**Supplemental Table 1. Baseline characters of participants according to FVS by BMI group or by sex and BMI group.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | FVS | | | | | | | | |
|  |  | ALL | | 1st (low) | | 2nd (middle) | | 3rd (high) | | *P value* |
| All (n=2,944) | |  |  |  |  |  |  |  |  |  |
| BMI <20 group (n=371) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 371 |  | 124 |  | 124 |  | 123 |  |  |
|  | Women (n, %) | 227 | 61.2 | 76 | 33.5 | 76 | 33.5 | 75 | 33.0 | 1.000 |
|  | Living alone (n, %) | 17 | 4.6 | 8 | 6.5 | 4 | 3.2 | 5 | 4.1 | 0.286 |
|  | Education ≧ High School (n, %) | 251 | 67.7 | 65 | 52.4 | 94 | 75.8 | 92 | 74.8 | <0.001 |
|  | Current Smoking (n, %) | 88 | 23.7 | 34 | 27.4 | 28 | 22.6 | 26 | 21.1 | 0.289 |
|  | Current Drinking (n, %) | 141 | 38.0 | 47 | 37.9 | 47 | 37.9 | 47 | 38.2 | 0.998 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 166 | 44.7 | 50 | 40.3 | 55 | 44.4 | 61 | 49.6 | 0.541 |
|  | Heart Disease (Yes) (n, %) | 13 | 3.5 | 4 | 3.2 | 7 | 5.7 | 2 | 1.6 | 0.224 |
|  | Cerebrovascular disease (Yes) (n, %) | 10 | 2.7 | 1 | 0.8 | 3 | 2.4 | 6 | 4.9 | 0.138 |
|  | Cancer (Yes) (n, %) | 17 | 4.6 | 7 | 5.7 | 7 | 5.7 | 3 | 2.4 | 0.380 |
|  | Hypertension (Yes) (n, %) | 100 | 27.0 | 36 | 29.0 | 33 | 26.6 | 31 | 25.2 | 0.790 |
|  | Hyperlipidemia (Yes) (n, %) | 188 | 50.7 | 65 | 52.4 | 63 | 50.8 | 60 | 48.8 | 0.849 |
|  | Diabetes mellitus (Yes) (n, %) | 26 | 7.0 | 7 | 5.7 | 11 | 8.9 | 8 | 6.5 | 0.588 |
|  | TEI (kcal/day) (mean, SD) | 1,930 | 630 | 1,516 | 400 | 1,813 | 442 | 2,465 | 608 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Men:60 g/day, Women: 50g/day) | 0.99 | 0.03 | 0.98 | 0.05 | 0.99 | 0.03 | 1.00 | 0.00 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Men:20 g/day, Women: 17 g/day) | 0.72 | 0.18 | 0.63 | 0.18 | 0.75 | 0.18 | 0.78 | 0.15 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Men:100 mg/day, Women: 100 mg/day) | 0.89 | 0.18 | 0.78 | 0.24 | 0.92 | 0.14 | 0.98 | 0.07 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Men:3000 mg/day, Women: 2700 mg/day) | 0.88 | 0.14 | 0.80 | 0.16 | 0.90 | 0.12 | 0.94 | 0.08 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Men:750 mg/day, Women: 650 mg/day) | 0.76 | 0.21 | 0.66 | 0.22 | 0.08 | 0.19 | 0.83 | 0.17 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Men:350 mg/day, Women: 280 mg/day) | 0.83 | 0.12 | 0.77 | 0.13 | 0.85 | 0.12 | 0.87 | 0.10 | <0.001 |
|  | NAR Iron (mean, SD)(RDA Men:7.5 mg/day, Women: 6.0 mg/day) | 0.99 | 0.04 | 0.98 | 0.06 | 1.00 | 0.02 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD) (RDA Men:11 mg/day, Women: 8 mg/day) | 0.88 | 0.10 | 0.85 | 0.12 | 0.88 | 0.10 | 0.91 | 0.08 | <0.001 |
|  | MAR | 0.87 | 0.10 | 0.81 | 0.11 | 0.89 | 0.09 | 0.91 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.11 | 0.17 | 1.05 | 0.12 | 1.12 | 0.16 | 1.17 | 0.19 | <0.001 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.42 | 0.54 | 1.33 | 0.64 | 1.36 | 0.44 | 1.56 | 0.52 | <0.001 |
|  | MER | 0.27 | 0.31 | 0.20 | 0.35 | 0.24 | 0.25 | 0.36 | 0.30 | <0.001 |
| BMI 20-24.9 group (n=1,911) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 1,911 |  | 636 |  | 638 |  | 637 |  |  |
|  | Women (n, %) | 946 | 49.5 | 315 | 49.5 | 316 | 49.5 | 315 | 49.5 | 1.000 |
|  | Living alone (n, %) | 76 | 4.0 | 33 | 5.2 | 22 | 3.5 | 21 | 3.3 | 0.210 |
|  | Education ≧ High School (n, %) | 1,330 | 69.6 | 390 | 61.3 | 466 | 73.0 | 474 | 74.4 | <0.001 |
|  | Current Smoking (n, %) | 330 | 17.3 | 134 | 21.1 | 109 | 17.1 | 87 | 13.7 | 0.017 |
|  | Current Drinking (n, %) | 857 | 44.9 | 286 | 45.0 | 299 | 46.9 | 272 | 42.7 | 0.326 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 994 | 52.0 | 302 | 47.5 | 335 | 52.5 | 357 | 56.0 | 0.063 |
|  | Heart Disease (Yes) (n, %) | 61 | 3.2 | 26 | 4.1 | 15 | 2.4 | 20 | 3.1 | 0.210 |
|  | Cerebrovascular disease (Yes) (n, %) | 73 | 3.8 | 26 | 4.1 | 21 | 3.3 | 26 | 4.1 | 0.695 |
|  | Cancer (Yes) (n, %) | 76 | 4.0 | 21 | 3.3 | 29 | 4.6 | 26 | 4.1 | 0.518 |
|  | Hypertension (Yes) (n, %) | 846 | 44.3 | 288 | 45.3 | 286 | 44.8 | 272 | 42.7 | 0.612 |
|  | Hyperlipidemia (Yes) (n, %) | 1,246 | 65.2 | 411 | 64.6 | 430 | 67.4 | 405 | 63.6 | 0.335 |
|  | Diabetes mellitus (Yes) (n, %) | 196 | 10.3 | 67 | 10.5 | 66 | 10.3 | 63 | 9.9 | 0.927 |
