



‘Feeding young children aged 1 to 5 years’

Annex 11

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Annex 11: Additional analyses of National Diet and Nutrition Survey (NDNS) data

1. This Annex includes descriptive statistics for:
 - energy intakes and body weights
 - the full range of macronutrient and micronutrient intakes and blood analyte indicators of micronutrient status
 - food group contributors to intakes of each fatty acid category
 - energy, macronutrient and micronutrient intakes by Index of Multiple Deprivation (IMD) quintile (for England)
 - characteristics of children who provided a blood sample compared with all children surveyed
2. This Annex also includes supplementary tables of data from additional analyses conducted on the latest dataset from the National Diet and Nutrition Survey rolling programme (NDNS RP) for the chapter on Micronutrients (chapter 4).

Table A11.1 Estimated average requirements (EAR), energy intakes and body weight for children aged 12 to 60 months (NDNS 2008/09 to 2018/19 and DNSIYC)

| EAR, energy intake or body weight | | Age groups | | | | | | | | | |
|---|------------------------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|
| | | 12 to 18 months | | 18 to 23 months | | 24 to 35 months | | 36 to 47 months | | 48 to 60 months | |
| | | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls |
| EAR (MJ/day)¹ | Average | 3.2 | 3.0 | 3.2 | 3.0 | 4.2 | 3.9 | 4.9 | 4.5 | 5.8 | 5.4 |
| Energy intake (MJ/day)² | mean | 4.16 | 3.97 | 4.45 | 4.07 | 4.74 | 4.38 | 4.91 | 4.78 | 5.62 | 5.06 |
| | median | 4.13 | 3.97 | 4.32 | 4.03 | 4.62 | 4.26 | 4.81 | 4.69 | 5.68 | 5.26 |
| | SD | 0.87 | 0.87 | 0.89 | 0.82 | 1.00 | 0.92 | 1.03 | 1.22 | 1.10 | 1.13 |
| | 2.5th percentile | 2.36 | 2.33 | 3.01 | 2.38 | 2.89 | 2.98 | 2.92 | 2.36 | 3.78 | 2.90 |
| | 97.5th percentile | 5.83 | 5.83 | 6.53 | 5.52 | 6.83 | 6.17 | 6.87 | 7.04 | 7.80 | 7.89 |
| | % above EAR | 88 | 88 | 96 | 87 | 69 | 69 | 47 | 58 | 43 | 37 |
| | Number of participants | 641 | 634 | 141 | 129 | 299 | 255 | 277 | 274 | 235 | 219 |
| Body weight (kg)² | mean | 11.2 | 10.6 | 12.6 | 11.7 | 14.7 | 13.5 | 16.6 | 16.1 | 18.7 | 18.0 |
| | median | 11.2 | 10.5 | 12.6 | 11.8 | 14.3 | 13.4 | 16.5 | 15.8 | 18.6 | 17.4 |
| | SD | 1.3 | 1.3 | 1.61 | 1.56 | 3.09 | 1.53 | 2.32 | 2.48 | 2.44 | 3.11 |
| | 2.5th percentile | 8.9 | 8.1 | 9.1 | 8.3 | 11.1 | 10.8 | 12.3 | 12.3 | 14.5 | 13.6 |
| | 97.5th percentile | 13.9 | 13.5 | 15.8 | 14.9 | 18.3 | 16.7 | 20.9 | 21.7 | 24.7 | 27.5 |
| | Number of participants | 619 | 609 | 123 | 110 | 256 | 232 | 242 | 250 | 225 | 210 |

¹ Source: (SACN, 2011)

² Data from DNSIYC 2011 (Lennox et al, 2013) for children aged 12 to 18 months and NDNS RP years 1 to 11 (2008/09 to 2018/19) for children aged 18 to 60 months.

Table A11.2 Macronutrient intakes for children aged 12 to 60 months (NDNS 2016/17 to 2018/19 and DNSIYC)

| Macronutrient (Dietary recommendation) | | Age groups | | | |
|--|--|------------------------------|------------------------------|------------------------------|------|
| | | 12 to 18 months ¹ | 18 to 47 months ² | 48 to 60 months ² | |
| Protein ³ g/day (RNI:14.5g/day for age 1 to 3 years; 19.7g/day for age 4 to 6 years) | mean (g/day) | 37.7 | 41.0 | 45.8 | |
| | median (g/day) | 37.5 | 40.5 | 42.6 | |
| | SD (g/day) | 10.2 | 10.0 | 14.8 | |
| | 2.5th percentile (g/day) | 19.1 | 23.0 | 25.0 | |
| | 97.5th percentile (g/day) | 58.4 | 62.5 | 73.4 | |
| | % above RNI | 99 | 100 | 100 | |
| | % energy ⁴ | mean (% energy) | 15.6 | 15.7 | 15.0 |
| | | median (% energy) | 15.7 | 15.4 | 14.4 |
| | | SD (% energy) | 2.6 | 2.8 | 3.0 |
| | | 2.5th percentile (% energy) | 10.7 | 10.8 | 10.1 |
| 97.5th percentile (% energy) | | 20.7 | 21.7 | 21.1 | |
| Total carbohydrate ⁵ g/day | mean (g/day) | 126 | 138 | 168 | |
| | median (g/day) | 125 | 136 | 158 | |
| | SD (g/day) | 29 | 36 | 44 | |
| | 2.5th percentile (g/day) | 74 | 73 | 90 | |
| | 97.5th percentile (g/day) | 186 | 211 | 257 | |
| | % energy ⁴ (DRV: • 50% of total dietary energy for ages ≥2 years) | mean (% energy) | 49.0 | 49.1 | 51.3 |
| | | median (% energy) | 49.1 | 48.9 | 51.1 |
| | | SD (% energy) | 5.8 | 5.9 | 5.4 |
| | | 2.5th percentile (% energy) | 37.8 | 37.9 | 40.8 |
| | | 97.5th percentile (% energy) | 60.6 | 61.0 | 60.8 |
| | % meeting DRV ⁶ | 43 | 44 | 60 | |

¹ Data from DNSIYC 2011 (Lennox et al, 2013).

² Data from NDNS 2016/17 to 2018/19.

³ Protein Reference nutrient intakes (RNI) from (DH, 1991) and based on a body weight of 12.5kg and 17.8kg for children aged 1-3 years and 4-6 years, respectively.

⁴ Total energy is equivalent to food energy as no alcohol is consumed in children of this age.

⁵ Carbohydrate, free sugars and dietary fibre – Dietary reference values (DRV) from (SACN, 2015).

⁶ The DRVs for free sugars and fibre apply to children from the age of 2 years. However, for the purposes of reporting the age group 1.5 to 3 years, the recommendation has been applied to the whole group, including those aged under 2 years.

| Macronutrient (Dietary recommendation) | Age groups | | | | |
|--|--|------------------------------|------------------------------|--------------------|------|
| | 12 to 18 months ¹ | 18 to 47 months ² | 48 to 60 months ² | | |
| Total sugars g/day | mean (g/day) | 66.0 | 62.3 | 76.0 | |
| | median (g/day) | 64.9 | 59.9 | 69.0 | |
| | SD (g/day) | 18.6 | 22.6 | 25.3 | |
| | 2.5th percentile (g/day) | 30.7 | 23.3 | 32.4 | |
| | 97.5th percentile (g/day) | 107.2 | 108.7 | 137.2 | |
| | % energy ⁴ | mean (% energy) | 25.8 | 21.9 | 23.1 |
| | | median (% energy) | 25.5 | 21.5 | 23.1 |
| | | SD (% energy) | 5.6 | 5.4 | 4.6 |
| | | 2.5th percentile (% energy) | 15.1 | 12.4 | 13.8 |
| | | 97.5th percentile (% energy) | 37.6 | 32.7 | 32.1 |
| Free sugars / NMES^{5,7} g/day | mean (g/day) | 19.8 (NMES) | 27.9 (free sugars) | 38.9 (free sugars) | |
| | median (g/day) | 17.2 | 24.6 | 34.3 | |
| | SD (g/day) | 12.1 | 15.8 | 19.3 | |
| | 2.5th percentile (g/day) | 4.7 | 6.3 | 10.5 | |
| | 97.5th percentile (g/day) | 52.0 | 66.6 | 80.9 | |
| | % energy ⁴ (DRV < 5% of total dietary energy for ages ≥2 years) | mean (% energy) | 7.7 | 9.7 | 11.7 |
| | | median (% energy) | 6.8 | 9.0 | 10.9 |
| | | SD (% energy) | 4.5 | 4.6 | 4.6 |
| | | 2.5th percentile (% energy) | 1.9 | 2.9 | 4.8 |
| | | 97.5th percentile (% energy) | 19.9 | 20.5 | 21.4 |
| | % exceeding DRV ⁶ | 72 | 85 | 97 | |

⁷ In 2015, SACN recommended that a definition of 'free sugars' should be adopted in the UK for public health nutrition purposes to replace the concept of non-milk extrinsic sugars (NMES) on which sugar intake recommendations had been based since 1991 (SACN, 2015). DNSIYC estimated sugar intakes using the NMES definition while more recent NDNS survey used the definition of free sugars. The definition of free sugars is similar to that for NMES, the main difference is that NMES includes 50% of the sugar from canned, stewed, dried or preserved fruits but free sugars includes none (Roberts et al, 2018).

| Macronutrient (Dietary recommendation) | | Age groups | | |
|--|--|------------------------------|------------------------------|------------------------------|
| | | 12 to 18 months ¹ | 18 to 47 months ² | 48 to 60 months ² |
| Dietary fibre ⁵⁸ g/day (DRV AOAC fibre: 15g/day age 2 to 4 years) | mean (g/day) | 7.3 (NSP) | 10.4 (AOAC) | 12.6 (AOAC) |
| | median (g/day) | 7.2 | 9.7 | 11.6 |
| | SD (g/day) | 2.7 | 3.5 | 4.7 |
| | 2.5th percentile (g/day) | 2.5 | 4.7 | 4.8 |
| | 97.5th percentile (g/day) | 13.1 | 17.7 | 24.1 |
| | % not meeting DRV ⁵ | No DRV for this age group | 88 | 72 |
| | Total fat ⁹ g/day | mean (g/day) | 38.2 | 41.5 |
| | median (g/day) | 37.6 | 40.6 | 43.3 |
| | SD (g/day) | 10.6 | 11.5 | 13.8 |
| | 2.5th percentile (g/day) | 18.1 | 22.7 | 23.2 |
| | 97.5th percentile (g/day) | 60.1 | 63.7 | 79.4 |
| % energy ⁴ (DRV: 33% total energy from fat for children over 5 years) | mean (% energy) | 35.4 | 35.3 | 33.7 |
| | median (% energy) | 35.3 | 35.7 | 33.1 |
| | SD (% energy) | 5.0 | 4.9 | 4.7 |
| | 2.5th percentile (% energy) | 25.6 | 24.4 | 25.3 |
| | 97.5th percentile (% energy) | 45.1 | 43.5 | 44.0 |
| | % exceeding DRV (≤33% energy) | (69) | (69) | (53) |
| Saturated fats ⁹ g/day | mean (g/day) | 17.5 | 17.5 | 18.6 |
| | median (g/day) | 17.1 | 16.9 | 16.9 |
| | SD (g/day) | 5.8 | 6.1 | 6.9 |
| | 2.5th percentile (g/day) | 7.3 | 7.3 | 9.2 |
| | 97.5th percentile (g/day) | 29.1 | 29.7 | 34.7 |
| | % energy ⁴ | mean (% energy) | 16.3 | 14.8 |
| median (% energy) | | 16.3 | 14.7 | 13.1 |

⁸ The definition of AOAC fibre is dietary fibre which is measured by analytical AOAC methods. AOAC methods capture resistant starch and lignin in the estimation of total fibre, as well as non-starch polysaccharides (NSP) (Roberts et al, 2018). SACN recommended the adoption of the AOAC definition of fibre in 2015, replacing NSP. NDNS assesses intake of AOAC fibre while DNSIYC assessed intakes of NSP. AOAC fibre intakes are in the region of 30% higher than NSP intakes.

⁹ Fat (incl. fat saturated, monounsaturated and polyunsaturated fats). There are no recommendations for children under five years of age which state the proportions of dietary energy that should come from fat. (SACN, 2019). The DRV for total fat does not apply before 2 years of age and applies in full from age 5 years (DH, 1994a). To indicate this limited applicability of the DRV the figures in this column are stated in parenthesis.

Recommendations for fats for adults and children aged 5 years and older (DH, 1991; DH, 1994; SACN, 2019). Total fat: 35% food energy (33% total dietary energy); saturated fat: 11% food energy (10% total dietary energy); polyunsaturated fat: 6.5% food energy (6% total dietary energy); monounsaturated fat: 13% food energy (12% total dietary energy).

| Macronutrient (Dietary recommendation) | | Age groups | | | |
|---|--|------------------------------|------------------------------|------------------------------|------|
| | | 12 to 18 months ¹ | 18 to 47 months ² | 48 to 60 months ² | |
| DRV ≤10% total energy for children over 5 years | SD (% energy) | 3.6 | 3.6 | 3.0 | |
| | 2.5th percentile (% energy) | 9.0 | 7.2 | 7.7 | |
| | 97.5th percentile (% energy) | 23.1 | 21.7 | 20.4 | |
| | % exceeding DRV (≤ 10% energy) ¹⁰ | (95) | (91) | (91) | |
| | | | | | |
| Cis monounsaturated fatty acids⁹ g/day | mean (g/day) | 12.4 | 14.0 | 16.2 | |
| | median (g/day) | 12.2 | 13.4 | 15.6 | |
| | SD (g/day) | 3.7 | 4.0 | 5.1 | |
| | 2.5th percentile (g/day) | 5.9 | 7.7 | 7.2 | |
| | 97.5th percentile (g/day) | 20.4 | 22.7 | 27.3 | |
| | % energy ⁴ | mean (% energy) | 11.5 | 12.0 | 11.9 |
| | | median (% energy) | 11.3 | 11.7 | 11.7 |
| | | SD (% energy) | 2.2 | 2.2 | 2.1 |
| | | 2.5th percentile (% energy) | 7.7 | 8.3 | 7.8 |
| | | 97.5th percentile (% energy) | 16.4 | 16.3 | 16.2 |
| Cis n-3 polyunsaturated fatty acids⁹ g/day | mean (g/day) | 0.7 | 0.9 | 1.1 | |
| | median (g/day) | 0.7 | 0.8 | 1.0 | |
| | SD (g/day) | 0.3 | 0.5 | 0.4 | |
| | 2.5th percentile (g/day) | 0.3 | 0.4 | 0.5 | |
| | 97.5th percentile (g/day) | 1.4 | 2.1 | 2.0 | |
| | % energy ⁴ | mean (% energy) | 0.7 | 0.8 | 0.8 |
| | | median (% energy) | 0.6 | 0.7 | 0.7 |
| | | SD (% energy) | 0.2 | 0.4 | 0.3 |
| | | 2.5th percentile (% energy) | 0.3 | 0.3 | 0.5 |
| | | 97.5th percentile (% energy) | 1.2 | 1.7 | 1.5 |

¹⁰ The recommendation applies to adults and children aged 5 years and older (SACN, 2019). However, for the purpose of this risk assessment, the recommendation has been applied to children aged under 5 years.

| Macronutrient (Dietary recommendation) | Age groups | | | |
|--|------------------------------|------------------------------|------------------------------|------|
| | 12 to 18 months ¹ | 18 to 47 months ² | 48 to 60 months ² | |
| Cis n6- polyunsaturated fatty acids⁹ g/day % energy ⁴ | mean (g/day) | 4.0 | 5.1 | 6.0 |
| | median (g/day) | 3.9 | 4.7 | 5.4 |
| | SD (g/day) | 1.5 | 2.0 | 2.2 |
| | 2.5th percentile (g/day) | 1.6 | 2.2 | 3.2 |
| | 97.5th percentile (g/day) | 7.4 | 10.3 | 10.5 |
| | mean (% energy) | 3.7 | 4.3 | 4.5 |
| | median (% energy) | 3.6 | 4.1 | 4.2 |
| | SD (% energy) | 1.2 | 1.4 | 1.3 |
| | 2.5th percentile (% energy) | 1.9 | 2.5 | 2.6 |
| | 97.5th percentile (% energy) | 6.5 | 7.7 | 7.8 |
| Trans fatty acids⁹ g/day DRV ≤2% total energy % energy ⁴ | mean (g/day) | 0.6 | 0.6 | 0.7 |
| | median (g/day) | 0.6 | 0.6 | 0.6 |
| | SD (g/day) | 0.3 | 0.3 | 0.3 |
| | 2.5th percentile (g/day) | 0.1 | 0.2 | 0.2 |
| | 97.5th percentile (g/day) | 1.2 | 1.3 | 1.4 |
| | mean (% energy) | 0.5 | 0.5 | 0.5 |
| | median (% energy) | 0.5 | 0.5 | 0.5 |
| | SD (% energy) | 0.2 | 0.2 | 0.2 |
| | 2.5th percentile (% energy) | 0.2 | 0.1 | 0.2 |
| | 97.5th percentile (% energy) | 0.9 | 0.9 | 1.0 |
| % exceeding recommendation | - | - | - | |

| Macronutrient (Dietary recommendation) | Age groups | | | |
|--|------------------------------------|------------------------------------|------------------------------------|-----|
| | 12 to 18 months¹ | 18 to 47 months² | 48 to 60 months² | |
| Salt¹¹ (< 2g/day age 1-3 years < 3g/day age 4-6 years) | mean (g/day) | 2.3 | 2.7 | 3.2 |
| | median (g/day) | 2.2 | 2.6 | 2.9 |
| | SD (g/day) | 0.9 | 0.9 | 1.0 |
| | 2.5th percentile (g/day) | 0.8 | 1.1 | 1.7 |
| | 97.5th percentile (g/day) | 4.2 | 4.5 | 5.7 |
| | <i>% exceeding recommendation</i> | Not calculated | 76 | 47 |
| | <i>Number of participants</i> | 1275 | 306 | 102 |

¹¹ Salt - Recommendation from (SACN, 2003). These target salt intakes do not represent ideal or optimum consumption levels, but achievable population goals. Calculated from data of average daily intake of sodium from all sources, including dietary supplements (conversion factor: 1g salt = 400mg sodium). These estimates do not fully capture discretionary salt added in cooking or at the table.

