



EFSA's Concise European food consumption database

Davide Arcella
Data Collection and Exposure Unit

The EFSA raison d'être

Risk assessment authority created in 2002 as part of a comprehensive program to improve EU food safety, ensure a high level of consumer protection and restore and maintain confidence in the EU food supply.



EFSA task

In close collaboration with national authorities and in open consultation with its stakeholders, EFSA as the food safety risk assessor provides independent scientific advice and communication on existing and emerging risks.



Regulation (EC) N° 178/2002

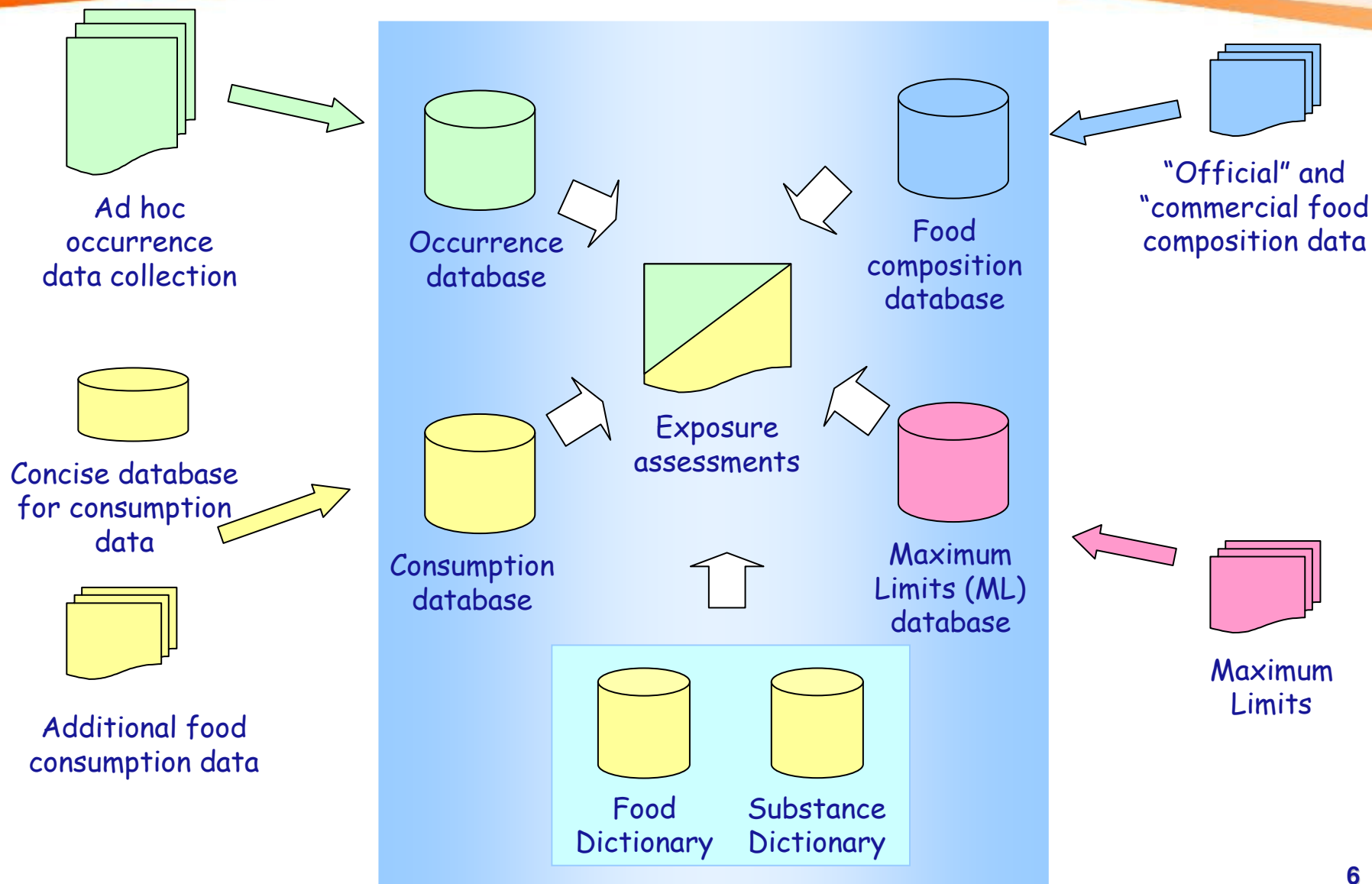


- EFSA “shall search for, collect, collate, analyse and summarise relevant scientific and technical data in the fields within its mission. This shall involve in particular the collection of data relating to food consumption and the exposure of individuals to risks related to the consumption of food”;
- EFSA “shall work in close cooperation with all organisations operating in the field of data collection, including those from applicant countries, third countries or international bodies”.

