Supplemental Table 1. Characteristics of meals and snacks in children aged 4-10 years reporting acceptable energy intake (EI) (n 649)*
$\underline{\text { (Mean values and standard deviations) }}$

|  | Total intake |  | Meals and snacks based on time $\dagger$ |  |  |  | P § | Meals and snacks based on EI contribution $\ddagger$ |  |  |  | P§ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Intake from meals |  | Intake from snacks |  |  | Intake from meals |  | Intake from snacks |  |  |
|  | Mean | SD | Mean | SD | Mean | SD |  | Mean | SD | Mean | SD |  |
| EI (kJ/d) |  |  |  |  |  |  |  |  |  |  |  |  |
| Total energy | 7002 | 1228 | 5235 | 1192 | 1767 | 914 | $<0.0001$ | 5445 | 1173 | 1557 | 805 | $<0.0001$ |
| Food energy | 6067 | 1177 | 4592 | 1104 | 1476 | 820 | $<0.0001$ | 4892 | 1107 | 1175 | 658 | $<0.0001$ |
| Beverage energy | 935 | 449 | 643 | 350 | 292 | 238 | $<0.0001$ | 553 | 328 | 382 | 282 | $<0.0001$ |
| Weight consumed (g/d) |  |  |  |  |  |  |  |  |  |  |  |  |
| Total weight (g/d) | 1563 | 338 | 1138 | 293 | 425 | 214 | $<0.0001$ | 1046 | 262 | 516 | 267 | $<0.0001$ |
| Food weight (g/d) | 702 | 156 | 550 | 154 | 152 | 97 | $<0.0001$ | 569 | 149 | 133 | 83 | $<0.0001$ |
| Beverage weight (g/d) | 861 | 282 | 588 | 213 | 273 | 159 | $<0.0001$ | 477 | 181 | 383 | 222 | $<0.0001$ |
| Energy density (kJ/g)\\| | 8.79 | 1.30 | 8.55 | 1.39 | 10.62 | 3.22 | $<0.0001$ | 8.78 | 1.35 | 9.87 | 3.45 | $<0.0001$ |
| Food intake (g/10 MJ) |  |  |  |  |  |  |  |  |  |  |  |  |
| Vegetables | 54.4 | 48.8 | 60.3 | 57.6 | 35.1 | 95.3 | $<0.0001$ | 60.6 | 56.7 | 30.9 | 66.5 | $<0.0001$ |
| Legumes | 35.3 | 35.6 | 39.5 | 40.7 | 21.3 | 53.9 | $<0.0001$ | 42.1 | 43.3 | 9.3 | 27.6 | $<0.0001$ |
| Fruits | 99.7 | 84.3 | 91.6 | 84.1 | 132.7 | 232.1 | $<0.0001$ | 65.7 | 72.1 | 210.6 | 256.5 | $<0.0001$ |
| Nuts and seeds | 1.8 | 5.4 | 1.8 | 6.0 | 2.0 | 11.4 | 0.72 | 2.0 | 6.5 | 1.0 | 5.8 | 0.003 |
| Cereals | 214.5 | 79.6 | 232.0 | 90.4 | 146.4 | 133.0 | $<0.0001$ | 229.8 | 92.0 | 161.1 | 127.8 | <0.0001 |
| Biscuits, cakes and pastries | 68.0 | 37.7 | 60.4 | 38.9 | 94.4 | 82.0 | $<0.0001$ | 65.7 | 42.6 | 74.6 | 65.6 | 0.002 |
| Fish | 22.3 | 24.6 | 25.5 | 30.0 | 11.6 | 39.0 | $<0.0001$ | 26.4 | 29.6 | 5.9 | 20.7 | <0.0001 |
| Meat | 128.3 | 64.6 | 141.6 | 76.0 | 80.8 | 107.0 | $<0.0001$ | 155.9 | 82.8 | 34.7 | 58.2 | $<0.0001$ |
| Dairy products | 406.7 | 206.2 | 395.1 | 210.6 | 444.6 | 414.4 | 0.002 | 311.7 | 187.8 | 731.2 | 506.6 | $<0.0001$ |
| Soft drinks | 349.1 | 288.1 | 309.2 | 277.0 | 511.3 | 575.1 | $<0.0001$ | 273.7 | 229.0 | 673.0 | 822.4 | $<0.0001$ |
| Sugar, preserves and confectionery | 56.5 | 36.5 | 43.8 | 33.9 | 100.1 | 86.3 | $<0.0001$ | 41.8 | 31.7 | 107.9 | 98.3 | $<0.0001$ |
| Tea, coffee and water | 168.5 | 199.5 | 156.7 | 186.9 | 236.1 | 442.7 | $<0.0001$ | 108.5 | 143.3 | 435.4 | 738.2 | $<0.0001$ |


