

# The Household Food Consumption and Anthropometric Survey in Poland

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## Abstract

**Objective:** To provide an overview of the Household Food Consumption and Anthropometric Survey, undertaken in Poland from September to November 2000.

**Design:** A sub-sample of households participating in the countrywide, representative household budget survey (HBS) was selected to participate in the Household Food Consumption and Anthropometric Survey. Four thousand two hundred (4200) individuals provided 24-hour recalls that were subsequently evaluated. Body weight and height together with the mid-arm, waist and hip circumferences were measured. Laboratory analyses of contaminants that may be present in selected individual diets will be undertaken.

**Setting:** Poland, 2000.

**Subjects:** Four thousand two hundred individuals from 1362 households participating in the Polish HBS.

**Results:** Preliminary analyses of height and weight, as well as energy and nutrient intakes, were undertaken in a sub-sample of 484 boys and girls aged 10–15 years. Energy intakes were generally in line with or above the Polish Recommendations.

**Conclusions:** Apart from serving as an important information source on individual food consumption and anthropometric status of the Polish population, the data collected through the Household Food Consumption and Anthropometric Survey will allow direct comparisons of food intake estimates, based on 24-hour recalls, with the results of the household budget survey. Such comparisons are expected to improve and refine interpretation of the data derived from both the individual nutrition survey and the household budget survey, and particularly to provide information on the importance of eating out, which is not covered in the Polish HBS.

## Keywords

Individual nutrition survey  
Household budget surveys  
Anthropometric status  
Food consumption  
Nutrient intakes

In 1989, Poland experienced dramatic changes in its political and economic conditions. The economic environment changed from a centrally planned one to the market economy. This transition, which is still continuing, has brought profound changes to the factors affecting the lifestyle of the Polish population<sup>1</sup>. The cost of food as well as the choice of food items has increased, and there have been profound changes in personal incomes, their distribution and the socio-economic environment in which food choices are made. Because of the changes in both the absolute and relative prices of various foods in the 1990s, major alterations in dietary patterns took place. These alterations have been seen at both the country and the household level, and were reflected in both the national food balance sheets and the household budget surveys (HBSs)<sup>2</sup>. Under these circumstances, the need for a precise assessment of the nutritional situation of the Polish population has become imperative, given growing

concern over the adequacy of the diet of the poorer population segments. However, to date, representative, countrywide individual dietary surveys were not available. A considerable number of individual dietary surveys have been conducted in the past in Poland, but their limited scope, coverage and differences in methodology do not allow national and international comparisons.

The Polish government therefore requested technical assistance from the United Nations Food and Agriculture Organisation (FAO) to enrich the existing nutrition information system by identifying major dietary problems and to improve policy formulation and programmes of intervention. This request was accepted and resulted in a project that examined the individual diets and selected anthropometric characteristics of members of a sub-sample of households from a countrywide, representative sample of Polish households. It is worth noting that the project is in agreement with the proposal to combine

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household budget and individual dietary surveys recommended at an International Seminar on Nutrition in Food Policy and Planning, organised by FAO in Moscow in 1971.

The overall objective of this project is to contribute to the improvement of household food supply and nutritional status of household members, by increasing the understanding of the adequacy, quality and safety of the diet of the Polish population.

Among the primary objectives is to establish co-ordination mechanisms to provide dietary information and apply this knowledge to better policy formulation and planning. This will be achieved through the regular collection, analysis and dissemination of relevant dietary and anthropometric data that can be utilised for formulating, implementing and monitoring nutrition programmes.

### Methodology

The Polish Ministry of Health and the National Food and Nutrition Institute (NFNI) under it are responsible for the project implementation.\*

The fieldwork was carried out by personnel of the regional statistical offices as part of their duties within the HBSs co-ordinated by the Central Statistical Office. Household Budget Surveys are conducted annually in Poland and cover over 30 000 households in a monthly rotation. Monthly quantitative and expenditure data for over 100 food items available to the households are collected. In keeping with the common methodology of the HBS, only food entering the household is recorded while the food consumed away from home is only covered in expenditure records. However, it is generally recognised that the importance of eating out, as reflected in expenditure data, is underestimated.