DATEX's Mission

- Collection, collation, and analysis of relevant scientific and technical data on
 - food consumption
 - food composition
 - food (and feed) contaminants
- Support to EFSA's Scientific panels and Scientific Committee for their exposure assessments and contribute to new exposure assessment methodologies

Data storage framework



Food consumption data are an essential element for the risk assessment work conducted by the EFSA.

Hence, the availability of reliable and detailed data in this domain is essential to enable it to carry out its mandates.

It is fundamental to take into special consideration non-average individuals, and in particular high consumers (those who consumes relatively large quantities of foods).

Consumption levels vary with age and physiological status

Pregnant women



Small children



Infants

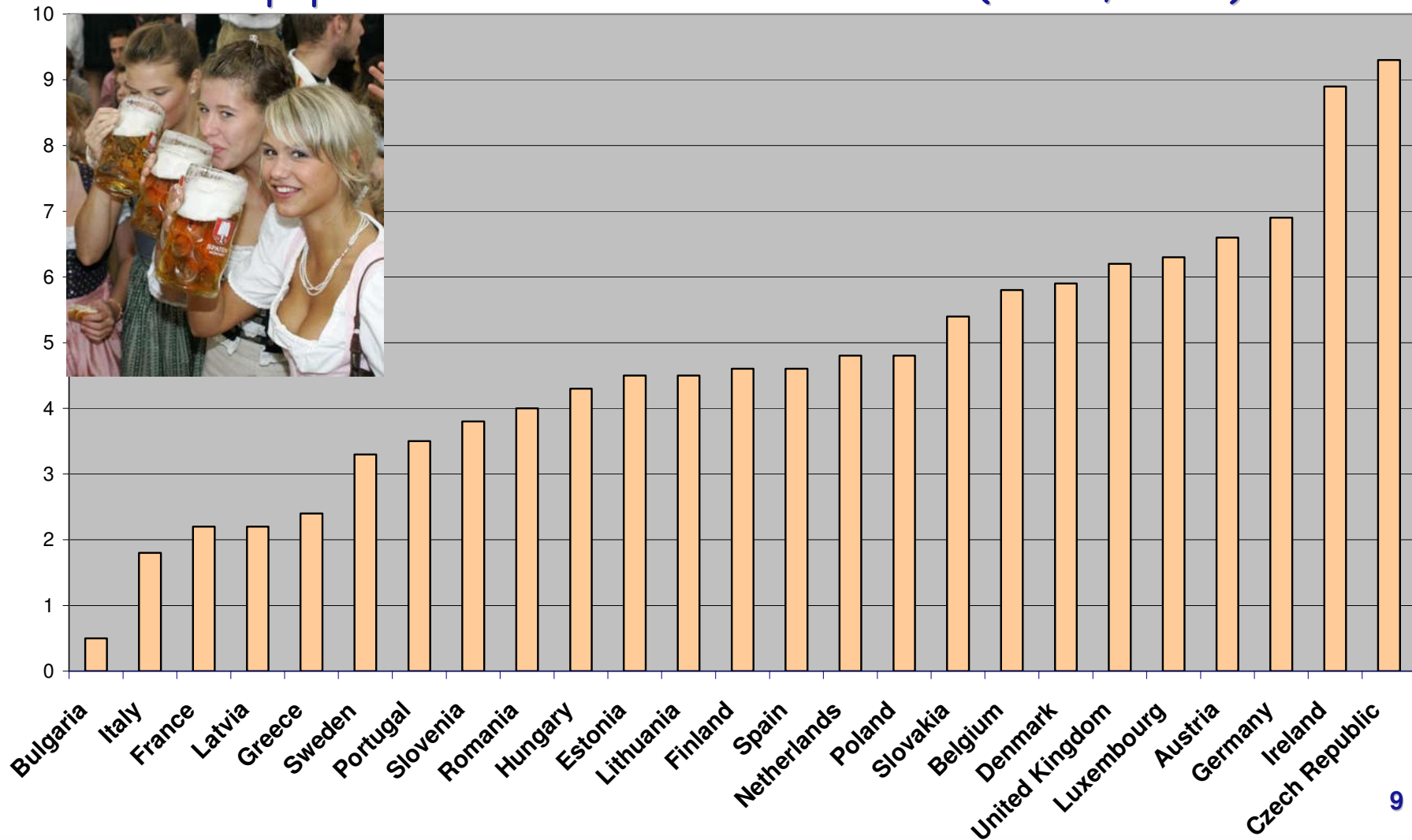
Vegetarians, diabetics, ...



