

Statistical Press Notice: National Diet and Nutrition Survey in Scotland: results from years 1, 2, 3 and 4 combined (2008-2012)

Today, the Food Standards Agency in Scotland (FSAS) published the combined results from four years of the National Diet and Nutrition Survey (NDNS) rolling programme (2008-2012) for Scotland as an Official Statistic. FSAS funded a boost of the NDNS to provide representative data for Scotland and allow comparison with the UK for selected foods and nutrients.

<http://www.food.gov.uk/scotland/researchscot/scotlandresearch/ScotlandProjectList/n10036>

The National Diet and Nutrition Survey (NDNS) estimates food consumption, nutrient intake and nutritional status of the general population aged 18 months upwards living in the UK. The report presents NDNS results for Scotland and provides key comparisons with the UK NDNS published by Public Health England on 14 May 2014 covering the same time period.ⁱ

The NDNS comprises an interview, a four-day diet diary and collection and analysis of blood and urine samples. The UK NDNS was mainly funded by FSA until 2010 and it is now jointly funded by Public Health England (PHE) and the FSA. Work for years 1-4 was carried out by a consortium of three organisations: National Centre for Social Research (NatCen Social Research), MRC Human Nutrition Research (HNR) and the University College London Medical School (UCL).

The results will support work by FSAS and the Scottish Government to facilitate improvements to the diet and nutritional status of children and adults in Scotland which are underpinned by the Scottish Dietary Goals (SDGs)ⁱⁱ. The SDGs encompass foods (fruit and vegetables, red meat, oil rich fish) and nutrients (total fat, saturated fat, *trans* fatty acids, non-milk extrinsic sugars (NMES), non-starch polysaccharides (NSP) and salt intakes).

The Scotland report covers the same topics as the main UK report including food consumption, use of dietary supplements, intakes of energy, macronutrients, vitamins, minerals, salt intake and biochemical measures of nutritional status. The report also includes the heights, weights, blood pressure and socio-demographic characteristics of the participants. Results for food consumption, nutrient intake and nutritional status are compared with SDGs and UK Dietary Reference Values (DRVs) and are mostly presented for five age groups: 1½-3 years; 4-10 years; 11-18 years; 19-64 years; 65 years and over, split by sex in most cases except the youngest age group. Fieldwork was carried out between 2008 and 2012 with an overall response rate of 53%. The analyses of food consumption and nutrient intake are based on 1695 individuals (867 adults and 828 children). The blood sample analyses are based on 440 adults and 227 children.

Main findings

- Intakes of key foods (including: meat, oily fish, confectionery, biscuits, cakes and pastries) and nutrients (including: energy, total fat, saturated fats, trans fats, sugars, protein, vitamins and minerals) were generally very similar in Scotland to those in the UK as a whole. The only consistent differences in intakes across the age/sex groups were for vegetables and fibre which were slightly lower in Scotland compared to the UK. Other small differences tended to be in a less healthy direction for Scotland.
- The analyses did not identify new nutritional problems specific to the Scottish population.
- The findings confirm that both the Scotland and UK population is consuming too much saturated fat, non-milk extrinsic sugars (NMES) (also known as 'added sugars' or 'free sugars') and salt and not enough fruit and vegetables, oil rich fish and non-starch polysaccharides (NSP; a measure of fibre).
- The lowest income group had a lower consumption of fruits and vegetables, fibre and some vitamins and minerals and a higher consumption of NMES in children.
- Blood analyses showed evidence of low vitamin D status in a proportion of adults and children across the UK, with a higher proportion in Scotland for most age groups compared to the UK.

The survey also measured blood levels of folate to assess folate status. However these results have been delayed due to problems with the laboratory analysis and are now expected in the first quarter of 2015.

- **fruit and vegetables:** Adults aged 19 to 64 years consumed on average 3.8 portions per day and older adults (i.e. those aged 65 years and over) consumed 4.4 portions. Twenty-five percent of adults and 37% of older adults met the "5-a-day" recommendation.
- Children aged 11 to 18 years consumed on average 2.7 portions per day. Eleven percent of boys and 8% of girls in this age group met the "5-a-day" recommendation.
- **oil rich fish:** Mean consumption of oil rich fish was well below the recommended one portion (140g) per week in all age groups, at around 45g per week for adults aged 19 to 64 years.
- **total fat:** Mean total fat intake met the recommendation of no more than 35% of food energy in all age groups except for men aged 19 to 64 years and 65 years and over, for whom, on average, total fat provided 35.1% and 36.2% of food energy.
- **saturated fats:** Mean saturated fat intake in all age groups exceeded the recommended level of no more than 11% of food energy. For example, mean saturated fat intake for adults aged 19 to 64 years was 12.9% of food energy.

