Supplemental Table 1. Summary of criteria for assessing dietary intakes\*

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Deficient** | **Adequate** | **In excess** |
| Food groups |
| Fruit and vegetables, g/d | <400 | >400 | NA |
| Wholegrains, g/d | <50 | >50 | NA |
| Dairy products, g/d | <600 | >600 | NA |
| Oily fish, g/wk | <150 | >150 | NA |
| Red meat, g/wk | NA | <450 | >450 |
| Nutrients |
| Protein, g/kg body weight | <0.66 | >0.66 & <2.4 | >2.4 |
| Carbohydrate, % of total energy | <45 | 45-65 | >65 |
| Total fat, % of total energy | <20 | 20-35 | >35 |
| Monounsaturated, % of total energy | <15 | 15-20 | >20 |
| Polyunsaturated, % of total energy | <6 | 6-11 | >11 |
| Saturated fat, % of total energy | <10 | >10 &<15 | >15 |
| Salt, g/d | 18-50yrs | <3.75 | >3.75 & <5.75 | >5.75 |
| 51-70yrs | <3.25 | >3.25 & <5.75 | >5.75 |
| >70yrs | <3 | >3 & <5.75 | >5.75 |
| Omega-3, % of total energy | <0.2 | >0.2 & <0.6 | >0.6 |
| Fibre, g/d | Males | 18-50yrs | <28 | >28 & <38 | >38 |
| >50yrs | <20 | >20 & <30 | >30 |
| Females | 18-50yrs | <15 | >15 & <25 | >25 |
| >50yrs | <14 | >14 & <21 | >21 |
| Calcium, mg/d | Males | 18-70yrs | <800 | >800 & <2500 | >2500 |
| >70yrs | <1000 | >1000 & <2500 | >2500 |
| Females | 18-50yrs | <800 | >800 & <2500 | >2500 |
| >50yrs | <1000 | >1000 & <2500 | >2500 |
| Iron, mg/d | Males | >18yrs | >4 & <6 | >6.0 & <45 | >45 |
| Females | 18-50yrs | <8.1 | >8.1 & <45 | >45 |
| >50yrs | <5 | >5 & <45 | >45 |
| Vitamin A, µg/d | Males | <625 | >625 & <3000 | >3000 |
| Females | <500 | >500 & <3000 | >3000 |
| Folate, µg/d | <320 | >320 & <1000 | >1000 |
| Thiamin, mg/d | Males | <0.8 | >0.8 & <1.0 | >1.0 |
| Females | <0.7 | >0.7 & <0.9 | >0.9 |
| Riboflavin, mg/d | Males | <0.9 | >0.9 & <1.1 | >1.1 |
| Females | <0.7 | >0.7 & <0.9 | >0.9 |
| Vitamin B12, µg/d | <1.6 | >1.6 & <2.0 | >2.0 |
| Vitamin C, mg/d | Males | <75 | >75 & <2000 | >2000 |
| Females | <60 | >60 & <2000 | >2000 |

\*, Cut-offs were used to deliver personalized dietary advice during the intervention ([20-23](#_ENREF_20))

Supplemental Table 2. Percentage of individuals meeting current European dietary recommendations at baseline

|  |  |
| --- | --- |
|  | **Percentage** |
| Food group intake, % |
| Fruit and vegetables | 52.4 |
| Oily fish | 32.4 |
| Red meat | 50.3 |
| Wholegrains | 75.7 |
| Dairy products | 13.3 |
| Nutrient intake, % |
| Total fat | 50.9 |
| Saturated fat | 54.1 |
| Mono-unsaturated fat | 23.6 |
| Poly-unsaturated fat | 36.7 |
| Protein | 91.2 |
| Carbohydrate | 55.8 |
| Salt | 6.9 |
| Dietary fibre | 46.5 |
| Calcium | 74.6 |
| Folate | 61.9 |
| Iron | 95.6 |
| Riboflavin | 95.8 |
| Thiamine | 97.4 |
| Vitamin A | 84.1 |
| Vitamin B12 | 98.5 |
| Vitamin C | 90.4 |

Values represent percentages of individuals meeting current European dietary recommendations ([20-23](#_ENREF_20))

Supplemental Table 3.Description of dietary clusters and the percentage of individuals within each cluster who met the dietary recommendations at baseline (met recommended intake: ✓; did not meet recommended intake: 🗶)

|  |  |
| --- | --- |
|  | **Clusters** |
| **1**  | **2** | **3** | **4** |
| Total, n | 416 | 351 | 310 | 208 |
| Food group |
| Oily fish | ✓ (100%) | 🗶 (100%) | 🗶 (100%) | 🗶 (100%) |
| Wholegrains | ✓ (75.0%) | ✓ (100%) | ✓ (100%) | 🗶 (100%) |
| Red meat | 🗶 (53.4%) | ✓ (100%) | 🗶 (100%) | 🗶 (51.4%) |
| Fruit and vegetables | ✓ (68.5%) |  ✓ (50.7%) | 🗶 (52.9%) | 🗶 (69.2%) |