Elderly

Consumption levels vary with geographical area

Average consumption of beer (L/capita per year) in the adult population in 25 EU Member States (WHO, 2007)



Food consumption data from dietary surveys are available in a majority of European countries, but data obtained at national level can often not be compared directly because of various survey methodologies and various food categorisation systems.

Main factors affecting reliability and completeness of the data:

- ▶ Survey methodology (individual dietary record, 24-hour recall, ...)
- ▶ Number of days
- ▶ Food codification level
- ▶ Composite foods / recipes

Individual dietary record

	Country	Year	Number of subjects	Age range	Number of days
1	Denmark	2000 – 05	4,439	4 – 75	7
2	France*	1998 – 99	1,474	15 – 92	7
3	Hungary	2003 – 04	1,179	18 – 96	3
4	Ireland	1997 – 99	1,379	18 – 65	7
5	Italy*	1994 – 96	1,544	16 – 64	7
6	Sweden	1997 – 98	1,210	17 – 79	7
7	The Netherlands	1997 – 98	4,285	19 – 64	2
8	United Kingdom	2000 – 01	1,724	19 – 64	7

* New dietary survey just completed

24-hour recall

	Country	Year	Number of subjects	Age range	Number of days
1	Austria	1993 – 97	2,065	19 – 65	1
2	Belgium	2004	1,723	16 – 64	2
3	Bulgaria	2004	853	16 – 64	1
4	Czech Republic	2003 – 04	1,751	16 – 64	2
5	Estonia	1997	2,015	19 – 65	1
6	Finland	2002	2,007	25 – 65	2
7	Iceland	2002	1,366	16 – 64	1
8	Lithuania	1997	2,094	19 – 65	1
9	Poland	2000	4,134	1 – 96	1
10	Slovakia	2006	2,209	17 – 60	1
11	Spain	2002	1,060	17 – 60	3 ¹²

Others

	Country	Year	Number of subjects	Age range	Number of days
1	Germany* (dietary-history)	1998	4,030	17 – 79	28
2	Norway (food frequency questionnaire)	1997	2,322	15 – 79	-

* New dietary survey just completed

Data currently not available

1	Greece	3	Luxemburg	5	Slovenia	7	Turkey
2	Latvia	4	Malta	6	Switzerland		Portugal

EFSA Scientific Colloquium 3



"A common database on food consumption would improve the consistency and reliability of exposure assessments carried out by the various EFSA Panels and other experts in Europe".

Conclusions and recommendations

In the short term:

“... the **compilation** of existing food consumption data can be performed in order to make data as comparable as possible across Europe”.

In the long term:

“... **harmonised** food consumption data **collection** should be promoted in order to obtain a fully harmonised European database.

Expert group on food consumption data

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands, Turkey and United Kingdom.



- To provide a platform for exchange of views with the best experts in Europe on ways to harmonise methodologies for the collection and collation of food consumption data
- To coordinate and facilitate the merger of national food consumption information into a pan-European food consumption database

Network meetings



- 1st Expert Group network meeting held in January 2007
 - outlined activities in respective Member State
 - start the compilation of the Concise European Food Consumption Database
- 2nd Expert Group network meeting held in October 2007
 - agreed to publish Member State aggregated summaries on EFSA website
 - Food Consumption and Exposure Working Group

Concise European food consumption database

The Concise European Food Consumption Database is called "concise" since it is intended to provide a **limited number of data** to be used as a **screening tool for preliminary exposure assessments** by the EFSA Scientific Panels and Member States.

