Department of Nutritional Behaviour

MRI Max Rubner-Institut

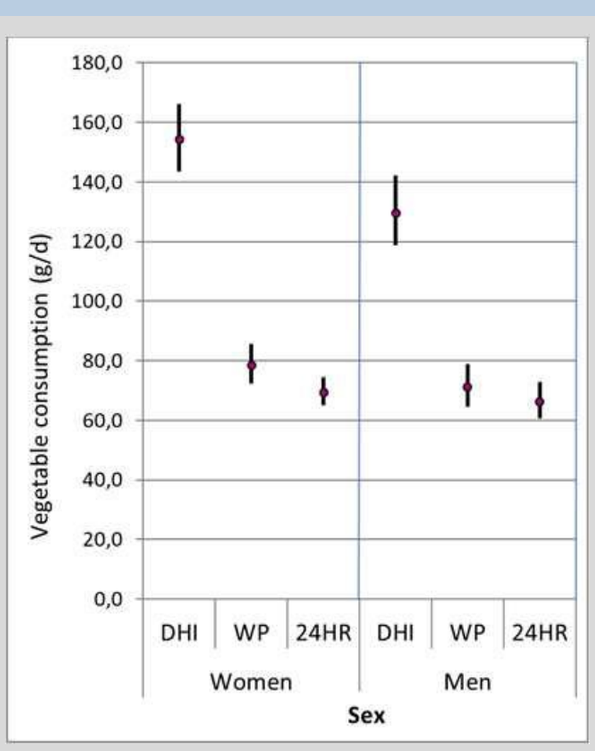
Fruit and vegetable consumption assessed by three dietary assessment methods in regard to sex, age, BMI and socio economic status

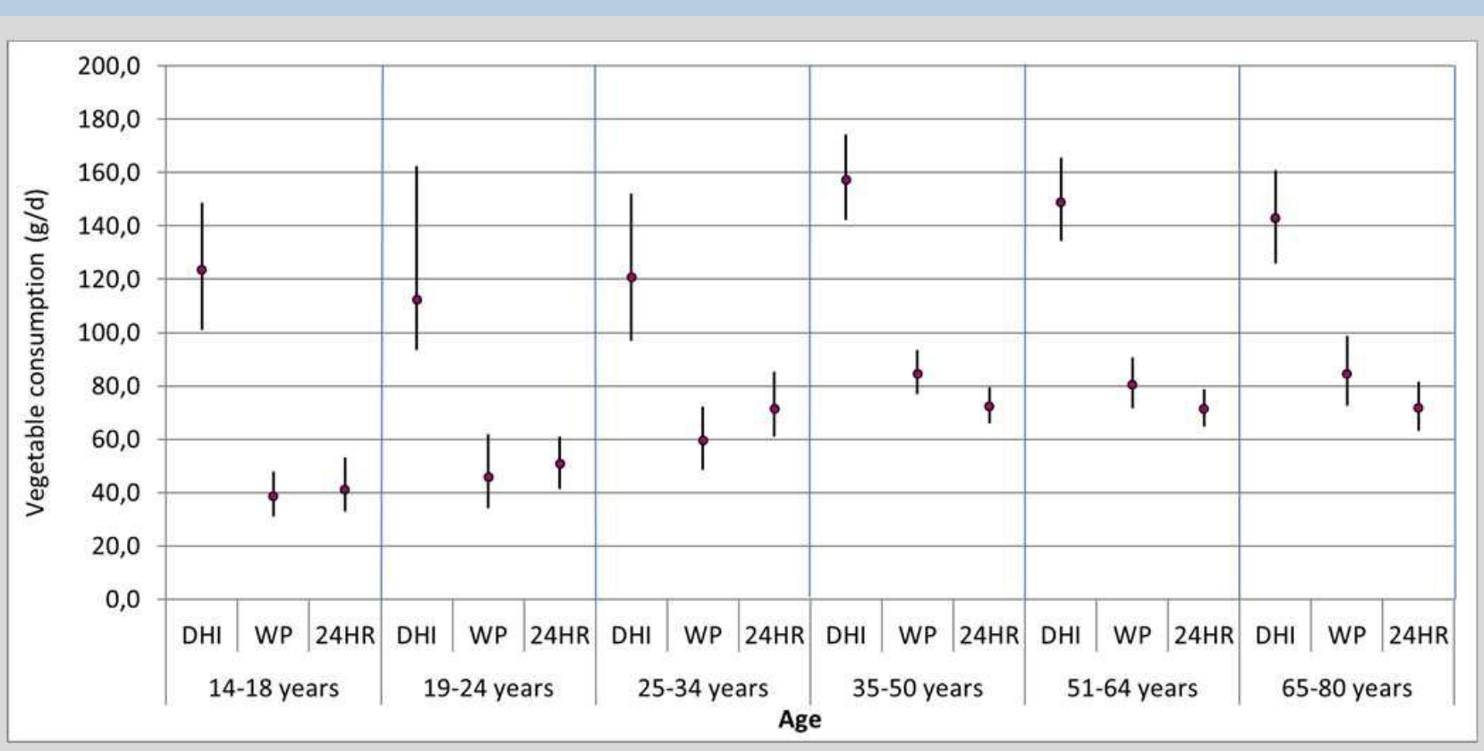
Andrea Straßburg, Carolin Krems, Ingrid Hoffmann

