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Fruit and vegetable consumption assessed by three different dietary assessment methods in regard to sex, age, body mass index and socio economic status

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Introduction: A comparison of means of food consumption assessed by three dietary assessment methods [DAM] (diet history interviews [DHI], 24h-recalls [24HR] and weighing food records [WR]) used in the German National Nutrition Survey (NVS) II showed higher consumption means in 7 out of 18 food groups for DHI compared to 24HR and WR. Especially for food groups perceived as socially desirable such as fruit and vegetable means were highest for DHI. In the following it is examined whether differences in fruit and vegetable consumption assessed by three DAM are related to sex, age, body mass index or socio economic status (SES).

Methods: A subgroup of 677 participants of the NVS II (2005-2007, 14-80 years of age) completed all three DAM. DHI assessed the food consumption of the past month, 24HR of the previous day and WR altogether 8 days. Body height and weight were measured in study centres. SES was defined as an index based on the income of the household, employment status of the household's principle earner, and education level of the participant. The Multiple Source Method was applied to estimate population distributions of usual intakes based on two 24HR. Confidence intervals were calculated on basis of bootstrapping samples. Differences are considered to be significant if confidence intervals do not overlap.

Results: For all subgroups regarding sex (male, female), age (14-18 years, 19-24 years, 25-34 years, 51-64 years, 65 years and older), body mass index (<25 kg/m², 25-30 kg/m², >30 kg/m²) and SES (5 groups from 1= lower to 5=upper SES) assessed means in vegetable consumption were higher for DHI compared to 24HR and WR. In fruit consumption for all subgroups besides the age group 19-24 years and the lowest SES group higher means for DHI compared to 24HR and WR could be found.

Discussion: Fruit and vegetables are inhomogeneous food groups and may lead to difficulties in estimating quantities and frequencies in DHI compared to 24HR and WR due to the long period of time assessed by DHI. Additionally they are perceived as socially desirable food groups. Both aspects may lead to higher means in DHI compared to 24HR and WR. The results show, that these higher means are independently of sex, age, BMI and SES. No differences between the methods in fruit consumption in the age group 19-24 years and the lowest SES group may be explained by small numbers of participants in these groups.