|  |  |  | Meals and snacks based on time $\dagger$ |  |  |  | $P \S$ | Meals and snacks based on EI contribution $\ddagger$ |  |  |  | P§ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total intake |  | Intake from meals |  | Intake from snacks |  |  | Intake from meals |  | Intake from snacks |  |  |
|  | Mean | SD | Mean | SD | Mean | SD |  | Mean | SD | Mean | SD |  |
| Nutrient intake |  |  |  |  |  |  |  |  |  |  |  |  |
| Protein (\% of energy) | 12.6 | 1.8 | 13.2 | 2.1 | 10.4 | 3.5 | $<0.0001$ | 13.3 | 2.1 | 10.2 | 2.9 | $<0.0001$ |
| Fat (\% of energy) | 35.7 | 3.9 | 35.7 | 4.3 | 35.6 | 6.9 | 0.61 | 37.3 | 4.4 | 30.0 | 6.7 | $<0.0001$ |
| Saturated fat (\% of energy) | 14.8 | 2.3 | 14.5 | 2.4 | 15.7 | 4.0 | $<0.0001$ | 14.8 | 2.4 | 14.6 | 4.0 | 0.15 |
| Monounsaturated fat (\% of energy) | 11.6 | 1.6 | 11.6 | 1.8 | 11.3 | 2.7 | 0.006 | 12.3 | 1.9 | 8.9 | 2.3 | $<0.0001$ |
| Polyunsaturated fat (\% of energy) | 5.6 | 1.4 | 5.8 | 1.5 | 4.7 | 2.1 | $<0.0001$ | 6.2 | 1.6 | 3.3 | 1.5 | $<0.0001$ |
| Carbohydrate (\% of energy) | 51.6 | 4.3 | 51.0 | 4.7 | 54.0 | 8.3 | $<0.0001$ | 49.4 | 4.8 | 59.8 | 7.7 | $<0.0001$ |
| Starch (\% of energy) | 26.7 | 4.0 | 27.9 | 4.1 | 22.2 | 7.4 | $<0.0001$ | 28.2 | 4.1 | 21.2 | 7.4 | $<0.0001$ |
| Total sugar (\% of energy) | 24.9 | 5.1 | 23.1 | 5.1 | 31.8 | 11.3 | $<0.0001$ | 21.2 | 5.2 | 38.6 | 10.1 | $<0.0001$ |
| Non-milk extrinsic sugar (\% of energy) | 17.6 | 5.0 | 15.9 | 4.9 | 23.7 | 11.1 | $<0.0001$ | 14.9 | 4.7 | 27.2 | 10.8 | $<0.0001$ |
| Dietary fiber (g/10 MJ) | 13.9 | 3.6 | 14.6 | 3.9 | 11.9 | 5.4 | $<0.0001$ | 14.4 | 3.8 | 12.2 | 5.9 | $<0.0001$ |

* Acceptable EI reporters were defined as subjects with the ratio of EI to estimated energy requirement 0.72 to 1.28 .
$\dagger$ Meals were defined as eating events reported during select times of the day (0600-0900, 1200-1400, and 1700-2000 hours); all other eating occasions were considered as snacks.
$\ddagger$ A meal was defined as any eating episode comprising $\geq 15 \%$ of total EI, regardless of the time of day or composition of foods and beverages consumed; all other eating episodes were classified as snacks. $\S P$ values for differences between meal and snack based on the paired $t$-test.
$\|$ Calculated based on solid foods only; excluding all caloric and non-caloric beverages (tea, coffee, water, alcoholic beverages, soft drinks, fruit juice, and milk).