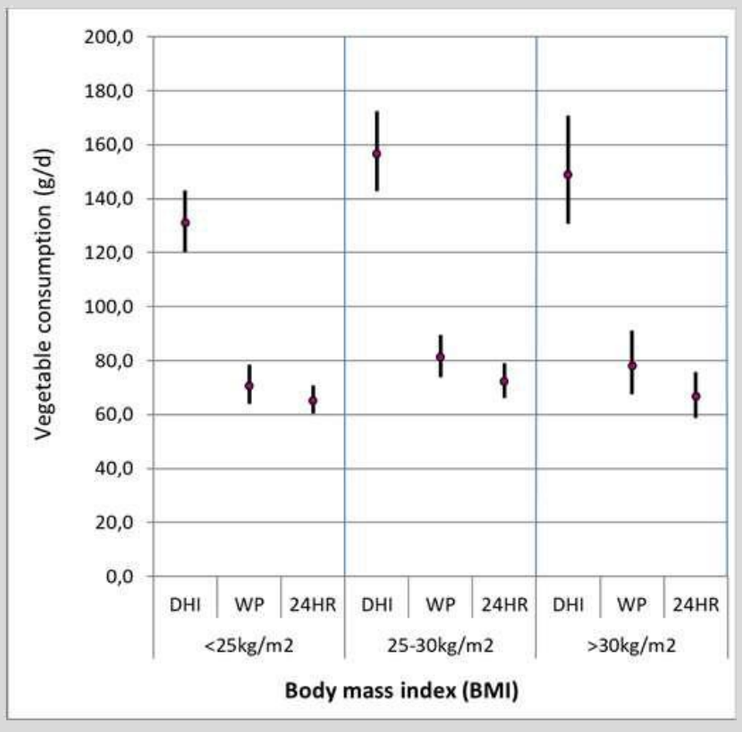
Introduction: A comparison of means of food consumption assessed by three different dietary assessment methods (diet history interviews [DHI], 24h-recalls [24HR] and weighing food records [WR]) used in the German National Nutrition Survey (NVS) II showed higher consumption means in 7 out of 18 food groups 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 are related to sex, age, body mass index (BMI) or socio economic status (SES).

Methods: A subgroup of 677 participants of the NVS II completed all three dietary assessment methods, all conducted in 2005-2007. Participants were between 14 and 80 years of age. DHI covered the food consumption of the past month, 24HR of the previous day and WR two times four days. Body height and weight were measured in study centres. SES was defined as an index based on the household income, employment status of the household's principle earner, and education level of the participant (SES 5=upper SES, SES 1=lower SES). 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 vegetable consumption (Fig.1) and fruit consumption, almost all subgroups regarding sex, age, body mass index, and SES showed higher means for DHI compared to 24HR and WR. For fruit consumption no differences could be found for the age group 19-24 years and the lowest SES group (results for fruit consumption not shown).