It has been developed in order to **allow risk managers to identify substances that might be of concern and prioritise the use of resources for safety assessments.**

At the present time, this database is planned to contain food consumption data only for the **adult population** (16 to 64 years old).

Compilation of the Concise database

Each member of the Expert Group is in charge of coordinating the

- collection,
- formatting and
- transfer

of local National food consumption data to EFSA.

For this purpose, Expert Group members have been asked to:

- identify the most recent and relevant dietary survey available in his country and
- re-codify the food consumption database of the identified survey according to ad hoc broad food categories and subcategories.

Food classification system

To overcome the categorisation problem, EFSA has developed an ad hoc system with 15 main food categories (29 sub-categories).

The food categorisation system has been largely built by aggregating the Euro Food Grouping (EFG) categories developed within the EFCOSUM project.

The number of food categories was limited in order to:

- increase comparability between countries and
- to allow the use of a conservative technique of exposure assessment.
- distinguish solid from liquid foods.

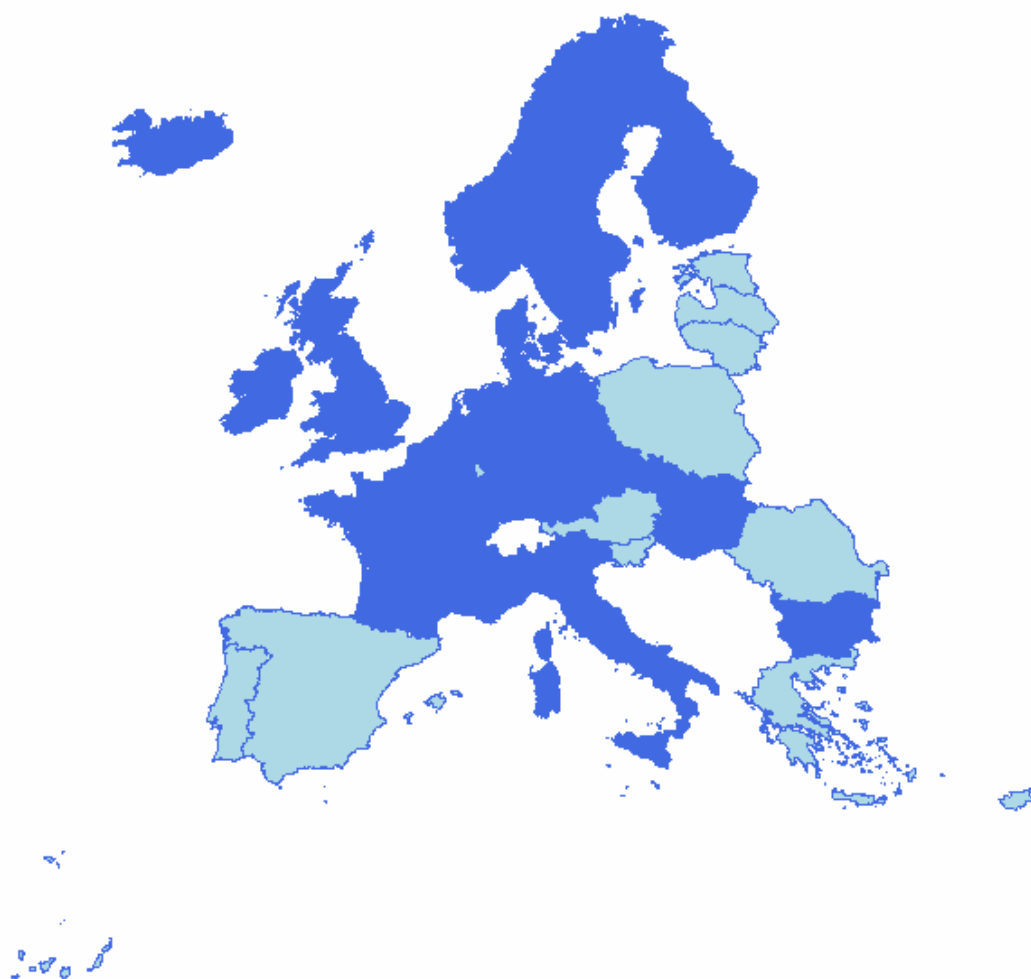
Food categories (1)