Supplemental Table 2. Characteristics of meals and snacks in adolescents aged 11-18 years reporting acceptable energy intake (EI) (n 387)*
(Mean values and standard deviations)

|  | Total intake |  | Meals and snacks based on time $\dagger$ |  |  |  | P § | Meals and snacks based on EI contribution $\ddagger$ |  |  |  | P § |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Intake from meals |  | Intake from snacks |  |  | Intake from meals |  | Intake from snacks |  |  |
|  | Mean | SD | Mean | SD | Mean | SD |  | Mean | SD | Mean | SD |  |
| EI (kJ/d) |  |  |  |  |  |  |  |  |  |  |  |  |
| Total energy | 9204 | 1892 | 6169 | 1625 | 3035 | 1593 | $<0.0001$ | 7176 | 1530 | 2028 | 1077 | $<0.0001$ |
| Food energy | 8054 | 1663 | 5500 | 1493 | 2554 | 1384 | $<0.0001$ | 6521 | 1388 | 1533 | 867 | $<0.0001$ |
| Beverage energy | 1150 | 702 | 669 | 401 | 481 | 445 | $<0.0001$ | 655 | 441 | 495 | 423 | $<0.0001$ |
| Weight consumed (g/d) |  |  |  |  |  |  |  |  |  |  |  |  |
| Total weight (g/d) | 2038 | 583 | 1309 | 409 | 729 | 414 | $<0.0001$ | 1321 | 352 | 717 | 426 | $<0.0001$ |
| Food weight (g/d) | 903 | 215 | 646 | 199 | 257 | 164 | $<0.0001$ | 746 | 177 | 157 | 100 | $<0.0001$ |
| Beverage weight (g/d) | 1135 | 494 | 663 | 294 | 472 | 328 | $<0.0001$ | 575 | 265 | 560 | 381 | 0.49 |
| Energy density (kJ/g)\\| | 9.06 | 1.27 | 8.72 | 1.43 | 10.74 | 2.80 | $<0.0001$ | 8.87 | 1.26 | 10.78 | 3.48 | $<0.0001$ |
| Food intake (g/10 MJ) |  |  |  |  |  |  |  |  |  |  |  |  |
| Vegetables | 61.9 | 59.3 | 71.9 | 72.3 | 35.5 | 65.7 | $<0.0001$ | 71.1 | 72.4 | 32.4 | 79.4 | $<0.0001$ |
| Legumes | 34.3 | 36.1 | 38.6 | 46.7 | 24.7 | 50.3 | $<0.0001$ | 41.9 | 45.0 | 6.8 | 23.6 | $<0.0001$ |
| Fruits | 63.5 | 71.7 | 57.9 | 78.5 | 79.9 | 135.4 | 0.002 | 38.6 | 53.7 | 146.4 | 215.0 | $<0.0001$ |
| Nuts and seeds | 2.0 | 7.0 | 1.4 | 7.0 | 3.3 | 15.7 | 0.013 | 2.1 | 7.8 | 1.2 | 5.4 | 0.06 |
| Cereals | 227.1 | 87.0 | 240.3 | 97.6 | 188.0 | 135.6 | $<0.0001$ | 249.2 | 102.9 | 148.2 | 102.6 | $<0.0001$ |
| Biscuits, cakes and pastries | 59.9 | 41.4 | 52.1 | 40.7 | 77.6 | 72.1 | $<0.0001$ | 54.8 | 44.2 | 74.2 | 69.4 | $<0.0001$ |
| Fish | 18.6 | 25.6 | 22.8 | 34.2 | 9.5 | 29.7 | $<0.0001$ | 21.9 | 31.6 | 7.0 | 26.3 | $<0.0001$ |
| Meat | 153.6 | 78.3 | 174.4 | 97.1 | 102.4 | 110.6 | $<0.0001$ | 186.7 | 96.4 | 35.5 | 62.5 | $<0.0001$ |
| Dairy products | 303.9 | 185.6 | 277.3 | 185.2 | 361.6 | 300.1 | $<0.0001$ | 228.7 | 174.4 | 577.4 | 434.0 | $<0.0001$ |
| Soft drinks | 355.7 | 294.7 | 329.4 | 299.9 | 456.5 | 506.3 | $<0.0001$ | 263.9 | 227.4 | 736.1 | 862.4 | $<0.0001$ |
| Sugar, preserves and confectionery | 57.3 | 41.4 | 47.1 | 44.7 | 86.5 | 75.3 | $<0.0001$ | 42.8 | 40.5 | 106.6 | 84.1 | $<0.0001$ |
| Tea, coffee and water | 294.7 | 331.6 | 251.8 | 325.8 | 431.8 | 580.2 | $<0.0001$ | 150.4 | 190.0 | 866.8 | 1197.4 | $<0.0001$ |


