

Summary

Dietary habits and nutrient intake in Swedish children 4 year old and schoolchildren in grade 2 and 5. Riksmaten – children 2003.

Heléne Enghardt Barbieri, Monika Pearson and Wulf Becker, National Food Administration, Uppsala, Sweden.

A national food survey was carried out during 2003 on children 4 year old and school children in grade 2 and in grade 5. The method was an open and estimated food diary over four consecutive days. All days were evenly represented in the survey. The food diary was filled in by the children or with the help of parents or carer. Portion sizes and amounts of all food and drink eaten by the children were estimated with the help of a picture book (Matmallen). It was also noted when and where food was eaten as well as the fat content, mode of preparation, certain additives and brand name. Intake of supplements and level of physical activity was also recorded. In addition, an optically readable questionnaire contained questions about weight, height, parents' education and profession, ethnic background and regional residence.

Children 4 year old were randomly sampled from a stratified sample of municipalities representative of Sweden. School children were sampled on the basis of school classes. The survey took place during spring and autumn 2003. The sample size of children 4 year old was 924 of which 590 fulfilled the survey. 1 209 children in grade 2 were sampled of which 889 fulfilled the survey and 1 290 children in grade 5 were sampled of which 1 016 fulfilled the survey. Children 4 year old dropped out due to time constraints or that day-care institutions did not want to participate. School children dropped out because it was too difficult, they forgot or didn't have time.

Between 17 and 23 percent of the children were overweight (isoBMI>25), of which 1 to 4 percent were obese (isoBMI>30).

The average intake of energy was 6,3 MJ per day (1 506 kcal), 7,6 MJ (1 823 kcal) and 7,4 MJ (1 759 kcal) for children 4 year old, children in grade 2 and grade 5, respectively. The reported average energy intake for children 4 year old was 108 percent of the calculated reference value for that age and the average reference value for children in grade 2 was 81 percent. For children in grade 5, the reported average energy intake was 76 and 86 percent, respectively of the calculated reference value for a moderate and for a low physical activity level, respectively.

The children's diet had a satisfactory distribution of energy between protein (14-16 energy percent, E %), fat (31-32 E %) and carbohydrates (53-54 E %) but the quality of fat and carbohydrates were not satisfactory. Generally the children consumed too much sugar, i.e. added sucrose and monosaccharides (12-14 E %), saturated fatty acids (14 E %) and salt (8,1-9,4 g/10 MJ), but not enough of polyunsaturated fatty acids (3,6-3,7 E %) and dietary fibre (18 g/10 MJ). Trans fatty acids amounted to 1 energy percent. Intake of vitamin D was low compared to amount recommended intakes.

The content of naturally occurring and added sucrose amounted to 12-14 energy percent, but added sugar, as sucrose and monosaccharides, amounted to 13-15 energy percent. Added sugar should be limited to 10 energy percent to ensure an acceptable nutrient density in the diet. The major sources for sugar were soft drinks, such as

carbonated drinks and cordials, sweets, flavoured dairy products and biscuits, buns and cakes. On average the children ate sugar rich foodstuffs 2-3 times per day.

The sodium intake from salt was high in the children's diet. The salt intake amounted to 5-7 g per day and was equivalent to the level of intake of adults, which was almost twice the recommended amount. Children received most of the salt from meals with meat and meat products.

The fruit and vegetable intake was in average 225, and 193 g/day respectively for children 4 year old, children in grade 2 and grade 5 respectively. This is about half of the recommended amount of 400 g fruit and vegetables for children 4-10 years.

The children ate fish 1-2 times per week and sausages 2-3 times per week. If the children would exchange one meal of sausages for one meal of fish per week, their intake of polyunsaturated fatty acids would increase and the intake of saturated fatty acids would decrease.

Approximately 25 percent of the consumed daily energy originated from foodstuffs like soft drinks, sweets, crisps, ice cream, desserts and cakes and biscuits. The children consumed in average 100-200 g of sweets per week distributed on 3-5 occasions. 13 percent of the children ate sweets daily. The children ate buns, cakes and biscuits 3-5 times per week. Children 4 year old ate ice cream 2-3 times per week and school children 1-2 times per week. The children drank in average 200 ml soft drinks every day but 10 percent of the school children drank daily 500 ml or more. Altogether, these foods provide the largest sources of added sugars, fat, saturated fatty acids and trans fatty acids.

No large differences were seen in food choice or nutrient intake between children from different socio-economic groups. Children to parents with a university education consumed more fruits and vegetables and had a diet with a slightly higher nutrient density. Children to parents with a non-Swedish background ate more fruits and vegetables but drank less milk.

The nutrient intake of the children is similar to that of adults and therefore the food based dietary recommendations aimed at adults are also valid for children. The most desired changes in food habits are a lower intake of soft drinks, sweets, crisps, cakes and biscuits and an increase in the intake of fruits and vegetables.