- **trans fats:** Mean intakes of *trans* fats provided between 0.6% and 0.8% of food energy for all age groups, thus meeting the Scottish recommendation that *trans* fats should remain below 1% of food energy.
- **non-milk extrinsic sugars** (NMES - also referred to as 'added sugars' or 'free sugars'): Mean intake for all age groups exceeded the recommendation that average intake of NMES should reduce to less than 11% of food energy, most notably for children aged 11 to 18 years where mean intake provided 15.4% of food energy with 35% of NMES coming from soft drinks with added sugar in this age group.
- **NSP:** Mean intake of non-starch polysaccharide (NSP) was less than the population average recommendation of 18g per day for all age groups. For example, mean intake for adults aged 19 to 64 years was 13g per day.
- **alcohol:** Fifty-three percent of adults aged 19 to 64 years and 47% of adults aged 65 years and over consumed alcohol during the four-day diary. Adults who consumed alcohol obtained 9.1% of energy intake from alcohol on average; older adult consumers obtained 5.7%.
- **salt:** Mean salt intake based on urinary sodium excretion was estimated to be 8.2g per day for adults between 19 and 64 years. It should be noted that sample numbers were low in adults aged 65 years and over and in children. Mean salt intake was higher than recommended for all age groups except for children aged 7 to 10 years. Mean intake exceeded 6g per day for older adults (7.3g) and for children aged 11 to 18 years (6.7g). Intakes for children aged 4 to 10 years just met the recommendation of no more than 5g per day (4.9g).
- **iron:** Fifty-four percent of girls aged 11 to 18 years and 24% of women aged 19 to 64 years had low iron intakes. There was evidence of both iron-deficiency anaemia (as indicated by low haemoglobin levels) and low iron stores (plasma ferritin) in 3% of girls aged 11 to 18 years, 3% of women aged 19 to 64 years and 5% of women aged 65 years and over.
- **vitamin D:** There was evidence of low vitamin D status (as indicated by low plasma 25-hydroxy vitamin D (25-OHD) concentrations in blood) in all age groups. Based on results collected over the whole year to take account of seasonal differences, 32% of adults aged 19 to 64 years, 29% of adults aged 65 years and over, 26% of children aged 11-18 years and 9% of children aged 4-10 years had low status. This compares with 23%, 21%, 22% and 14% respectively for the same age groups across the UK. This has implications for bone health.
- **blood lipids:** About half of adults and older adults had elevated concentrations of serum total cholesterol associated with increasing risk of cardiovascular disease. This is well known and in line with findings from other health surveys.
- **income and area deprivation:** There was some evidence of differences in intake of foods and nutrients including some vitamins and minerals by income and deprivation, although differences were not consistently observed for all

age groups. For adults aged 19 to 64 years there was a pattern of decreased consumption of both fruits and vegetables, decreased fibre intake, decreased folate intake and increased consumption of soft drinks with added sugar and NMES intake in children with decreasing income and increasing deprivation.

- **dietary supplements**: Seventeen percent of men and 20% of women aged 19 to 64 years and 37% of men and 36% of women aged 65 years and over reported taking at least one dietary supplement over the four-day recording period. Those who took dietary supplements generally had higher intakes of vitamins and minerals from food than non-users of supplements.
- **changes over time**: This is the first time that a representative sample from Scotland has been recruited for the NDNS, it is therefore not possible to compare results with previous NDNS surveys in Scotland. Data from previous NDNS surveys in the 1990s suggest that UK intakes of saturated fat and NMES have fallen while fibre intakes have increased in some age groups in the UK. These differences should be treated with caution due to methodological differences between the NDNS surveys over time.

ⁱ National Diet and Nutrition Survey: results from Years 1 to 4 (combined) of the rolling programme for 2008 and 2009 to 2011 and 2012 <https://www.gov.uk/government/publications/national-diet-and-nutrition-survey-results-from-years-1-to-4-combined-of-the-rolling-programme-for-2008-and-2009-to-2011-and-2012> (accessed 16/09/14).

ⁱⁱ Scottish Dietary Goals (SDGs) were originally set in 1996 and updated in 2010. The SDGs describe the diet that will improve and support the health of the Scottish population and are used to assist with policy development to reduce the burden of obesity and diet-related disease in Scotland. Revised Dietary Goals for Scotland. Scottish Government, May 2013; <http://www.scotland.gov.uk/Resource/0042/00421385.pdf> (accessed 16/09/14)