Main food categories		Sub-categories	
1	Cereals & cereal products	1A	Cereal-based mixed dishes
		1B	Cereals & cereal products excl. Cereal-based mixed dishes
2	Sugar & sugar products including chocolate		
3	Fats (vegetable and animal)		
4	Vegetables, nuts, pulses including carrots, tomato and leafy vegetables	4A	Vegetable soups
		4B	Vegetables, nuts, pulses except vegetable soups
5	Starchy roots or potatoes		
6	Fruits		
7	Fruit and vegetable juices, soft drinks and bottled water	7A	Fruit and vegetable juices
		7B	Soft drinks with percentage of fruits lower than nectar, excl fruit juice
		7C	Bottled water
8	Coffee, tea, cocoa (expressed as liquid)		

Food categories (2)

Main food categories		Sub-categories	
9	Alcoholic beverages	9A	Beer and substitutes
		9B	Wine and substitutes
		9C	Other alcoholic beverages and substitutes
10	Meat and meat products, offal	10A	Meat and meat products and substitutes
		10B	Edible offal and offal products
		10C	Meat based preparations
11	Fish and seafood	11A	Seafood and seafood products
		11B	Fish and fish products
		11C	Fish based preparations
12	Eggs		
13	Milk and dairy based products	13A	Milk and dairy based drinks
		13B	Dairy based products
		13C	Cheese
14	Miscellaneous / Food for special dietary uses	14A	Miscellaneous
		14B	Food for special dietary uses
15	Tap water		

EFSA's Concise European food consumption database



- 1) Belgium
- 2) Bulgaria
- 3) Czech Republic
- 4) Denmark
- 5) Finland
- 6) France
- 7) Germany
- 8) Great Britain
- 9) Hungary
- 10) Iceland
- 11) Ireland
- 12) Italy
- 13) Norway
- 14) Poland
- 15) Slovakia
- 16) Sweden
- 17) The Netherlands

■ Data available ■ Data not available

Format of the databases received

Format	Number of datasets	
EFSA Template – XML	2	12%
EFSA Template – Excel	10	59%
Excel different from EFSA Template	5	29%
Total	17	

Summary statistics from the Concise database

Consumption data are submitted as **average daily consumption per person**.

Individual food consumption data are stored by EFSA but only **summary statistics** from the Concise database are made available to the public on the [EFSA web site](#).

The use of food consumption data at individual level is **restricted to EFSA staff** and requires preliminary notification to the countries providing the data.

Any further use of the data at individual level requires a formal authorisation by each country providing the data.

- Unfilled food categories (all zeros and missing)
- Inconsistencies, e.g. Category 1 different from category 1B but category 1A not provided.
- Missing values, e.g. missing values for the body weight (till to 5.4% of the total population)
- Impossible values, e.g. body weight equal to “999” or “-4” where considered as missing
- Possible outliers, e.g. energy intake > 1,000,000 KJoule
- Reference not reported
- Weighting factors

Summary statistics from the Concise database

For each country, food consumption data are elaborated according to both **main categories** and **sub-categories** and for the **total population** and **consumers only**.

The summary statistics include:

- **numbers of consumers,**
- **mean consumption,**
- **standard deviation,**
- **low and high percentiles of consumption.**

Concise database on the EFSA website


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↓ Scientific Panels & Units

Data Collection and Exposure unit (DATEX)

- Concise European Food Consumption Database

Concise European Food Consumption Database




Exposure assessment is a key part of the risk assessment process. The quality of available data - both on food consumption and on occurrence levels - can have a major impact on the outcome of risk assessment. Food consumption data from dietary surveys are available in a majority of European countries. However, data obtained at national level often cannot be compared directly due to different survey methodologies, food categorisation systems, etc. To overcome this, EFSA has developed the "Concise European Food Consumption Database".