|  | TEI (kcal/day) (mean, SD) | 1,923 | 602 | 1,509 | 409 | 1,848 | 416 | 2,410 | 579 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Men:60 g/day, Women: 50g/day) | 0.99 | 0.03 | 0.99 | 0.04 | 1.00 | 0.01 | 1.00 | 0.00 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Men:20 g/day, Women: 17 g/day) | 0.72 | 0.17 | 0.62 | 0.16 | 0.74 | 0.15 | 0.80 | 0.14 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Men:100 mg/day, Women: 100 mg/day) | 0.92 | 0.17 | 0.82 | 0.23 | 0.95 | 0.12 | 0.99 | 0.06 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Men:3000 mg/day, Women: 2700 mg/day) | 0.89 | 0.13 | 0.80 | 0.15 | 0.91 | 0.11 | 0.95 | 0.08 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Men:750 mg/day, Women: 650 mg/day) | 0.76 | 0.20 | 0.67 | 0.22 | 0.78 | 0.18 | 0.83 | 0.17 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Men:350 mg/day, Women: 280 mg/day) | 0.83 | 0.12 | 0.78 | 0.12 | 0.84 | 0.11 | 0.88 | 0.10 | <0.001 |
|  | NAR Iron (mean, SD)(RDA Men:7.5 mg/day, Women: 6.0 mg/day) | 0.99 | 0.04 | 0.98 | 0.06 | 1.00 | 0.01 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD) (RDA Men:11 mg/day, Women: 8 mg/day) | 0.87 | 0.10 | 0.98 | 0.06 | 1.00 | 0.01 | 1.00 | 0.00 | <0.001 |
|  | MAR | 0.87 | 0.09 | 0.85 | 0.11 | 0.86 | 0.10 | 0.90 | 0.09 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.12 | 0.18 | 1.07 | 0.17 | 1.09 | 0.17 | 1.15 | 0.17 | <0.001 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.47 | 0.56 | 1.35 | 0.58 | 1.50 | 0.56 | 1.57 | 0.50 | <0.001 |
|  | MER | 0.29 | 0.31 | 0.21 | 0.31 | 0.31 | 0.31 | 0.36 | 0.28 | <0.001 |
| BMI≧25 group (n=662) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 662 |  | 221 | 33.4 | 221 | 33.4 | 220 | 33.1 |  |
|  | Women (n, %) | 290 | 43.8 | 97 | 43.9 | 97 | 43.9 | 96 | 43.6 | 0.998 |
|  | Living alone (n, %) | 24 | 3.6 | 14 | 6.3 | 9 | 4.1 | 1 | 0.5 | 0.022 |
|  | Education ≧ High School (n, %) | 435 | 65.7 | 126 | 57.0 | 151 | 68.3 | 158 | 71.8 | <0.001 |
|  | Current Smoking (n, %) | 103 | 15.6 | 38 | 17.2 | 32 | 14.5 | 33 | 15.0 | 0.865 |
|  | Current Drinking (n, %) | 307 | 46.4 | 104 | 47.1 | 95 | 43.0 | 108 | 49.1 | 0.464 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 326 | 49.2 | 96 | 43.4 | 109 | 49.3 | 121 | 55.0 | 0.086 |
|  | Heart Disease (Yes) (n, %) | 33 | 5.0 | 12 | 5.4 | 10 | 4.5 | 11 | 5.0 | 0.909 |
|  | Cerebrovascular disease (Yes) (n, %) | 46 | 7.0 | 14 | 6.3 | 17 | 7.7 | 15 | 6.8 | 0.851 |
|  | Cancer (Yes) (n, %) | 18 | 2.7 | 5 | 2.3 | 3 | 1.4 | 10 | 4.6 | 0.106 |
|  | Hypertension (Yes) (n, %) | 408 | 61.6 | 158 | 67.9 | 134 | 60.6 | 124 | 56.4 | 0.043 |
|  | Hyperlipidemia (Yes) (n, %) | 469 | 70.9 | 148 | 67.0 | 155 | 70.1 | 166 | 75.5 | 0.141 |
|  | Diabetes mellitus (Yes) (n, %) | 96 | 14.5 | 32 | 14.5 | 30 | 13.6 | 34 | 15.5 | 0.855 |
|  | TEI (kcal/day) (mean, SD) | 1,858 | 624 | 1,401 | 378 | 1,825 | 477 | 2,350 | 589 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Men:60 g/day, Women: 50g/day) | 0.99 | 0.04 | 0.97 | 0.07 | 1.00 | 0.02 | 1.00 | 0.01 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Men:20 g/day, Women: 17 g/day) | 0.71 | 0.17 | 0.61 | 0.17 | 0.70 | 0.16 | 0.80 | 0.15 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Men:100 mg/day, Women: 100 mg/day) | 0.88 | 0.21 | 0.74 | 0.27 | 0.92 | 0.15 | 0.97 | 0.09 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Men:3000 mg/day, Women: 2700 mg/day) | 0.88 | 0.15 | 0.79 | 0.17 | 0.90 | 0.12 | 0.96 | 0.01 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Men:750 mg/day, Women: 650 mg/day) | 0.74 | 0.21 | 0.63 | 0.23 | 0.75 | 0.19 | 0.84 | 0.16 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Men:350 mg/day, Women: 280 mg/day) | 0.82 | 0.12 | 0.76 | 0.13 | 0.83 | 0.11 | 0.88 | 0.10 | <0.001 |
|  | NAR Iron (mean, SD)(RDA Men:7.5 mg/day, Women: 6.0 mg/day) | 0.99 | 0.05 | 0.97 | 0.08 | 1.00 | 0.02 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD) (RDA Men:11 mg/day, Women: 8 mg/day) | 0.86 | 0.11 | 0.83 | 0.11 | 0.87 | 0.11 | 0.88 | 0.10 | <0.001 |
|  | MAR | 0.86 | 0.11 | 0.79 | 0.12 | 0.87 | 0.08 | 0.92 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.10 | 0.17 | 1.07 | 0.17 | 1.09 | 0.17 | 1.15 | 0.17 | <0.001 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.48 | 0.56 | 1.33 | 0.54 | 1.53 | 0.63 | 1.59 | 0.49 | <0.001 |
|  | MER | 0.29 | 0.31 | 0.20 | 0.29 | 0.31 | 0.34 | 0.37 | 0.28 | <0.001 |
| Men (n=1,481) | |  |  |  |  |  |  |  |  |  |
| BMI <20 group (n=144) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 144 |  | 48 |  | 48 |  | 48 |  |  |
|  | Women (n, %) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.000 |