Table A11.3 Micronutrient intakes for children aged 12 to 60 months (NDNS 2016/17 to 2018/19 and DNSIYC)

| Micronutrient (Dietary Reference Value ¹) | Age groups | | | | | | |
|--|------------------------------|----------------|------------------------------|----------------|--|----------------|------------|
| | 12 to 18 months ² | | 18 to 47 months ³ | | 48 to 60 months ^{Error!} Bookmark not defined. | | |
| | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only | |
| Vitamin A (retinol equivalents) µg/day | mean (µgRE/day) | 698 | 676 | 543 | 460 | 611 | 530 |
| | median (µgRE/day) | 609 | 599 | 466 | 419 | 450 | 397 |
| | SD (µgRE/day) | 375 | 351. | 323 | 240 | 437 | 387 |
| | 2.5th percentile (µgRE/day) | 203 | 203 | 131 | 92 | 184 | 137 |
| | 97.5th percentile (µgRE/day) | 1666 | 1531 | 1417 | 1057 | 1621 | 1540 |
| | <i>Mean as % RNI</i> | <i>175</i> | <i>169</i> | <i>136</i> | <i>115</i> | <i>153</i> | <i>132</i> |
| | <i>% below LRNI</i> | <i>2</i> | <i>2</i> | <i>8</i> | <i>9</i> | <i>7</i> | <i>10</i> |
| Retinol (µg/day) | mean (µg/day) | 341 | 319 | 319 | 236 | 306 | 225 |
| | median (µg/day) | 312 | 299 | 244 | 214 | 237 | 182 |
| | SD (µg/day) | 183 | 147 | 221 | 121 | 223 | 134 |
| | 2.5th percentile (µg/day) | 113 | 106 | 35 | 35 | 57 | 36 |
| | 97.5th percentile (µg/day) | 752 | 637 | 903 | 502 | 770 | 614 |
| | <i>% above TUL</i> | <i>1.9</i> | <i>0.9</i> | <i>4.2</i> | <i>0.4</i> | <i>1.7</i> | <i>0.0</i> |
| Total carotene (µg/day) | mean (µg/day) | 2144 | 2141 | 1347 | 1345 | 1827 | 1827 |
| | median (µg/day) | 1701 | 1701 | 956 | 956 | 1128 | 1127 |
| | SD (µg/day) | 1871 | 1870 | 1214 | 1215 | 2047 | 2047 |
| | 2.5th percentile (µg/day) | 145 | 145 | 142 | 142 | 144 | 144 |
| | 97.5th percentile (µg/day) | 7077 | 7077 | 4960 | 4960 | 8341 | 8341 |

¹ All DRVs are derived from (DH, 1991), except for thiamine and niacin equivalents which are linked to energy requirements. Thiamine and niacin DRVs have been re-calculated based on the revised SACN energy report (SACN, 2011).

² Data from DNSIYC 2011 (DH, 2013)

³ Data from NDNS 2016/17 to 2018/19.

| Micronutrient (Dietary Reference Value ¹) | | Age groups | | | | | |
|---|----------------------------|------------------------------|----------------|------------------------------|----------------|--|----------------|
| | | 12 to 18 months ² | | 18 to 47 months ³ | | 48 to 60 months ^{Error!} Bookmark not defined. | |
| | | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only |
| Thiamin (B1) (RNI: 0.4mg/day age 1-3 years 0.6mg/day age 4-6 years LRNI: 0.2mg/day age 1-3 years 0.3mg/day age 4-6 years) | mean (mg/day) | 0.85 | 0.82 | 1.04 | 0.93 | 1.14 | 1.06 |
| | median (mg /day) | 0.82 | 0.81 | 0.93 | 0.89 | 1.04 | 1.02 |
| | SD (mg /day) | 0.26 | 0.22 | 0.49 | 0.30 | 0.54 | 0.32 |
| | 2.5th percentile (mg /day) | 0.44 | 0.44 | 0.48 | 0.48 | 0.40 | 0.40 |
| | 97.5th percentile (mg/day) | 1.41 | 1.30 | 2.10 | 1.71 | 2.25 | 1.77 |
| | <i>mean as % RNI</i> | 223 | 165 | 209 | 186 | 163 | 152 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |
| Riboflavin (B2) (RNI: 0.6mg/day age 1-3 years 0.8mg/day age 4-6 years LRNI: 0.3mg/day age 1-3 years 0.4mg/day age 4-6 years) | mean (mg/day) | 1.49 | 1.46 | 1.41 | 1.29 | 1.43 | 1.33 |
| | median (mg /day) | 1.46 | 1.43 | 1.35 | 1.26 | 1.23 | 1.19 |
| | SD (mg /day) | 0.53 | 0.51 | 0.62 | 0.47 | 0.66 | 0.54 |
| | 2.5th percentile (mg /day) | 0.55 | 0.53 | 0.49 | 0.49 | 0.57 | 0.52 |
| | 97.5th percentile (mg/day) | 2.56 | 2.47 | 2.75 | 2.27 | 3.10 | 2.76 |
| | <i>mean as % RNI</i> | 249 | 244 | 235 | 216 | 178 | 167 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |
| Niacin (B3) equivalent (RNI: 6mg/day age 1-3 years 9mg/day age 4-6 years LRNI:4mg/day age 1-3 years 6mg/day age 4-6 years) | mean (mg/day) | 16.4 | 16.0 | 18.9 | 17.5 | 20.9 | 20.1 |
| | median (mg /day) | 15.9 | 15.8 | 18.1 | 17.4 | 19.6 | 19.0 |
| | SD (mg /day) | 4.6 | 4.4 | 5.4 | 4.3 | 6.4 | 6.2 |
| | 2.5th percentile (mg /day) | 8.3 | 8.0 | 10.8 | 9.8 | 12.8 | 10.9 |
| | 97.5th percentile (mg/day) | 26.5 | 25.6 | 32.2 | 27.3 | 32.8 | 32.8 |
| | <i>mean as % RNI</i> | 258 | 201 | 236 | 219 | 190 | 183 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |
| Vitamin B6 (RNI: 0.7mg/day age 1-3 years 0.9mg/day age 4-6 years LRNI: 0.5mg/day age 1-3 years 0.7mg/day age 4-6 years) | mean (mg/day) | 1.1 | 1.1 | 1.2 | 1.0 | 1.4 | 1.1 |
| | median (mg /day) | 1.1 | 1.1 | 1.1 | 1.1 | 1.3 | 1.1 |
| | SD (mg /day) | 0.4 | 0.4 | 0.5 | 0.3 | 0.5 | 0.4 |
| | 2.5th percentile (mg /day) | 0.4 | 0.4 | 0.5 | 0.5 | 0.3 | 0.3 |
| | 97.5th percentile (mg/day) | 2.0 | 1.9 | 2.6 | 1.7 | 2.6 | 1.9 |
| | <i>mean as % RNI</i> | 202 | 156 | 175 | 149 | 152 | 127 |
| | <i>% below LRNI</i> | 0 | 0.4 | 0 | 0 | 2 | 2 |
| | mean (µg/day) | 3.7 | 3.6 | 4.6 | 4.4 | 3.9 | 3.8 |

| Micronutrient (Dietary Reference Value ¹) | | Age groups | | | | | |
|--|----------------------------|------------------------------|----------------|------------------------------|----------------|--|----------------|
| | | 12 to 18 months ² | | 18 to 47 months ³ | | 48 to 60 months ^{Error!} Bookmark not defined. | |
| | | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only |
| Vitamin B12 | median (µg/day) | 3.6 | 3.6 | 3.7 | 3.5 | 3.4 | 3.3 |
| (RNI: 0.5µg/day age 1-3 years) | SD (µg/day) | 1.7 | 1.7 | 11.6 | 11.6 | 2.0 | 2.0 |
| 0.8µg/day age 4-6 years | 2.5th percentile (µg/day) | 1.0 | 1.0 | 0.9 | 0.9 | 1.0 | 0.9 |
| LRNI: 0.3µg/day age 1-3 years | 97.5th percentile (µg/day) | 7.1 | 7.1 | 8.2 | 8.0 | 9.9 | 9.7 |
| 0.5µg/day age 4-6 years) | <i>mean as % RNI</i> | 732 | 730 | 912 | 876 | 491 | 470 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |
| Folate | mean (µg/day) | 144 | 144 | 143 | 134 | 153 | 149 |
| (RNI: 70µg/day age 1-3 years) | median (µg /day) | 143 | 142 | 132 | 129 | 142 | 141 |
| 100µg/day age 4-6 years | SD (µg /day) | 41 | 40 | 61 | 43 | 55 | 49 |
| LRNI: 35µg/day age 1-3 years | 2.5th percentile (µg /day) | 69 | 69 | 60 | 60 | 52 | 52 |
| 50µg/day age 4-6 years) | 97.5th percentile (µg/day) | 237 | 234 | 298 | 237 | 280 | 259 |
| | <i>mean as % RNI</i> | 218 | 205 | 204 | 192 | 153 | 149 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |
| Vitamin C | mean (mg/day) | 62.5 | 60.5 | 74.5 | 64.3 | 81.1 | 69.0 |
| (RNI: 30mg/d) | median (mg /day) | 55.5 | 54.4 | 67.3 | 56.9 | 71.6 | 61.8 |
| LRNI: 8mg/d) | SD (mg /day) | 34.5 | 32.8 | 40.7 | 34.2 | 42.8 | 35.0 |
| | 2.5th percentile (mg /day) | 17.8 | 17.8 | 18.1 | 18.1 | 11.3 | 11.3 |
| | 97.5th percentile (mg/day) | 149.6 | 143 | 170.9 | 137.2 | 166.1 | 160.9 |
| | <i>mean as % RNI</i> | 208 | 202 | 248 | 214 | 270 | 230 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |

| Micronutrient (Dietary Reference Value ¹) | Age groups | | | | | |
|--|--|----------------|------------------------------|----------------|--|----------------|
| | 12 to 18 months ² | | 18 to 47 months ³ | | 48 to 60 months ^{Error!} Bookmark not defined. | |
| | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only |
| Vitamin D⁴ | Non-breastfed⁵ | | | | | |
| mean (µg/day) | 3.9 | 3.5 | 4.0 | 2.4 | 3.9 | 2.5 |
| (Safe intake: median (µg/day) | 1.9 | 1.7 | 2.2 | 1.7 | 2.4 | 2.0 |
| 8.5- 10µg/day age <1 year SD (µg/day) | 3.9 | 3.5 | 4.2 | 2.5 | 4.2 | 2.3 |
| 10µg/day for age 1 up to 4 years 2.5th percentile (µg/day) | 0.3 | 0.3 | 0.3 | 0.2 | 0.7 | 0.5 |
| RNI: 10µg/day age ≥4 years) 97.5th percentile (µg/day) | 14.0 | 12.0 | 15.7 | 10.1 | 16.4 | 8.4 |
| <i>mean as % RNI</i> | 55 | 50 | 40 | 24 | 39 | 25 |
| | Breastfed excluding breast milk⁶ | | | | | |
| mean (µg/day) | 2.6 | 1.8 | -- | -- | -- | -- |
| median (µg/day) | 1.5 | 1.2 | -- | -- | -- | -- |
| SD (µg/day) | 2.8 | 1.7 | -- | -- | -- | -- |
| 2.5th percentile (µg/day) | 0.2 | 0.2 | -- | -- | -- | -- |
| 97.5th percentile (µg/day) | 10.8 | 5.7 | -- | -- | -- | -- |
| <i>mean as % RNI</i> | 37 | 26 | -- | -- | -- | -- |
| Vitamin E⁴ | No data | 4.9 | 6.6 | 5.4 | 7.5 | 6.1 |
| mean (mg/day) | No data | 4.3 | 5.6 | 5.0 | 6.4 | 5.9 |
| median (mg /day) | No data | 2.2 | 3.8 | 2.2 | 3.5 | 1.6 |
| (no DRVs) SD (mg /day) | No data | 1.8 | 2.1 | 2.0 | 3.1 | 3.1 |
| 2.5th percentile (mg /day) | No data | 10.4 | 15.9 | 11.0 | 16.2 | 9.1 |
| 97.5th percentile (mg/day) | No data | | | | | |

⁴ Prior to publication of the 2016 SACN report there was an RNI for vitamin D of 7µg/day for infants and children aged 0 to 3 years but no RNI was set for children aged 4 years upwards

⁵ Vitamin D intake does not include values for breastfed children as the vitamin D content of breast milk is not known. Note breastfeeding status is defined by whether it was recorded in the 4-day diary (Lennox et al, 2013).