|  | Total intake |  | Meals and snacks based on time $\dagger$ |  |  |  | P§ | Meals and snacks based on EI contribution $\ddagger$ |  |  |  | P§ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Intake from meals |  | Intake from snacks |  |  | Intake from meals |  | Intake from snacks |  |  |
|  | Mean | SD | Mean | SD | Mean | SD |  | Mean | SD | Mean | SD |  |
| Nutrient intake |  |  |  |  |  |  |  |  |  |  |  |  |
| Protein (\% of energy) | 12.8 | 1.9 | 13.5 | 2.3 | 11.0 | 3.1 | $<0.0001$ | 13.7 | 2.1 | 9.6 | 3.0 | $<0.0001$ |
| Fat (\% of energy) | 35.8 | 4.3 | 36.3 | 4.6 | 34.6 | 7.2 | $<0.0001$ | 37.7 | 4.7 | 29.0 | 7.9 | $<0.0001$ |
| Saturated fat (\% of energy) | 14.2 | 2.2 | 14.1 | 2.3 | 14.4 | 3.4 | 0.08 | 14.4 | 2.3 | 13.3 | 4.0 | $<0.0001$ |
| Monounsaturated fat (\% of energy) | 11.8 | 1.8 | 12.1 | 2.0 | 11.2 | 2.9 | $<0.0001$ | 12.6 | 2.1 | 8.9 | 2.8 | $<0.0001$ |
| Polyunsaturated fat (\% of energy) | 6.1 | 1.5 | 6.4 | 1.7 | 5.3 | 2.1 | $<0.0001$ | 6.7 | 1.7 | 3.8 | 1.9 | $<0.0001$ |
| Carbohydrate (\% of energy) | 50.7 | 4.7 | 49.8 | 5.2 | 53.2 | 8.0 | $<0.0001$ | 48.2 | 5.1 | 60.0 | 8.4 | $<0.0001$ |
| Starch (\% of energy) | 27.5 | 4.2 | 28.7 | 4.2 | 24.2 | 7.1 | $<0.0001$ | 29.3 | 4.6 | 20.9 | 7.3 | $<0.0001$ |
| Total sugar (\% of energy) | 23.2 | 5.2 | 21.1 | 5.8 | 29.1 | 9.6 | $<0.0001$ | 18.9 | 5.4 | 39.1 | 10.6 | $<0.0001$ |
| Non-milk extrinsic sugar (\% of energy) | 17.3 | 5.1 | 15.4 | 5.5 | 22.4 | 9.1 | $<0.0001$ | 13.8 | 5.0 | 30.0 | 11.1 | $<0.0001$ |
| Dietary fiber (g/10 MJ) | 13.9 | 3.5 | 14.6 | 3.9 | 12.3 | 4.9 | $<0.0001$ | 14.6 | 3.6 | 11.6 | 6.0 | $<0.0001$ |

* Acceptable EI reporters were defined as subjects with the ratio of EI to estimated energy requirement 0.72 to 1.28.
$\dagger$ Meals were defined as eating events reported during select times of the day ( $0600-0900$, 1200-1400, and 1700-2000 hours); all other eating occasions were considered as snacks.
 $\S P$ values for differences between meal and snack based on the paired $t$-test
|| Calculated based on solid foods only; excluding all caloric and non-caloric beverages (tea, coffee, water, alcoholic beverages, soft drinks, fruit juice, and milk).