The concise database gathers data on average daily consumption of foods per person sourced from the Member States. It comprises 15 broad categories (e.g. milk and dairy-based products) and 21 subcategories (e.g. cheese). The intention of the concise database is to provide a valuable first screening tool to EFSA, its Scientific Panels, and potentially to other scientists in Member States, to help carry out preliminary exposure assessments. It will serve as a starting point for EFSA to develop a more comprehensive database with information on more refined food categories and specific population groups (e.g. children).

















The database was set up with the involvement of the EFSA Expert group on food consumption data, a network currently composed of members representing EU and neighbouring countries. The group co-ordinated the collection and formatting of national data and transfer to EFSA. It is also responsible for discussing the requirements for the future comprehensive database.

The need for such data at European level was raised at the colloquium on "European Food Consumption Database - Current and medium to long-term strategies" organised by EFSA in Brussels in April 2005. The [full report of the Colloquium](#) is available to download.

 [Guidance Document for the use of the Concise Database in Exposure Assessment](#)

National summary statistics

Food consumption data are elaborated, at country level, according to both broad categories and subcategories. Moreover, summary statistics are calculated in the total population as well as for consumers only. The available data, together with information on the dietary surveys used as sources, are presented in the following files:

 Belgium	 Germany	 Norway
 Bulgaria	 Hungary	 Slovakia
 Czech Republic	 Iceland	 Sweden
 Denmark	 Ireland	 UK
 Finland	 Italy	
 France	 Netherlands	

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See Also

 [The EFSA's 3rd Scientific Colloquium Report - European Food Consumption Database - Current and medium to long-term strategies](#)

Parma, 17 March 2008
EFSA/DATEX/2008/01

Guidance Document for the use of the Concise European Food Consumption Database in Exposure Assessment

TABLE OF CONTENTS

<i>Introduction</i>	1
<i>Objective of this guidance document</i>	3
<i>Completion of the Concise Database</i>	3
<i>Food classification system</i>	4
<i>Summary statistics from the Concise Database</i>	5
<i>How to use the Concise Database</i>	6
<i>Future steps</i>	7
<i>Acknowledgement</i>	7
<i>References</i>	8
<u><i>Annexes</i></u>	

Use of the Concise Database

The Concise Database is intended to produce conservative estimates of exposure. If the database is used for screening assessments, an analysis of uncertainty is not required, provided that appropriate conservative assumptions take account of uncertainty.

Risk assessors are responsible for ensuring that the use of the database is conservative for the specific case. If data from the Concise Database are used for non-conservative assessments, the degree of uncertainty of the adopted model should be evaluated and discussed.

Between countries differences

Between countries differences (especially in higher percentiles) can simply be induced by the survey methodology.

In particular, the duration of the survey is expected to affect the distribution of consumption, particularly at the upper tails.

A short survey tends to under-estimate the proportion of individuals who consume particular food types, but at the same time, over-estimates the levels for high consumers.

High percentiles

The reliability of high percentiles is related to the number of subjects used to calculate them.

Percentiles calculated on a limited number of subjects bear a large uncertainty and only provide a rough indication of high levels of consumption.

The minimum sample sizes can be estimated

- between 130 and 160 for the 95th percentile,
- between 263 and 320 for the 97.5th percentile and
- between 662 and 800 for the 99th percentile.

Information on the surveys

**Table 1 - Basic information on the national food survey
Italy**

	Italy
Reference period	1994 - 1996
Name of the dietary survey	Nationwide Nutritional Survey of Food Behaviour of the Italian population
Acronym	INN-CA
PROVIDER	National Research Institute for Food and Nutrition (INRAN)
Methodology used	Dietary record
Total number of individuals	1544
Number of days*	7
Age range**	16 to 64
Reference publication	Turrini A, Saba A, Perrone D, Cialfa E, D'Amicis A (2001): Food consumption patterns in Italy: the INN-CA Study 1994-1996. Eur. J. Clin. Nutr. 55 (7), 571-88.
Remarks	

In addition to the food consumption data, a detailed description of the survey characteristics (e.g. method, duration, year, etc.) is provided in order to allow a correct interpretation of the data.

Usage of the data from the Concise Database

Preliminary data:

- ▶ Opinion of the EFSA Scientific Panel on Contaminants in the Food Chain on **perfluorooctane sulfonate (PFOS)**, **perfluorooctanoic acid (PFOA)** and their salts.
- ▶ Opinion of the EFSA Scientific Panel on Contaminants in the food chain related to **ochratoxin A** in food.