⁷ Vitamin D intake includes values for breastfed children excluding the contribution from breast milk (therefore excluding any exclusively breastfed children (n=2)) as the vitamin D content of breast milk is not known. Note breastfeeding status is defined by whether it was recorded in the four-day diary (Lennox et al, 2013).

| Micronutrient (Dietary Reference Value ¹) | | Age groups | | | | | |
|--|--|------------------------------|----------------|------------------------------|----------------|--|----------------|
| | | 12 to 18 months ² | | 18 to 47 months ³ | | 48 to 60 months ^{Error!} Bookmark not defined. | |
| | | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only |
| Iron (RNI: 6.9mg/day age 1-3 years 6.1mg/day age 4-6 years LRNI: 3.7mg/day age 1-3 years 3.3mg/day age 4-6 years) | mean (mg/day) | 6.4 | 6.4 | 6.1 | 5.8 | 7.2 | 7.1 |
| | median (mg /day) | 6.1 | 6.0 | 5.7 | 5.6 | 6.5 | 6.3 |
| | SD (mg /day) | 2.7 | 2.6 | 2.4 | 1.8 | 2.5 | 2.5 |
| | 2.5th percentile (mg /day) | 2.4 | 2.4 | 2.8 | 2.8 | 3.5 | 3.5 |
| | 97.5th percentile (mg/day) | 12.2 | 12.0 | 12.0 | 10.5 | 13.0 | 13.0 |
| | <i>mean as % RNI</i> | 93 | 92 | 88 | 84 | 187 | 186 |
| | <i>% below LRNI</i> | 13 | <i>No data</i> | 11 | 11 | 1 | 1 |
| | Calcium (RNI: 350mg/day age 1-3 years 450mg/day age 4-6 years LRNI: 200mg/day age 1-3 years 275mg/day age 4-6 years) | mean (mg/day) | 790 | 789 | 707 | 707 | 712 |
| median (mg /day) | | 774 | 771 | 690 | 690 | 634 | 634 |
| SD (mg /day) | | 260 | 259 | 246 | 246 | 259 | 261 |
| 2.5th percentile (mg /day) | | 326 | 321 | 250 | 250 | 370 | 370 |
| 97.5th percentile (mg/day) | | 1330 | 1318 | 1213 | 1213 | 1279 | 1279 |
| <i>mean as % RNI</i> | | 226 | 225 | 202 | 202 | 158 | 158 |
| <i>% below LRNI</i> | | 0 | 0 | 1 | 1 | 0 | 0 |
| Magnesium (RNI: 85mg/day age 1-3 years 120mg/day age 4-6 years LRNI: 50mg/day age 1-3 years 70mg/day age 4-6 years) | | mean (mg/day) | 135 | 135 | 147 | 146 | 169 |
| | median (mg /day) | 134 | 133 | 143 | 143 | 156 | 156 |
| | SD (mg /day) | 37 | 37 | 43 | 40 | 56 | 56 |
| | 2.5th percentile (mg /day) | 68 | 67 | 62 | 62 | 83 | 83 |
| | 97.5th percentile (mg/day) | 213 | 210 | 232 | 232 | 294 | 294 |
| | <i>mean as % RNI</i> | 159 | 159 | 173 | 172 | 141 | 141 |
| | <i>% below LRNI</i> | 0 | 0 | 0 | 0 | 0 | 0 |
| | Potassium (RNI: 800mg/day age 1-3 years 1100mg/day age 4-6 years LRNI: 450mg/day age 1-3 years 600mg/day age 4-6 years) | mean (mg/day) | 1599 | 1599 | 1654 | 1654 | 1852 |
| median (mg /day) | | 1590 | 1590 | 1605 | 1605 | 1714 | 1714 |
| SD (mg /day) | | 437 | 437 | 460 | 460 | 573 | 573 |
| 2.5th percentile (mg /day) | | 769 | 769 | 754 | 754 | 786 | 786 |
| 97.5th percentile (mg/day) | | 2507 | 2503 | 2585 | 2585 | 3084 | 3084 |
| <i>mean as % RNI</i> | | 200 | 200 | 207 | 207 | 168 | 168 |
| <i>% below LRNI</i> | | 0 | 0 | 0 | 0 | 0 | 0 |

| Micronutrient (Dietary Reference Value ¹) | | Age groups | | | | | |
|---|-------------------------------|------------------------------|----------------|------------------------------|----------------|--|----------------|
| | | 12 to 18 months ² | | 18 to 47 months ³ | | 48 to 60 months ^{Error!} Bookmark not defined. | |
| | | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only |
| Iodine (RNI: 70µg/day age 1-3 years 100µg/day age 4-6 years LRNI: 40µg/day age 1-3 years 50µg/day age 4-6 years) | mean (µg/day) | 174 | 173 | 127 | 126 | 131 | 130 |
| | median (µg/day) | 164 | 163 | 110 | 109 | 112 | 108 |
| | SD (µg/day) | 80 | 80 | 64 | 64 | 72 | 72 |
| | 2.5th percentile (µg/day) | 55 | 53 | 28 | 26 | 33 | 33 |
| | 97.5th percentile (µg/day) | 337 | 337 | 263 | 262 | 354 | 354 |
| | <i>mean as % RNI</i> | 248 | 248 | 182 | 180 | 131 | 130 |
| | <i>% below LRNI</i> | 0 | 0 | 4 | 4 | 6 | 6 |
| Selenium (RNI: 15µg/day for age 1-3 years 20µg/day for age 4-6 years LRNI: 7µg/day for age 1-3 years 10µg/day for age 4-6 years) | mean (µg/day) | 22 | 22 | 24 | 23 | 26 | 26 |
| | median (µg/day) | 21 | 21 | 23 | 23 | 24 | 24 |
| | SD (µg/day) | 7 | 7 | 8 | 7 | 11 | 11 |
| | 2.5th percentile (µg/day) | 11 | 11 | 12 | 12 | 10 | 10 |
| | 97.5th percentile (µg/day) | 38 | 38 | 40 | 38 | 51 | 51 |
| | <i>mean as % RNI</i> | 145 | 145 | 157 | 155 | 129 | 129 |
| | <i>% below LRNI</i> | 1 | 1 | 0 | 0 | 2 | 2 |
| Zinc (RNI: 5.0mg/day age 1-3 years 6.5mg/day age 4-6 years LRNI: 3.0mg/day age 1-3 years 4.0mg/day age 4-6 years) | mean (mg/day) | 5.4 | 5.4 | 5.0 | 4.8 | 5.4 | 5.3 |
| | median (mg /day) | 5.3 | 5.3 | 4.8 | 4.7 | 4.9 | 4.8 |
| | SD (mg /day) | 1.6 | 1.6 | 1.9 | 1.4 | 1.8 | 1.8 |
| | 2.5th percentile (mg /day) | 2.7 | 2.7 | 2.4 | 2.4 | 2.9 | 2.9 |
| | 97.5th percentile (mg/day) | 9.1 | 9.1 | 8.7 | 7.9 | 10.2 | 9.7 |
| | <i>mean as % RNI</i> | 109 | 108 | 101 | 96 | 83 | 82 |
| | <i>% below LRNI</i> | 4 | 4 | 8 | 8 | 23 | 24 |
| Copper (RNI: 0.4mg/day age 1-3 years 0.6mg/day age 4-6 years) | mean (mg/day) | 0.50 | 0.5 | 0.57 | 0.57 | 0.66 | 0.66 |
| | median (mg /day) | 0.49 | 0.5 | 0.57 | 0.55 | 0.63 | 0.63 |
| | SD (mg /day) | 0.17 | 0.2 | 0.21 | 0.20 | 0.23 | 0.23 |
| | 2.5th percentile (mg /day) | 0.21 | 0.2 | 0.27 | 0.27 | 0.38 | 0.38 |
| | 97.5th percentile (mg/day) | 0.89 | 0.9 | 1.02 | 1.01 | 1.11 | 1.11 |
| | <i>mean as % RNI</i> | 126 | 126 | 144 | 141 | 110 | 110 |
| | <i>Number of participants</i> | | 1275 | | 306 | | 102 |

Table A11.4 Micronutrient status markers for children aged 12 to 60 months (NDNS 2008/09 to 2018/19 and DNSIYC)

| Micronutrient status ¹⁸ Status marker | Age groups | | |
|--|-----------------------------------|-------------------------------|---|
| | 12 to 18 months ¹⁹ | 18 to 47 months ²⁰ | 48 to 60 months ^{Error! Bookmark not defined.} |
| Vitamin A status | | | |
| mean | | 1.03 | [1.12] |
| median | | 1.01 | [1.16] |
| SD | | 0.26 | [0.30] |
| Plasma retinol (µmol/l) | | | |
| <0.35µmol/l: severe deficiency | 2.5 th percentile | 0.66 | [0.61] |
| | 97.5 th percentile | 1.58 | [1.65] |
| 0.35-0.70nmol/l: mild deficiency | % below 0.35 µmol/l ²¹ | 0 | [0] |
| | % 0.35-0.70 µmol/l ⁹ | 7 | [10] |
| | Number of participants | 103 | 41 |
| Vitamin C status²² | | | |
| mean | | 74.2 | [76.7] |
| median | | 74.5 | [76.5] |
| SD | | 25.4 | [22.8] |
| Plasma vitamin C (µmol/l) | | | |
| <11µmol/l: biochemical depletion ²³ | 2.5 th percentile | 7.2 | [39.0] |
| | 97.5 th percentile | 124.5 | [131.3] |
| | % below 11µmol/l | 2 | [0] |
| | Number of participants | 116 | 45 |
| Vitamin D status | | | |
| mean | 64.3 | 58.3 | 47.7 |
| median | 62.9 | 56.1 | 49.6 |
| SD | 24.3 | 23.2 | 21.3 |
| Plasma 25 OH D (nmol/l) | | | |
| < 25nmol/l: increased risk of osteomalacia and rickets ²⁴ | 2.5 th percentile | 9.8 | 13.3 |
| | 97.5 th percentile | 100.0 | 83.7 |
| | % below 25 nmol/l | 2 | 21 |

¹⁸ [] data presented in square brackets denotes that the estimates are based on a cell size between 30 and 49. In this case it should be noted that the lower or upper 2.5th percentiles represent data from at most 2 participants.

¹⁹ Data from DNSIYC 2011 (Lennox et al, 2013).

²⁰ Data from NDNS 2008/09 to 2018/19. Data for some analytes from 2008/09 to 2016/17. See footnote 5.

²¹ Concentrations below 0.35 µmol/L are considered to reflect severe deficiency and concentrations between 0.35 µmol/L and 0.70 µmol/L to reflect mild deficiency. It should be noted that the evidence for these thresholds is confined mainly to non-elderly adults (Bates et al, 1997).

²² Data from NDNS 2008/09 to 2016/17.

²³ Sauberlich HE. Vitamin C status: methods and findings. Annals of the New York Academy of Sciences, 1971; 24: 444–454.

²⁴ SACN (2016) Vitamin D and Health

| Micronutrient status ¹⁸ Status marker | Age groups | | |
|--|-------------------------------|----------------------------------|---|
| | 12 to 18 months ¹⁹ | 18 to 47 months ²⁰ | 48 to 60 months ^{Error! Bookmark not defined.} |
| <i>Number of participants</i> | 300 | 140 | 58 |
| Iron status | | | |
| Plasma ferritin (µg/l) | mean | 28.3 | 24.5 |
| | median | 24.0 | 19.5 |
| | SD | 18.8 | 18.7 |
| <12µg/l: depleted iron stores; increased risk of iron deficiency anaemia ²⁵ | 2.5 th percentile | 7.0 | 3.7 |
| | 97.5 th percentile | 79.0 | 60.8 |
| | % below 12 µg/l | 11 | 24 |
| <i>Number of participants</i> | 298 | 117 | 53 |
| Haemoglobin (g/l) | mean | 117 | 120 |
| | median | 117 | 119 |
| | SD | 10 | 8 |
| <110g/l: anaemia ²⁶ | 2.5 th percentile | 99 | 105 |
| | 97.5 th percentile | 135 | 136 |
| | % below 110g/l | 15 | 9 |
| % below thresholds for ferritin and haemoglobin | 2 | 3 | 0 |
| <i>Number of participants</i> | 325 | 140 | 58 |
| Transferrin receptors (µg/ml) | mean | 8.6 | |
| | median | 6.8 | |
| | SD | 5.9 | |
| >11µg/ml: depleted iron stores and increased risk of iron deficiency anaemia | 2.5 th percentile | 26.6 | |
| | 97.5 th percentile | 4.2 | |
| | % below 11µg/ml | 15 | |
| <i>Number of participants</i> | 296 | | |
| | | Not available for this age group | Not available for this age group |

²⁵ SACN (2011) Iron and Health

²⁶ SACN (2011) Iron and Health

| Micronutrient status ¹⁸ Status marker | Age groups | | |
|--|-------------------------------|----------------------------------|---|
| | 12 to 18 months ¹⁹ | 18 to 47 months ²⁰ | 48 to 60 months ^{Error! Bookmark not defined.} |
| Folate status ^{Error! Bookmark not defined.} | | | |
| Red cell folate nmol/l | Mean | 678 | 692 |
| <305nmol/l: clinical threshold for increased risk of anaemia ²⁷ | Median | 659 | 640 |
| | SD | 210 | 287 |
| | 2.5th percentile | Not available for this age group | 344 |
| | 97.5th percentile | 1238 | 1460 |
| | % below 305nmol/l threshold | 1 | 1 |
| | Number of participants | 125 | 55 |
| Serum folate nmol/l | Mean | 30.7 | 27.1 |
| <7nmol/l: threshold for clinical deficiency | Median | 31.8 | 25.9 |
| <13nmol/l: threshold for possible deficiency | SD | 17.4 | 13.1 |
| | 2.5th percentile | 11.8 | 9.8 |
| | 97.5th percentile | 69.2 | 56.7 |
| | % below threshold 7nmol/l | 0 | 0 |
| | % below threshold 13nmol/l | 5 | 5 |
| | Number of participants | 118 | 50 |

--' no data available

²⁷ WHO. Serum and red blood cell folate concentrations for assessing folate in populations. Vitamins and Mineral Nutrition Information System. 2015; 01.1-7

Table A11.5 Energy and macronutrient intakes by IMD quintile: children aged 18 to 60 months in England (NDNS 2008/09 to 2018/19)

| Energy and macronutrient | | IMD quintile 1 (least deprived) | IMD quintile 2 | IMD quintile 3 | IMD quintile 4 | IMD quintile 5 (most deprived) |
|------------------------------------|------------------------------|------------------------------------|----------------|----------------|----------------|-----------------------------------|
| Energy MJ/day | Mean (MJ/day) | 4.90 | 4.78 | 4.91 | 4.83 | 4.67 |
| | Lower confidence limit (5%) | 4.78 | 4.66 | 4.79 | 4.70 | 4.54 |
| | Upper confidence limit (95%) | 5.03 | 4.89 | 5.04 | 4.95 | 4.80 |
| Protein g/day | mean (g/day) | 43.7 | 43.7 | 45.7 | 43.0 | 41.9 |
| | Lower confidence limit (5%) | 42.3 | 42.5 | 44.0 | 41.8 | 40.6 |
| | Upper confidence limit (95%) | 45.1 | 44.9 | 46.8 | 44.2 | 43.1 |
| % energy | mean (% energy) | 15.1 | 15.6 | 15.6 | 15.2 | 15.3 |
| | Lower confidence limit (5%) | 14.8 | 15.3 | 15.3 | 14.9 | 15.0 |
| | Upper confidence limit (95%) | 15.4 | 15.9 | 16.0 | 15.4 | 15.6 |
| Carbo- hydrate g/day | mean (g/day) | 159 | 152 | 157 | 155 | 148 |
| | Lower confidence limit (5%) | 154 | 147 | 153 | 151 | 144 |
| | Upper confidence limit (95%) | 163 | 156 | 162 | 160 | 152 |
| % energy | mean (% energy) | 51.3 | 50.1 | 50.6 | 50.7 | 50.3 |
| | Lower confidence limit (5%) | 50.6 | 49.4 | 49.9 | 50.1 | 49.7 |
| | Upper confidence limit (95%) | 52.0 | 50.8 | 51.2 | 51.3 | 50.9 |
| Free sugars g/day | mean (g/day) | 39.0 | 35.5 | 37.5 | 37.8 | 35.7 |
| | Lower confidence limit (5%) | 36.5 | 33.2 | 35.2 | 35.6 | 33.7 |
| | Upper confidence limit (95%) | 41.6 | 37.8 | 39.9 | 40.1 | 37.7 |
| % energy | mean (% energy) | 12.4 | 11.6 | 11.9 | 12.1 | 11.8 |
| | Lower confidence limit (5%) | 11.7 | 10.9 | 11.2 | 11.5 | 11.2 |
| | Upper confidence limit (95%) | 13.2 | 12.2 | 12.5 | 12.6 | 12.3 |
| Dietary fibre g/day | mean (g/day) | 11.7 | 11.2 | 11.2 | 11.0 | 10.3 |
| | Lower confidence limit (5%) | 11.3 | 10.8 | 10.8 | 10.6 | 9.9 |
| | Upper confidence limit (95%) | 12.1 | 11.6 | 11.6 | 11.4 | 10.7 |