|  | Living alone (n, %) | 1 | 0.7 | 1 | 2.1 | 0 | 0.0 | 0 | 0.0 | 0.365 |
|  | Education ≧ High School (n, %) | 100 | 69.4 | 30 | 62.5 | 73 | 41.7 | 35 | 72.9 | 0.414 |
|  | Current Smoking (n, %) | 73 | 50.7 | 29 | 60.4 | 20 | 41.7 | 24 | 50.0 | 0.189 |
|  | Current Drinking (n, %) | 91 | 63.2 | 30 | 62.5 | 30 | 62.5 | 31 | 64.6 | 0.971 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 55 | 38.2 | 15 | 31.3 | 18 | 37.5 | 22 | 45.8 | 0.692 |
|  | Heart Disease (Yes) (n, %) | 3 | 2.1 | 0 | 0.0 | 2 | 4.2 | 1 | 2.1 | 0.360 |
|  | Cerebrovascular disease (Yes) (n, %) | 3 | 2.1 | 0 | 0.0 | 1 | 2.1 | 2 | 4.2 | 0.360 |
|  | Cancer (Yes) (n, %) | 5 | 3.5 | 1 | 2.1 | 2 | 4.2 | 2 | 4.2 | 0.813 |
|  | Hypertension (Yes) (n, %) | 44 | 30.6 | 15 | 31.3 | 15 | 31.3 | 14 | 29.2 | 0.968 |
|  | Hyperlipidemia (Yes) (n, %) | 55 | 38.2 | 25 | 52.1 | 15 | 31.3 | 15 | 31.3 | 0.053 |
|  | Diabetes mellitus (Yes) (n, %) | 18 | 12.5 | 5 | 10.4 | 8 | 16.7 | 5 | 10.4 | 0.565 |
|  | TEI (kcal/day) (mean, SD) | 1,950 | 669 | 1,494 | 416 | 1,811 | 476 | 2,543 | 609 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Men:60 g/day) | 0.99 | 0.04 | 0.97 | 0.07 | 0.99 | 0.03 | 1.00 | 0.00 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Men:20 g/day,) | 0.65 | 0.18 | 0.55 | 0.15 | 0.70 | 0.20 | 0.70 | 0.15 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Men:100 mg/day) | 0.85 | 0.22 | 0.70 | 0.27 | 0.89 | 0.17 | 0.96 | 0.10 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Men:3000 mg/day) | 0.84 | 0.16 | 0.74 | 0.18 | 0.87 | 0.11 | 0.91 | 0.09 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Men:750 mg/day) | 0.68 | 0.22 | 0.58 | 0.23 | 0.71 | 0.20 | 0.76 | 0.17 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Men:350 mg/day) | 0.77 | 0.12 | 0.71 | 0.13 | 0.81 | 0.12 | 0.81 | 0.09 | <0.001 |
|  | NAR Iron (mean, SD) (RDA Men:7.5 mg/day) | 0.98 | 0.06 | 0.95 | 0.09 | 1.00 | 0.03 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD)(RDA Men:11 mg/day) | 0.83 | 0.11 | 0.78 | 0.12 | 0.84 | 0.10 | 0.87 | 0.08 | <0.001 |
|  | MAR | 0.82 | 0.11 | 0.75 | 0.12 | 0.85 | 0.09 | 0.88 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.08 | 0.15 | 1.05 | 0.02 | 1.07 | 0.02 | 1.11 | 0.02 | 0.157 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.60 | 0.65 | 1.44 | 0.74 | 1.55 | 0.54 | 1.81 | 0.62 | 0.02 |
|  | MER | 0.34 | 0.36 | 0.25 | 0.40 | 0.31 | 0.29 | 0.46 | 0.36 | 0.01 |
| BMI 20-24.9 group (n=965) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 965 |  | 321 |  | 322 |  | 322 |  |  |
|  | Women (n, %) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.000 |
|  | Living alone (n, %) | 17 | 1.8 | 8 | 2.5 | 4 | 1.2 | 5 | 1.6 | 0.532 |
|  | Education ≧ High School (n, %) | 700 | 72.5 | 222 | 69.2 | 245 | 76.1 | 233 | 72.4 | 0.188 |
|  | Current Smoking (n, %) | 302 | 31.3 | 113 | 35.2 | 103 | 32.0 | 86 | 26.7 | 0.218 |
|  | Current Drinking (n, %) | 672 | 69.6 | 222 | 69.2 | 237 | 73.6 | 213 | 66.2 | 0.118 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 520 | 53.9 | 161 | 50.2 | 173 | 53.7 | 186 | 57.8 | 0.567 |
|  | Heart Disease (Yes) (n, %) | 43 | 4.5 | 15 | 4.7 | 11 | 3.4 | 17 | 5.3 | 0.505 |
|  | Cerebrovascular disease (Yes) (n, %) | 44 | 4.6 | 14 | 4.4 | 12 | 3.7 | 18 | 5.6 | 0.514 |
|  | Cancer (Yes) (n, %) | 37 | 3.8 | 7 | 2.2 | 14 | 4.4 | 16 | 5.0 | 0.155 |
|  | Hypertension (Yes) (n, %) | 479 | 49.6 | 169 | 52.7 | 155 | 48.1 | 155 | 48.1 | 0.418 |
|  | Hyperlipidemia (Yes) (n, %) | 555 | 57.5 | 183 | 57.0 | 195 | 60.6 | 177 | 55.0 | 0.348 |
|  | Diabetes mellitus (Yes) (n, %) | 133 | 13.8 | 47 | 14.6 | 39 | 12.1 | 47 | 14.6 | 0.567 |
|  | TEI (kcal/day) (mean, SD) | 1,917 | 582 | 1,547 | 436 | 1,848 | 448 | 2,355 | 541 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Men:60 g/day) | 0.99 | 0.03 | 0.98 | 0.05 | 1.00 | 0.02 | 1.00 | 0.00 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Men:20 g/day,) | 0.69 | 0.17 | 0.59 | 0.15 | 0.71 | 0.15 | 0.79 | 0.14 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Men:100 mg/day) | 0.89 | 0.19 | 0.76 | 0.25 | 0.93 | 0.13 | 0.98 | 0.06 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Men:3000 mg/day) | 0.87 | 0.15 | 0.77 | 0.16 | 0.88 | 0.12 | 0.95 | 0.08 | 0.08 |
|  | NAR Calcium (mean, SD) (RDA Men:750 mg/day) | 0.73 | 0.21 | 0.62 | 0.21 | 0.75 | 0.19 | 0.81 | 0.17 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Men:350 mg/day) | 0.80 | 0.12 | 0.75 | 0.12 | 0.80 | 0.11 | 0.86 | 0.10 | <0.001 |
