

## Recent national French food and nutrient intake data

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In France, the first national dietary survey, called ASPCC, was done in 1993–1994. According to this survey, the mean fat intake in France is rather high, both for men (37.7%) and women (40%). Saturated fat intake is above 15% of energy. The intake of fruit and vegetables is particularly low for younger people and manual workers. Fruit intake is also lower for people from the north of the country. These data show the necessity of a targeted nutritional policy in France. Therefore, public health authorities are determining new dietary guidelines. The fact that people with unsatisfactory nutritional status are often not concerned with nutrition proves the importance of simple understandable food-based dietary guidelines.

### French nutrient intakes: Food intakes in France: Dietary guidelines: Fat intake: Fruits and vegetables

In France, the dietary guidelines are given by committees of experts organized by the Centre National d'Études et de Recommendations sur la Nutrition et l'Alimentation (CNERNA). There are no precise RDA or dietary guidelines in France. There are quantitative recommendations (Apports Nutritionnels Conseillés; ANCs) that are used to indicate dietary adequacy but are not considered to be appropriate as strict guidelines for individuals. The ANC were revised in 1994 (Dupin *et al.* 1994) and will be redefined in 1999. The national food council (Conseil National de l'Alimentation; CNA) also gives recommendations. These guidelines are qualitative. They emphasize the need to eat more fruit and vegetables and to avoid eating fatty products. Dietary diversity is encouraged more than precise nutrient or food-based dietary guidelines.

This cautiousness in providing national dietary guidelines can be explained by the fact that the nutritional status of the French population is often considered as good by public opinion and practitioners. The 'French Paradox' is a very popular concept among food producers. The traditional strong interest for food in France increases the confidence in the nutritional status of the population. The high diversity of foods consumed enhance this confidence. But knowledge of the real nutritional status of the French population is not precise and most data is of relatively recent origin. The first national dietary survey was done only in 1994–1995. The results of regional surveys are not always convergent. The debates among experts about the fortification of foods and the increase of obesity among children show the necessity for greater monitoring of food and nutrient intakes.

### Methods

In France, the national food consumption database is handled by the Observatoire des Consommations Alimentaires (OCA). This database includes national individual dietary surveys (1993–1994 and 1998–1999) and continuous national food purchase panels (1989–1996; Bertail *et al.* 1993). The 1993–1994 national food consumption survey (ASPCC survey) is based on an individual 7-d dietary questionnaire. The portion sizes are estimated by duplicate weighing for the food consumed at home and by photographs for the food consumed outside of the home. Data are available for 1229 adults aged 18 years and over, of which 324 adults were classified as under-reporters (Rigaud *et al.* 1997). The sample is nation-wide and gives a good representation of the French population according to the following criteria: region, rural/urban areas, age, sex, profession and occupational status. The national food composition database is handled by the CIQUAL (Centre Informatique sur la Qualité des Aliments) and the nutritional table used in the survey includes 611 foods. The use of the Languag food description language both in CIQUAL and in OCA allows the identification of food items between the two databases (Favier *et al.* 1996).

### Results

The results of the ASPCC survey in 1994 show strong differences between the nutrient intakes of men and women (Table 1). The contribution to the energy intake of fat (men 38%, women 40%) is close to the contribution of

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**Table 1.** Energy and macro-nutrient intakes in French men and women

	Men (n=600)	Women (n=629)
Energy (MJ)	10.0	7.2
Protein (%energy)	16.6 (3.0)	18.1 (3.8)
Carbohydrate (%energy)	38.0 (7.1)	38.4 (7.8)
Total fat (%energy)	37.7 (6.0)	40.0 (6.9)
Saturated fat (%energy)*	15.0 (3.4)	15.8 (3.6)
Alcohol (%energy)	7.7	3.5

\* For 19–64 year old adults.

carbohydrates (men and women 38%). Total fats come mainly from butter, cheese, meat products, oils, and biscuits, cakes and fruit pies (Table 2). Saturated fats come from the same products with the exception of vegetable oils (Table 3). Intakes of fruits and vegetables are rather low with the mean intake being less than 300 g/d (Table 4). The percentage of people consuming selected food categories according to age, region and occupation are given in Table 5. Using the first day of recording to identify the percentage consumers, an average of 76% of people consume fruit and 78% consume vegetables. The percentage of consumers of fruit and vegetables is lower for younger people (70.7%) and manual workers (61.9%). The percentage of fruit consumers is also notably lower among employed professionals 67.6% and in people living in the north (73.8%). Ironically, the percentage of consumers of dairy products is lower among farmers 98.5% when compared to any other occupation.

### Discussion

The energy and the macro-nutrient intake of the ASPCC survey described in this paper are relatively low compared with other non-representative or regional surveys in France. But the results of these surveys are not strictly comparable. The survey methods used in local surveys are 24 h recall or food frequency questionnaires. For consumption outside of the home, a comparison with another national dietary survey conducted in 1994 with a 7 d dietary record showed a lower vegetable intake (4.2 kg/year versus 5.6 kg/year) and a higher fruit intake (3.1 kg/year versus 2.3 kg/year) than shown in the ASPCC survey (Guillemant *et al.* 1998).