Supplemental Table 3. Associations of energy density of meals and snacks with total dietary intakes in children aged 4-10 years reporting acceptable energy intake (EI) ( $n$ 649)*
$\underline{\text { (Regression coefficients with their standard errors) }}$

|  | Meals and snacks based on time $\dagger$ |  |  |  |  |  | Meals and snacks based on EI contribution $\ddagger$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Energy density of meals |  |  | Energy density of snacks |  |  | Energy density of meals |  |  | Energy density of snacks |  |  |
|  | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ |
| Food intake from meals and snacks (g/10 MJ) |  |  |  |  |  |  |  |  |  |  |  |  |
| Vegetables | -14.95 | 1.24 | $<0.0001$ | -2.48 | 0.53 | $<0.0001$ | -15.40 | 1.27 | $<0.0001$ | -2.66 | 0.49 | $<0.0001$ |
| Legumes | -7.06 | 0.98 | $<0.0001$ | -0.82 | 0.42 | 0.05 | -8.42 | 1.00 | $<0.0001$ | 0.68 | 0.39 | 0.08 |
| Fruits | -25.85 | 1.97 | $<0.0001$ | -7.46 | 0.84 | $<0.0001$ | -21.32 | 1.98 | $<0.0001$ | -10.38 | 0.77 | $<0.0001$ |
| Nuts and seeds | -0.23 | 0.16 | 0.14 | 0.05 | 0.07 | 0.44 | -0.16 | 0.16 | 0.33 | -0.03 | 0.06 | 0.63 |
| Cereals | -7.51 | 2.27 | 0.001 | -1.03 | 0.96 | 0.28 | -10.41 | 2.32 | $<0.0001$ | -0.60 | 0.91 | 0.51 |
| Biscuits, cakes and pastries | 3.78 | 1.05 | 0.0003 | 2.09 | 0.45 | $<0.0001$ | 4.83 | 1.10 | $<0.0001$ | 0.53 | 0.43 | 0.22 |
| Fish | -2.71 | 0.69 | $<0.0001$ | -0.37 | 0.29 | 0.21 | -2.90 | 0.71 | $<0.0001$ | -0.21 | 0.28 | 0.44 |
| Meat | -10.45 | 1.79 | $<0.0001$ | -2.60 | 0.76 | 0.0007 | -14.87 | 1.82 | $<0.0001$ | 0.23 | 0.71 | 0.75 |
| Dairy products | -10.69 | 5.69 | 0.06 | -0.77 | 2.42 | 0.75 | -6.49 | 5.88 | 0.27 | -2.45 | 2.29 | 0.29 |
| Soft drinks | 16.50 | 8.28 | 0.05 | 0.32 | 3.52 | 0.93 | 23.68 | 8.52 | 0.006 | -3.10 | 3.32 | 0.35 |
| Sugar, preserves and confectionery | 3.65 | 1.04 | 0.0005 | 0.18 | 0.44 | 0.68 | 6.68 | 1.05 | $<0.0001$ | -0.89 | 0.41 | 0.03 |
| Tea, coffee and water | -8.28 | 5.62 | 0.14 | 0.40 | 2.39 | 0.87 | -10.12 | 5.79 | 0.08 | 1.11 | 2.26 | 0.62 |
| Nutrient intake from meals and snacks |  |  |  |  |  |  |  |  |  |  |  |  |
| Protein (\% of energy) | -0.49 | 0.05 | $<0.0001$ | -0.07 | 0.02 | 0.0003 | -0.61 | 0.05 | $<0.0001$ | 0.00 | 0.02 | 0.88 |
| Fat (\% of energy) | 0.69 | 0.11 | $<0.0001$ | 0.13 | 0.05 | 0.006 | 0.83 | 0.11 | $<0.0001$ | 0.11 | 0.04 | 0.011 |
| Saturated fat (\% of energy) | 0.37 | 0.06 | $<0.0001$ | 0.10 | 0.03 | 0.0002 | 0.48 | 0.06 | $<0.0001$ | 0.05 | 0.02 | 0.04 |
| Monounsaturated fat (\% of energy) | 0.25 | 0.04 | $<0.0001$ | 0.03 | 0.02 | 0.08 | 0.27 | 0.05 | $<0.0001$ | 0.05 | 0.02 | 0.003 |
| Polyunsaturated fat (\% of energy) | 0.05 | 0.04 | 0.16 | -0.02 | 0.02 | 0.17 | 0.03 | 0.04 | 0.46 | 0.01 | 0.02 | 0.67 |
| Carbohydrate (\% of energy) | -0.21 | 0.12 | 0.09 | -0.05 | 0.05 | 0.31 | -0.22 | 0.13 | 0.08 | -0.11 | 0.05 | 0.02 |
| Starch (\% of energy) | 0.04 | 0.11 | 0.73 | -0.04 | 0.05 | 0.43 | -0.32 | 0.12 | 0.005 | 0.18 | 0.04 | $<0.0001$ |
| Total sugar (\% of energy) | -0.25 | 0.14 | 0.09 | -0.02 | 0.06 | 0.80 | 0.10 | 0.15 | 0.48 | -0.29 | 0.06 | $<0.0001$ |
| Non-milk extrinsic sugar (\% of energy) | 0.48 | 0.14 | 0.0007 | 0.12 | 0.06 | 0.05 | 0.75 | 0.14 | $<0.0001$ | -0.09 | 0.05 | 0.11 |
| Dietary fiber (g/10 MJ) | -1.18 | 0.09 | $<0.0001$ | -0.23 | 0.04 | $<0.0001$ | -1.28 | 0.09 | $<0.0001$ | -0.16 | 0.04 | $<0.0001$ |