| Energy and macronutrient | | IMD quintile 1 (least deprived) | IMD quintile 2 | IMD quintile 3 | IMD quintile 4 | IMD quintile 5 (most deprived) |
|-------------------------------|------------------------------|------------------------------------|----------------|----------------|----------------|-----------------------------------|
| Total fat g/day | mean (g/day) | 43.7 | 43.3 | 43.7 | 43.5 | 42.7 |
| | Lower confidence limit (5%) | 42.2 | 41.9 | 42.5 | 42.2 | 41.3 |
| | Upper confidence limit (95%) | 45.1 | 44.6 | 45.0 | 44.8 | 44.2 |
| % energy | mean (% energy) | 33.6 | 34.4 | 33.8 | 34.2 | 34.5 |
| | Lower confidence limit (5%) | 33.0 | 33.7 | 33.3 | 33.6 | 33.9 |
| | Upper confidence limit (95%) | 34.2 | 35.0 | 34.4 | 34.7 | 35.0 |
| Saturated fat g/day | mean (g/day) | 18.9 | 18.6 | 18.4 | 18.0 | 17.6 |
| | Lower confidence limit (5%) | 18.2 | 17.9 | 17.8 | 17.3 | 16.9 |
| | Upper confidence limit (95%) | 19.7 | 19.3 | 19.0 | 18.7 | 18.3 |
| % energy | mean (% energy) | 14.6 | 14.8 | 14.3 | 14.1 | 14.2 |
| | Lower confidence limit (5%) | 14.2 | 14.4 | 13.9 | 13.8 | 13.8 |
| | Upper confidence limit (95%) | 15.0 | 15.2 | 14.6 | 14.5 | 14.5 |
| Cis MUFA g/day | mean (g/day) | 14.5 | 14.5 | 15.0 | 15.0 | 14.9 |
| | Lower confidence limit (5%) | 14.0 | 14.0 | 14.5 | 14.5 | 14.3 |
| | Upper confidence limit (95%) | 15.0 | 15.0 | 15.5 | 15.5 | 15.4 |
| % energy | mean (% energy) | 11.1 | 11.5 | 11.6 | 11.8 | 12.0 |
| | Lower confidence limit (5%) | 10.9 | 11.3 | 11.4 | 11.5 | 11.7 |
| | Upper confidence limit (95%) | 11.4 | 11.8 | 11.8 | 12.0 | 12.2 |
| Cis n-3 PUFA g/day | mean (g/day) | 0.94 | 0.91 | 0.95 | 0.95 | 0.97 |
| | Lower confidence limit (5%) | 0.89 | 0.87 | 0.90 | 0.91 | 0.92 |
| | Upper confidence limit (95%) | 0.99 | 0.96 | 1.00 | 1.00 | 1.02 |
| % energy | mean (% energy) | 0.72 | 0.72 | 0.73 | 0.75 | 0.80 |
| | Lower confidence limit (5%) | 0.69 | 0.69 | 0.70 | 0.72 | 0.76 |
| | Upper confidence limit (95%) | 0.75 | 0.75 | 0.76 | 0.78 | 0.85 |
| Cis n-6 PUFA g/day | mean (g/day) | 5.14 | 5.09 | 5.22 | 5.52 | 5.31 |
| | Lower confidence limit (5%) | 4.90 | 4.87 | 5.00 | 5.24 | 5.09 |
| | Upper confidence limit (95%) | 5.38 | 5.30 | 5.45 | 5.79 | 5.54 |
| % energy | mean (% energy) | 3.96 | 4.05 | 4.04 | 4.29 | 4.31 |
| | Lower confidence limit (5%) | 3.80 | 3.90 | 3.89 | 4.14 | 4.17 |
| | Upper confidence limit (95%) | 4.12 | 4.19 | 4.20 | 4.45 | 4.45 |
| <i>Number of participants</i> | | 210 | 211 | 182 | 234 | 277 |

Data source: NDNS years 1 to 11 (2008/09 to 2018/19)

Table A11.6 Micronutrient intakes from food sources by IMD quintile: children aged 18 to 60 months England (NDNS 2008/09 to 2018/19)

| Micronutrient¹ | IMD quintile 1 (least deprived) | IMD quintile 2 | IMD quintile 3 | IMD quintile 4 | IMD quintile 5 (most deprived) | |
|---|--|-----------------------|-----------------------|-----------------------|---|------|
| Vitamin A (retinol equivalents [RE]) µg/day | mean (µg RE/day) | 562 | 540 | 520 | 488 | 421 |
| | Lower confidence limit (5%) | 523 | 500 | 481 | 455 | 396 |
| | Upper confidence limit (95%) | 601 | 579 | 560 | 522 | 445 |
| Thiamin (B1) mg/day | mean (mg/day) | 0.99 | 0.97 | 1.06 | 1.01 | 0.92 |
| | Lower confidence limit (5%) | 0.95 | 0.93 | 1.01 | 0.97 | 0.88 |
| | Upper confidence limit (95%) | 1.03 | 1.00 | 1.11 | 1.06 | 0.96 |
| Riboflavin (B2) mg/day | mean (mg/day) | 1.44 | 1.40 | 1.42 | 1.31 | 1.29 |
| | Lower confidence limit (5%) | 1.36 | 1.34 | 1.34 | 1.25 | 1.23 |
| | Upper confidence limit (90%) | 1.51 | 1.46 | 1.49 | 1.37 | 1.35 |
| Niacin (B3) equivalent mg/day | mean (mg/day) | 18.8 | 19.1 | 19.8 | 19.2 | 18.5 |
| | Lower confidence limit (5%) | 18.1 | 18.4 | 19.0 | 18.4 | 17.8 |
| | Upper confidence limit (95%) | 19.4 | 19.7 | 20.6 | 19.9 | 19.2 |
| Vitamin B6 mg/day | mean (mg/day) | 1.2 | 1.2 | 1.3 | 1.2 | 1.1 |
| | Lower confidence limit (5%) | 1.2 | 1.1 | 1.2 | 1.1 | 1.1 |
| | Upper confidence limit (95%) | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 |
| Vitamin B12 µg/day | mean (µg/day) | 4.1 | 4.8 | 4.0 | 3.5 | 3.6 |
| | Lower confidence limit (5%) | 3.8 | 3.0 | 3.7 | 3.3 | 3.4 |
| | Upper confidence limit (95%) | 4.3 | 6.5 | 4.3 | 3.7 | 3.8 |
| Folate µg/day | mean (µg/day) | 155 | 149 | 153 | 149 | 139 |
| | Lower confidence limit (5%) | 148 | 142 | 146 | 142 | 133 |
| | Upper confidence limit (95%) | 161 | 156 | 160 | 156 | 144 |
| Vitamin C mg/day | mean (mg/day) | 72.6 | 67.1 | 73.9 | 69.4 | 66.7 |
| | Lower confidence limit (5%) | 67.7 | 63.0 | 68.4 | 65.2 | 62.6 |
| | Upper confidence limit (95%) | 77.6 | 71.3 | 79.4 | 73.7 | 70.8 |

| Micronutrient¹ | | IMD quintile 1 (least deprived) | IMD quintile 2 | IMD quintile 3 | IMD quintile 4 | IMD quintile 5 (most deprived) |
|----------------------------------|------------------------------|--|-----------------------|-----------------------|-----------------------|---|
| Vitamin D µg/day | mean (µg/day) | 1.83 | 2.10 | 2.16 | 2.09 | 2.16 |
| | Lower confidence limit (5%) | 1.64 | 1.92 | 1.89 | 1.86 | 1.91 |
| | Upper confidence limit (95%) | 2.02 | 2.28 | 2.43 | 2.31 | 2.40 |
| Vitamin E mg/day | mean (mg/day) | 5.3 | 5.4 | 5.6 | 5.8 | 5.5 |
| | Lower confidence limit (5%) | 5.1 | 5.1 | 5.3 | 5.5 | 5.2 |
| | Upper confidence limit (95%) | 5.6 | 5.6 | 5.9 | 6.1 | 5.7 |
| Iron mg/day | mean (mg/day) | 6.5 | 6.3 | 6.5 | 6.5 | 6.3 |
| | Lower confidence limit (5%) | 6.2 | 6.0 | 6.2 | 6.3 | 6.1 |
| | Upper confidence limit (95%) | 6.7 | 6.5 | 6.7 | 6.8 | 6.5 |
| Calcium mg/day | mean (mg/day) | 776 | 744 | 781 | 718 | 700 |
| | Lower confidence limit (5%) | 739 | 712 | 745 | 687 | 670 |
| | Upper confidence limit (95%) | 814 | 776 | 817 | 749 | 731 |
| Magnesium mg/day | mean (mg/day) | 163 | 159 | 159 | 156 | 148 |
| | Lower confidence limit (5%) | 158 | 153 | 154 | 150 | 142 |
| | Upper confidence limit (95%) | 169 | 164 | 165 | 161 | 154 |
| Potassium mg/day | mean (mg/day) | 1872 | 1789 | 1852 | 1761 | 1669 |
| | Lower confidence limit (5%) | 1798 | 1728 | 1781 | 1700 | 1606 |
| | Upper confidence limit (90%) | 1946 | 1851 | 1924 | 1823 | 1732 |
| Iodine µg/day | mean (µg/day) | 140 | 137 | 135 | 129 | 126 |
| | Lower confidence limit (5%) | 130 | 128 | 127 | 120 | 118 |
| | Upper confidence limit (95%) | 150 | 146 | 144 | 138 | 134 |
| Selenium µg/day | mean (µg/day) | 24 | 26 | 25 | 25 | 25 |
| | Lower confidence limit (5%) | 23 | 24 | 24 | 24 | 23 |
| | Upper confidence limit (95%) | 26 | 27 | 27 | 26 | 26 |
| Zinc mg/day | mean (mg/day) | 5.2 | 5.2 | 5.3 | 5.0 | 5.0 |
| | Lower confidence limit (5%) | 5.0 | 5.0 | 5.1 | 4.8 | 4.8 |
| | Upper confidence limit (95%) | 5.4 | 5.3 | 5.5 | 5.2 | 5.3 |
| Copper µg/day | mean (mg/day) | 0.63 | 0.61 | 0.60 | 0.60 | 0.57 |
| | Lower confidence limit (5%) | 0.60 | 0.58 | 0.57 | 0.58 | 0.54 |
| | Upper confidence limit (95%) | 0.65 | 0.63 | 0.62 | 0.63 | 0.59 |

| Micronutrient¹ | IMD quintile 1 (least deprived) | IMD quintile 2 | IMD quintile 3 | IMD quintile 4 | IMD quintile 5 (most deprived) |
|----------------------------------|--|-----------------------|-----------------------|-----------------------|---|
| Number of participants | 210 | 211 | 182 | 234 | 277 |

¹ Data from NDNS 2008/09 to 2018/19.

Table A11.7 Food group contributors to cis monounsaturated fatty acid (MUFA) intake for children aged 12 to 60 months¹

| Contribution of food groups ^{2,3,4} to cis MUFA intake | 12 to 18 months | | 18 to 47 months | | 48 to 60 months | |
|--|-----------------|-------|-----------------|-------|-----------------|-------|
| | % | g/day | % | g/day | % | g/day |
| Milk⁵ | 21.2 | 2.5 | 15.5 | 2.1 | 8.5 | 1.4 |
| Formula milks⁶ | 14.6 | 1.9 | 1.7 | 0.2 | 0.0 | 0.0 |
| Meat, meat products and dishes | 12.2 | 1.6 | 17.1 | 2.4 | 22.5 | 3.6 |
| Butter and fat spreads | 7.9 | 1.0 | 8.4 | 1.2 | 9.4 | 1.5 |
| Biscuits, buns, cakes, pastries, fruit pies puddings | 6.4 | 0.8 | 11.3 | 1.6 | 13.9 | 2.2 |
| Cheese⁷ | 4.0 | 0.5 | 4.6 | 0.6 | 3.3 | 0.5 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 3.4 | 0.4 | 0.6 | 0.1 | 0.7 | 0.1 |
| Potatoes, potato products and dishes | 3.2 | 0.4 | 3.8 | 0.6 | 5.6 | 1.0 |
| Eggs, egg products and dishes | 3.1 | 0.4 | 3.4 | 0.5 | 3.2 | 0.5 |
| Crisps and savoury snacks | 3.0 | 0.4 | 7.6 | 1.2 | 7.2 | 1.2 |
| Yoghurt, fromage frais and dairy desserts⁷ | 3.0 | 0.3 | 1.9 | 0.3 | 1.6 | 0.2 |
| Fish, fish products and dishes | 2.8 | 0.4 | 3.5 | 0.5 | 2.4 | 0.4 |
| Breast milk | 2.8 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Pizza, pasta, rice, products and dishes | 2.6 | 0.3 | 3.8 | 0.5 | 4.3 | 0.6 |
| Sugar, preserves and confectionery | 2.1 | 0.3 | 3.8 | 0.5 | 4.4 | 0.7 |
| Bread | 1.6 | 0.2 | 2.2 | 0.3 | 2.5 | 0.4 |
| Vegetables, products and dishes | 1.6 | 0.2 | 2.1 | 0.3 | 2.3 | 0.3 |
| Breakfast cereals | 1.4 | 0.2 | 2.4 | 0.3 | 2.2 | 0.4 |
| Savoury sauces, pickles gravies and condiments | 1.2 | 0.1 | 2.1 | 0.3 | 2.2 | 0.4 |
| Soup | 0.6 | 0.1 | 0.7 | 0.1 | 0.5 | 0.1 |
| Fruit | 0.6 | 0.1 | 1.0 | 0.2 | 0.5 | 0.1 |
| Ice cream⁷ | 0.3 | 0.0 | 0.7 | 0.1 | 1.1 | 0.2 |
| Nuts and seeds | 0.2 | 0.0 | 1.5 | 0.2 | 1.7 | 0.3 |
| Number of participants | 1275 | | 306 | | 102 | |

¹ Data sources: DNSYIC (2011) for children aged 12 to 18 months; NDNS years 2016/17 to 2018/19 for children aged 18 to 60 months.

² Food groups are ordered by largest to smallest % contribution in the youngest age group.

³ Food groups that contribute less than 0.5% of intake in all age groups are not presented.

⁴ Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

⁵ Milk includes cream and non-dairy alternatives.

⁶ Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary)..

⁷ Includes non-dairy alternatives

Table A11.8 Food group contributors to cis n-3 polyunsaturated fatty acids (cis n-3 PUFA) intake for children aged 12 to 60 months¹

| Contribution of food groups ^{2,3,4} to cis n-3 PUFA intake | 12 to 18 months | | 18 to 47 months | | 48 to 60 months | |
|---|-----------------|-------|-----------------|-------|-----------------|-------|
| | % | g/day | % | g/day | % | g/day |
| Formula milks ⁶ | 12.9 | 0.1 | 1.4 | 0.0 | 0.0 | 0.0 |
| Butter and fat spreads | 11.6 | 0.1 | 13.4 | 0.1 | 13.6 | 0.1 |
| Meat, meat products and dishes | 10.5 | 0.1 | 15.1 | 0.1 | 17.4 | 0.2 |
| Milk ⁵ | 9.4 | 0.1 | 6.6 | 0.1 | 3.5 | 0.0 |
| Fish, fish products and dishes | 7.8 | 0.1 | 8.9 | 0.1 | 7.0 | 0.1 |
| Vegetables, vegetable products and dishes | 7.2 | 0.1 | 6.1 | 0.1 | 7.5 | 0.1 |
| Biscuits, buns, cakes, pastries, fruit pies and puddings | 5.1 | 0.0 | 8.3 | 0.1 | 10.8 | 0.1 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 4.8 | 0.0 | 0.9 | 0.0 | 0.4 | 0.0 |
| Potatoes, potato products and dishes | 4.3 | 0.0 | 4.5 | 0.0 | 6.7 | 0.1 |
| Fruit | 4.2 | 0.0 | 4.3 | 0.0 | 4.7 | 0.0 |
| Bread | 3.4 | 0.0 | 5.2 | 0.1 | 4.9 | 0.1 |
| Pizza, pasta, rice, products and dishes | 3.1 | 0.0 | 4.5 | 0.0 | 4.7 | 0.0 |
| Crisps and savoury snacks | 2.5 | 0.0 | 3.6 | 0.0 | 3.6 | 0.0 |
| Breast milk | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cheese ⁷ | 2.0 | 0.0 | 2.2 | 0.0 | 1.3 | 0.0 |
| Breakfast cereals | 1.5 | 0.0 | 1.7 | 0.0 | 1.6 | 0.0 |
| Savoury sauces pickles gravies and condiments | 1.4 | 0.0 | 2.7 | 0.0 | 3.2 | 0.0 |
| Eggs, egg products and dishes | 1.4 | 0.0 | 2.4 | 0.0 | 2.4 | 0.0 |
| Yoghurt, fromage frais and dairy desserts ⁷ | 1.4 | 0.0 | 0.9 | 0.0 | 0.8 | 0.0 |
| Soup | 1.3 | 0.0 | 1.0 | 0.0 | 0.7 | 0.0 |
| Sugar preserves and confectionery | 0.7 | 0.0 | 2.4 | 0.0 | 1.8 | 0.0 |
| Nuts and seeds | 0.4 | 0.0 | 2.3 | 0.0 | 1.4 | 0.0 |
| Dietary supplements | 0.2 | 0.0 | 0.9 | 0.0 | 1.3 | 0.0 |
| Number of participants | 1275 | | 306 | | 102 | |

¹Data sources: DNSYIC (2011) for children aged 12 to 18 months; NDNS years 2016/17 to 2018/19 for children aged 18 to 60 months.

