

THE GAP BETWEEN RECOMMENDATIONS AND REAL CONSUMPTION (IN EUROPE)

Edito

An adequate consumption of Fruits and Vegetables (F&V) is an important component of a healthy diet to prevent major non-communicable diseases such as cardiovascular diseases, diabetes, gastrointestinal cancer and obesity. The recently published European nutrition and health report 2009 indicates that a minimum daily intake of 400g of F&V (excluding potatoes and other starchy tubers), which is the minimum amount recommended by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), has not been achieved in many European Union countries. Data from dietary surveys carried out in the adult population suggest that Austria, Germany, Italy and Poland only have been able to meet this recommendation.

The FAO food balance sheets present a comprehensive picture of the pattern of a country's food supply during a specified reference period and show the quantities and types of food available in a country. Although an increase has been observed in the mean supply of F&V over the past years, in almost two thirds of the 53 Member States in the WHO European Region their mean supply is far below the recommended supply of 600g per capita per day. The second action area of the WHO European Action Plan for Food and Nutrition Policy 2007-2012 is entitled *ensuring a safe, healthy and sustainable food supply*. Member States are encouraged to take integrated action in this area in order to improve the availability and affordability of F&V by revising, for instance, their agricultural policies; providing technical advice and market incentives for local horticulture (including urban horticulture) and reducing trade barriers to imports.

A preliminary analysis of currently available national policy documents, carried out by the WHO Regional Office for Europe, suggest that nine documents only include an objective *to increase the production and growing of F&V*. In contrast, campaigns targeting the availability of F&V in local settings such as schools or work places have been widely implemented as well as initiatives aiming to improve the individual consumption. These campaigns and initiatives are promising in reducing the gap between recommendations and real consumption of F&V in Europe, but many countries still need to take action in this regard.

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Elmadfa I, ed. European Nutrition and Health Report 2009. Basel, Karger, 2009.
FAOSTAT (online database). Rome, Food and Agriculture Organization of the United Nations, 2003.
WHO European Action Plan for Food and Nutrition Policy 2007-2012. Copenhagen, World Health Organization Regional Office for Europe, 2007.

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The gap between recommendations and real consumption in Italy

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Results of the last Italian National Food Consumption Survey show the need to increase the consumption of Fruit and Vegetables (F&V) and legumes and to decrease the consumption of red meat.

Recommendations in Italy

Food consumption patterns are changing rapidly in the Italian population. Important factors of change are the evolution of lifestyle, the availability of a large variety of new intensively advertised food products and the progressive ageing of the population. A steady increase of meals consumed away from home and of convenience foods has been observed¹. The traditional Mediterranean diet, rich in plant foods, is being modified².

The Italian Ministry of Agriculture funded the third national food consumption survey, named INRAN-SCAI 2005–06, to update current dietary information. The paper by Leclercq et al.³ presents the main results of this survey in terms of food categories.

The survey, cross-sectional, had been conducted on a random sample of the Italian population, stratified into four main geographical areas of Italy (North-West, North-East, Centre, South & Islands) from October 2005 to December 2006. Food consumption had been self-recorded by subjects for three consecutive days on hard-copy diaries and structured by meal. In total, 1,329 households had been involved in the food survey corresponding to 3,323 individuals (1,501 males and 1,822 females), aged 0.1 to 97.7 years.

The authors compared some of the results with the population goals for the prevention of chronic diseases which are expressed in terms of food.

The gap with real consumption in Italy

The mean individual consumption of F&V in the whole study sample was 208g/d and 210g/d, respectively, meeting the minimum population goal of 400g of F&V daily established by FAO/WHO⁴. The mean daily consumption of F&V met such goal only in adults (18 to 64.9 years) and in the elderly (65 years and above), not in the younger age classes. The individual daily

consumption of F&V in adolescents was only 140 g/d and 190 g/d respectively, i.e. less than one portion of F&V per day.

A goal was recently set for the population for the average consumption of red meat (beef, pork, lamb and goat from domesticated animals, including that contained in processed foods): it should be less than 300g/week as cooked meat (approximately 400–450g as raw weight) for the prevention of colorectal cancer⁵. Overall consumption of red meat in the study sample was obtained by adding up fresh beef and veal (42.7g/d), fresh pork (12.7g/d), other red meats such as lamb and horse (about 5g/d) and preserved pork and beef (28g/d, corresponding to approximately 40g of raw weight). The estimated consumption of red meat as raw weight was therefore approximately 700 g/week in the study sample, i.e. significantly higher than the goal, with a higher daily consumption in the adolescents and adults males (137g/d and 122g/d respectively) than in elderly males (106g/d). On the other hand, the consumption of legumes was very low (approximately 10g/d in the whole study sample).