Values represent the percentage of individuals meeting the following recommendations: Fruit and vegetables >5 servings/day; Oily fish >1 serving/week; Wholegrains >3 servings/day; Red meat <3 servings/week ([20-23](#_ENREF_20))

Supplemental Table 4.Percentage of individuals meeting nutrient-based guidelines by clusters of adherence to recommendations at baseline\*

|  |  |  |
| --- | --- | --- |
|  | **Clusters** | **P**† |
| **1 (n=416)** | **2 (n=351)** | **3 (n=310)** | **4 (n=208)**  |
| Total fat, % energy | 51.72,4 | 58.1 | 50.0 | 38.5 | **0.046** |
| SFA, % energy | 62.03,4 | 53.3 | 50.7 | 44.7 | **<0.001** |
| MUFA, % energy | 28.9 | 12.0 | 21.6 | 35.6 | 0.68 |
| PUFA, % energy | 42.83,4 | 36.5 | 32.6 | 31.3 | **0.005** |
| Protein, g/kg/d | 86.5 | 96.9 | 93.9 | 87.0 | 0.99 |
| Carbohydrate, % energy | 46.2 | 75.5 | 53.9 | 44.7 | 0.93 |
| Dietary fibre, g/d | 55.84 | 51.3 | 51.3 | 13.0 | **<0.001** |
| Salt, g/d | 4.82,4 | 10.3 | 0.0 | 15.9 | **0.034** |

Values represent percentages of individuals that meet the dietary guidelines:

\*, Dietary recommendations: Total fat: 20-35 % energy; SFA: 10-15% energy; MUFA: 15-20% energy; PUFA: 6-11% energy; protein: 0.66-2.4g/kg/day; carbohydrate: 45-65% energy; dietary fibre: males (18-50yrs ≥38g/day; >50yrs ≥30g/day) and females (18-50yrs ≥25g/day; >50yrs ≥21g/day); salt: 18-50yrs ≤3.75g/day; 51-70yrs ≤3.25g/day; >70yrs ≤3g/day

†, Logistic regression was used to test for significant differences across and between clusters (cluster 1 was used as the base category) ([20](#_ENREF_20); [21](#_ENREF_21); [22](#_ENREF_22); [23](#_ENREF_23)).

Supplemental Table 5**.** Changes from baseline to month 6 in Healthy Eating Index 2010 (HEI) score by cluster (C) of adherence to dietary recommendations at baseline among adults aged 18–79 years in the Food4Me study stratified by level of personalised nutrition advice.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Level of PN** | **n** | **C1** | **C2** | **C3** | **C4** | **P-value** |
| Level 1 | 281 | 3.55 (0.91) | 2.93 (1.01) | 3.93 (1.09) | 4.39 (1.36) | 0.83 |
| Level 2 | 305 | 0.26 (0.94) | 4.41 (1.06)1 | 3.97 (1.02)1 | 7.78 (1.30)1 | <0.001 |
| Level 3 | 287 | 2.60 (0.78) | 2.93 (0.90) | 5.48 (0.97) | 7.78 (1.30)1,2 | 0.002 |

Values are predicted means and standard errors. ANOVA were used to test for significant differences across clusters. Models were adjusted for age, sex, BMI, physical activity level, smoking habits and country. Level 1 received personalised dietary advice on how their intakes of these food groups at baseline compared with guideline amounts. Level 2 received advice based on their dietary intake (as for Level 1) and also on their baseline phenotypic data. Level 3 received advice based on their dietary intake, phenotypic and genotypic data collected at baseline. Posthoc Tukey’s tests used to test for significant differences between clusters. Superscript numbers denote where the differences lie across the clusters relative to the reference category. For example, 2 means significantly different from cluster 2.

Supplemental Table 6.Percentage of individuals meeting dietary recommendations by clusters of adherence to recommendations after exclusion of 3SD of each of the four dietary components at baseline (n=1,201; met recommended intake: ✓; did not meet recommended intake: 🗶)

|  |  |
| --- | --- |
|  | **Clusters** |
| **1**  | **2** | **3** | **4**  |
| Total, n | 389 | 302 | 272 | 238 |
| Food group |
| Oily fish | ✓ (93.3%) | 🗶 (99.7%) | 🗶 (100%) | 🗶 (100%) |
| Fruit and vegetables | ✓ (68.4%) | ✓ (100%) | 🗶 (87.1%) | 🗶 (100%) |
| Red meat | 🗶 (55.5%) | ✓ (54.6%) | ✓ (100%) | 🗶 (99.6%) |
| Wholegrains | ✓ (68.6%) | ✓ (100%) | ✓ (62.9%) | ✓ (68.1%) |

Values represent the percentage of individuals meeting the following recommendations: Fruit and vegetables >5 servings/day; Oily fish >1 serving/week; Wholegrains >3 servings/day; Red meat <3 servings/week ([20-23](#_ENREF_20))