² Food groups are ordered by largest to smallest % contribution in the youngest age group.

³ Food groups that contribute less than 0.5% of intake in all age groups are not presented.

⁴ Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

⁵ Milk includes cream and non-dairy alternatives.

⁶ Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary).

⁷ Includes non-dairy alternatives

Table A11.9 Food group contributors to cis n-6 polyunsaturated fatty acids (cis n-6 PUFA) intake for children aged 12 to 60 months¹

| Contribution of food groups ^{2,3,4} to cis n-6 PUFA intake | 12 to 18 months | | 18 to 47 months | | 48 to 60 months | |
|---|-----------------|-------|-----------------|-------|-----------------|-------|
| | % | g/day | % | g/day | % | g/day |
| Formula milks ⁶ | 14.7 | 0.7 | 1.4 | 0.1 | 0.0 | 0.0 |
| Meat, meat products and dishes | 11.7 | 0.5 | 16.9 | 0.8 | 21.2 | 1.3 |
| Milk ⁵ | 8.8 | 0.3 | 6.2 | 0.3 | 3.6 | 0.2 |
| Butter and fat spreads | 8.6 | 0.4 | 9.4 | 0.5 | 9.0 | 0.5 |
| Biscuits, buns, cakes, pastries, fruit pies and puddings | 7.0 | 0.3 | 10.7 | 0.5 | 11.7 | 0.7 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 6.4 | 0.2 | 1.3 | 0.1 | 0.6 | 0.0 |
| Potatoes, potato products and dishes | 5.7 | 0.2 | 7.7 | 0.4 | 9.1 | 0.6 |
| Bread | 5.2 | 0.2 | 6.6 | 0.3 | 6.5 | 0.4 |
| Breakfast cereals | 4.6 | 0.2 | 4.7 | 0.2 | 4.4 | 0.3 |
| Pizza, pasta, rice, products and dishes | 4.4 | 0.2 | 5.1 | 0.2 | 5.5 | 0.3 |
| Vegetables, vegetable products and dishes | 4.1 | 0.2 | 4.1 | 0.2 | 4.7 | 0.3 |
| Fish, fish products and dishes | 3.7 | 0.1 | 4.3 | 0.2 | 2.8 | 0.2 |
| Eggs, egg products and dishes | 2.8 | 0.1 | 3.7 | 0.2 | 3.1 | 0.2 |
| Crisps and savoury snacks | 2.8 | 0.1 | 5.7 | 0.3 | 5.8 | 0.4 |
| Breast milk | 2.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Savoury sauces, pickles, gravies and condiments | 1.5 | 0.1 | 2.2 | 0.1 | 2.1 | 0.1 |
| Sugar preserves and confectionery | 1.1 | 0.0 | 2.5 | 0.1 | 2.6 | 0.2 |
| Fruit | 1.1 | 0.0 | 1.8 | 0.1 | 1.9 | 0.1 |
| Yoghurt, fromage frais and dairy desserts ⁷ | 1.0 | 0.0 | 0.8 | 0.0 | 0.8 | 0.1 |
| Cheese ⁷ | 0.9 | 0.0 | 1.2 | 0.1 | 0.8 | 0.0 |
| Soup | 0.8 | 0.0 | 0.8 | 0.0 | 0.4 | 0.0 |
| Nuts and seeds | 0.5 | 0.0 | 2.3 | 0.2 | 2.6 | 0.2 |
| Number of participants | 1275 | | 354 | | 114 | |

¹ Data sources: DNSYIC (2011) for children aged 12 to 18 months; NDNS years 2016/17 to 2018/19 for children aged 18 to 60 months.

² Food groups are ordered by largest to smallest % contribution in the youngest age group.

³ Food groups that contribute less than 0.5% of intake in all age groups are not presented.

⁴ Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

⁵ Milk includes cream and non-dairy alternatives.

⁶ Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary)..

⁷ Includes non-dairy alternatives

Table A11.10 Food group contributors to trans fatty acids intake for children aged 12 to 60 months¹

| Contribution of food groups ^{2,3,4} to trans fatty acid intake | 12-18 months | | 18-47 months | | 48-60 months | |
|--|--------------|-------|--------------|-------|--------------|-------|
| | % | g/day | % | g/day | % | g/day |
| Milk⁵ | 32.8 | 0.2 | 28.6 | 0.2 | 23.8 | 0.2 |
| Meat, meat products and dishes | 14.5 | 0.1 | 13.7 | 0.1 | 18.9 | 0.1 |
| Cheese | 13.7 | 0.1 | 15.9 | 0.1 | 10.3 | 0.1 |
| Yoghurt, fromage frais and dairy desserts⁶ | 8.2 | 0.0 | 5.3 | 0.0 | 4.6 | 0.0 |
| Butter and fat spreads | 6.5 | 0.0 | 7.9 | 0.1 | 11.1 | 0.1 |
| Biscuits, buns, cakes, pastries, fruit pies and puddings | 4.1 | 0.0 | 8.7 | 0.0 | 11.2 | 0.1 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 3.8 | 0.0 | 0.5 | 0.0 | 0.1 | 0.0 |
| Eggs, egg products and dishes | 2.5 | 0.0 | 1.5 | 0.0 | 1.2 | 0.0 |
| Potatoes, potato products and dishes | 2.3 | 0.0 | 1.3 | 0.0 | 1.2 | 0.0 |
| Pizza, pasta, rice, products and dishes | 2.2 | 0.0 | 3.7 | 0.0 | 4.3 | 0.0 |
| Bread | 1.9 | 0.0 | 3.4 | 0.0 | 3.5 | 0.0 |
| Fish, fish products and dishes | 1.3 | 0.0 | 1.0 | 0.0 | 0.4 | 0.0 |
| Savoury sauces, pickles gravies and condiments | 1.3 | 0.0 | 1.1 | 0.0 | 0.4 | 0.0 |
| Sugar, preserves and confectionery | 1.1 | 0.0 | 1.5 | 0.0 | 1.9 | 0.0 |
| Vegetables, vegetable products and dishes | 0.9 | 0.0 | 1.4 | 0.0 | 1.2 | 0.0 |
| Ice cream⁶ | 0.8 | 0.0 | 1.5 | 0.0 | 3.4 | 0.0 |
| Soup | 0.8 | 0.0 | 0.8 | 0.0 | 0.6 | 0.0 |
| Breakfast cereals | 0.7 | 0.0 | 1.6 | 0.0 | 1.4 | 0.0 |
| Number of participants | 1275 | | 306 | | 102 | |

¹ Data sources: DNSYIC (2011) for children aged 12 to 18 months; NDNS years 2016/17 to 2018/19 for children aged 18 to 60 months.

² Food groups are ordered by largest to smallest % contribution in the youngest age group.

³ Food groups that contribute less than 0.5% of intake in all age groups are not presented.

⁴ Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

⁵ Milk includes cream and non-dairy alternatives

⁶ Includes non-dairy alternatives

Table A11.11 Sex breakdown of children who gave a blood sample compared with all children

| Breakdown | 18 to 47 months | | 48 to 60 months | |
|-------------------------------|------------------------------------|----------------|------------------------------------|----------------|
| | Children who gave a blood sample % | All children % | Children who gave a blood sample % | All children % |
| Boys | 47.1 | 51.2 | 48.2 | 47.2 |
| Girls | 52.9 | 48.8 | 51.8 | 52.8 |
| Number of participants | 157 | 1375 | 67 | 453 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.12 Age breakdown of children who gave a blood sample compared with all children

| Breakdown | 18 to 23 months (1 year) % | 24 to 35 months (2 years) % | 36 to 47 months (3 years) % | 48 to 60 months (4 years) % | Number of participants |
|---|----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------|
| Children who gave a blood sample | 9.4 | 33.0 | 26.5 | 31.1 | 224 |
| All children | 14.8 | 29.1 | 28.4 | 27.7 | 1828 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.13 Ethnic minority group breakdown of children who gave a blood sample compared with all children

| Ethnic minority group | 18 to 47 months | | 48 to 60 months | |
|-------------------------------|------------------------------------|----------------|------------------------------------|----------------|
| | Children who give a blood sample % | All children % | Children who give a blood sample % | All children % |
| White | 75.6 | 80.5 | 83.7 | 81.3 |
| Mixed | 3.7 | 4.0 | 2.6 | 5.7 |
| Black or black British | 4.4 | 4.0 | 2.0 | 2.9 |
| Asian or Asian British | 6.7 | 8.4 | 6.0 | 8.0 |
| Any other group | 9.4 | 3.1 | 5.7 | 2.0 |
| Number of participants | 157 | 1375 | 67 | 453 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.14 Socioeconomic breakdown of households of children who gave a blood sample compared with all children

| Occupation of Household Reference Person | 18 to 47 months | | 48 to 60 months | |
|--|------------------------------------|----------------|------------------------------------|----------------|
| | Children who gave a blood sample % | All children % | Children who gave a blood sample % | All children % |
| Higher managerial and professional occupations | 21.7 | 15.3 | 28.1 | 23.1 |
| Lower managerial and professional occupations | 21.4 | 25.9 | 18.0 | 24.3 |
| Intermediate occupations | 10.7 | 10.0 | 2.9 | 7.0 |
| Small employers and own account workers | 17.5 | 10.4 | 10.6 | 10.1 |
| Lower supervisory and technical occupations | 6.9 | 9.3 | 12.8 | 7.6 |
| Semi-routine occupations | 9.8 | 12.3 | 18.8 | 13.1 |
| Routine occupations | 3.7 | 9.6 | 5.4 | 9.0 |
| Never worked | 7.6 | 6.0 | 3.5 | 4.8 |
| Other or Unclassified | 0.6 | 1.2 | 0.0 | 1.0 |
| Number of participants | 157 | 1375 | 67 | 453 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.15 Total dietary energy intake (TDEI): BMR ratio and body weights for children who are above and below the Dietary Reference Values for vitamin A, iron and zinc) (NDNS years 2008/09 to 2018/19)

| Age | 18 to 47 months | | | | | Number of participants | 48 to 60 months | | | | | Number of participants |
|------------------|------------------------|------------------------------|--------|---------|----------|------------------------|------------------------|------------------------------|--------|---------|----------|------------------------|
| | TDEI: BMR ¹ | Body weight for age z-scores | | | | | TDEI: BMR ¹ | Body weight for age z-scores | | | | |
| | | Mean (CI) | median | 2.5%ile | 97.5%ile | | | Mean (CI) | median | 2.5%ile | 97.5%ile | |
| Vitamin A | | | | | | | | | | | | |
| All | 1.38 | 0.64 (0.57-0.70) | 0.63 | -1.37 | 2.63 | 1213 | 1.44 | 0.40 (0.30-0.50) | 0.37 | -1.54 | 2.83 | 434 |
| < LRNI | 1.03 | 0.79 (0.31-1.28) | 0.33 | -1.74 | 5.32 | 79 | | | | | | 26 |
| ≥LRNI | 1.41 | 0.62 (0.56-0.68) | 0.64 | -1.36 | 2.57 | 1134 | 1.47 | 0.42 (0.32-0.52) | 0.37 | -1.57 | 2.85 | 408 |
| ≥RNI | 1.47 | 0.68 (0.60-0.76) | 0.73 | -1.35 | 2.73 | 683 | 1.50 | 0.41 (0.29-0.54) | 0.36 | -1.53 | 2.47 | 257 |
| Iron | | | | | | | | | | | | |
| All | 1.38 | 0.64 (0.57-0.70) | 0.63 | -1.37 | 2.63 | 1213 | 1.44 | 0.40 (0.30-0.50) | 0.37 | -1.54 | 2.83 | 434 |
| < LRNI | 1.12 | 0.57 (0.38-0.75) | 0.61 | -1.75 | 2.20 | 105 | | | | | | 8 |
| ≥LRNI | 1.40 | 0.64 (0.57-0.71) | 0.63 | -1.34 | 2.66 | 1108 | 1.44 | 0.40 (0.30-0.50) | 0.37 | -1.54 | 2.84 | 426 |
| ≥RNI | 1.54 | 0.71 (0.61-0.81) | 0.75 | -1.32 | 2.55 | 381 | 1.55 | 0.48 (0.35-0.60) | 0.41 | -1.28 | 2.72 | 278 |
| Zinc | | | | | | | | | | | | |
| All | 1.38 | 0.64 (0.57-0.70) | 0.63 | -1.37 | 2.63 | 1213 | 1.44 | 0.40 (0.30-0.50) | 0.37 | -1.54 | 2.83 | 434 |
| < LRNI | 0.94 | 0.43 (0.12-0.74) | 0.33 | -1.88 | 2.67 | 65 | 1.17 | 0.19 (0.01-0.36) | 0.28 | -1.65 | 1.49 | 77 |
| ≥LRNI | 1.41 | 0.65 (0.58-0.71) | 0.63 | -1.34 | 2.58 | 1148 | 1.51 | 0.46 (0.34-0.57) | 0.39 | -1.52 | 2.92 | 357 |
| ≥RNI | 1.54 | 0.71 (0.63-0.79) | 0.74 | -1.33 | 2.60 | 592 | 1.69 | 0.57 (0.38-0.77) | 0.39 | -1.47 | 2.36 | 98 |

Abbreviations: BMR, basal metabolic rate, LRNI, Lower Reference Nutrient Intake; RNI, Reference Nutrient Intake

¹ BMR calculated using the Henry equations (SACN, 2011)

Table A11.16 Iron status (plasma ferritin, iron deficiency [ID], anaemia, iron deficiency anaemia [IDA]) in children aged 12 to 60 months in the UK (DNSIYC and NDNS RP years 2008/09 to 2018/19)

| Age | Haemoglobin (g/l) Mean (SD) | | Plasma ferritin(μ g/l) Mean (SD) | | % ID (plasma ferritin below 12 μ g/l) | | % anaemia (haemoglobin below 110g/l) | | % IDA (% below thresholds for ferritin and haemoglobin) | |
|-------------------------------------|--------------------------------|---------------------------------------|--|---------------------------------------|--|----------------------------|--|----------------------------|---|----------------------------|
| | All children ⁴ | Children with CRP <5mg/l ⁵ | All children ⁶ | Children with CRP <5mg/l ⁷ | All children % | Children with CRP <5mg/l % | All children % | Children with CRP <5mg/l % | All children % | Children with CRP <5mg/l % |
| 12 to 18 months ¹ | 117 (10) | No data | 28.3 (18.8) | No data | 11 | No data | 15 | No data | 2 | No data |
| 18 to 47 months ² | 120 (82) | 119 (83) | 24.5 (18.7) | 22.4 (15.7) | 23.9 | 26.4 | 9.0 | 9.8 | 3.3 | 3.7 |
| 48 to 60 months ² | 123 (80) | [124] ³ [81] | 29.1 (22.6) | [25.2] ³ [11.9] | 20.0 | [20.0] ³ | 7.2 | [9.7] | [0.0] ³ | [0.0] ³ |

¹ Data from DNSIYC 2011 (Lennox et al, 2013).

² Data from NDNS years 1 to 11 (2008/09-2018/19).

³ Data for a variable with a cell size between 30 to 49 are presented in square brackets.

