Intake assessment: Estimation of the content of free sugars in foods and beverages

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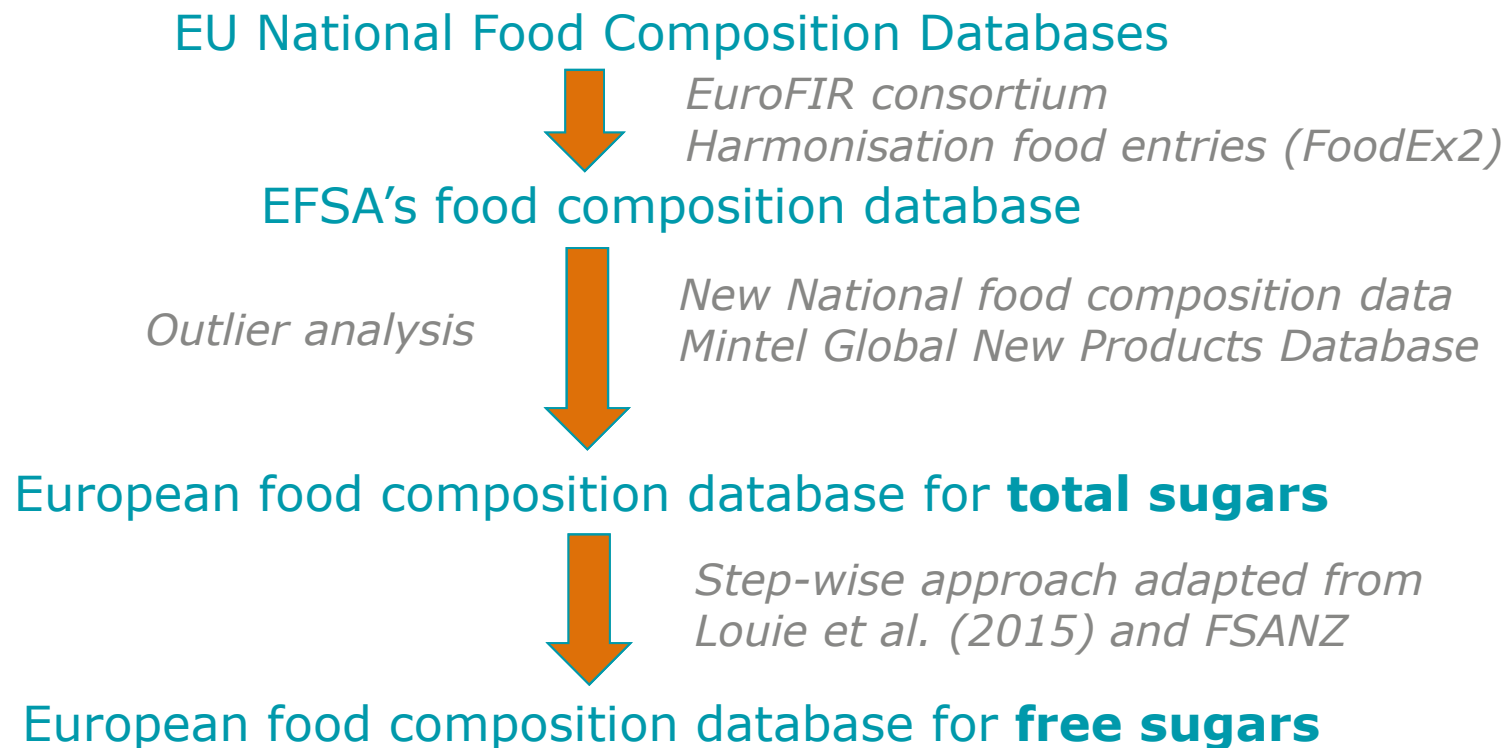
SUB-QUESTION 1

What are the levels of free sugars
in solid foods and beverages in Europe?

❑ Methodology adapted from Louie *et al.* (2015)* for added sugars and used by FSANZ to determine the amount of added sugars in foods in the AUSNUT 2011-2013 food composition database

➢ Maltodextrin and similar products excluded to maintain consistency with the definition of sugars (mono- and disaccharides) used in nutrition labelling and international food composition databases

Louie JCY, Moshtaghian H, Boylan S, Flood VM, Rangan AM, Barclay AW, Brand-Miller JC, Gill TP. A systematic methodology to estimate added sugar content of foods. European Journal of Clinical Nutrition. 2015,69(2),154-61.