In collaboration with the Central Statistical Office, a sub-sample of 1362 households was selected. Between September and November 2000, food and nutrient intakes of individual members of these households were examined using 24-hour recall. The methodology for data collection was developed at the NFNI and pilot tested prior to adoption. The information collected included

\* The Government nominated Lucjan Szponar, Director of the NFNI, Head of the Food Hygiene and Nutrition Department, as the National Project Director. He is assisted in this task by Dr Włodzimierz Sekula, Deputy Economic Director of NFNI and Head of the Food Economics Department. The project protocol was developed through the personal contribution and commitment of Dr Robert C Weisell, Nutrition Officer from the FAO Food and Nutrition Division, who also supervises the project implementation. Assistance to the project is provided by Dr Michael Nelson, Department of Nutrition and Dietetics, King's College, London, serving as an international consultant in nutrition policy and data analysis, and by Professor Georgy Biro, Budapest, Hungary, serving as an expert on food consumption surveys and data analysis in Central and Eastern Europe. The project implementation is further assisted by two national consultants, Professor J Charzewski, Academy of Physical Education, Warsaw and Professor S Smoczyński, University of Warmia and Mazury, Olsztyn.

place and time a particular meal was eaten, meal composition and, where necessary, its recipe.

An album with colour photographs, developed by the NFNI for the purpose of the project<sup>3</sup>, was utilised to help in the assessment of portion sizes. The album contained photographs of 201 food items, dishes, soft drinks and alcoholic beverages commonly consumed in Poland, in three different portion sizes.

Questions on the intakes of mineral and vitamin supplements were included in the 24-hour recall. Anthropometric measurements included body weight and height, and mid-arm, waist and hip circumferences. Seventy sets of mobile scales (Soehnle) and measures (Seca Bodymeter 208) were used to measure weight and height, respectively.

Personnel of the regional statistical offices responsible for the fieldwork were properly trained at the National Food and Nutrition Institute. An intensive three-day training workshop including instruction and practical exercises took place in June 2000 for approximately 50 field workers, who in turn trained others at the local statistical offices.

In this cascade training, a video film illustrating the 24-hour recall technique and correct methods for undertaking anthropometric measurements was used. The video script was prepared by the NFNI and members of its staff served as demonstrators of the dietary and anthropometric assessment methods. Copies of the video were distributed among local statistical offices. The entire programme was supported by NFNI workers.

Following the fieldwork carried out from September to November 2000, the completed 24-hour recalls and other forms were collected and checked at local statistical offices and then forwarded to the Central Statistical Office in Warsaw, Division of the Living Conditions, for further review. Data for 4200 individuals were eventually returned to the NFNI, where six teams of coders undertook data entry into the database of the DIETA program, developed at the NFNI in collaboration with FAO. This program is the modified version of the DIETA-2 program previously used to process the results of individual dietary surveys and relies on national food composition tables<sup>4</sup> prepared and updated by the NFNI. The modifications introduced allow the program to accommodate the results of the HBS as well. The performance of the coders was checked by expert supervisors based at NFNI.

### Preliminary results of the Household Food Consumption and Anthropometric Survey

Based on a sub-sample of 484 subjects (241 boys and 243 girls) aged 10–15 years, the daily energy and nutrient intakes were calculated.

Tables 1 and 2 provide results on energy intake by age in this sub-sample. As expected and in agreement with results from earlier studies<sup>5,6</sup>, the diets of boys provide

**Table 1** Average daily energy intakes among boys in Poland 2000, in kcal (kJ)

Age (years)	N	Mean	Standard deviation	Intake in relation to Polish RDI (%)
10	32	2304 (9648)	806 (3377)	107.2
11	50	2508 (10 501)	803 (3357)	111.5
12	43	2580 (10 824)	937 (3934)	109.8
13	35	3050 (12 768)	1042 (4360)	122.0
14	33	2987 (12 502)	1130 (4726)	112.7
15	48	3288 (13 768)	1087 (4549)	115.4

Source: Calculations of the Food Hygiene and Nutrition Department, National Food and Nutrition Institute.