⁴ 325 participants in the 12 to 18 months age category, 140 participants in the 18 to 47 months age category, 58 participants in the 48 to 60 months category.

⁵ 107 participants in the 18 to 47 months age category, 47 participants in the 48 to 60 months category.

⁶ 298 participants in the 12 to 18 month age category, 117 participants in the 18 to 47 months age category, 53 participants in the 48 to 60 months category.

⁷ 99 participants in the 18 to 47 months age category, 42 participants in the 48 to 60 months category.

Table A11.17 Sex breakdown of children at or above or below the DRVs for vitamin A, iron and zinc

| Nutrient | Sex | 18 to 47 months | | | | 48 to 60 months | | | |
|-----------|------------------------|-----------------|------------------|--------------------------|--------------|-----------------|------------------|--------------------------|--------------|
| | | At or above RNI | At or above LRNI | Below LRNI | All children | At or above RNI | At or above LRNI | Below LRNI | All children |
| | | % | % | % | % | % | % | % | % |
| Vitamin A | Boys | 55.3 | 51.6 | 47.0 | 51.2 | 49.0 | 48.8 | No data <30 participants | 47.2 |
| | Girls | 44.7 | 48.4 | 53.0 | 48.8 | 51.0 | 51.2 | No data <30 participants | 52.8 |
| | Number of participants | 775 | 1280 | 95 | 1375 | 269 | 425 | 28 | 453 |
| Iron | Boys | 54.6 | 52.3 | 39.5 | 51.2 | 54.2 | 47.4 | No data <30 participants | 47.2 |
| | Girls | 45.4 | 47.7 | 60.5 | 48.8 | 45.8 | 52.6 | No data <30 participants | 52.8 |
| | Number of participants | 418 | 1257 | 118 | 1375 | 289 | 445 | 8 | 453 |
| Zinc | Boys | 51.9 | 51.7 | 43.7 | 51.2 | 59.3 | 50.9 | 33.1 | 47.2 |
| | Girls | 48.1 | 48.3 | 56.3 | 48.8 | 40.7 | 49.1 | 66.9 | 52.8 |
| | Number of participants | 658 | 1300 | 75 | 1375 | 99 | 371 | 82 | 453 |
| All | Boys | 58.4 | 52.2 | No data <30 participants | 51.2 | 61.5 | 50.4 | No data <30 participants | 47.2 |
| | Girls | 41.6 | 47.8 | No data <30 participants | 48.8 | 38.5 | 49.6 | No data <30 participants | 52.8 |
| | Number of participants | 254 | 1152 | 16 | 1375 | 71 | 360 | 3 | 453 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.18 Age breakdown of children at or above or below the DRVs for vitamin A, iron and zinc

| Nutrient | Age | % at or above RNI | % at or above LRNI | % below LRNI | % all children |
|------------------|-------------------------------|--------------------------|---------------------------|--------------------------|-----------------------|
| Vitamin A | 18 to 23 months | 15.9 | 15.3 | 10.1 | 14.8 |
| | 24 to 35 months | 28.3 | 28.3 | 36.7 | 29.1 |
| | 36 to 47 months | 27.5 | 28.6 | 26.4 | 28.4 |
| | 48 to 60 months | 28.3 | 27.7 | 26.9 | 27.7 |
| | Number of participants | 1044 | 1705 | 123 | 1828 |
| Iron | 18 to 23 months | 10.9 | 13.5 | 34.1 | 14.8 |
| | 24 to 35 months | 21.5 | 28.7 | 33.5 | 29.1 |
| | 36 to 47 months | 23.0 | 28.5 | 27.2 | 28.4 |
| | 48 to 60 months | 44.6 | 29.2 | 5.3 | 27.7 |
| | Number of participants | 707 | 1702 | 126 | 1828 |
| Zinc | 18 to 23 months | 15.7 | 15.8 | 6.2 | 14.8 |
| | 24 to 35 months | 33.5 | 30.3 | 18.1 | 29.1 |
| | 36 to 47 months | 35.8 | 29.6 | 17.6 | 28.4 |
| | 48 to 60 months | 15.0 | 24.3 | 58.1 | 27.7 |
| | Number of participants | 757 | 1671 | 157 | 1828 |
| All | 18 to 23 months | 16.5 | 14.7 | No data <30 participants | 14.8 |
| | 24 to 35 months | 29.5 | 29.0 | No data <30 participants | 29.1 |
| | 36 to 47 months | 29.1 | 30.1 | No data <30 participants | 28.4 |
| | 48 to 60 months | 24.9 | 26.2 | No data <30 participants | 27.7 |
| | Number of participants | 325 | 1512 | 19 | 1828 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.19 Ethnic minority group breakdown of children meeting and not meeting the DRVs for vitamin A, iron and zinc

| Nutrient | Ethnic minority group | 18 to 47 months | | | | 48 to 60 months | | | |
|-----------|------------------------|-------------------|--------------------|--------------|----------------|-------------------|--------------------|--------------------------|----------------|
| | | % at or above RNI | % at or above LRNI | % below LRNI | % all children | % at or above RNI | % at or above LRNI | % below LRNI | % all children |
| Vitamin A | White | 82.2 | 81.1 | 73.9 | 80.5 | 84.5 | 81.7 | No data <30 participants | 81.3 |
| | Mixed ethnic group | 3.2 | 3.7 | 7.7 | 4.0 | 4.3 | 4.7 | No data <30 participants | 5.7 |
| | Black or Black British | 3.3 | 3.5 | 9.0 | 4.0 | 2.2 | 2.8 | No data <30 participants | 2.9 |
| | Asian or Asian British | 7.4 | 8.7 | 5.8 | 8.4 | 7.1 | 8.5 | No data <30 participants | 8.0 |
| | Any other group | 3.9 | 3.0 | 3.5 | 3.1 | 1.8 | 2.2 | No data <30 participants | 2.0 |
| | Number of participants | 775 | 1280 | 95 | 1375 | 269 | 425 | 28 | 453 |
| Iron | White | 81.1 | 81.3 | 72.6 | 80.5 | 81.2 | 81.6 | No data <30 participants | 81.3 |
| | Mixed ethnic group | 4.4 | 4.0 | 3.7 | 4.0 | 7.4 | 5.6 | No data <30 participants | 5.7 |
| | Black or Black British | 4.4 | 4.0 | 3.5 | 4.0 | 3.1 | 3.0 | No data <30 participants | 2.9 |
| | Asian or Asian British | 7.8 | 7.6 | 17.2 | 8.4 | 7.3 | 7.7 | No data <30 participants | 8.0 |
| | Any other group | 2.3 | 3.1 | 2.8 | 3.1 | 1.0 | 2.0 | No data <30 participants | 2.0 |
| | Number of participants | 418 | 1257 | 118 | 1375 | 289 | 445 | 8 | 453 |
| Zinc | White | 80.1 | 80.1 | 86.5 | 80.5 | 80.2 | 82.2 | 78.1 | 81.3 |
| | Mixed ethnic group | 3.9 | 4.1 | 2.4 | 4.0 | 9.7 | 5.3 | 7.2 | 5.7 |
| | Black or Black British | 4.2 | 3.7 | 7.9 | 4.0 | 2.4 | 3.2 | 1.8 | 2.9 |
| | Asian or Asian British | 8.7 | 8.7 | 3.3 | 8.4 | 7.7 | 7.4 | 10.0 | 8.0 |
| | Any other group | 3.2 | 3.2 | 0.0 | 3.1 | 0.0 | 1.8 | 2.9 | 2.0 |
| | Number of participants | 658 | 1300 | 75 | 1375 | 99 | 371 | 82 | 453 |
| All 3 | White | 82.8 | 81.7 | - | 80.5 | 85.4 | 82.3 | No data <30 participants | 81.3 |

| | | | | | | | | | |
|--|-------------------------------|-----|------|----|------|-----|-----|--------------------------|-----|
| | Mixed ethnic group | 2.8 | 3.7 | - | 4.0 | 8.1 | 4.8 | No data <30 participants | 5.7 |
| | Black or Black British | 4.5 | 3.5 | - | 4.0 | 3.4 | 3.3 | No data <30 participants | 2.9 |
| | Asian or Asian British | 6.7 | 7.9 | - | 8.4 | 3.1 | 7.7 | No data <30 participants | 8.0 |
| | Any other group | 3.2 | 3.3 | - | 3.1 | | 1.8 | No data <30 participants | 2.0 |
| | Number of participants | 254 | 1152 | 16 | 1375 | 71 | 360 | 3 | 453 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.20 Socioeconomic breakdown of children meeting and not meeting the DRVs for vitamin A, iron and zinc

| Nutrient | Socioeconomic group (occupation of Household Reference person) | 18 to 47 months | | | | 48 to 60 months | | | |
|-----------|--|-------------------|--------------------|--------------|----------------|-------------------|--------------------|--------------------------|----------------|
| | | % at or above RNI | % at or above LRNI | % below LRNI | % all children | % at or above RNI | % at or above LRNI | % below LRNI | % all children |
| Vitamin A | Higher managerial and professional occupations | 17.9 | 16.2 | 5.6 | 15.3 | 25.6 | 23.2 | No data <30 participants | 23.1 |
| | Lower managerial and professional occupations | 27.4 | 26.2 | 22.8 | 25.9 | 26.3 | 25.5 | No data <30 participants | 24.3 |
| | Intermediate occupations | 9.1 | 10.6 | 4.2 | 10.0 | 8.2 | 6.9 | No data <30 participants | 7.0 |
| | Small employers and own account workers | 10.1 | 10.8 | 5.8 | 10.4 | 10.8 | 10.8 | No data <30 participants | 10.1 |
| | Lower supervisory and technical occupations | 9.6 | 9.2 | 10.6 | 9.3 | 7.3 | 7.6 | No data <30 participants | 7.6 |
| | Semi-routine occupations | 11.4 | 11.7 | 19.4 | 12.3 | 11.7 | 13.7 | No data <30 participants | 13.1 |
| | Routine occupations | 9.1 | 9.3 | 12.4 | 9.6 | 7.7 | 8.2 | No data <30 participants | 9.0 |
| | Never worked | 4.3 | 4.8 | 18.3 | 6.0 | 1.5 | 3.0 | No data <30 participants | 4.8 |
| | Other / Unclassified | 1.1 | 1.3 | 0.7 | 1.2 | 1.0 | 1.1 | No data <30 participants | 1.0 |
| | Number of participants | 775 | 1280 | 95 | 1375 | 269 | 425 | 28 | 453 |
| Iron | Higher managerial and professional occupations | 20.7 | 16.1 | 6.0 | 15.3 | 22.9 | 23.3 | No data <30 participants | 23.1 |
| | Lower managerial and professional occupations | 26.8 | 25.9 | 25.7 | 25.9 | 26.0 | 24.6 | No data <30 participants | 24.3 |
| | Intermediate occupations | 9.1 | 10.0 | 10.5 | 10.0 | 8.3 | 6.9 | No data <30 participants | 7.0 |
| | Small employers and own account workers | 10.2 | 10.5 | 8.8 | 10.4 | 10.0 | 9.9 | No data <30 participants | 10.1 |
| | Lower supervisory and technical occupations | 10.1 | 8.9 | 13.8 | 9.3 | 8.5 | 7.7 | No data <30 participants | 7.6 |

| Nutrient | Socioeconomic group (occupation of Household Reference person) | 18 to 47 months | | | | 48 to 60 months | | | |
|-------------|--|-------------------|--------------------|--------------------------|----------------|-------------------|--------------------|--------------------------|----------------|
| | | % at or above RNI | % at or above LRNI | % below LRNI | % all children | % at or above RNI | % at or above LRNI | % below LRNI | % all children |
| | Semi-routine occupations | 11.2 | 12.5 | 10.0 | 12.3 | 11.2 | 13.0 | No data <30 participants | 13.1 |
| | Routine occupations | 8.7 | 9.6 | 9.8 | 9.6 | 7.8 | 9.2 | No data <30 participants | 9.0 |
| | Never worked | 2.5 | 5.2 | 14.0 | 6.0 | 4.4 | 4.4 | No data <30 participants | 4.8 |
| | Other / Unclassified | 0.7 | 1.2 | 1.5 | 1.2 | 0.9 | 1.0 | No data <30 participants | 1.0 |
| | Number of participants | 418 | 1257 | 118 | 1375 | 289 | 445 | 8 | 453 |
| Zinc | Higher managerial and professional occupations | 17.6 | 16.1 | 2.1 | 15.3 | 18.2 | 24.0 | 19.5 | 23.1 |
| | Lower managerial and professional occupations | 25.6 | 25.8 | 27.5 | 25.9 | 27.8 | 24.8 | 22.5 | 24.3 |
| | Intermediate occupations | 10.9 | 9.9 | 12.3 | 10.0 | 10.9 | 8.0 | 3.1 | 7.0 |
| | Small employers and own account workers | 9.6 | 10.7 | 4.8 | 10.4 | 6.0 | 10.9 | 7.1 | 10.1 |
| | Lower supervisory and technical occupations | 8.2 | 9.5 | 5.9 | 9.3 | 13.1 | 8.5 | 4.0 | 7.6 |
| | Semi-routine occupations | 14.1 | 11.6 | 24.7 | 12.3 | 10.2 | 11.5 | 19.1 | 13.1 |
| | Routine occupations | 8.0 | 9.8 | 6.3 | 9.6 | 2.5 | 7.9 | 13.2 | 9.0 |
| | Never worked | 4.6 | 5.4 | 15.0 | 6.0 | 8.3 | 3.0 | 11.5 | 4.8 |
| | Other / Unclassified | 1.3 | 1.2 | 1.4 | 1.2 | 2.9 | 1.3 | 0.0 | 1.0 |
| | Number of participants | 658 | 1300 | 75 | 1375 | 99 | 371 | 82 | 453 |
| All | Higher managerial and professional occupations | 22.8 | 17.4 | No data <30 participants | 15.3 | 22.7 | 23.4 | No data <30 participants | 23.1 |
| | Lower managerial and professional occupations | 26.3 | 26.4 | No data <30 participants | 25.9 | 37.4 | 25.4 | No data <30 participants | 24.3 |
| | Intermediate occupations | 9.1 | 10.2 | No data <30 participants | 10.0 | 12.4 | 7.6 | No data <30 participants | 7.0 |

| Nutrient | Socioeconomic group (occupation of Household Reference person) | 18 to 47 months | | | | 48 to 60 months | | | |
|----------|--|-------------------|--------------------|--------------------------|----------------|-------------------|--------------------|--------------------------|----------------|
| | | % at or above RNI | % at or above LRNI | % below LRNI | % all children | % at or above RNI | % at or above LRNI | % below LRNI | % all children |
| | Small employers and own account workers | 8.8 | 10.9 | No data <30 participants | 10.4 | 1.6 | 11.3 | No data <30 participants | 10.1 |
| | Lower supervisory and technical occupations | 8.0 | 8.5 | No data <30 participants | 9.3 | 11.0 | 8.7 | No data <30 participants | 7.6 |
| | Semi-routine occupations | 12.9 | 11.4 | No data <30 participants | 12.3 | 7.6 | 11.8 | No data <30 participants | 13.1 |
| | Routine occupations | 8.8 | 9.5 | No data <30 participants | 9.6 | 1.4 | 7.5 | No data <30 participants | 9.0 |
| | Never worked | 2.3 | 4.3 | No data <30 participants | 6.0 | 2.8 | 3.1 | No data <30 participants | 4.8 |
| | Other / Unclassified | 1.1 | 1.3 | No data <30 participants | 1.2 | 3.2 | 1.3 | No data <30 participants | 1.0 |
| | Number of participants | 254 | 1152 | 16 | 1375 | 71 | 360 | 3 | 453 |