|  | NAR Iron (mean, SD) (RDA Men:7.5 mg/day) | 0.99 | 0.05 | 0.97 | 0.08 | 1.00 | 0.02 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD)(RDA Men:11 mg/day) | 0.83 | 0.10 | 0.81 | 0.11 | 0.81 | 0.10 | 0.86 | 0.09 | <0.001 |
|  | MAR | 0.85 | 0.10 | 0.78 | 0.11 | 0.86 | 0.08 | 0.91 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.08 | 0.16 | 1.05 | 0.14 | 1.09 | 0.18 | 1.10 | 0.16 | <0.001 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.60 | 0.65 | 1.44 | 0.71 | 1.63 | 0.65 | 1.72 | 0.54 | <0.001 |
|  | MER | 0.34 | 0.35 | 0.25 | 0.37 | 0.36 | 0.36 | 0.41 | 0.30 | <0.001 |
| BMI≧25 group (n=372) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 372 |  | 124 |  | 124 |  | 124 |  |  |
|  | Women (n, %) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.000 |
|  | Living alone (n, %) | 8 | 2.2 | 5 | 4.0 | 3 | 2.4 | 0 | 0.0 | 0.277 |
|  | Education ≧ High School (n, %) | 264 | 71.0 | 82 | 66.1 | 91 | 73.4 | 91 | 73.4 | 0.348 |
|  | Current Smoking (n, %) | 92 | 24.7 | 30 | 24.2 | 30 | 24.2 | 32 | 25.8 | 0.870 |
|  | Current Drinking (n, %) | 256 | 68.8 | 83 | 66.9 | 84 | 67.7 | 89 | 71.8 | 0.604 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 182 | 48.9 | 57 | 46.0 | 60 | 48.4 | 65 | 52.4 | 0.784 |
|  | Heart Disease (Yes) (n, %) | 26 | 7.0 | 9 | 7.3 | 9 | 7.3 | 8 | 6.5 | 0.960 |
|  | Cerebrovascular disease (Yes) (n, %) | 30 | 8.1 | 9 | 7.3 | 12 | 9.7 | 9 | 7.3 | 0.722 |
|  | Cancer (Yes) (n, %) | 7 | 1.9 | 0 | 0.0 | 2 | 1.6 | 5 | 4.0 | 0.063 |
|  | Hypertension (Yes) (n, %) | 239 | 64.3 | 91 | 73.4 | 80 | 64.5 | 68 | 54.8 | 0.010 |
|  | Hyperlipidemia (Yes) (n, %) | 249 | 66.9 | 75 | 60.5 | 85 | 68.6 | 89 | 71.8 | 0.150 |
|  | Diabetes mellitus (Yes) (n, %) | 63 | 16.9 | 22 | 17.7 | 18 | 14.5 | 23 | 18.6 | 0.670 |
|  | TEI (kcal/day) (mean, SD) | 1,870 | 633 | 1,437 | 411 | 1,841 | 506 | 2,331 | 614 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Men:60 g/day) | 0.99 | 0.04 | 0.97 | 0.07 | 0.99 | 0.03 | 0.99 | 0.01 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Men:20 g/day,) | 0.69 | 0.17 | 0.59 | 0.16 | 0.70 | 0.15 | 0.80 | 0.14 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Men:100 mg/day) | 0.86 | 0.23 | 0.70 | 0.28 | 0.90 | 0.17 | 0.97 | 0.09 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Men:3000 mg/day) | 0.87 | 0.15 | 0.77 | 0.18 | 0.88 | 0.13 | 0.95 | 0.08 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Men:750 mg/day) | 0.72 | 0.21 | 0.62 | 0.23 | 0.70 | 0.19 | 0.83 | 0.16 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Men:350 mg/day) | 0.80 | 0.12 | 0.74 | 0.13 | 0.79 | 0.11 | 0.87 | 0.10 | <0.001 |
|  | NAR Iron (mean, SD) (RDA Men:7.5 mg/day) | 0.98 | 0.05 | 0.96 | 0.09 | 0.99 | 0.02 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD)(RDA Men:11 mg/day) | 0.81 | 0.10 | 0.78 | 0.20 | 0.81 | 0.21 | 0.85 | 0.10 | <0.001 |
|  | MAR | 0.84 | 0.11 | 0.76 | 0.12 | 0.84 | 0.08 | 0.91 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.08 | 0.16 | 1.07 | 0.16 | 1.05 | 0.13 | 1.11 | 0.18 | 0.004 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.58 | 0.65 | 1.36 | 0.60 | 1.67 | 0.73 | 1.71 | 0.55 | <0.001 |
|  | MER | 0.33 | 0.35 | 0.21 | 0.32 | 0.37 | 0.39 | 0.41 | 0.31 | <0.001 |
| Women (n=1,463) | |  |  |  |  |  |  |  |  |  |
| BMI <20 group (n=227) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 227 |  | 76 |  | 76 |  | 75 |  |  |
|  | Women (n, %) | 227 | 100.0 | 76 | 100 | 76 | 100 | 75 | 100.0 | 1.000 |
|  | Living alone (n, %) | 16 | 7.1 | 7 | 9.2 | 4 | 5.3 | 5 | 6.7 | 0.361 |
|  | Education ≧ High School (n, %) | 151 | 66.5 | 35 | 15.4 | 59 | 77.6 | 57 | 76.0 | <0.001 |
|  | Current Smoking (n, %) | 15 | 6.6 | 5 | 6.6 | 8 | 10.5 | 2 | 2.7 | 0.253 |
|  | Current Drinking (n, %) | 50 | 22.0 | 17 | 22.4 | 17 | 22.4 | 16 | 21.3 | 0.985 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 111 | 48.9 | 35 | 46.1 | 37 | 48.7 | 39 | 52.0 | 0.832 |
|  | Heart Disease (Yes) (n, %) | 10 | 4.4 | 4 | 5.3 | 5 | 6.6 | 1 | 1.3 | 0.264 |
|  | Cerebrovascular disease (Yes) (n, %) | 7 | 3.1 | 1 | 1.3 | 2 | 2.7 | 4 | 5.3 | 0.347 |
|  | Cancer (Yes) (n, %) | 12 | 5.3 | 6 | 7.9 | 5 | 6.6 | 1 | 1.3 | 0.163 |
|  | Hypertension (Yes) (n, %) | 56 | 24.7 | 21 | 27.6 | 18 | 23.7 | 17 | 22.7 | 0.756 |
|  | Hyperlipidemia (Yes) (n, %) | 133 | 58.6 | 40 | 52.6 | 48 | 63.2 | 45 | 60.0 | 0.401 |
|  | Diabetes mellitus (Yes) (n, %) | 8 | 3.5 | 2 | 2.6 | 3 | 4.0 | 3 | 4.0 | 0.875 |