|  | Meals and snacks based on time $\dagger$ |  |  |  |  |  | Meals and snacks based on EI contribution $\ddagger$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Energy density of meals |  |  | Energy density of snacks |  |  | Energy density of meals |  |  | Energy density of snacks |  |  |
|  | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ |
| Mediterranean diet score\\| | -0.33 | 0.04 | $<0.0001$ | -0.08 | 0.02 | $<0.0001$ | -0.35 | 0.04 | $<0.0001$ | -0.07 | 0.02 | <0.0001 |
| Total EI (kJ/d) | 27.8 | 28.4 | 0.33 | 9.7 | 12.1 | 0.42 | 46.6 | 29.2 | 0.11 | -19.2 | 11.4 | 0.09 |

* Energy density was calculated based on solid foods only, excluding all caloric and non-caloric beverages (tea, coffee, water, alcoholic beverages, soft drinks, fruit juice, and milk).

Acceptable EI reporters were defined as subjects with the ratio of EI to estimated energy requirement 0.72 to 1.28 . Adjustment was made for age (years, continuous), sex (boys or girls), and social class (manual, non-manual, or unclassified). Both energy density of meal and energy density of snack based on the same definition were entered simultaneously into the regression model.
$\dagger$ Meals were defined as eating events reported during select times of the day (0600-0900, 1200-1400, and 1700-2000 hours); all other eating occasions were considered as snacks.
$\ddagger$ A meal was defined as any eating episode comprising $\geq 15 \%$ of total EI, regardless of the time of day or composition of foods and beverages consumed; all other eating episodes were classified as snacks
$\S$ Regression coefficients mean the change of dietary variables with 1 -unit increase of energy density ( $\mathrm{kJ} / \mathrm{g}$ )
$\|$ Possible score ranging from 0 to 8 .

Supplemental Table 4. Associations of energy density (ED) of meals and snacks with total dietary intakes in adolescents aged 11-18 years reporting acceptable energy intake (EI) (n 387)* $\underline{\text { (Regression coefficients with their standard errors) }}$

