



**Karolinska
Institutet**

Department of Biosciences and Nutrition

Breakfast habits among European adolescents

**The Healthy Lifestyle in Europe by Nutrition
in Adolescence (HELENA) Study**

AKADEMISK AVHANDLING

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av

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ABSTRACT

The aim of this thesis was to study the associations of individual and socio-environmental factors with breakfast habits among adolescents on a European level.

Methods: The HELENA-study (Healthy Lifestyle in Europe by Nutrition in Adolescence) is a multi-centre cross-sectional, school-based study including 3528 adolescents (aged 12.5-17.49 years) from 10 European cities in Europe. Data was collected during the 2006-2007 academic year. Breakfast habits were assessed by a computerised, self-administered, 24-h recall and by questionnaires. The whole day dietary intake, measured with the computerised 24-h recall, was evaluated by comparing a self-administered and an interviewed 24-h recall. The socio-demographical factors used were sex, age, region in Europe (southern versus northern/central), mother and father's education and occupation, family structure and family affluence. Body composition was measured with weight, height, waist circumference and skinfold thickness. Blood pressure, cardiorespiratory fitness, blood lipids, insulin and glucose were also measured.

Results: The evaluation between the self-administered and interview 24-h recall showed generally good agreement between the two methods. Few adolescents (4 %) had a 'high-quality' breakfast. Breakfast consumption on both recall days was reported among 77 % (24-h recall) and 55 % reported slightly disagreeing to strongly disagreeing with the statement 'I often skip breakfast'. Younger adolescents, adolescents from the northern/central part of Europe and adolescents from families with high socio-demographical status were more likely to report consuming a 'high-quality' breakfast while breakfast consumption versus breakfast skipping were inappreciably associated with socio-demographical factors. Personal factors ('hunger', 'taste of the food' 'concern for health') and the socio-environmental factor ('parents or guardian') were the most important influences on the adolescents' choice of food at breakfast. Regular 'breakfast consumption' was associated with higher cardiorespiratory fitness in both boys and girls, and with a healthier cardiovascular profile, especially in boys.

Conclusion: The public health implications of poor breakfast consumption habits are considerable. This work highlights the need to promote breakfast, especially a 'high-quality' breakfast, among adolescents, particularly older adolescents, adolescents from the southern part of Europe and adolescents from families with low socio-demographical status.

Keywords: Breakfast; adolescents; socio-demographical factors; dietary assessment; 24-h recall; food groups; cardiovascular disease risk factors; Europe