|  | TEI (kcal/day) (mean, SD) | 1,917 | 605 | 1,530 | 391 | 1,814 | 422 | 2,414 | 606 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Women: 50g/day) | 0.99 | 0.02 | 0.99 | 0.03 | 1.00 | 0.02 | 1.00 | 0.00 | 0.004 |
|  | NAR Dietary fiber (mean, SD) (DG Women: 17 g/day) | 0.76 | 0.17 | 0.68 | 0.18 | 0.79 | 0.17 | 0.83 | 0.14 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Women: 100 mg/day) | 0.92 | 0.15 | 0.83 | 0.20 | 0.95 | 0.12 | 1.00 | 0.26 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Women: 2700 mg/day) | 0.90 | 0.12 | 0.83 | 0.14 | 0.92 | 0.11 | 0.96 | 0.06 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Women: 650 mg/day) | 0.81 | 0.19 | 0.72 | 0.20 | 0.84 | 0.17 | 0.88 | 0.14 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Women: 280 mg/day) | 0.86 | 0.11 | 0.81 | 0.12 | 0.87 | 0.11 | 0.91 | 0.09 | <0.001 |
|  | NAR Iron (mean, SD) (RDA Women: 6.0 mg/day) | 1.00 | 0.01 | 1.00 | 0.01 | 1.00 | 0.01 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD) (RDA Women: 8 mg/day) | 0.91 | 0.08 | 0.90 | 0.08 | 0.90 | 0.08 | 0.94 | 0.73 | 0.002 |
|  | MAR | 0.90 | 0.08 | 0.84 | 0.09 | 0.91 | 0.08 | 0.94 | 0.05 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.13 | 0.18 | 1.08 | 0.15 | 1.14 | 0.17 | 1.18 | 0.19 | 0.002 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.31 | 0.43 | 1.27 | 0.56 | 1.24 | 0.32 | 1.41 | 0.36 | 0.042 |
|  | MER | 0.22 | 0.26 | 0.17 | 0.32 | 0.19 | 0.21 | 0.30 | 0.24 | 0.009 |
| BMI 20-24.9 group (n=946) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 946 |  | 315 |  | 316 |  | 315 |  |  |
|  | Women (n, %) | 946 | 100.0 | 315 | 100.0 | 316 | 100.0 | 315 | 100.0 | 1.000 |
|  | Living alone (n, %) | 59 | 6.2 | 25 | 7.9 | 18 | 5.7 | 16 | 5.1 | 0.366 |
|  | Education ≧ High School (n, %) | 630 | 66.6 | 168 | 53.3 | 221 | 69.9 | 241 | 76.5 | <0.001 |
|  | Current Smoking (n, %) | 28 | 3.0 | 21 | 6.7 | 6 | 1.9 | 1 | 0.3 | <0.001 |
|  | Current Drinking (n, %) | 185 | 19.6 | 64 | 20.3 | 62 | 19.6 | 59 | 18.7 | 0.881 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 474 | 50.1 | 141 | 44.8 | 162 | 51.3 | 171 | 54.3 | 0.047 |
|  | Heart Disease (Yes) (n, %) | 18 | 1.9 | 11 | 3.5 | 4 | 1.3 | 3 | 1.0 | 0.039 |
|  | Cerebrovascular disease (Yes) (n, %) | 29 | 3.1 | 12 | 3.8 | 9 | 2.9 | 8 | 2.5 | 0.628 |
|  | Cancer (Yes) (n, %) | 39 | 4.1 | 14 | 4.4 | 15 | 4.8 | 10 | 3.2 | 0.574 |
|  | Hypertension (Yes) (n, %) | 367 | 38.8 | 119 | 37.8 | 131 | 41.5 | 117 | 37.1 | 0.486 |
|  | Hyperlipidemia (Yes) (n, %) | 691 | 73.0 | 228 | 72.4 | 235 | 74.4 | 228 | 72.4 | 0.810 |
|  | Diabetes mellitus (Yes) (n, %) | 63 | 6.7 | 20 | 6.4 | 27 | 8.5 | 16 | 5.1 | 0.210 |
|  | TEI (kcal/day) (mean, SD) | 1,929 | 623 | 1,471 | 377 | 1,848 | 381 | 2,467 | 610 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Women: 50g/day) | 1.00 | 0.01 | 0.99 | 0.03 | 1.00 | 0.01 | 1.00 | 0.00 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Women: 17 g/day) | 0.75 | 0.16 | 0.66 | 0.15 | 0.77 | 0.15 | 0.81 | 0.15 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Women: 100 mg/day) | 0.94 | 0.13 | 0.88 | 0.19 | 0.97 | 0.09 | 0.99 | 0.06 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Women: 2700 mg/day) | 0.91 | 0.12 | 0.84 | 0.13 | 0.93 | 0.09 | 0.96 | 0.07 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Women: 650 mg/day) | 0.79 | 0.19 | 0.72 | 0.21 | 0.81 | 0.16 | 0.85 | 0.16 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Women: 280 mg/day) | 0.86 | 0.11 | 0.81 | 0.11 | 0.87 | 0.10 | 0.90 | 0.09 | <0.001 |
|  | NAR Iron (mean, SD) (RDA Women: 6.0 mg/day) | 1.00 | 0.02 | 0.99 | 0.03 | 1.00 | 0.01 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD) (RDA Women: 8 mg/day) | 0.92 | 0.08 | 0.90 | 0.08 | 0.91 | 0.08 | 0.95 | 0.06 | <0.001 |
|  | MAR | 0.90 | 0.08 | 0.85 | 0.09 | 0.91 | 0.06 | 0.93 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.15 | 0.20 | 1.11 | 0.19 | 1.14 | 0.19 | 1.19 | 0.20 | <0.001 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.34 | 0.41 | 1.25 | 0.39 | 1.36 | 0.41 | 1.42 | 0.40 | <0.001 |
|  | MER | 0.25 | 0.25 | 0.18 | 0.23 | 0.25 | 0.25 | 0.31 | 0.25 | <0.001 |
| BMI≧25 group (n=290) | |  |  |  |  |  |  |  |  |  |
|  | Number of participants | 290 |  | 97 |  | 97 |  | 96 |  |  |
|  | Women (n, %) | 290 | 100.0 | 97 | 100.0 | 97 | 100.0 | 96 | 100.0 | 1.000 |
|  | Living alone (n, %) | 16 | 5.5 | 6 | 6.2 | 5 | 5.2 | 5 | 5.2 | 0.157 |