|  | Meals and snacks based on time $\dagger$ |  |  |  |  |  | Meals and snacks based on EI contribution $\ddagger$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Energy density of meals |  |  | Energy density of snacks |  |  | Energy density of meals |  |  | Energy density of snacks |  |  |
|  | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ |
| Food intake from meals and snacks (g/10 MJ) |  |  |  |  |  |  |  |  |  |  |  |  |
| Vegetables | -13.83 | 1.91 | $<0.0001$ | -2.87 | 0.96 | 0.003 | -18.21 | 2.18 | $<0.0001$ | -1.78 | 0.77 | 0.02 |
| Legumes | -6.35 | 1.28 | $<0.0001$ | -1.31 | 0.65 | 0.04 | -8.81 | 1.48 | $<0.0001$ | 0.04 | 0.52 | 0.93 |
| Fruits | -15.77 | 2.28 | $<0.0001$ | -7.99 | 1.15 | $<0.0001$ | -11.73 | 2.55 | $<0.0001$ | -8.86 | 0.90 | $<0.0001$ |
| Nuts and seeds | 0.53 | 0.25 | 0.04 | 0.12 | 0.13 | 0.33 | 0.90 | 0.29 | 0.003 | -0.07 | 0.10 | 0.50 |
| Cereals | -7.29 | 3.08 | 0.02 | -7.48 | 1.55 | $<0.0001$ | -13.85 | 3.62 | 0.0002 | -2.92 | 1.28 | 0.02 |
| Biscuits, cakes and pastries | 0.66 | 1.48 | 0.66 | 2.41 | 0.74 | 0.001 | 3.53 | 1.74 | 0.04 | 0.17 | 0.61 | 0.78 |
| Fish | -1.22 | 0.93 | 0.19 | -0.80 | 0.47 | 0.09 | -2.72 | 1.09 | 0.013 | 0.32 | 0.38 | 0.40 |
| Meat | -9.25 | 2.81 | 0.001 | -3.56 | 1.41 | 0.012 | -11.47 | 3.30 | 0.0006 | -0.57 | 1.16 | 0.63 |
| Dairy products | -16.11 | 6.69 | 0.02 | 0.31 | 3.37 | 0.93 | -14.63 | 7.80 | 0.06 | -4.02 | 2.75 | 0.14 |
| Soft drinks | 3.09 | 10.81 | 0.77 | 4.02 | 5.44 | 0.46 | 2.85 | 12.64 | 0.82 | 0.49 | 4.46 | 0.91 |
| Sugar, preserves and confectionery | 3.66 | 1.49 | 0.014 | 1.06 | 0.75 | 0.16 | 4.91 | 1.74 | 0.005 | 0.12 | 0.61 | 0.85 |
| Tea, coffee and water | -15.91 | 11.51 | 0.17 | -1.84 | 5.80 | 0.75 | -31.63 | 13.37 | 0.02 | -3.02 | 4.71 | 0.52 |
| Nutrient intake from meals and snacks |  |  |  |  |  |  |  |  |  |  |  |  |
| Protein (\% of energy) | -0.51 | 0.06 | $<0.0001$ | -0.10 | 0.03 | 0.001 | -0.57 | 0.07 | $<0.0001$ | -0.08 | 0.03 | 0.003 |
| Fat (\% of energy) | 0.70 | 0.15 | $<0.0001$ | 0.28 | 0.08 | 0.0002 | 1.05 | 0.17 | $<0.0001$ | 0.18 | 0.06 | 0.004 |
| Saturated fat (\% of energy) | 0.39 | 0.08 | $<0.0001$ | 0.14 | 0.04 | 0.0003 | 0.51 | 0.09 | $<0.0001$ | 0.08 | 0.03 | 0.007 |
| Monounsaturated fat (\% of energy) | 0.28 | 0.06 | $<0.0001$ | 0.11 | 0.03 | 0.0005 | 0.43 | 0.07 | $<0.0001$ | 0.06 | 0.03 | 0.02 |
| Polyunsaturated fat (\% of energy) | 0.00 | 0.05 | 0.97 | 0.01 | 0.03 | 0.85 | 0.04 | 0.06 | 0.50 | 0.01 | 0.02 | 0.50 |
| Carbohydrate (\% of energy) | -0.24 | 0.17 | 0.14 | -0.07 | 0.08 | 0.42 | -0.54 | 0.19 | 0.006 | -0.09 | 0.07 | 0.20 |
| Starch (\% of energy) | -0.11 | 0.15 | 0.47 | -0.11 | 0.08 | 0.14 | -0.52 | 0.18 | 0.004 | -0.10 | 0.06 | 0.11 |
| Total sugar (\% of energy) | -0.13 | 0.19 | 0.48 | 0.05 | 0.10 | 0.64 | -0.01 | 0.22 | 0.93 | -0.19 | 0.08 | 0.02 |
| Non-milk extrinsic sugar (\% of energy) | 0.38 | 0.18 | 0.04 | 0.21 | 0.09 | 0.02 | 0.44 | 0.22 | 0.04 | 0.02 | 0.08 | 0.82 |
| Dietary fiber (g/10 MJ) | -0.96 | 0.12 | $<0.0001$ | -0.20 | 0.06 | 0.0007 | -1.08 | 0.13 | $<0.0001$ | -0.19 | 0.05 | $<0.0001$ |