The need of strategies targeting adolescents

Other main results of the Italian National Food Consumption Survey INRAN-SCAI 2005–06 confirmed some aspects of the Italian food consumption pattern: a very large contribution from olive oil to fats, a large contribution from wine to alcoholic beverages and a large contribution from bread, pasta and pizza to cereals. Italian food consumption pattern is still Mediterranean, mainly due to the elderly food habits which still consume an adequate amount of F&V and a minor amount of meat. On the other hand, the results suggest that strategies to increase F&V consumption should target mainly adolescents, males and females. A decrease in red meat consumption would also have a very positive impact in terms of reduction of greenhouse gases and of water use⁶. Meat as a source of proteins could be substituted by the combination of cereals and legumes which is frequent in traditional Italian dishes such as pasta with chick peas, rice with lentils, etc.

Recommendations given to the population for healthy eating should promote food consumption patterns that are healthy not only for the individuals but also for the environment.



REFERENCES

1. Istituto di Servizi per il Mercato Agricolo Alimentare (2007) Consumi Extra Domestici dei prodotti alimentari: Indagine qualitativa II semestre 2006. Rome: ISMEA; available at <http://www.ismea.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/2064>
2. Branca F, Nikogosian H & Lobstein T (editors) (2007) The Challenge of Obesity in the WHO European Region and Strategies for Response. Copenhagen: WHO Regional Office for Europe; available at <http://www.euro.who.int/document/E90711.pdf>.
3. Catherine Leclercq, Davide Arcella, Raffaella Piccinelli, Stefania Sette, Cinzia Le Donne and Aida Turrini on behalf of the INRAN-SCAI 2005–06 Study Group (2009) The Italian National Food Consumption Survey INRAN-SCAI 2005–06: main results in terms of food consumption. Public Health Nutr, 12(12):2504–32.
4. Food and Agriculture Organization of the United Nations/World Health Organization (2002) Diet, Nutrition and the Prevention of Chronic Diseases. Joint WHO/FAO Expert Consultation. WHO Technical Report Series no. 916. Geneva: WHO
5. World Cancer Research Fund/American Institute for Cancer Research (2007) Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective. Washington, DC: AICR.
6. Food and Agriculture Organization of the United Nations (2006) Livestock long shadow. Environmental issues and options. Rome: FAO. <ftp://ftp.fao.org/docrep/fao/010/a0701e/a0701e00.pdf> [accessed December 2009].

Dietary intake, physical activity and nutritional status in adults: the French nutrition and health survey (ENNS¹, 2006-2007)

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A dynamic public health context

Implemented in France in 2001, the French National Program on Nutrition and Health (PNNS) aims at reducing the burden of nutrition-related chronic diseases in the general population by acting on nutrition. Various public health initiatives have been conducted, including media campaigns and the dissemination of guidelines covering the importance of nutrition and physical activity. Such initiatives necessitate monitoring activities such as process evaluation as well as epidemiological assessments.

ENNS: A tool for nutritional surveillance

The objective of the French nutrition and health survey ("Etude Nationale Nutrition Santé", ENNS) was to describe dietary intake, physical activity and nutritional status in a national sample of adults and children, taking into account current French recommendations. This study was based on a cross-sectional population-based survey using a multistage sampling design. Between February 2006 and March 2007, 3,115 adults aged 18-74 years (participation rate: 59.7%) and 1,675 children aged 3-17 years (67.9%) were included.

Energy, macronutrient and food consumption was estimated through three randomly distributed 24 hour recalls, and compared to PNNS recommendations. Physical activity was described using "International Physical Activity Questionnaire" (IPAQ) guidelines in 15-74 year-old individuals and age-adapted questionnaires in 3-14 year-old children. Anthropometry in adults and children, and blood pressure and biochemical measurements in adults were assessed according to national and international references.