|  | Education ≧ High School (n, %) | 171 | 59.0 | 44 | 45.4 | 60 | 61.9 | 68 | 69.8 | 0.006 |
|  | Current Smoking (n, %) | 11 | 3.8 | 8 | 8.3 | 2 | 2.1 | 1 | 1.0 | 0.036 |
|  | Current Drinking (n, %) | 51 | 17.6 | 21 | 21.7 | 11 | 11.3 | 19 | 19.8 | 0.133 |
|  | Habitual Exercise (≧1 times/week) (n, %) | 144 | 49.7 | 39 | 40.2 | 49 | 50.5 | 56 | 58.3 | 0.084 |
|  | Heart Disease (Yes) (n, %) | 7 | 2.4 | 3 | 3.1 | 1 | 1.0 | 3 | 3.1 | 0.553 |
|  | Cerebrovascular disease (Yes) (n, %) | 16 | 5.5 | 5 | 5.2 | 5 | 5.2 | 6 | 6.3 | 0.929 |
|  | Cancer (Yes) (n, %) | 11 | 3.8 | 5 | 5.2 | 1 | 1.0 | 5 | 5.2 | 0.218 |
|  | Hypertension (Yes) (n, %) | 169 | 58.3 | 59 | 60.8 | 54 | 55.7 | 56 | 58.3 | 0.767 |
|  | Hyperlipidemia (Yes) (n, %) | 220 | 75.9 | 73 | 75.3 | 70 | 72.2 | 77 | 80.2 | 0.420 |
|  | Diabetes mellitus (Yes) (n, %) | 33 | 11.4 | 10 | 10.3 | 12 | 12.4 | 11 | 11.5 | 0.902 |
|  | TEI (kcal/day) (mean, SD) | 1,843 | 613 | 1,355 | 328 | 1,805 | 438 | 2,375 | 556 | <0.001 |
|  | NAR Protein (mean, SD) (RDA Women: 50g/day) | 0.99 | 0.04 | 0.98 | 0.07 | 1.00 | 0.01 | 1.00 | 0.01 | <0.001 |
|  | NAR Dietary fiber (mean, SD) (DG Women: 17 g/day) | 0.73 | 0.17 | 0.64 | 0.17 | 0.75 | 0.15 | 0.81 | 0.15 | <0.001 |
|  | NAR Vitamin C (mean, SD) (RDA Women: 100 mg/day) | 0.91 | 0.18 | 0.80 | 0.25 | 0.95 | 0.11 | 0.98 | 0.09 | <0.001 |
|  | NAR Potassium (mean, SD) (DG Women: 2700 mg/day) | 0.89 | 0.14 | 0.80 | 0.17 | 0.92 | 0.10 | 0.96 | 0.08 | <0.001 |
|  | NAR Calcium (mean, SD) (RDA Women: 650 mg/day) | 0.77 | 0.20 | 0.65 | 0.22 | 0.81 | 0.17 | 0.86 | 0.15 | <0.001 |
|  | NAR Magnesium (mean, SD) (RDA Women: 280 mg/day) | 0.85 | 0.12 | 0.78 | 0.13 | 0.87 | 0.10 | 0.90 | 0.10 | <0.001 |
|  | NAR Iron (mean, SD) (RDA Women: 6.0 mg/day) | 0.99 | 0.04 | 0.98 | 0.08 | 1.00 | 0.00 | 1.00 | 0.00 | <0.001 |
|  | NAR Zinc (mean, SD) (RDA Women: 8 mg/day) | 0.91 | 0.09 | 0.88 | 0.10 | 0.92 | 0.08 | 0.93 | 0.09 | <0.001 |
|  | MAR | 0.88 | 0.10 | 0.81 | 0.12 | 0.90 | 0.07 | 0.93 | 0.06 | <0.001 |
|  | NAR Saturated fat (mean, SD) (DG 7 %e) | 1.13 | 0.18 | 1.08 | 0.15 | 1.14 | 0.17 | 1.18 | 0.19 | 0.002 |
|  | NAR Cholesterol (mean, SD) (200mg/day) | 1.36 | 0.40 | 1.29 | 0.44 | 1.34 | 0.40 | 1.44 | 0.35 | 0.02 |
|  | MER | 0.25 | 0.24 | 0.19 | 0.24 | 0.24 | 0.24 | 0.32 | 0.22 | <0.001 |

FVS: Food Variety Score, TEI: total energy intake, BMI: body mass index, MAR: mean adequacy ratio, MER: mean excess ratio, RDA: recommended dietary allowance, DG: tentative dietary goals for preventing life-style related decease

Differences in characters across turtile of FVS were examined by Pearson’s chi–square test (categorical variables). or ANOVA (continuous variables).

**Supplemental Table 2. Multivariate-adjusted HRs and corresponding 95% CIs for the association of FVS with all-cause mortality by BMI group or by sex and BMI group excluding participants with history of heart disease, cerebrovascular disease, and cancer or excluding participants died or moved within 3 years from baseline.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | FVS | | | | | |  |
|  |  | 1st (low) | | 2nd (middle) | | 3rd (high) | | *P for trend* |
| **Excluding participants with history of heart disease, cerebrovascular disease, and cancer (n=2,615)** | | | | | | |  |  |
| BMI <20 group (n=334) | |  | |  | |  | |  |
|  | FVS mean, SD | 14.0 | 3.7 | 20.9 | 3.6 | 30.3 | 6.2 |  |
|  | Person-year | 1,737 | | 1,852 | | 1,668 | |  |
|  | Cases | 35 | | 25 | | 26 | |  |
|  | Model11 | 1.00 | | 0.53 | (0.32-0.90)\* | 0.61 | (0.36-1.04) | 0.09 |
|  | Model2 | 1.00 | | 0.63 | (0.37-1.09) | 0.62 | (0.36-1.06) | 0.09 |
|  | Model32 | 1.00 | | 0.61 | (0.35-1.05) | 0.64 | (0.37-1.09) | 0.12 |
|  | Model4 | 1.00 | | 0.54 | (0.31-0.96)\* | 0.44 | (0.21-0.94)\* | 0.03 |
| BMI 20-24.9 group (n=1,714) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 13.8 | 3.4 | 20.6 | 2.9 | 29.0 | 5.6 |  |
|  | Person-year | 9,288 | | 9,430 | | 9,254 | |  |
|  | Cases | 148 | | 100 | | 121 | |  |
|  | Model11 | 1.00 | | 0.70 | (0.54-0.90)\*\* | 0.85 | (0.67-1.08) | 0.217 |
|  | Model2 | 1.00 | | 0.73 | (0.57-0.95)\* | 0.92 | (0.72-1.17) | 0.525 |
|  | Model32 | 1.00 | | 0.74 | (0.57-0.96)\* | 0.93 | (0.73-1.19) | 0.585 |
|  | Model4 | 1.00 | | 0.71 | (0.54-0.93)\* | 0.85 | (0.63-1.16) | 0.307 |
| BMI≧25 group (n=567) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 12.2 | 3.4 | 19.6 | 3.1 | 28.3 | 5.5 |  |
|  | Person-year | 2,968 | | 3,137 | | 2,879 | |  |