Data source: NDNS years 2008/09 to 2018/19

Table A11.21 Contributors to iron and total dietary energy intake in children aged 18 to 47 months, comparing all children, those with intakes at or above the LRNI and those with intakes below the LRNI for iron

| 18 to 47 months Contribution to iron and energy intake Food Group | All children | | | | Children < LRNI | | | | Children ≥ LRNI | | | |
|---|--------------|------|--------|--------|-----------------|------|--------|--------|-----------------|------|--------|--------|
| | Iron | | Energy | | Iron | | Energy | | Iron | | Energy | |
| | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d |
| Breakfast cereals | 23.4 | 1.50 | 5.8 | 62 | 17.4 | 0.55 | 3.8 | 29 | 23.9 | 1.59 | 6.0 | 65 |
| Bread | 13.9 | 0.82 | 10.0 | 109 | 15.6 | 0.46 | 8.3 | 65 | 13.7 | 0.85 | 10.1 | 113 |
| Meat, meat products and dishes | 11.5 | 0.67 | 10.6 | 115 | 15.6 | 0.48 | 11.8 | 96 | 11.1 | 0.69 | 10.5 | 117 |
| Biscuits, buns, cakes, pastries, fruit pies, puddings | 8.0 | 0.47 | 9.6 | 107 | 8.2 | 0.21 | 7.2 | 54 | 8.0 | 0.49 | 9.8 | 112 |
| Vegetables, vegetable products and dishes | 7.0 | 0.44 | 2.6 | 29 | 6.6 | 0.21 | 1.8 | 15 | 7.0 | 0.46 | 2.7 | 30 |
| Pizza, pasta, rice, products and dishes | 6.0 | 0.36 | 6.7 | 73 | 6.3 | 0.20 | 6.1 | 53 | 6.0 | 0.38 | 6.8 | 75 |
| Fruit | 5.3 | 0.32 | 5.8 | 63 | 5.5 | 0.17 | 4.6 | 38 | 5.2 | 0.33 | 5.9 | 66 |
| Potatoes, potato products and dishes | 3.6 | 0.2 | 4.4 | 48 | 5.7 | 0.17 | 5.5 | 44 | 3.5 | 0.21 | 4.3 | 49 |
| Formula milks ³ | 3.1 | 0.29 | 1.6 | 16 | 0.2 | 0.01 | 0.1 | 1 | 3.3 | 0.31 | 1.8 | 18 |
| Eggs, egg products and dishes | 2.8 | 0.16 | 1.5 | 16 | 3.3 | 0.11 | 1.5 | 12 | 2.7 | 0.17 | 1.5 | 17 |
| Sugar preserves and confectionery | 1.9 | 0.11 | 3.9 | 43 | 2.2 | 0.07 | 3.2 | 27 | 1.8 | 0.11 | 3.9 | 45 |
| Fish, fish products and dishes | 1.8 | 0.10 | 2.4 | 26 | 2.5 | 0.08 | 2.8 | 23 | 1.7 | 0.11 | 2.4 | 27 |
| Dietary supplements | 1.6 | 0.18 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 1.7 | 0.19 | 0.0 | 0 |
| Fruit juice and smoothies | 1.5 | 0.09 | 1.8 | 20 | 1.4 | 0.04 | 1.1 | 10 | 1.5 | 0.09 | 1.9 | 21 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 1.2 | 0.08 | 0.9 | 10 | 1.5 | 0.04 | 0.6 | 5 | 1.2 | 0.08 | 0.9 | 10 |
| Yoghurt, fromage frais and dairy desserts ⁴ | 1.2 | 0.07 | 4.1 | 44 | 1.6 | 0.04 | 4.5 | 38 | 1.2 | 0.07 | 4.0 | 45 |
| Crisps and savoury snacks | 1.2 | 0.07 | 2.7 | 29 | 1.5 | 0.05 | 2.7 | 21 | 1.2 | 0.07 | 2.6 | 30 |
| Soup | 1.0 | 0.06 | 0.6 | 6 | 1.0 | 0.03 | 0.6 | 5 | 1.0 | 0.06 | 0.6 | 6 |
| Milk ⁵ | 1.0 | 0.07 | 14.8 | 162 | 0.5 | 0.02 | 24.9 | 223 | 1.0 | 0.08 | 13.9 | 157 |
| Number of participants | 1375 | 1375 | 1375 | 1375 | 116 | 116 | 116 | 116 | 1259 | 1259 | 1259 | 1259 |

Data source: NDNS years 2008/09 to 2018/19.

¹ Food groups that contribute less than 1% of iron intake for all children are not presented.

² Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

³ Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary)..

⁴ Includes non-dairy alternatives

⁵ Milk includes cream and non-dairy alternatives.

Table A11.22 Contributors to iron and total dietary energy intake in children aged 18 to 47 months, comparing all children, those with intakes at or above the RNI and those with intakes below the LRNI for iron

| 18 to 47 months Contribution to iron and energy intake Food Group | All children | | | | Children < LRNI | | | | Children ≥ RNI | | | |
|---|--------------|------|--------|--------|-----------------|------|--------|--------|----------------|------|--------|--------|
| | Iron | | Energy | | Iron | | Energy | | Iron | | Energy | |
| | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d |
| Breakfast cereals | 23.4 | 1.50 | 5.8 | 62 | 17.4 | 0.55 | 3.8 | 29 | 26.3 | 2.26 | 7.3 | 87 |
| Bread | 13.9 | 0.82 | 10.0 | 109 | 15.6 | 0.46 | 8.3 | 65 | 10.6 | 0.90 | 9.4 | 116 |
| Meat, meat products and dishes | 11.5 | 0.67 | 10.6 | 115 | 15.6 | 0.48 | 11.8 | 96 | 9.1 | 0.77 | 9.9 | 125 |
| Biscuits, buns, cakes, pastries, fruit pies, puddings | 8.0 | 0.47 | 9.6 | 107 | 8.2 | 0.21 | 7.2 | 54 | 6.7 | 0.57 | 9.6 | 121 |
| Vegetables, vegetable products and dishes | 7.0 | 0.44 | 2.6 | 29 | 6.6 | 0.21 | 1.8 | 15 | 6.6 | 0.58 | 2.5 | 30 |
| Pizza, pasta, rice, products and dishes | 6.0 | 0.36 | 6.7 | 73 | 6.3 | 0.20 | 6.1 | 53 | 5.2 | 0.45 | 7.3 | 88 |
| Fruit | 5.3 | 0.32 | 5.8 | 63 | 5.5 | 0.17 | 4.6 | 38 | 4.8 | 0.42 | 6.2 | 76 |
| Potatoes, potato products and dishes | 3.6 | 0.21 | 4.4 | 48 | 5.7 | 0.17 | 5.5 | 44 | 2.9 | 0.24 | 4.1 | 52 |
| Formula milks ³ | 3.1 | 0.29 | 1.6 | 16 | 0.2 | 0.01 | 0.1 | 1 | 8.1 | 0.81 | 4.7 | 49 |
| Eggs, products and dishes | 2.8 | 0.16 | 1.5 | 16 | 3.3 | 0.11 | 1.5 | 12 | 2.1 | 0.18 | 1.6 | 20 |
| Sugar preserves and confectionery | 1.9 | 0.11 | 3.9 | 43 | 2.2 | 0.07 | 3.2 | 27 | 1.4 | 0.12 | 2.2 | 28 |
| Fish, fish products and dishes | 1.8 | 0.10 | 2.4 | 26 | 2.5 | 0.08 | 2.8 | 23 | 1.6 | 0.13 | 2.5 | 30 |
| Dietary supplements | 1.6 | 0.18 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 4.7 | 0.54 | 0 | 0 |
| Fruit juice and smoothies | 1.5 | 0.09 | 1.8 | 20 | 1.4 | 0.04 | 1.1 | 10 | 1.1 | 0.09 | 1.7 | 21 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 1.2 | 0.08 | 0.9 | 10 | 1.5 | 0.04 | 0.6 | 5 | 1.6 | 0.15 | 1.5 | 17 |
| Yoghurt, fromage frais and dairy desserts ⁴ | 1.2 | 0.07 | 4.1 | 44 | 1.6 | 0.04 | 4.5 | 38 | 0.8 | 0.07 | 3.8 | 47 |
| Crisps and savoury snacks | 1.9 | 0.11 | 2.7 | 29 | 1.5 | 0.05 | 2.7 | 21 | 0.7 | 0.06 | 2.2 | 28 |
| Soup | 1.0 | 0.06 | 0.6 | 6 | 1.0 | 0.03 | 0.6 | 5 | 1.0 | 0.08 | 0.7 | 8 |
| Milk ⁵ | 1.0 | 0.07 | 14.8 | 162 | 0.5 | 0.02 | 24.9 | 223 | 1.8 | 0.16 | 11.0 | 139 |
| Number of participants | 1375 | | | | 116 | | | | 418 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of iron intake for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary).

4 Includes non-dairy alternatives

5 Milk includes cream and non-dairy alternatives

Table A11.23 Contributors to zinc and total dietary energy intake in children aged 18 to 47 months, comparing all children, those with intakes at or above the LRNI and those with intakes below the LRNI for zinc

| 18 to 47 months | All children | | | | Children < LRNI | | | | Children ≥ LRNI | | | |
|---|--------------|------|--------|--------|-----------------|------|--------|--------|-----------------|------|--------|--------|
| Contributors to zinc and energy intake | Zinc | | Energy | | Zinc | | Energy | | Zinc | | Energy | |
| Food Group | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d |
| Milk³ | 21.9 | 1.1 | 14.8 | 162 | 16.2 | 0.4 | 8.1 | 57 | 22.2 | 1.1 | 15.2 | 169 |
| Meat, meat products and dishes | 19.5 | 1.0 | 1.6 | 115 | 28.5 | 0.7 | 14.5 | 114 | 19.5 | 1.0 | 10.4 | 115 |
| Bread | 9.6 | 0.5 | 10.0 | 109 | 5.0 | 0.1 | 11.1 | 78 | 9.5 | 0.5 | 9.9 | 111 |
| Pizza, pasta, rice, products and dishes | 6.0 | 0.3 | 6.7 | 73 | 7.6 | 0.2 | 6.9 | 53 | 5.9 | 0.3 | 6.7 | 74 |
| Cheese⁴ | 5.9 | 0.3 | 3.0 | 33 | 6.6 | 0.2 | 2.8 | 20 | 5.9 | 0.3 | 3.0 | 33 |
| Breakfast cereals | 5.2 | 0.3 | 5.8 | 62 | 5.3 | 0.1 | 6.2 | 46 | 5.2 | 0.3 | 5.8 | 62 |
| Biscuits, buns, cakes, pastries, fruit pies puddings | 4.6 | 0.2 | 9.6 | 107 | 6.8 | 0.2 | 12.5 | 90 | 4.5 | 0.2 | 9.4 | 108 |
| Yoghurt fromage frais and dairy desserts⁴ | 4.5 | 0.2 | 4.1 | 44 | 2.2 | 0.1 | 3.0 | 20 | 4.5 | 0.2 | 4.1 | 46 |
| Vegetables, vegetable products and dishes | 4.4 | 0.2 | 2.6 | 29 | 3.3 | 0.1 | 1.6 | 12 | 4.4 | 0.2 | 2.7 | 30 |
| Formula milks⁵ | 3.0 | 0.2 | 1.6 | 16 | 0 | 0 | 0 | 0 | 3.1 | 0.2 | 1.7 | 17 |
| Fruit | 2.7 | 0.1 | 5.8 | 63 | 2.9 | 0.1 | 4.9 | 38 | 2.7 | 0.1 | 5.8 | 65 |
| Potatoes, potato products and dishes | 2.5 | 0.1 | 4.4 | 48 | 4.5 | 0.1 | 6.4 | 49 | 2.4 | 0.1 | 4.3 | 48 |
| Eggs, egg products and dishes | 2.3 | 0.1 | 1.5 | 16 | 1.0 | 0.0 | 0.6 | 5 | 2.3 | 0.1 | 1.6 | 17 |
| Fish, fish products and dishes | 1.7 | 0.1 | 2.4 | 26 | 2.5 | 0.1 | 3.3 | 25 | 1.7 | 0.1 | 2.4 | 27 |
| Number of participants | 1375 | | | | 75 | | | | 1300 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of zinc intake for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Milk includes cream and non-dairy alternatives

4 Includes non-dairy alternatives

5 Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary).

Table A11.24 Contributors to zinc and total dietary energy intake in children aged 18 to 47 months, comparing all children, those with intakes at or above the RNI and those with intakes below the LRNI for zinc

| 18 to 47 months | All children | | | | Children < LRNI | | | | Children ≥ RNI | | | |
|---|--------------|------|--------|--------|-----------------|------|--------|--------|----------------|------|--------|--------|
| % contribution to zinc and energy intake | Zinc | | Energy | | Zinc | | Energy | | Zinc | | Energy | |
| Food Group | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d |
| Milk ³ | 21.9 | 1.1 | 14.8 | 162 | 16.2 | 0.4 | 8.1 | 57 | 22.1 | 1.3 | 15.9 | 198 |
| Meat, meat products and dishes | 19.5 | 1.0 | 1.6 | 115 | 28.5 | 0.7 | 14.5 | 114 | 11.3 | 0.7 | 10.4 | 129 |
| Bread | 9.6 | 0.5 | 10.0 | 109 | 5.0 | 0.1 | 11.1 | 78 | 9.1 | 0.5 | 9.7 | 121 |
| Pizza, pasta, rice, products and dishes | 6.0 | 0.3 | 6.7 | 73 | 7.6 | 0.2 | 6.9 | 53 | 5.3 | 0.3 | 6.6 | 81 |
| Cheese ⁴ | 5.9 | 0.3 | 3.0 | 33 | 6.6 | 0.2 | 2.8 | 20 | 11.6 | 0.8 | 3.3 | 41 |
| Breakfast cereals | 5.2 | 0.3 | 5.8 | 62 | 5.3 | 0.1 | 6.2 | 46 | 4.7 | 0.3 | 5.4 | 65 |
| Biscuits, buns, cakes, pastries, fruit pies puddings | 4.6 | 0.2 | 9.6 | 107 | 6.8 | 0.2 | 12.5 | 90 | 3.9 | 0.2 | 8.8 | 112 |
| Yoghurt fromage frais and dairy desserts ⁴ | 4.5 | 0.2 | 4.1 | 44 | 2.2 | 0.1 | 3.0 | 20 | 4.4 | 0.3 | 4.4 | 54 |
| Vegetables, vegetable products and dishes | 4.4 | 0.2 | 2.6 | 29 | 3.3 | 0.1 | 1.6 | 12 | 4.4 | 0.3 | 2.9 | 34 |
| Formula milks ⁵ | 3.0 | 0.2 | 1.6 | 16 | 0 | 0 | 0 | 0 | 5.5 | 0.4 | 3.0 | 31 |
| Fruit | 2.7 | 0.1 | 5.8 | 63 | 2.9 | 0.1 | 4.9 | 38 | 2.5 | 0.1 | 5.8 | 72 |
| Potatoes, potato products and dishes | 2.5 | 0.1 | 4.4 | 48 | 4.5 | 0.1 | 6.4 | 49 | 1.9 | 0.1 | 3.7 | 48 |
| Eggs, egg products and dishes | 2.3 | 0.1 | 1.5 | 16 | 1.0 | 0.0 | 0.6 | 5 | 2.4 | 0.1 | 1.7 | 21 |
| Fish, fish products and dishes | 1.7 | 0.1 | 2.4 | 26 | 2.5 | 0.1 | 3.3 | 25 | 1.5 | 0.1 | 2.3 | 28 |
| Number of participants | 1375 | | | | 75 | | | | 658 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of zinc intake for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Milk includes cream and non-dairy alternatives

4 Includes non-dairy alternatives

5 Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary).