Diet behaviors to improve in adults and children along with frequent cardiovascular risks in adults

In adults, when compared to current recommendations, intake of carbohydrates (>50% EI: 26.4%), saturated fatty acids (<35% total lipids: 18.5%) and total fiber (>25g/d: 13.7%) was frequently unsatisfactory. While overall consumption of "meat, seafood and eggs" was satisfactory, that of Fruits and Vegetables (F&V) (≥ 400 g/d: 43.8%) and seafood (≥ 2 servings /week: 29.9%) was

frequently too low. The physical activity level was satisfactory (moderate and high IPAQ-categories) at 63.2%.

Overweight (BMI ≥ 25) was observed in 49.3% of adults (among them, 16.9% were obese, BMI ≥ 30), while 30.9% were hypertensive (elevated blood pressure and / or anti-hypertensive intake) and 44.1% had dyslipidemia (abnormal values of triacylglycerol, LDL- and HDL-cholesterol, and / or lipid-lowering medication). Vitamin and iron poor status was found to affect less than 10% of the adult population. Diet behaviors and nutritional status varied between men and women, and across age categories. Briefly, diet quality was higher in women than in men, as well as in the 55-74 year-old-category compared to the 18-29 year-olds. Besides, while men were generally at higher-risk of cardiovascular abnormalities, these later also increased with age categories.

In children, the figure regarding diet was little different but it includes more frequent behaviors unsatisfactory compared to PNNS recommendations. In particular, only 19.7% of children ate ≥ 400 g/d of F&V. In addition, half of 3-17-year-old children consumed <3 dairy products daily, with 28.2% consuming seafood ≥ 2 servings /week.

While a few variations were observed between boys and girls, diet behaviors varied across age categories, in particular regarding saturated fat (too much elevated in 3-10-year-olds), low consumption of dairy products and calcium (in 15-17-year-old girls) and salt (too much elevated in 15-17-year-old boys). Sedentary lifestyle, estimated using time spent in front of a television or a computer, was generally high (3 hours per day on the average). Finally, 17% of children were overweight, including 3.4% of them being obese.

Based on the ENNS survey, overall nutrition remains a problem in France. Comparison of data with that of other countries could contribute to a better understanding of observed variations in nutrition-related diseases. The intermediate situation of France consisting between a Mediterranean and Western diet, previously documented, may no be true longer for the young French generations.



REFERENCES

1. Results regarding adults have been previously published in the British Journal of Nutrition (2009; 102: 733-43). In addition to those in children, they also are available in French at : www.invs.sante.fr, dossier thématique "Nutrition et santé".

Food consumption in Belgium compared to the food-based dietary guidelines

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The first Belgian Food Consumption Survey

In order to develop effective policies on nutrition it is important to be aware of current dietary patterns. In 2004, the first Belgian Food Consumption Survey (BFCS) was initiated. An in-depth description of the study design and the methodology used is given elsewhere^{1, 2}. Information on food intake was collected with two non-consecutive 24 hour recalls, using EPIC-SOFT³. Habitual food intake was estimated by the Nusser method⁴. One of the aims of the BFCS is to monitor the adequacy of food intakes and to determine the proportion of the population meeting the food-based dietary guidelines (FBDG).

The food-based dietary guidelines (FBDG)

FBDG were developed and used internationally to express the principles of a balanced diet in terms of foods. In Belgium, a food triangle and a food pyramid were developed by the regional health authorities responsible for health promotion. Although both guidelines are similar, food intakes were compared with the Flemish recommendations, since the latter describe the guidelines in terms of both the number of pieces and the amount. According to the food triangle a healthy diet is based on balance, variation and moderation. The triangle is composed of eight food groups: water; grains and potatoes; vegetables; fruits; dairy (including cheese) and Ca-enriched soy products; meat, fish, eggs, legumes, nuts and meat substitutes; fats; and energy-dense, nutrient-poor foods. The water group includes water, coffee, tea and broth. The bigger the surface of a particular food group in the triangle, the bigger the daily consumption of that food group should be relative to the other food groups. To allow the comparison of food intake with the FBDG, the portion size of some reported foods had to be converted into an equivalent of another food using conversion factors proposed in the food guides.

The gap between recommendations and consumption

Results show that the overall food intake of the Belgian population did not comply with the FBDG (Figure 1).

The base of the food triangle describes the recommendation for physical activity. The majority of the population was classified as inactive (41.1%). Only 27.7% of the population was physically active enough to experience health-enhancing effects.

The mean daily intake of beverages (water, coffee, tea and broth) was 1202 ml (SD 593). The recommendation for water intake was met by only 26.2% of the population.