Under consideration:

- ▶ EFSA scientific opinion on the risks to human health related to the presence of **cadmium** in foodstuffs.
- ▶ Refinement of the 2001 COM report on **food additive** dietary intake at EU level.

Short and long term objectives

In the short term:

compilation of existing food consumption data

- at the lowest possible level of detail
- for population groups other than adults, e.g. small children, elderly, ...

In the long term:

Promote the collection of harmonised food consumption data collection

- by Member States
- within a pan-European dietary survey

Individual food consumption data for children



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European Food Safety Authority

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Scientific Cooperation

- Article 36 Cooperation

Call for proposals


Call for proposals - CFP/EFSA/ DATEX/2008/01: Individual food consumption data and exposure assessment studies for children

Restricted to the [list](#) adopted by EFSA Management Board according to article 36 of European Parliament and Council Regulation (EC) No 178/2002.

The deadline for submitting proposals is **6 June 2008**.

- [Call for proposals and guide for applicants](#)
- [Annex 1 - Rules on eligibility costs](#)
- [Application form](#)
- [Legal entities form](#)
- [Declaration on honour](#)
- [Estimated budget template](#)
- [Draft Grant agreement](#)

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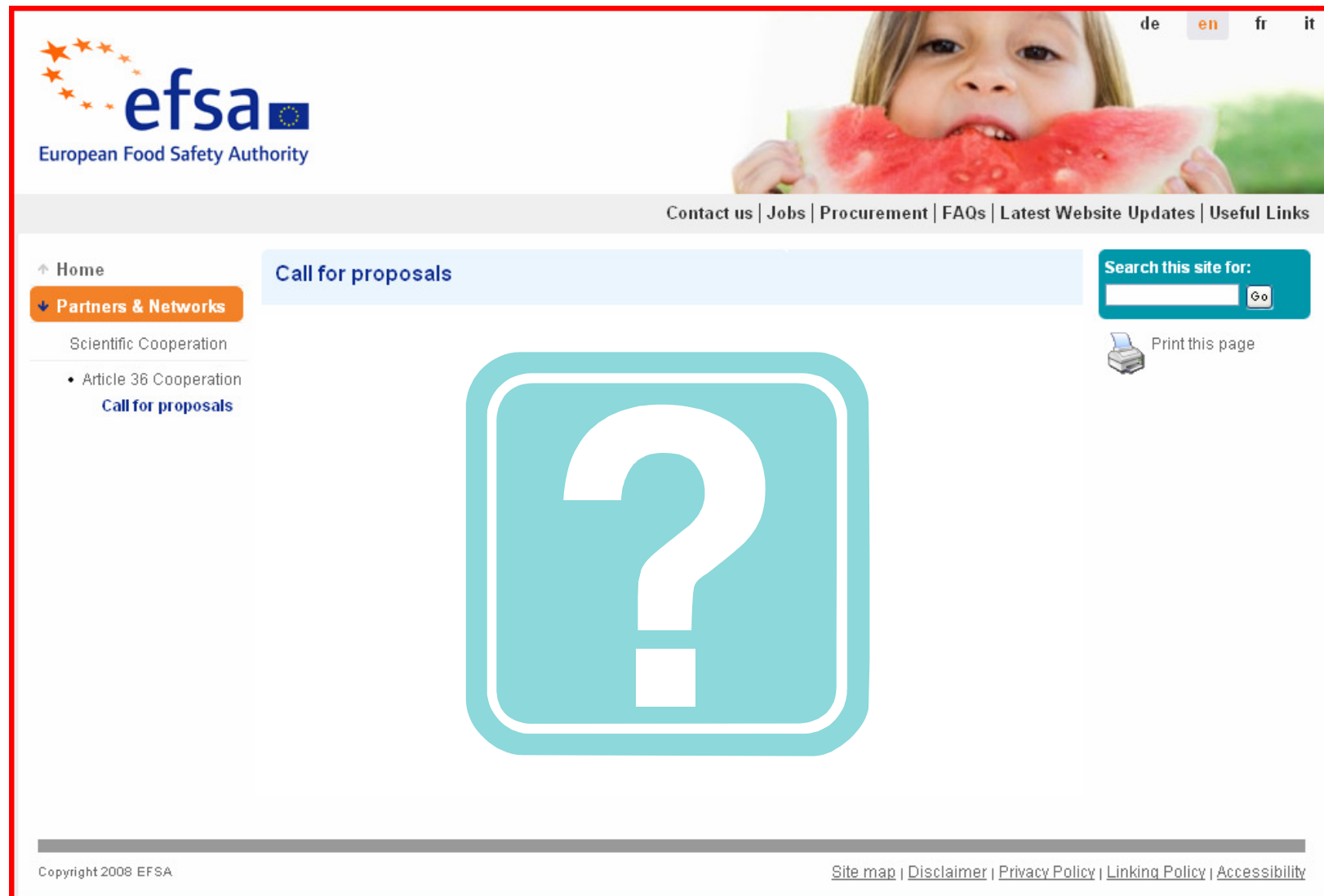
Publication date: 10/04/2008