|  | Cases | 39 | | 43 | | 44 | |  |
|  | Model11 | 1.00 | | 0.98 | (0.63-1.51) | 1.13 | (0.73-1.75) | 0.547 |
|  | Model2 | 1.00 | | 0.98 | (0.63-1.52) | 1.08 | (0.69-1.69) | 0.718 |
|  | Model32 | 1.00 | | 1.01 | (0.65-1.57) | 1.07 | (0.68-1.68) | 0.772 |
|  | Model4 | 1.00 | | 1.05 | (0.65-1.69) | 1.16 | (0.64-2.09) | 0.619 |
| **Men (n=1,292)** | |  |  |  |  |  |  |  |
| BMI <20 group (n=133) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 10.7 | 2.4 | 17.2 | 1.9 | 26.5 | 6.2 |  |
|  | Person-year | 624 | | 725 | | 566 | |  |
|  | Cases | 21 | | 19 | | 18 | |  |
|  | Model12 | 1.00 | | 0.64 | (0.34-1.21) | 0.72 | (0.37-1.38) | 0.384 |
|  | Model2 | 1.00 | | 0.85 | (0.43-1.69) | 0.72 | (0.36-1.46) | 0.368 |
|  | Model32 | 1.00 | | 0.78 | (0.39-1.59) | 0.74 | (0.37-1.48) | 0.418 |
|  | Model4 | 1.00 | | 0.67 | (0.32-1.39) | 0.39 | (0.15-1.01) | 0.053 |
| BMI 20-24.9 group (n=849) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 11.8 | 2.5 | 18.2 | 1.4 | 25.9 | 4.3 |  |
|  | Person-year | 4,471 | | 4,572 | | 4,392 | |  |
|  | Cases | 95 | | 66 | | 84 | |  |
|  | Model12 | 1.00 | | 0.73 | (0.53-1.00) | 0.95 | (0.71-1.27) | 0.770 |
|  | Model2 | 1.00 | | 0.76 | (0.55-1.05) | 1.02 | (0.76-1.37) | 0.875 |
|  | Model32 | 1.00 | | 0.78 | (0.57-1.08) | 1.04 | (0.77-1.40) | 0.786 |
|  | Model4 | 1.00 | | 0.76 | (0.54-1.06) | 0.97 | (0.67-1.40) | 0.879 |
| BMI≧25 group (n=388) | |  |  |  | |  |  |  |
|  | FVS mean, SD | 11.4 | 2.6 | 17.9 | 1.6 | 25.9 | 4.5 |  |
|  | Person-year | 1,516 | | 1,642 | | 1,498 | |  |
|  | Cases | 27 | | 27 | | 31 | |  |
|  | Model12 | 1.00 | | 0.78 | (0.45-1.36) | 1.04 | (0.62-1.75) | 0.727 |
|  | Model2 | 1.00 | | 0.81 | (0.47-1.42) | 1.00 | (0.58-1.74) | 0.864 |
|  | Model32 | 1.00 | | 0.84 | (0.48-1.47) | 0.99 | (0.57-1.73) | 0.865 |
|  | Model4 | 1.00 | | 0.82 | (0.45-1.47) | 0.92 | (0.46-1.87) | 0.995 |
| **Women (n=1,323)** | |  |  |  |  |  |  |  |
| BMI <20 group (n=201) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 16.1 | 2.7 | 23.4 | 2.1 | 32.8 | 4.9 |  |
|  | Person-year | 1,113 | | 1,127 | | 1,102 | |  |
|  | Cases | 14 | | 6 | | 8 | |  |
|  | Model12 | 1.00 | | 0.33 | (0.12-0.88)\* | 0.49 | (0.19-1.28) | 0.115 |
|  | Model2 | 1.00 | | 0.26 | (0.09-0.81)\* | 0.61 | (0.22-1.65) | 0.238 |
|  | Model32 | 1.00 | | 0.25 | (0.08-0.79)\* | 0.54 | (0.19-1.48) | 0.185 |
|  | Model4 | 1.00 | | 0.23 | (0.07-0.79)\* | 0.43 | (0.10-1.82) | 0.240 |
| BMI 20-24.9 group (n=865) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 15.9 | 2.9 | 22.9 | 1.8 | 32.0 | 5.0 |  |
|  | Person-year | 4,816 | | 4,858 | | 4,862 | |  |
|  | Cases | 53 | | 34 | | 37 | |  |
|  | Model12 | 1.00 | | 0.63 | (0.41-0.97)\* | 0.68 | (0.45-1.04) | 0.084 |
|  | Model2 | 1.00 | | 0.66 | (0.43-1.03) | 0.73 | (0.48-1.13) | 0.174 |
|  | Model32 | 1.00 | | 0.65 | (0.42-1.01) | 0.73 | (0.48-1.13) | 0.178 |
|  | Model4 | 1.00 | | 0.61 | (0.38-0.96)\* | 0.62 | (0.35-1.10) | 0.098 |
| BMI≧25 group (n=257) | |  |  |  | |  |  |  |
|  | FVS mean, SD | 13.8 | 3.5 | 22.2 | 2.1 | 31.3 | 5.1 |  |
|  | Person-year | 1,452 | | 1,495 | | 1,381 | |  |
|  | Cases | 12 | | 16 | | 13 | |  |
|  | Model12 | 1.00 | | 1.33 | (0.63-2.85) | 1.38 | (0.62-3.05) | 0.426 |
|  | Model2 | 1.00 | | 1.51 | (0.67-3.42) | 1.36 | (0.58-3.19) | 0.501 |
|  | Model32 | 1.00 | | 1.61 | (0.70-3.72) | 1.52 | (0.63-3.65) | 0.373 |
|  | Model4 | 1.00 | | 2.12 | (0.82-5.49) | 2.39 | (0.76-7.56) | 0.163 |
| **Excluding participants died or moved within 3 years from baseline (n=2,825)** | | | | |  |  |  |  |
| BMI <20 group (n=354) | |  | |  | |  | |  |
|  | FVS mean, SD | 14.2 | 3.5 | 20.8 | 3.3 | 29.8 | 5.9 |  |
|  | Person-year | 1,858 | | 2,204 | | 1,909 | |  |
|  | Cases | 35 | | 29 | | 26 | |  |
|  | Model1 | 1.00 | | 0.57 | (0.34-0.94)\* | 0.53 | (0.31-0.90)\* | 0.026 |
|  | Model2 | 1.00 | | 0.65 | (0.38-1.10) | 0.56 | (0.32-0.96)\* | 0.041 |
|  | Model31 | 1.00 | | 0.65 | (0.38-1.11) | 0.56 | (0.32-0.96)\* | 0.043 |
|  | Model4 | 1.00 | | 0.64 | (0.36-1.11) | 0.53 | (0.25-1.12) | 0.088 |
| BMI 20-24.9 group (n=1,844) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 13.8 | 3.3 | 20.4 | 2.8 | 28.9 | 5.6 |  |
|  | Person-year | 10,225 | | 10,454 | | 10,265 | |  |
|  | Cases | 159 | | 109 | | 136 | |  |
|  | Model1 | 1.00 | | 0.70 | (0.55-0.90)\*\* | 0.90 | (0.71-1.13) | 0.469 |
|  | Model2 | 1.00 | | 0.74 | (0.58-0.95)\* | 0.97 | (0.77-1.22) | 0.892 |
|  | Model31 | 1.00 | | 0.75 | (0.59-0.96)\* | 0.99 | (0.78-1.25) | 0.964 |