The mean daily intake of vegetables was 138g (SD 53). This is inadequate and far below the recommended intake of at least 350g/d. Only 1 in 1,000 persons met this recommendation. Even when vegetable soups and juices were included, only 13.0% of women and 8.8% of men complied with this recommendation.

The mean daily intake of fruits was hardly 118g (SD 84) while the lower limit of the recommendation is 250g/d. Only 7.6% of the population met this recommendation. Adolescents are recommended to consume at least 375g fruit daily. None of them met this recommendation. When fruit juices were included, only 21.6% of the general population met the recommendation.

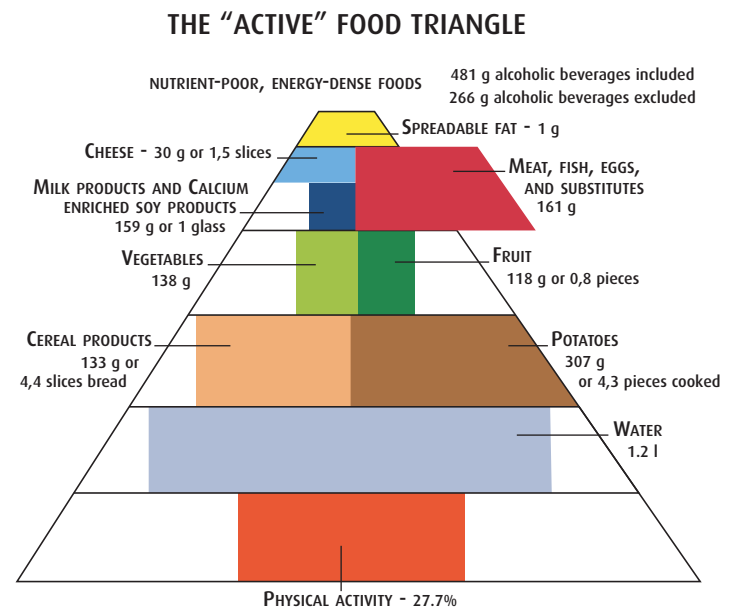
The mean daily intake of dairy and soy products was 159 g (SD 127). The average daily intake of cheese was 30g (SD 18), which is higher than the lower limit of the recommendation (20g/d). Only 3.4% of the population met the recommendation of consuming at least 450 g dairy or Ca-enriched soy products daily, while 68.1% of them consumed at least 20g cheese daily. A quarter of them exceeded the recommendation by eating more than 40g/d.

The mean intake of meat, fish, eggs and meat substitutes exceeded the upper limit of the recommendation by 1.6 times. Only 11.9% of the population consumed less than 100g of these products daily. The mean daily intake of fish and crustaceans was 24 (SD 14) g, which was below the recommended intake of 30g/d; nearly 70% of the population did not meet this recommendation.

Less than 10% eat the recommended F&V portion

The mean daily intake of nutrient-poor, energy-dense foods was 481g (SD 395) (alcohol included). The majority of the population (92.0%) consumed more than 100g of these products daily.

The consumption of food products from the triangle tip and the meat group is excessive, while the average daily portions consumed from all other groups, except for cheese, potatoes, rice and pasta, are below the recommendations. For vegetables, fruits, dairy products and energy-dense, nutrient-poor foods, the percentage of the population meeting the recommendations is below 10%.



REFERENCES

1. De Vriese S, Debacker G, de Henauw S, Huybrechts I, Kornitzer M, Leveque A et al. The Belgian food consumption survey: aims, design and methods. Arch Public Health 2005; 63:1-16.
2. Vandevijvere S, De Vriese S, Huybrechts I, Moreau M, Temme E, de Henauw S et al. The gap between food-based dietary guidelines and usual food consumption in Belgium, 2004. Public Health Nutr 2009; 12(3):423-431.
3. Slimani N, Valsta L. Perspectives of using the EPIC-SOFT programme in the context of pan-European nutritional monitoring surveys: methodological and prac-

tical implications. Eur J Clin Nutr 2002; 56 Suppl 2:S63-S74.

4. Nusser SM, Carriquiry AL, Dodd KW, Fuller WA. A semiparametric transformation approach to estimating usual daily intake distributions. J Am Stat Assoc 1996; 91:1440-1449.

5. Vlaams Instituut voor Gezondheidspromotie. De voedingsdriehoek: een praktische voedingsgids. 2004. Brussels.