EU National Food Composition Databases

EuroFIR consortium
Harmonisation food entries (FoodEx2)

EFSA's food composition database

Outlier analysis

New National food composition data
Mintel Global New Products Database

European food composition database for **total sugars**

Step-wise approach adapted from
Louie et al. (2015) and FSANZ

European food composition database for **free sugars**

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SUB-QUESTION 1 - DATABASE FOR TOTAL SUGARS

- ❑ **EFSA's food composition database (2013)** covering approx. 1750 food entries in the EFSA FoodEx2 classification system + facet descriptors

- ❑ **14** national food database compiler **organisations** provided information from **national food composition databases up to 2012**

- ❑ Data compilers allowed to **borrow compatible data** from other countries and/or from similar foods

- ❑ **12 countries** provided data on **total sugars** covering **about 1290 FoodEx2 codes**

SUB-QUESTION 1 - DATABASE FOR TOTAL SUGARS (cont.)

A **single** European food composition **database for total sugars** will be developed from the information available in the national food composition databases

Outlier analysis : To identify values which deviate from the others for a given food code (e.g. by 10-fold)

❑ For food codes with **no outliers** = **mean** will be taken as unique value

❑ Whenever **outliers** are identified for a given food code:

➢ highest/lowest values will be compared with values published after 2012

➢ Mintel: to check if differences among countries might be explained by differences in product formulations in their markets

SUB-QUESTION 1 - DATABASE FOR TOTAL SUGARS (cont.)

Outlier analysis: Options

If differences between countries…

❑ … **can** be explained by differences in product formulations:

Different values will be assigned to that food code for different countries

❑ … **cannot** be explained by differences in product formulations:

Highest and lowest values will be assigned to that food code to evaluate the impact of this variability in the intake of total sugars

SUB-QUESTION 1 - DATABASE FOR TOTAL SUGARS (cont.)

Outlier analysis: Priorities

❑ Foods with a **high content** of total sugars

❑ Foods **largely consumed** by one or more population subgroups

SUB-QUESTION 1 - DATABASE FOR FREE SUGARS

Starting point: database on total sugars

All foods will be classified in 4 groups:

1. **Foods containing no sugars (total sugars = 0).**

   Free sugars = 0

2. **Foods containing only intrinsic sugars and/or lactose in milk (total sugars > 0).**

   Free sugars = 0

3. Foods containing free sugars only (total sugars > 0).

Free sugars = Total sugars

Foods with no intrinsic sugars or lactose in milk, e.g. (adapted to FoodEx2):
- Sucrose (table sugar), including white, brown, flavoured, and icing sugar
- Syrups and molasses
- Honey
- Fruit and vegetable juices and nectars (including concentrates), either commercial or homemade
- Alcoholic beverages
- Confectionery with no dried fruit or milk sugars
- Water-based beverages (including soft drinks, energy drinks and sport drinks) and beverage concentrates

4. Foods containing free sugars and intrinsic sugars and/or lactose in milk

Most challenging task. Step-wise approach to calculate free sugars from:

4.1 The **unsweetened variety method**, based on Louie *et al. (*2015), if the unsweetened variety exists

4.2 The **proportioning method**, based on *Louie et al.* (2015), if the free sugar content of all the ingredients in the standard recipe is known

Objective steps

4.3 A **similar product** (value borrowed from this or other database, possibly from the EU otherwise from abroad)

4.4 The assumption that **50%** of total sugars are free sugars

Subjective steps

SUB-QUESTION 1 – RELIABILITY OF LOUIE *et al.* 2015

Reliability study (2 independent researchers) of the method for the estimation of **added sugars** applied to the Australia food composition database AUSNUT 2011-2013*:

❑ 4126 foods (**72% of all foods** in AUSNUT 2011-2013) were assigned an estimated value based on **objective criteria** (Steps 1, 2, 3, 4.1 and 4.2 in the present protocol)

❑ 1614 (**28%**) were assigned a **subjectively estimated** value (Steps 4.3 and 4.4).

➢ mean difference between the **values estimated** by the two researchers was small
➢ good inter-researchers agreement in **steps chosen**
➢ excellent **correlations** were observed between the two sets of values where the two researchers used the same step

* *Louie JCY, Linggang L, Rangan AM, 2016. Reliability of a systematic methodology to estimate added sugars content of foods when applied to a recent Australian food composition database. Journal of Food Composition and Analysis 46, 36-42.*

SUB-QUESTION 1 – ADAPTATION OF LOUIE *et al.* 2015

Uncertainty about

❑ The relative contribution to total free sugars intake of foods for which free sugars can only be **estimated subjectively**

❑ How the method will perform:
  ➢ For **free sugars**
  ➢ When applied to the **European food composition database**