|  | Model4 | 1.00 | | 0.74 | (0.57-0.96)\* | 0.96 | (0.71-1.29) | 0.854 |
| BMI≧25 group (n=627) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 12.3 | 3.2 | 19.5 | 3.1 | 28.3 | 5.6 |  |
|  | Person-year | 3,471 | | 3,521 | | 3,411 | |  |
|  | Cases | 45 | | 49 | | 49 | |  |
|  | Model1 | 1.00 | | 1.04 | (0.69-1.56) | 1.11 | (0.74-1.67) | 0.605 |
|  | Model2 | 1.00 | | 1.07 | (0.71-1.61) | 1.09 | (0.72-1.64) | 0.848 |
|  | Model31 | 1.00 | | 1.14 | (0.76-1.73) | 1.12 | (0.73-1.70) | 0.740 |
|  | Model4 | 1.00 | | 1.04 | (0.67-1.63) | 0.91 | (0.53-1.59) | 0.590 |
| **Men (n=1,414)** | |  |  |  |  |  |  |  |
| BMI <20 group (n=131) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 11.00 | 2.46 | 17.36 | 1.77 | 25.41 | 4.48 |  |
|  | Person-year | 662 | | 721 | | 651 | |  |
|  | Cases | 21 | | 19 | | 17 | |  |
|  | Model12 | 1.00 | | 0.61 | (0.32-1.15) | 0.55 | (0.28-1.08) | 0.102 |
|  | Model2 | 1.00 | | 0.75 | (0.37-1.50) | 0.55 | (0.27-1.13) | 0.100 |
|  | Model31 | 1.00 | | 0.73 | (0.35-1.51) | 0.56 | (0.27-1.18) | 0.131 |
|  | Model4 | 1.00 | | 0.70 | (0.33-1.47) | 0.47 | (0.17-1.27) | 0.132 |
| BMI 20-24.9 group (n=932) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 11.9 | 2.5 | 18.2 | 1.5 | 25.9 | 4.2 |  |
|  | Person-year | 5,055 | | 5,212 | | 4,960 | |  |
|  | Cases | 101 | | 73 | | 97 | |  |
|  | Model12 | 1.00 | | 0.75 | (0.56-1.02) | 1.05 | (0.79-1.38) | 0.687 |
|  | Model2 | 1.00 | | 0.78 | (0.58-1.07) | 1.11 | (0.84-1.48) | 0.402 |
|  | Model31 | 1.00 | | 0.81 | (0.59-1.10) | 1.14 | (0.86-1.52) | 0.332 |
|  | Model4 | 1.00 | | 0.81 | (0.59-1.12) | 1.16 | (0.82-1.65) | 0.403 |
| BMI≧25 group (n=351) | |  |  |  | |  |  |  |
|  | FVS mean, SD | 11.2 | 2.6 | 17.5 | 1.9 | 26.0 | 4.8 |  |
|  | Person-year | 1,823 | | 1,875 | | 1,832 | |  |
|  | Cases | 32 | | 32 | | 36 | |  |
|  | Model12 | 1.00 | | 0.90 | (0.55-1.48) | 1.07 | (0.66-1.73) | 0.732 |
|  | Model2 | 1.00 | | 0.95 | (0.57-1.56) | 1.02 | (0.62-1.66) |  |
|  | Model31 | 1.00 | | 1.00 | (0.61-1.67) | 1.01 | (0.61-1.69) | 0.961 |
|  | Model4 | 1.00 | | 0.88 | (0.51-1.51) | 0.75 | (0.39-1.44) | 0.390 |
| **Women (n=1,411)** | |  |  |  |  |  |  |  |
| BMI <20 group (n=223) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 16.0 | 2.5 | 22.9 | 2.0 | 32.4 | 5.0 |  |
|  | Person-year | 1,196 | | 1,303 | | 1,258 | |  |
|  | Cases | 14 | | 10 | | 9 | |  |
|  | Model12 | 1.00 | | 0.45 | (0.18-1.06) | 0.53 | (0.21-1.33) | 0.175 |
|  | Model2 | 1.00 | | 0.44 | (0.17-1.15) | 0.69 | (0.27-1.75) | 0.390 |
|  | Model31 | 1.00 | | 0.47 | (0.17-1.27) | 0.64 | (0.24-1.75) | 0.347 |
|  | Model4 | 1.00 | | 0.45 | (0.15-1.32) | 0.60 | (0.15-2.29) | 0.412 |
| BMI 20-24.9 group (n=912) | |  |  |  |  |  |  |  |
|  | FVS mean, SD | 15.7 | 2.9 | 22.7 | 1.7 | 31.9 | 5.2 |  |
|  | Person-year | 5,170 | | 5,241 | | 5,304 | |  |
|  | Cases | 58 | | 36 | | 39 | |  |
|  | Model12 | 1.00 | | 0.62 | (0.41-0.94)\* | 0.65 | (0.43-0.98)\* | 0.043 |
|  | Model2 | 1.00 | | 0.65 | (0.42-0.99)\* | 0.69 | (0.45-1.05) | 0.098 |
|  | Model31 | 1.00 | | 0.66 | (0.43-1.01) | 0.72 | (0.47-1.10) | 0.149 |
|  | Model4 | 1.00 | | 0.60 | (0.38-0.94)\* | 0.57 | (0.32-1.00) | 0.051 |
| BMI≧25 group (n=276) | |  |  |  | |  |  |  |
|  | FVS mean, SD | 13.8 | 3.3 | 22.1 | 2.2 | 31.2 | 5.0 |  |
|  | Person-year | 1,648 | | 1,646 | | 1,580 | |  |
|  | Cases | 13 | | 17 | | 13 | |  |
|  | Model12 | 1.00 | | 1.29 | (0.62-2.67) | 1.19 | (0.54-2.59) | 0.638 |
|  | Model2 | 1.00 | | 1.41 | (0.65-3.06) | 1.03 | (0.45-2.38) | 0.907 |
|  | Model31 | 1.00 | | 1.28 | (0.58-2.82) | 0.90 | (0.38-2.10) | 0.832 |
|  | Model4 | 1.00 | | 1.52 | (0.64-3.63) | 1.27 | (0.41-3.88) | 0.628 |

HR, hazard ratio; CI, confidence interval; FVS, food variety score; TEI, total energy intake; BMI, body mass index.

\**p*<0.05, \*\**p*<0.01

Analyzed by Cox proportional hazard regression model

Model 11 (adjusted for sex, survey year)

Model 12 (adjusted for survey year)

Model 2 (model 1 plus adjusted for living alone, education, smoking, drinking, habitual exercise)

Model 31 (model 2 plus adjusted for history of heart disease, cerebrovascular disease, cancer, and medical status of hypertension, hyperlipidaemia and diabetes mellitus)

Model 32 (model 2 plus adjusted for medical status of hypertension, hyperlipidaemia and diabetes mellitus)

Model 4 (model 3 plus adjusted for TEI)

*p* for trend is calculated across the mean values of FVS.