

Background information for visualizations

DATA SOURCE: The visualizations used in this study are based on data from a government-funded survey, the National Diet and Nutrition Survey (NDNS) which is intended to assess the dietary habits and nutritional status of the general adult and child population in the UK. The NDNS programme began in 1992, and since 2008 has been conducted annually as part of a rolling programme¹. Nine years' data are available up to 2016/17, and can be downloaded from the UK data service website². Around 500 adults and 500 children take part each year. The sample represents the UK general population aged ≥ 1.5 years living in private households. For this secondary data analysis, only the data collected from adults aged ≥ 19 years were used.

DATA COLLECTION AND ANALYSIS: The survey uses two-stage sampling - first all UK addresses are clustered into geographical areas (the Primary Sampling Unit; PSU) and the PSUs are randomly sampled (158 in 2016), second a random sample of addresses is drawn from each PSU (28 in 2016). Recruitment in Wales and Northern Ireland is boosted to get representative country-specific data. Data collection consists of a 4-day diet diary, face-to-face Computer Assisted Personal interviews (CAPI), physical measurements, self-completion questionnaires, and blood and urine samples. The researcher only used dietary and CAPI data for her secondary data analysis.

The researcher chose a small number of dietary variables for which there is strong evidence of associations with health-related outcomes, either as protective or risk factors. She examined variation in these dietary variables with respect to age (4 categories), sex, ethnicity (2 categories), three socio-economic variables (occupation, income and educational attainment - 4 categories each), region (12) and survey year (9). She used linear regression to examine time-trends in the dietary variables, and to explore the association of each dietary variable with the socio-economic variables (in these regression models the other independent variables were included as covariates).

FINDINGS:

Time-trends (see Chart 1) - The four dietary variables examined had statistically significant associations with survey year ($p < 0.001$) across the UK as a whole. The consumption of sodium and red meat, and the proportion of the population consuming alcohol decreased. The proportion of the adult population with folate intake lower than the recommended levels increased.

Socio-economic and regional variation (see Chart 2) – The regions with lowest median fruit and vegetable intakes were Northern Ireland and the North-East, and the highest were in London and the South-West. The region with strongest linear association between fruit and vegetable intake and occupation category was Scotland, while the region with weakest association was East of England.

Associations between dietary, socio-economic and socio-demographic variables (see Chart 3, in which error bars show 95% confidence intervals around the regression coefficients for normalised dietary variables) -

- When statistically adjusted for age-group, sex and ethnicity, intake of fruit and vegetables had a stronger positive association with education and occupation than with income. Intake was lower in the younger and white ethnicity adults compared to the older and non-white ethnicity groups.
- When statistically adjusted for age-group, sex and ethnicity, intake of red and processed meat had a negative association with education and occupation and no association with income. Red meat intake was lower in women and the non-white ethnicity group compared to men and adults of white ethnicity.

¹ These details about the NDNS were obtained from: NATCEN SOCIAL RESEARCH 2019. National Diet and Nutrition Survey Years 1-9, 2008/09-2016/17. 15th Edition. SN: 6533. UK Data Service, MRC Elsie Widdowson Laboratory.

² <https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=6533>