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Overweight in children – a rural problem?

EDITORIAL

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There is a large body of evidence which suggests that weight increase in children is a natural consequence of a society with a pre-disposition to obesity

According to a report from the Norwegian Broadcasting Corporation, the rural population in Norway is fatter than the urban population (1). Figures from Statistics Norway show that the percentage of adults with self-reported obesity in Finnmark, Nord-Trøndelag and Vest-Agder counties (14 %) was twice as high as in Oslo (7 %). A recent summary of the three HUNT studies reveals both that in the period from 2006 to 2008, two out of three adults in Nord-Trøndelag were overweight or fat, and that the increase in the prevalence of overweight over the last 20 years was greatest in young people (2). Children with fat parents are at a greater risk of developing obesity than children with thin parents (3). New data from the Norwegian Institute of Public Health shows that the proportion of eight-year-olds suffering from overweight and obesity has increased from 16 % in 2008 to 19 % in 2010 (4).

The political and economic systems of western countries promote rapid economic growth and high consumption. Foods with high sugar and fat content are cheap to buy, easily available and marketed effectively. On an individual level this contributes to an elevated intake of energy-rich food which can lead to weight gain (5). Children are vulnerable to over-exposure of calorie-rich food. Overweight in children can therefore be interpreted as a natural consequence of an unnatural environment. Obesity in childhood increases the risk of obesity in adulthood, long-term complications and premature death. Reversing weight gain is, however, most likely in children under the age of 12 (3).

Surveillance is essential for monitoring and evaluating the effects of various prevention measures and treatments. At present, national surveys are being conducted in a number of European countries as part of a WHO collaboration which aims to better understand child growth and weight accumulation (6). In 2008, as a part of this pan-European study, the Norwegian Institute of Public Health carried out the «Child growth study in Norway» survey among 3 743 eight-year-olds at 127 different schools in 86 municipalities (4).

In this issue of *Tidskriftet*, Nora Heyerdahl and her colleagues present a comprehensive and well-reasoned article on the significance of place of residence (7). They use data from the survey above to explore whether overweight in Norwegian eight-year-olds is affected by the urbanity of the municipality in which they live (7). Centrality, population density and number of inhabitants are used as measures of urbanity, with analyses adjusted for education and income level. The authors find that of the three measures of urbanity, only the degree of centrality had a statistically significant correlation with overweight.

The main finding of the article is that the odds of children in central municipalities being overweight or obese was 34 % lower than for children in less central municipalities. In order to assess the extent to which the finding can be applied generally, the measurement variable 'centrality' needs to be more precisely defined (8). According to Statistics Norway a municipality has a centrality level of 3 if the majority of the population live within 75 minutes' travelling time from an urban settlement with a minimum of 50 000 inhabitants, a centrality level of 2 when located at a maximum of 60 minutes' travelling time from an urban settlement with at least 15 000 inhabitants, and a centrality level of 1 when located within a maximum of 45 minutes' travelling time from an urban settlement with a minimum of 5 000 inhabitants. Municipalities that do not satisfy any of these standards have a centrality level of 0 (8). The study therefore shows that while 14 % of eight-year-olds from the most central municipalities were overweight or fat, as many as 21 % of eight-year-olds who lived in the least central municipalities had a similar problem. This is a key finding and leads the authors to generate a number of hypotheses, none of which give a conclusive answer to the question of whether rural children are more overweight than urban children.

What explains the lower prevalence of overweight in municipalities with a high level of urbanity? Since theirs is a cross-sectional study, no definite conclusions can be drawn as to causal relationships. Nevertheless, Heyerdahl et al. suggest that higher education and income levels in urban municipalities may explain

some of the differences. Previous studies have shown that children from urban areas have higher physical activity levels, lower levels of inactivity and a healthier diet. These are possible explanations that need to be confirmed by future studies; in addition the effects of various political initiatives must also be assessed.

The previously mentioned «Child growth study in Norway 2008» had a sound design and was well conducted, with a high response rate and objective measurements of overweight and obesity. The results should encourage the authorities to adopt structural and individual measures to prevent and treat overweight in children (3), particularly in less central municipalities. Australian studies have shown that preventive measures against overweight in children at a societal level can be extremely cost-effective (5). Such measures, for example, might include reducing advertisements for energy-rich food and beverages which target children. Other cost-effective measures include school-based educational programmes aimed at both reducing television-viewing and promoting healthier eating and exercise habits. It is vital that preventive activities are put in place as soon as possible, both in rural and urban areas, and that they are monitored and evaluated continuously (5, 6).

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