**Table 2** Average daily energy intakes among girls in Poland 2000, in kcal (kJ)

Age (years)	N	Mean	Standard deviation	Intake in relation to Polish RDI (%)
10	39	2008 (8410)	618 (2588)	100.4
11	37	2086 (8734)	639.5 (2676)	101.8
12	37	2477 (10 375)	932 (3900)	115.2
13	37	2415 (10 115)	1161 (4858)	109.8
14	37	2568 (10 777)	904 (3774)	111.7
15	56	2363 (9891)	825 (3451)	98.5

Source: Calculations of the Food Hygiene and Nutrition Department, National Food and Nutrition Institute.

more energy than the diets of girls. This finding applies to all ages covered in the tables. However, energy intake among boys increases with age, while the trend is much less evident among girls. Average energy intakes among boys of all ages were above Polish Recommended Dietary Intakes<sup>7</sup> (RDIs), published in 1995. Energy intakes higher than the recommended levels were noted for girls aged 12–14 years, while for girls aged 10, 11 and 15 years, energy intakes were in line with RDIs.

Data on the body height and weight of the boys and girls are presented in Tables 3 and 4. The height of the boys shows an acceleration from 13 to 15 years. In contrast, the acceleration in the girls' height ceases at about the age of 14 years. Changes in body weight parallel changes in height at the corresponding ages.

These findings are based on small numbers of observations at each age. Future reports will include

**Table 3** Body height of boys and girls in cm, Poland 2000

Age (years)	Boys			Girls		
	N	Mean	Standard deviation	N	Mean	Standard deviation
10	32	140.6	7.1	39	140.3	6.8
11	48	145.6	6.9	37	145.9	8.2
12	42	150.8	7.9	37	148.7	10.1
13	35	156.7	9.6	37	156.7	7.9
14	32	163.2	8.5	37	162.6	6.5
15	46	172.1	8.4	56	163.5	6.2

Source: Calculations of the Food Hygiene and Nutrition Department, National Food and Nutrition Institute.

**Table 4** Body weight of boys and girls in kg, Poland 2000

Age (years)	Boys			Girls		
	N	Mean	Standard deviation	N	Mean	Standard deviation
10	32	34.6	8.8	39	32.5	7.8
11	49	39.2	8.9	37	37.2	9.0
12	42	43.4	10.2	37	41.8	10.4
13	34	47.0	10.0	37	47.5	9.7
14	32	54.3	12.6	37	50.9	7.5
15	45	63.9	11.2	56	54.6	8.4

Source: Calculations of the Food Hygiene and Nutrition Department, National Food and Nutrition Institute.

larger samples at each age and will cover adults as well as children.

### Expected outcomes of the project

Data collected in the context of the Polish Household Food Consumption and Anthropometric Survey will contribute to:

1. Determination of the food consumption, nutrient intake and anthropometric status of individuals according to their age, gender and a variety of socio-economic and demographic characteristics.
2. Comparisons of the findings between the household budget and individual nutrition survey data.
3. Improvement in the understanding of how HBS data can be used for nutritional monitoring.
4. Formulation of recommendations regarding the best approach to improve nutritional monitoring in Poland.
5. Evaluation of field workers' training, of the logistics for collecting dietary data from the HBS sample on a routine basis, of the data-entry process into a computerised database, and of the subsequent analysis.

It is important to stress that the comparisons between the household budget and individual-based dietary surveys will be facilitated by the experience of the FAIR-97-3096 project: 'Compatibility of the Household and Individual Nutrition Surveys in Europe and Disparities in Food Habits'<sup>8</sup>, and earlier published methods<sup>9</sup>.

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