|  | Meals and snacks based on time $\dagger$ |  |  |  |  |  | Meals and snacks based on EI contribution $\ddagger$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Energy density of meals |  |  | Energy density of snacks |  |  | Energy density of meals |  |  | Energy density of snacks |  |  |
|  | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ | $\beta \S$ | SE§ | $P$ |
| Mediterranean diet score\\| | -0.29 | 0.05 | $<0.0001$ | -0.10 | 0.03 | $<0.0001$ | -0.29 | 0.06 | $<0.0001$ | -0.09 | 0.02 | $<0.0001$ |
| Total EI (kJ/d) | 23.3 | 54.7 | 0.67 | 42.4 | 27.6 | 0.12 | 135.4 | 63.6 | 0.03 | -44.4 | 22.4 | 0.05 |

* Energy density was calculated based on solid foods only, excluding all caloric and non-caloric beverages (tea, coffee, water, alcoholic beverages, soft drinks, fruit juice, and milk).

Acceptable EI reporters were defined as subjects with the ratio of EI to estimated energy requirement 0.72 to 1.28 . Adjustment was made for age (years, continuous), sex (boys or girls), and social class (manual, non-manual, or unclassified). Both energy density of meal and energy density of snack based on the same definition were entered simultaneously into the regression model.
$\dagger$ Meals were defined as eating events reported during select times of the day ( $0600-0900,1200-1400$, and 1700-2000 hours); all other eating occasions were considered as snacks.
$\ddagger$ A meal was defined as any eating episode comprising $\geq 15 \%$ of total EI, regardless of the time of day or composition of foods and beverages consumed; all other eating episodes were classified as snacks
$\S$ Regression coefficients mean the change of dietary variables with 1 -unit increase of energy density ( $\mathrm{kJ} / \mathrm{g}$ )
$\|$ Possible score ranging from 0 to 8 .

Supplemental Table 5. Associations of energy density (ED) of meals and snacks with adiposity measures in acceptable energy intake (EI) reporters*
$\underline{\text { (Regression coefficients with their standard errors) }}$


EI, energy intake; WHtR, waist-height ratio.

* Energy density was calculated based on solid foods only, excluding all caloric and non-caloric beverages (tea, coffee, water, alcoholic beverages, soft drinks, fruit juice, and milk). Acceptable EI reporters were defined as subjects with the ratio of EI to estimated energy requirement 0.72 to 1.28 .
$\dagger$ Adjusted for age (years, continuous), sex (boys or girls), social class (manual, non-manual, or unclassified), physical activity (low active, active, or very active), meal frequency based on the same definition (times/d, continuous), snack frequency based on the same definition (times/d, continuous), and energy intake from beverages ( $\mathrm{kJ} / \mathrm{d}$, continuous). Both energy density of meal and energy density of snack based on the same definition were entered simultaneously into the regression model.
$\ddagger$ Adjusted for variables used in model 1 and ratio of EI to estimated energy requirement (continuous). Both energy density of meal and energy density of snack based on the same definition were entered simultaneously into the regression model.
§ Regression coefficients mean the change of adiposity measures with 1-unit increase of energy density ( $\mathrm{kJ} / \mathrm{g}$ ) .
$\|$ Meals were defined as eating events reported during select times of the day (0600-0900, 1200-1400, and 1700-2000 hours); all other eating occasions were considered as snacks.

【 A meal was defined as any eating episode comprising $\geq 15 \%$ of total EI, regardless of the time of day or composition of foods and beverages consumed; all other eating episodes were classified as snacks.