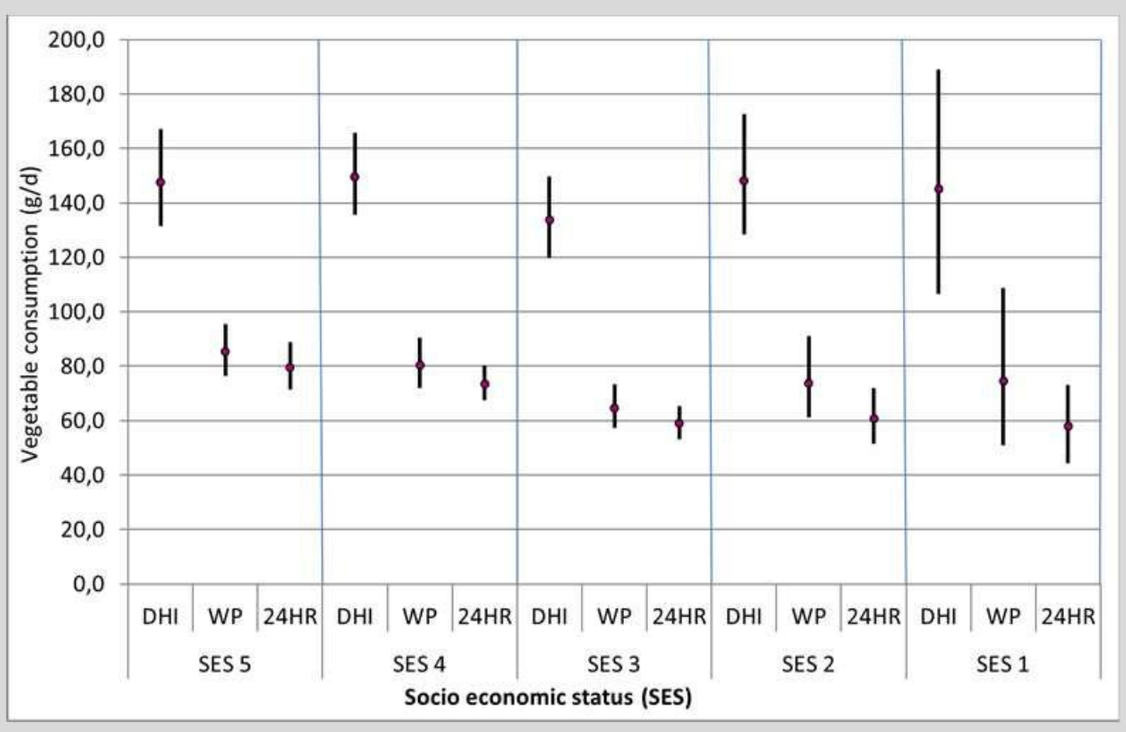


Fig 1: Vegetable consumption by sex, age, BMI and socio economic status (g/d) (arithmetic mean, 95% confidence intervals)

Conclusion: Many factors influence the assessment of food consumption. The results show that higher means in fruit and vegetable consumption assessed by DHI compared to 24HR and WR are independent of sex, age, BMI and SES. A possible reason why socially desirable foods like fruit or vegetables were assessed in higher amounts by DHI may be the enormous cognitive task of participants necessary to estimate quantities and frequencies over the long period of time covered by DHI.

Max Rubner-Institut, Federal Research Institute of Nutrition and Food Address Haid-und-Neu-Str. 9, 76131 Karlsruhe, Germany
Internet www.mri.bund.de Contact Person Dr. Andrea Straßburg Phone +49 (0)721 6625-265 E-mail andrea.strassburg@mri.bund.de