Table A11.25 Contributors to zinc and total dietary energy intake in children aged 48 to 60 months, comparing all children, those with intakes at or above the LRNI and those with intakes below the LRNI for zinc

| 48 to 60 months | All children | | | | Children < LRNI | | | | Children ≥ LRNI | | | |
|--|--------------|------|--------|--------|-----------------|------|--------|--------|-----------------|------|--------|--------|
| % contribution to zinc and energy intake | Zinc | | Energy | | Zinc | | Energy | | Zinc | | Energy | |
| Food Group | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d |
| Meat, meat products and dishes | 22.3 | 1.2 | 11.5 | 145 | 20.6 | 0.7 | 10.9 | 104 | 22.8 | 1.4 | 11.7 | 156 |
| Milk ³ | 17.0 | 0.9 | 10.3 | 132 | 15.8 | 0.6 | 8.6 | 86 | 17.4 | 1.1 | 10.7 | 145 |
| Bread | 11.0 | 0.6 | 11.2 | 140 | 12.3 | 0.4 | 11.7 | 116 | 10.7 | 0.6 | 11.0 | 147 |
| Pizza, pasta, rice, products and dishes | 7.3 | 0.4 | 7.3 | 92 | 8.6 | 0.3 | 7.8 | 78 | 7.0 | 0.4 | 7.2 | 95 |
| Biscuits, buns, cakes, pastries, fruit pies, puddings | 5.6 | 0.3 | 11.7 | 150 | 6.7 | 0.2 | 12.6 | 133 | 5.3 | 0.3 | 11.4 | 155 |
| Breakfast cereals | 5.2 | 0.3 | 5.6 | 72 | 4.6 | 0.2 | 4.7 | 48 | 5.4 | 0.3 | 5.9 | 78 |
| Cheese ⁴ | 5.5 | 0.3 | 2.6 | 34 | 4.2 | 0.5 | 1.7 | 17 | 5.9 | 0.3 | 2.9 | 38 |
| Yoghurt, fromage frais and dairy desserts ⁴ | 3.8 | 0.2 | 3.1 | 41 | 3.5 | 0.1 | 2.7 | 26 | 3.9 | 0.2 | 3.3 | 44 |
| Potatoes, potato products and dishes | 3.2 | 0.2 | 5.4 | 69 | 4.1 | 0.1 | 5.9 | 61 | 3.0 | 0.2 | 5.3 | 71 |
| Fruit | 2.7 | 0.1 | 5.6 | 71 | 3.7 | 0.1 | 6.1 | 63 | 2.4 | 0.1 | 5.5 | 73 |
| Eggs, egg products and dishes | 2.4 | 0.1 | 1.5 | 19 | 2.4 | 0.1 | 1.3 | 13 | 2.5 | 0.1 | 1.5 | 20 |
| Fish, fish products and dishes | 1.8 | 0.1 | 2.1 | 27 | 2.0 | 0.1 | 2.5 | 25 | 1.8 | 0.1 | 2.0 | 27 |
| Sugar preserves and confectionery | 1.7 | 0.1 | 5.0 | 64 | 2.2 | 0.1 | 5.7 | 62 | 1.6 | 0.1 | 4.8 | 65 |
| Number of participants | 453 | | | | 82 | | | | 371 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of zinc intake for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Milk includes cream and non-dairy alternatives

4 Includes non-dairy alternatives

Table A11.26 Contributors to zinc and total dietary energy intake in children aged 48 to 60 months, comparing all children, those with intakes at or above the RNI and those with intakes below the LRNI for zinc

| 48 to 60 months % contribution to zinc and energy intake Food Group | All children | | | | Children < LRNI | | | | Children ≥ RNI | | | |
|---|--------------|------|--------|--------|-----------------|------|--------|--------|----------------|------|--------|--------|
| | Zinc | | Energy | | Zinc | | Energy | | Zinc | | Energy | |
| | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d | % | mg/d | % | kcal/d |
| Meat, meat products and dishes | 22.3 | 1.2 | 11.5 | 145 | 20.6 | 0.7 | 10.9 | 104 | 23.9 | 1.8 | 11.8 | 176 |
| Milk ³ | 17.0 | 0.9 | 10.3 | 132 | 15.8 | 0.6 | 8.6 | 86 | 19.3 | 1.5 | 13.5 | 210 |
| Bread | 11.0 | 0.6 | 11.2 | 140 | 12.3 | 0.4 | 11.7 | 116 | 9.8 | 0.7 | 10.1 | 158 |
| Pizza, pasta, rice, products and dishes | 7.3 | 0.4 | 7.3 | 92 | 8.6 | 0.3 | 7.8 | 78 | 6.1 | 0.5 | 6.7 | 102 |
| Biscuits, buns, cakes, pastries, puddings | 5.6 | 0.3 | 11.7 | 150 | 6.7 | 0.2 | 12.6 | 133 | 4.5 | 0.3 | 10.1 | 158 |
| Breakfast cereals | 5.2 | 0.3 | 5.6 | 72 | 4.6 | 0.2 | 4.7 | 48 | 5.4 | 0.4 | 6.1 | 92 |
| Cheese ⁴ | 5.5 | 0.3 | 2.6 | 34 | 4.2 | 0.5 | 1.7 | 17 | 5.5 | 0.4 | 2.9 | 45 |
| Yoghurt, fromage frais and dairy desserts ⁴ | 3.8 | 0.2 | 3.1 | 41 | 3.5 | 0.1 | 2.7 | 26 | 4.0 | 0.3 | 3.6 | 56 |
| Potatoes, potato products and dishes | 3.2 | 0.2 | 5.4 | 69 | 4.1 | 0.1 | 5.9 | 61 | 2.3 | 0.2 | 4.7 | 72 |
| Fruit | 2.7 | 0.1 | 5.6 | 71 | 3.7 | 0.1 | 6.1 | 63 | 2.4 | 0.2 | 5.4 | 86 |
| Eggs, egg products and dishes | 2.4 | 0.1 | 1.5 | 19 | 2.4 | 0.1 | 1.3 | 13 | 2.4 | 0.2 | 1.6 | 25 |
| Fish, fish products and dishes | 1.8 | 0.1 | 2.1 | 27 | 2.0 | 0.1 | 2.5 | 25 | 1.3 | 0.1 | 1.6 | 26 |
| Sugar preserves and confectionery | 1.7 | 0.1 | 5.0 | 64 | 2.2 | 0.1 | 5.7 | 62 | 1.6 | 0.1 | 4.8 | 65 |
| Number of participants | 453 | | | | 82 | | | | 99 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of intake of zinc for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Milk includes cream and non-dairy alternatives

4 Includes non-dairy alternatives

Table A11.27 Contributors to vitamin A and total dietary energy intake in children aged 18 to 47 months, comparing all children, those with intakes at or above the LRNI and those with intakes below the LRNI for vitamin A

| 18 to 47 months | All children | | | | Children < LRNI | | | | Children ≥ LRNI | | | |
|---|--------------|-------------|----------|---------------|-----------------|-------------|----------|---------------|-----------------|-------------|----------|---------------|
| | Vitamin A | | Energy | | Vitamin A | | Energy | | Vitamin A | | Energy | |
| % contribution to vitamin A and energy intake | % | µg/d | % | kcal/d | % | µg/d | % | kcal/d | % | µg/d | % | kcal/d |
| Food Group | % | µg/d | % | kcal/d | % | µg/d | % | kcal/d | % | µg/d | % | kcal/d |
| Milk ³ | 18.2 | 83 | 14.8 | 162 | 19.5 | 29 | 9.4 | 78 | 18.1 | 88 | 15.3 | 170 |
| Carrots raw and cooked | 13.8 | 98 | 0.1 | 1 | 4.1 | 7 | 0.0 | 0 | 15 | 106 | 0.1 | 2 |
| Butter and fat spreads | 9.7 | 43 | 3.0 | 34 | 12.4 | 20 | 2.4 | 20 | 9.5 | 45 | 3.1 | 35 |
| Meat, meat products and dishes | 7.1 | 45 | 10.6 | 115 | 7.1 | 11 | 18.3 | 160 | 7.1 | 48 | 9.9 | 111 |
| Cheese ⁴ | 6.7 | 30 | 3.0 | 33 | 9.9 | 16 | 2.5 | 18 | 6.4 | 31 | 3.0 | 34 |
| Dietary supplements | 6.6 | 60 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 7.2 | 65 | 0.0 | 0 |
| Vegetables, vegetable products and dishes (excluding carrots) | 5.8 | 30 | 2.5 | 27 | 4.5 | 6 | 1.6 | 15 | 5.9 | 32 | 2.6 | 29 |
| Biscuits, buns, cakes, pastries, fruit pies, puddings | 4.1 | 18 | 9.6 | 107 | 5.8 | 7 | 10.0 | 84 | 4.0 | 19 | 9.5 | 109 |
| Yoghurt, fromage frais and dairy desserts ⁴ | 4.3 | 19 | 4.1 | 44 | 7.8 | 11 | 3.5 | 27 | 4.0 | 20 | 4.1 | 46 |
| Pizza, pasta, rice, products and dishes | 3.8 | 16 | 6.7 | 73 | 5.1 | 7 | 5.6 | 47 | 3.7 | 17 | 6.8 | 75 |
| Soft drinks | 2.7 | 10 | 1.4 | 16 | 8.3 | 10 | 1.9 | 16 | 2.2 | 10 | 1.3 | 16 |
| Eggs, egg products and dishes | 2.7 | 13 | 1.5 | 16 | 1.9 | 3 | 0.7 | 5 | 2.8 | 14 | 1.6 | 17 |
| Formula milks ⁵ | 2.5 | 17 | 1.6 | 16 | 0.0 | 0 | 0.0 | 0 | 2.8 | 18 | 1.8 | 18 |
| Soup | 2.4 | 16 | 0.6 | 6 | 0.6 | 1 | 0.2 | 2 | 2.5 | 18 | 0.6 | 6 |
| Fruit | 1.5 | 7 | 5.8 | 63 | 2.3 | 3 | 5.2 | 44 | 1.4 | 7 | 5.8 | 65 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 1.2 | 9 | 0.9 | 10 | 0.3 | 0 | 0.3 | 2 | 1.3 | 9 | 1.0 | 11 |
| Ice cream ⁴ | 1.1 | 5 | 1.1 | 13 | 2.4 | 4 | 0.7 | 6 | 1.0 | 5 | 1.2 | 13 |
| Number of participants | 1375 | | | | 95 | | | | 1280 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of intake of vitamin A for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Milk includes cream and non-dairy alternatives

4 Includes non-dairy alternatives

5 Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary).

Table A11.28 Contributors to vitamin A and total dietary energy intake in children aged 18 to 47 months, comparing all children, those with intakes at or above the RNI and those with intakes below the LRNI for vitamin A

| 18 to 47 months | All children | | | | Children < LRNI | | | | Children ≥ RNI | | | |
|--|--------------|------|--------|--------|-----------------|------|--------|--------|----------------|------|--------|--------|
| % contribution to vitamin A and energy intake | Vitamin A | | Energy | | Vitamin A | | Energy | | Vitamin A | | Energy | |
| Food Group | % | µg/d | % | kcal/d | % | µg/d | % | kcal/d | % | µg/d | % | kcal/d |
| Milk³ | 18.2 | 83 | 14.8 | 162 | 19.5 | 29 | 9.4 | 78 | 15.5 | 96 | 15.5 | 182 |
| Carrots raw and cooked | 13.8 | 98 | 0.1 | 1 | 4.1 | 7 | 0.0 | 0 | 18.6 | 150 | 0.2 | 2 |
| Butter and fat spreads | 9.7 | 43 | 3.0 | 34 | 12.4 | 20 | 2.4 | 20 | 7.6 | 47 | 3.1 | 38 |
| Meat, meat products and dishes | 7.1 | 45 | 10.6 | 115 | 7.1 | 11 | 18.3 | 160 | 7.9 | 65 | 9.6 | 113 |
| Cheese⁴ | 6.7 | 30 | 3.0 | 33 | 9.9 | 16 | 2.5 | 18 | 5.2 | 33 | 3.1 | 37 |
| Dietary supplements | 6.6 | 60 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 10.7 | 99 | 0 | 0 |
| Vegetables, vegetable products and dishes (excluding carrots) | 5.8 | 30 | 2.5 | 27 | 4.5 | 6 | 1.6 | 15 | 5.9 | 40 | 3.3 | 37 |
| Biscuits, buns, cakes, pastries, fruit pies, puddings | 4.1 | 18 | 9.6 | 107 | 5.8 | 7 | 10.0 | 84 | 3.3 | 21 | 9.1 | 111 |
| Yoghurt, fromage frais and dairy desserts⁴ | 4.3 | 19 | 4.1 | 44 | 7.8 | 11 | 3.5 | 27 | 3.5 | 22 | 4.4 | 51 |
| Pizza, pasta, rice, products and dishes | 3.8 | 16 | 6.7 | 73 | 5.1 | 7 | 5.6 | 47 | 2.7 | 17 | 6.5 | 75 |
| Soft drinks | 2.7 | 10 | 1.4 | 16 | 8.3 | 10 | 1.9 | 16 | 1.7 | 10 | 1.3 | 16 |
| Eggs, egg products and dishes | 2.7 | 13 | 1.5 | 16 | 1.9 | 3 | 0.7 | 5 | 2.5 | 16 | 1.7 | 19 |
| Formula milks⁵ | 2.5 | 17 | 1.6 | 16 | 0.0 | 0 | 0.0 | 0 | 3.5 | 26 | 2.7 | 27 |
| Soup | 2.4 | 16 | 0.6 | 6 | 0.6 | 1 | 0.2 | 2 | 2.9 | 24 | 0.8 | 8.0 |
| Fruit | 1.5 | 7 | 5.8 | 63 | 2.3 | 3 | 5.2 | 44 | 1.3 | 8 | 6.1 | 71 |
| Commercially manufactured foods and drinks marketed specifically for infants and young children | 1.2 | 9 | 0.9 | 10 | 0.3 | 0 | 0.3 | 2 | 1.8 | 14 | 1.3 | 15 |
| Ice cream⁴ | 1.1 | 5 | 1.1 | 13 | 2.4 | 4 | 0.7 | 6 | 0.8 | 5 | 1.2 | 14 |
| Number of participants | 1375 | | | | 95 | | | | 775 | | | |

Data source: NDNS years 2008/09 to 2018/19

1 Food groups that contribute less than 1% of intake of vitamin A for all children are not presented

2 Average % contribution for each food group has been calculated from the % contribution for each individual. Non consumers are included in the average.

3 Milk includes cream and non-dairy alternatives

4 Includes non-dairy alternatives

5 Formula milks include milks marketed to children over the age of 1 year, also known as 'toddler milks' and 'growing-up milks'. (see Glossary)

Table A11.29 Vitamin D intakes by ethnic minority group for children aged 12 to 60 months (NDNS 2016/17 to 2018/19 and DNSIYC)

| Vitamin D intake | 12 to 18 months ^a | | | | 18 to 60 months ^b | | | |
|--------------------------------------|--|---------------------------|----------------|---------------------------|--|---------------------------|----------------|---------------------------|
| | Black and other ethnic minority groups | | White | | Black and other ethnic minority groups | | White | |
| | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements | From diet only | From diet and supplements |
| Mean (µg/day) | 3.8 | 4.7 | 3.3 | 3.6 | 2.9 | 5.1 | 2.3 | 3.8 |
| Median (µg /day) | 1.9 | 2.7 | 1.6 | 1.8 | 2.0 | 3.1 | 1.8 | 2.2 |
| SD (µg /day) | 4.0 | 4.5 | 3.2 | 3.6 | 3.4 | 4.8 | 2.1 | 4.0 |
| 2.5th percentile (µg /day) | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.4 | 0.4 | 0.4 |
| 97.5th percentile (µg/day) | 12.1 | 15.5 | 11.1 | 13.4 | 11.1 | 18.7 | 8.0 | 14.8 |
| <i>Number of participants</i> | 90 | | 1085 | | 63 | | 343 | |

^a Data from DNSIYC 2011 (DH, 2013).

^b Data from NDNS 2016/17 to 2018/19.

Table A11.30 Vitamin D status by ethnic group for children aged 12 to 18 months (DNSIYC)

| Vitamin D status | | 12 to 18 months ¹ | |
|-------------------------------|----------------------------|--|-------|
| | | Black and other ethnic minority groups | White |
| 25 hydroxy vitamin D (nmol/l) | Mean (nmol/l) | [61.0] | 66.1 |
| | Median (nmol/l) | [60.3] | 65.3 |
| | SD (nmol/l) | [25.7] | 24.4 |
| | 2.5th percentile (nmol/l) | [12.9] | 26.3 |
| | 97.5th percentile (nmol/l) | [112] | 117 |
| | % below 25nmol/l | [4] | 1 |
| | Number of participants | 40 | 191 |

¹ Data from DNSIYC 2011 (Lennox et al, 2013).

Note that blood samples were not collected over a full calendar year