Development of harmonised food and sample lists for total diet studies in five European countries.

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Abstract:
A total diet study (TDS) is a public health tool for determination of population dietary exposure to chemicals across the entire diet. TDSs have been performed in several countries but the comparability of data produced is limited. Harmonisation of the TDS methodology is therefore desirable and the development of comparable TDS food lists is considered essential to achieve the consistency between countries. The aim of this study is to develop and test the feasibility of a method for establishing harmonised TDS food and sample lists in five European countries with different consumption patterns (Czech Republic, Finland, Germany, Iceland and Portugal). The food lists were intended to be applicable for exposure assessment of wide range of chemical substances in adults (18-64 years) and the elderly (65-74 years). Food consumption data from recent dietary surveys measured on individuals served as the basis for this work. Since the national data from these five countries were not comparable, all foods were linked to the EFSA FoodEx2 classification and description system. The selection of foods for TDS was based on the weight of food consumed and was carried out separately for each FoodEx2 level 1 food group. Individual food approach was respected as much as possible when the TDS samples were defined. TDS food lists developed with this approach represented 94.7-98.7% of the national total diet weights. The overall number of TDS samples varied from 128 in Finland to 246 in Germany. The suggested method was successfully implemented in all five countries. Mapping of data to the EFSA FoodEx2 coding system was recognised as a crucial step in harmonisation of the developed TDS food lists.
[Dietary exposure assessment of substances in foods: The BfR MEAL study - the first German total diet study].

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Source: Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2017 May 17;
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Abstract: The dietary exposure of a population to chemical substances is estimated based on representative consumption data and data on the occurrence of substances in foods. Consumption data in Germany for different age groups are provided by the National Nutrition Survey II, VELS, EsKiMo and the ongoing KiESEL study. The data for the levels of substances in foods is currently obtained from the German food monitoring programme (Lebensmittel-Monitoring) and the German Food Composition Table (Bundeslebensmittelschlüssel) and is not sufficient for a comprehensive evaluation of dietary exposure in Germany. More data is needed and, in particular, the range of analysed substances should be broadened to reduce the uncertainties of the exposure assessment. A representative data basis for concentrations of substances in foods will be established with the first German total diet study, called the BfR MEAL study. The study will markedly reduce major uncertainties in the dietary exposure assessment through its wide coverage of substances in food groups, the inclusion of prepared foods, the orientation on low measurement limits as well as the analysis of substances without a reliable data basis.

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Validation of a picture book to be used in a pan-European dietary survey.

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Source: Public Health Nutr. 2018 06; 21(9):1654-1663
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Language: English
Abstract: To validate a picture book for estimation of food portion sizes using two approaches: (i) 'perception' of food portions by comparison with a series of food photos; and (ii) 'conceptualization and memory', using the same photos to estimate the amount of served food one hour after self-served food portions.

Each partner developed a country-specific picture book based on the so-called EPIC-Soft picture book. Representative and common photo series were chosen achieving approximately 25% of the original picture book (n 23). Three portions from each photo series were randomly selected.

The study was performed within the Pilot study in the view of a Pan-European dietary survey - Adolescents, adults and elderly (PILOT-PANEU) project.

A sample of adolescents and adults was recruited in five countries: Bulgaria (n 103), Finland (n 34), Germany (n 69), Hungary (n 62) and Portugal (n 77).

Among the portions of the corresponding photo series and depending on the type of food, from 18% (cheese) to 96% (ratatouille) of participants chose the correct portions. In the perception study, agreement between the portions shown and reported was substantial (intraclass correlation coefficient (ICC)=0.805) and the mean difference was very low. In the memory study, agreement between the served and reported portions was lower than in the perception study (ICC=0.536). Agreement also seemed to decrease as the appearance of food on the plate differed from food in the picture.

Overall, the picture series selected can be applied in future intake surveys to quantify foods similar to those depicted in the pictures.

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