Examples of DRV values set by EFSA

Nutrient	DRV –adults
Total carbohydrates – Reference intake range	45-60 Energy%
Dietary fibres- Adequate Intake	25 g/d
Total fat – Reference intake range	20-35 Energy%
Linoleic acid – Adequate Intake	4 Energy%
Alpha-linolenic acid – Adequate Intake	0.5 Energy%
EPA + DHA – Adequate Intake	250 mg/d
DHA – Adequate Intake	100 mg/d (7-24 months)

DRV for (added) sugars?

- dental caries - frequent consumption of predominantly sugar-rich foods can increase caries risk (depends on F, oral hygiene)
- body weight - high intakes of sugar-sweetened beverages might contribute to weight gain
- serum lipids - high intakes (> 20 E%) of sugars may increase serum TG and LDL-cholesterol concentrations
- nutrient density - mainly related to patterns of intake of - not to the intake of added sugars *per se*
- evidence insufficient to set an upper limit for sugars/added sugars
- Panel noted population average intake of added sugars of <10 E% recommended by some authorities

EFSA recommendation:

- SFA/TFA as low as possible (in the context of an adequate diet)
- Evidence insufficient to set an upper limit
- Continuous relationship with blood LDL-cholesterol (no threshold)
- NDA Panel noted upper limits 8-10 E% SFA and 1-2 E% TFA proposed by some authorities

EFSA will start the review on micronutrients in 2010

Priority criteria:

- ✓ Nutrient of public health importance
- ✓ New scientific evidence
- ✓ Divergence of approach in existing recommendations by Member States
- ✓ No specific recommendations given by SCF

DRV for micronutrients – Priority nutrients

Vitamin A	Calcium
Vitamin C	Magnesium
Vitamin D	Iron
Vitamin E	Zinc
Vitamin K	Selenium
Vitamin B ₁₂	Manganese
Folate	Chromium
	Fluoride
	Molybdenum
	Potassium

- EFSA plans to outsource some preparatory work in relation to the establishment of DRVs for specific micronutrients
 - Chromium, Fluoride, Magnesium, Manganese, Molybdenum, Potassium, Vitamin A, Vitamin C, Vitamin E, Vitamin K
- Open call for tender launched in April 2010
 - Literature review of relevant health outcomes upon which DRVs for specific micronutrients can be based
 - Calculation of harmonised EU reference weights and heights for children and adolescents (0-18 years)

- EURRECA = European micronutrient Recommendations
Aligned
 - Largely funded (2007–2011) by the European Union within the 6th Framework Programme for Research and Technological Development
 - Aims to develop and apply a framework for systematically setting and keeping up-to-date micronutrient recommendations
- EFSA take into consideration the work which has already been performed by EURRECA in order to avoid duplication, e.g.
 - Systematic reviews performed for certain micronutrients (iron, zinc, vitamin B₁₂, folate, iodine, selenium)
 - Database on nutrient recommendations in Member States
 - Database on micronutrient intakes in Member States

- Food-based dietary guidelines constitute science-based policy recommendations in the form of guidelines for healthy eating
- The differences between EU countries in the prevalence of nutrient imbalances and diet-related public health issues, together with the considerable disparities across countries in dietary habits and traditions, require that food-based dietary guidelines be established by country or region
- Food-based dietary guidelines should focus on the diet-disease relationships of particular relevance to the specific population
- EFSA's role is to provide guidance to risk managers how to translate nutrient based dietary advice into food-based guidance

Food-based dietary guidelines (FBDG) – steps proposed by EFSA

- 1) Identification of diet-health relationships
- 2) Identification of country specific diet-related health problems
- 3) Identification of nutrients of public health importance
- 4) Identification of foods relevant for FBDG
- 5) Identification of food consumption patterns
- 6) Testing and optimising FBDG
- 7) Graphical representations of FBDG

- Labelling reference intake values for energy, fat, SFA, carbohydrates, sugars, salt
 - ⇒ Adopted 13 March 2009
- Labelling reference intake values for n-3 PUFAs and n-6 PUFAs
 - ⇒ Adopted 30 June 2009

EFSA is commenting on proposed labelling reference intakes taking into consideration nutrient intake recommendations by different authorities

Health claims evaluation – Overlap with DRV

Scientific substantiation of specific health outcomes for nutrients, e.g.

- Potassium and blood pressure
- Stearic acid and maintenance of LDL cholesterol
- Specific fibre components and maintenance of LDL cholesterol

Sum up of Dietary Reference Values

- All EFSA draft opinions on dietary reference values – subject to public consultation
- EFSA opinions on Principles for setting DRVs, DRVs for fats carbohydrates, dietary fibre water and on Food Based Dietary Guidelines were also discussed at a National Experts Meeting on Dietary Reference Values, September 2009, Barcelona
- Opinions published in March 2010 together with a report on the outcome of the public consultation, and the minutes of the meeting with Member States
- Review of DRV for protein, energy, vitamins & minerals ongoing