**Table 2.** Percentage contribution of food groups to the intake of total fat in French men and women

Product groups	Men (n=600)	Women (n=629)
Butter	23.3	20.9
Cheese	13.3	13.7
Meat products	10.4	8.0
Vegetable oils	9.0	12.7
Biscuits, cakes and fruit pies	7.5	8.6
Beef/veal	5.7	5.3
Chips and French fries	4.9	4.1
Milk and milk products	4.9	5.7
Poultry	3.8	4.1
Ready-made meals	3.0	2.2
Chocolate and candy bars	2.4	2.4
Eggs	2.3	2.4
Others	9.5	9.9
Total	100.0	100.0

**Table 3.** Percentage contribution of food groups to the intake of saturated fat among French men and women

Product groups	Men (n=600)	Women (n=629)
Butter	31.7	29.0
Cheese	18.5	19.5
Meat products	8.8	6.9
Biscuits, cakes and fruit pies	7.1	8.5
Milk and milk products	6.7	8.0
Beef/veal	5.5	5.2
Chocolate and candy bars	3.0	3.2
Poultry	2.7	3.0
Chips and French fries	2.6	2.0
Ready-made meals	2.5	1.9
Vegetable oils	2.4	3.6
Other	8.5	9.2
Total	100.0	100.0

In comparison with international recommended daily allowances, the food pattern in France seems to be low in carbohydrates and rich in fatty acids, especially in saturated fats as in other developed countries. This higher intake of saturated fat is largely the consequence of high intakes of butter, cheese, meat products and baked products such as biscuits, cakes and fruit pies. The low level of cardiovascular disease in France is one reason why the high fat intake level is not considered as an urgent public health priority as it is in other European countries. This confidence could be considered as a consequence of the large success of the concept of the 'French Paradox'.

There are differences in food consumption patterns between age groups, especially for younger people who eat less fruit and vegetables. Cohort analysis has shown that the lower intake of fruit and vegetables for younger people is often a generation effect and not an age effect (Volatier & Babayou, 1997). This finding may be explained by the fact that the younger generation is not interested in preparing fresh fruit or vegetables. The fruit and vegetables eaten more frequently by younger people are convenient to eat, such as tomatoes, mandarins and bananas, while those eaten less frequently are less convenient and require some preparation, for example cauliflowers, leeks and lettuces. People not in the habit of spending time preparing meals at age 30 are unlikely to develop such a habit by the age of 40. These results clearly show that food habits are changing in France. As a consequence, the food behaviour of the present younger generation may be less consistent with dietary guidelines than has been the case in the past.

There are also regional differences in food intake patterns, with the population in the north of the country tending to eat more fats and alcohol and less vegetables than people from the south of the country. The comparison of a dietary diversity score (the number of the five groups of foods

**Table 4.** Intake of fruit and vegetables (g/d) among French men and women

Product groups	Men (n=600)	Women (n=629)
Fruits	189	184
Vegetables	93	109
Fruit and vegetables	282	293

**Table 5.** Percentage of consumers identified using the first day of recording period of selected food categories, according to sex, age, geographical location and occupation

	Bread and grain products	Dairy products	Meat and fish	Fruits	Vegetables
Men	98.2	94.4	96.5	74.5	74.7
Women	95.6	94.6	95.2	77.4	81.1
Age					
2–14	97.8	98.7	95.5	82.4	72.3
15–34	95.5	93.4	94.3	70.7	74.1
35–54	96.3	90.7	97.6	74.0	81.0
55 and over	98.4	96.6	96.2	79.4	83.8
Region					
Ile de France	96.9	96.9	95.6	77.7	77.8
North	97.3	94.4	96.4	73.8	78.2
South	96.0	93.3	95.1	78.4	77.8
Profession					
Farmers	100.0	85.3	100.0	94.7	93.3
Employed professionals	91.9	91.0	96.4	67.6	77.1
General management and self-employed professionals	97.5	94.2	97.0	81.3	86.9
Middle management	97.7	91.8	95.4	73.2	73.4
Office employees	96.4	94.4	97.5	76.0	80.8
Manual workers	97.4	92.0	95.4	61.9	74.6
Pensioners	98.1	95.3	95.7	77.6	82.2
Students	96.1	97.1	95.7	80.8	73.5
Non-working others	96.5	95.1	94.6	75.7	77.4
Total	96.9	94.5	95.8	76.0	78.0

Source: 1994 ASPCC Survey.

Treatment: CRÉDOC – Observatoire des Consommations Alimentaires

shown in Table 5, eaten on the same day by the same consumer) show that the mean dietary diversity is larger in France than in the USA according to two different surveys (Drewnowski *et al.* 1996; Chambolle *et al.* 1997). But this score is very low for some groups of consumers, namely younger people, manual workers, people living in the north or in the east of the country. These regional differences show the need for a targeted nutritional policy at a local level. The fact that people with unsatisfactory nutritional status are often not concerned with nutrition proves the importance of clear and simple food-based dietary guidelines.

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