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Deadline for submitting proposals is: **6th of June 2008.** 36

Individual food consumption data for adults and elderly

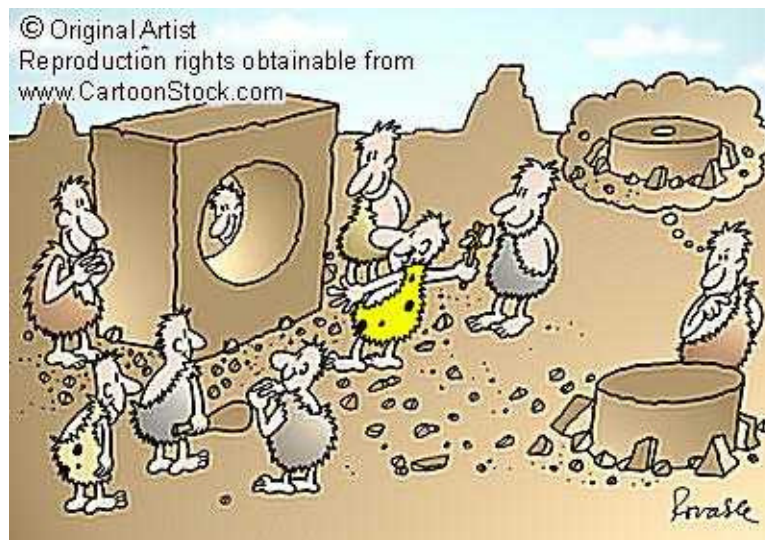


The screenshot shows the EFSA website interface. At the top right, there are language selection buttons for 'de', 'en', 'fr', and 'it'. The main header features the EFSA logo and a photograph of a child eating watermelon. Below the header is a navigation bar with links for 'Contact us', 'Jobs', 'Procurement', 'FAQs', 'Latest Website Updates', and 'Useful Links'. The left sidebar contains a menu with 'Home', 'Partners & Networks', 'Scientific Cooperation', and 'Article 36 Cooperation' with a sub-link for 'Call for proposals'. The main content area is titled 'Call for proposals' and features a large, light blue question mark icon. To the right of the icon is a search bar with the text 'Search this site for:' and a 'Go' button, and a 'Print this page' button with a printer icon. The footer contains the text 'Copyright 2008 EFSA' and a row of links: 'Site map', 'Disclaimer', 'Privacy Policy', 'Linking Policy', and 'Accessibility'.

Food Consumption and Exposure Working Group (FCE WG)

- determine the **feasibility** of creating a Pan-European food consumption survey
- outline **requirements** on food consumption studies with respect to exposure assessment
- recommend **methods** for food consumption surveys with the view of better harmonisation across Europe,
- explore access to, translation and transfer of data from **existing food consumption databases**,
- investigate possible **collaboration** with other current European initiatives in the field (e.g. EFCOVAL project, EUROSTAT, IARC, etc.)

European research projects



- EFCOSUM** - European Food Consumption Survey Method project
- EPIC** - European Prospective Investigation into Cancer and Nutrition
- EFCOVAL** - European Food Consumption Validation project
- FACET** - Flavours, Additives and Contact exposure project

Thank you

Davide Arcella

davide.arcella@efsa.europa.eu