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**Abstracts of the  
THIRD INTERNATIONAL CONFERENCE  
on  
DIETARY ASSESSMENT METHODS**

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## DETERMINANTS OF SNACK CONSUMPTION.

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Grazing, the consumption of snacks on many occasions during the day, is a trend in food habits of increasing importance. Therefore, we studied factors related to snacking behaviour. Data of the second Dutch National Food Consumption Survey (1992) were used. In this survey 6218 subjects living in 2475 households participated. Information on food intake was collected by means of a two-day record method. Consumption was recorded on six meal occasions: breakfast, lunch, dinner and between the main meals. In addition, the main housekeeper was asked to fill out a questionnaire on nutrition knowledge and attitudes. Snacking behaviour was defined as percentage of energy intake from foods eaten between meals. Subjects in the highest quartile (more than 38.5% of energy from foods eaten between meals) were compared with subjects in the lowest quartile (less than 20.4% of energy from foods eaten between meals) with respect to food consumption, nutrition knowledge and attitudes. Chi-square and t-tests were used to test differences between these groups. On weekend days energy intake from foods eaten between meals was higher than on week days ( $p < 0.01$ ). Younger subjects and men had a higher energy intake from snacks ( $p < 0.01$ ) than older subjects and women. Younger subjects ate more fried foods and pretzels, while older subjects ate more nuts and fruit ( $p < 0.01$ ). Subjects in the highest quartile evaluated 'eating at regular times' and 'natural' ( $p < 0.01$ ) as less important and 'easy to prepare' ( $p = 0.02$ ) as more important aspects of foods. Nutritional knowledge was higher in subjects who had a higher energy intake from foods eaten between meals ( $p < 0.01$ ), while the score on the attitude scale 'quality consciousness' was somewhat lower ( $p = 0.02$ ). It can be concluded that people who get the most energy from foods eaten between meals differ in several social demographic factors and in nutrition knowledge from people who get little energy from foods eaten between meals.

## SOCIAL CLASS, CULTURE AND THE CONSUMPTION OF FAT AND FIBRE.

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Over the past quarter of a century there has been a growing body of evidence in affluent countries pointing to socio-economic health differences. This study explores social class differences in the consumption of fat and fibre, as class differences in food consumption may contribute to the explanation of these health differences.

Consumption data of 849 women, living in working class or higher-middle class districts in Maastricht, Liège or Aachen, were analysed. The food frequency questionnaire that was developed for the Dutch prospective cohort study on diet and cancer was used. Based on the advises of Belgian and German dieticians and researchers, this questionnaire was adjusted for use in Liège and Aachen.

Higher-middle class women appeared to consume somewhat less dietary fat and more fibre, and they ate less meat, milk, and oils and fats, and more grain, fruit and vegetables. However, they did not always make choices that contributed to a lower intake of fat and a higher intake of fibre: they consumed less bread and potatoes and more cheese, and they chose less often medium-fat cheese and dietary fats than working class women.

Although these class patterns were uniform in the three cities, they were primarily apparent in Maastricht and Liège, and to a lesser extent in Aachen. Generally, high-middle class women's diets were more consistent with dietary recommendations than working class women's diets.

## MEAL PATTERNS IN A SOUTHERN GERMAN POPULATION: RESULTS FROM THE MONICA AUGSBURG DIETARY SURVEY 1984, 1985.

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**Aim:** Meal patterns are important for a comprehensive description of dietary habits of a population for various reasons. However, meal patterns have received comparably little attention in studies and data on meal patterns are generally scarce. The aim of the present analysis was to provide detailed data on meal patterns in a Southern German population under investigation.

**Methods:** Seven-day food records of the MONICA project Augsburg dietary survey, which were collected between October 1984 and May 1985 in 899 men aged 45-64 years (random sample), were used to analyse meal patterns. The definition of meals is based on how participants perceived and named their meals during their reported days.

**Results:** The combination of the three "classical" main meals (breakfast, lunch, dinner) with one snack is most frequent, followed by two main meals with two snacks and three main meals without any snack (31.4% vs. 31.0% vs. 15.6% of all reported days). Breakfast delivers 17%, lunch 29%, and dinner 33% of the total daily energy intake; all other meals (snacks) deliver 21% of the energy intake. The mean contribution of the three major meals, such as breakfast, lunch and dinner to daily protein intake is 14%, 36% and 36%, to fat intake 17%, 33% and 35% and to carbohydrate intake 23%, 25% and 29% respectively. Furthermore, the distributions of variables such as meal frequency, and rhythm, and place and time of meal intake are shown.

**Conclusions:** Variables on meal patterns are useful, if, for instance, preventive strategies or dietary assessment tools are developed. More knowledge on meal patterns is needed.

## ASSESSING MEAL PATTERNS.

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While sociocultural transformation affects the area of food and eating, nutritionists realise, that there are no standardised methods to assess eating patterns or meal formats. Nor have traditional differences in meal patterns so far been assessed or existing differences discussed on an international basis.

Within the frame of a working group, which is co-ordinated by the International Union of Nutritional Sciences (IUNS) Committee II/2 "Nutritional Food Habits" and which has the aim to standardise methods for the assessment of meal patterns, we have sent questionnaires to the members, in order to investigate the position of meal patterns in nutritional recommendations in the different countries. We asked, what kind of meals are served in military bases and in prisons and what kind of eating events one would expect, if invited to an informal seminar or several days in one's country. In Central and Southern Europe cooked meals were the rule at the midday time. In Anglo-Saxon, Nordic and overseas countries this was the case in the evening. Within countries meal patterns were identical for all three situations enquired. This suggests a strong fixation of the regional pattern, which can be identified with few questions. In none but one (Switzerland) country national recommendations included advice for number or patterns of eating events.