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**Supplementary Figure S1. Flow chart of study participants in CHNS**

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**Supplementary Figure S2. HRs (95% CIs) of T2D for isocalorically replacing SFA with MUFA.** Values were HRs (95% CIs) calculated by using a Cox proportional hazards model after adjusting for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, percentages of energy intake from protein, carbohydrate, PUFAs and remaining MUFAs where appropriate (MUFAs, P-MUFAs, fried P-MUFAs, non-fried P-MUFAs, A-MUFAs, fried A-MUFAs and non-fried A-MUFAs). The percentage of energy for replacement was 5%. A-MUFA, animal-derived MUFA; CI, confidence interval; HR, hazard ratio; P-MUFA, plant-derived MUFA; T2D, type 2 diabetes.

**Supplementary Table S1. Top food contributors of MUFA, OA and PA during follow-up**

|  |
| --- |
| CHNS |
|  | 1997 |  | 2000 |  | 2004 |  | 2006 |  | 2009 |  | 2011 |
|  | Food item | % | 　 | Food item | % | 　 | Food item | % | 　 | Food item | % | 　 | Food item | % | 　 | Food item | % |
| MUFA | Pork | 33.8  |  | Pork | 38.9  |  | Pork | 21.6  |  | Pork | 27.0  |  | Pork | 29.7  |  | Pork | 28.4  |
|  | **Canola oil** | 8.0  |  | **Peanut oil** | 4.3  |  | **Peanut oil** | 17.8  |  | **Peanut oil** | 10.1  |  | **Peanut oil** | 7.0  |  | **Canola oil** | 6.0  |
|  | **Peanut oil** | 6.1  |  | Egg | 4.2  |  | Lard | 10.2  |  | **Soybean oil** | 6.7  |  | **Canola oil** | 5.3  |  | **Peanut oil** | 5.2  |
|  | Lard | 5.7  |  | **Canola oil** | 3.8  |  | **Canola oil** | 8.2  |  | **Canola oil** | 5.8  |  | Egg | 4.1  |  | Egg | 4.4  |
|  | Rice | 3.3  |  | Lard | 3.7  |  | **Soybean oil** | 4.0  |  | Lard | 5.0  |  | **Soybean oil** | 4.1  |  | **Fried bread stick** | 3.0  |
|  | Egg | 2.9  |  | **Rice** | 3.5  |  | **Salad oil** | 3.6  |  | **Salad oil** | 4.0  |  | **Fried bread stick** | 3.1  |  | Lard | 2.1  |
|  | Egg (Red Skin) | 2.9  |  | Pork side ribs | 2.7  |  | Egg | 2.4  |  | Egg | 3.7  |  | Lard | 2.3  |  | **Soybean oil** | 2.1  |
|  | **Soybean oil** | 2.7  |  | **Soybean oil** | 2.5  |  | **Fried bread stick** | 2.2  |  | **Fried bread stick** | 3.2  |  | **Rice** | 2.1  |  | Pork side ribs | 1.9  |
|  | **Fried bread stick** | 2.0  |  | **Fried bread stick** | 2.4  |  | **Tea-seed oil** | 2.0  |  | **Rice** | 2.3  |  | Pork chop | 1.8  |  | Pork chop | 1.8  |
|  | Pork (fatty) | 1.8  |  | Egg (Red Skin) | 2.3  |  | **Rice** | 1.9  |  | Leaf Lard | 2.3  |  | Pork side ribs | 1.7  |  | Duck | 1.7  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OA | Pork | 36.3  |  | Pork | 40.8  |  | Pork | 23.2  |  | Pork | 29.0  |  | Pork | 31.7  |  | Pork | 30.4  |
|  | **Peanut oil** | 6.9  |  | **Peanut oil** | 4.8  |  | **Peanut oil** | 20.1  |  | **Peanut oil** | 11.4  |  | **Peanut oil** | 7.8  |  | **Peanut oil** | 5.9  |
|  | Lard | 6.0  |  | Egg | 4.3  |  | Lard | 10.8  |  | **Soybean oil** | 6.9  |  | Egg | 4.2  |  | Egg | 4.5  |
|  | **Rice** | 3.8  |  | **Rice** | 3.9  |  | **Soybean oil** | 4.2  |  | Lard | 5.3  |  | **Soybean oil** | 4.2  |  | **Canola oil** | 2.4  |
|  | **Canola oil** | 3.1  |  | Lard | 3.8  |  | **Salad oil** | 3.5  |  | **Salad oil** | 4.0  |  | Lard | 2.4  |  | Lard | 2.2  |
|  | Egg | 3.1  |  | Pork side ribs | 2.9  |  | **Canola oil** | 3.2  |  | Egg | 3.9  |  | **Rice** | 2.3  |  | **Soybean oil** | 2.1  |
|  | Egg (Red Skin) | 3.0  |  | **Soybean oil** | 2.5  |  | Egg | 2.5  |  | **Rice** | 2.6  |  | **Canola oil** | 2.0  |  | Pork side ribs | 2.0  |
|  | **Soybean oil** | 2.8  |  | Egg (Red Skin) | 2.4  |  | **Tea-seed oil** | 2.2  |  | Leaf Lard | 2.4  |  | Pork chop | 1.9  |  | Pork chop | 2.0  |
|  | Pork (fatty) | 2.0  |  | **Peanut** | 2.1  |  | **Rice** | 2.2  |  | **Canola oil** | 2.3  |  | Pork side ribs | 1.8  |  | Meat bun | 1.8  |
|  | Pork side ribs | 1.8  |  | **Salad oil** | 1.5  |  | Pork side ribs | 1.7  |  | Pork chop | 1.5  |  | **Mixed oil** | 1.7  |  | Duck | 1.7  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PA | Pork | 38.3  |  | Pork | 41.5  |  | Pork | 30.7  |  | Pork | 33.7  |  | Pork | 34.7  |  | Pork | 33.1  |
|  | Lard | 5.6  |  | Egg | 7.3  |  | Lard | 12.7  |  | **Soybean oil** | 9.2  |  | Egg | 7.8  |  | Egg | 8.4  |
|  | Egg | 5.4  |  | Egg (Red Skin) | 4.1  |  | **Soybean oil** | 6.3  |  | Egg | 7.6  |  | **Soybean oil** | 5.3  |  | Duck | 3.8  |
|  | Egg (Red Skin) | 5.4  |  | Lard | 3.4  |  | Egg | 5.6  |  | Lard | 5.5  |  | Chicken | 3.2  |  | Chicken | 3.5  |
|  | **Soybean oil** | 3.4  |  | Pork side ribs | 2.9  |  | Chicken | 2.5  |  | Leaf Lard | 2.5  |  | Lard | 2.4  |  | Cow milk | 3.0  |
|  | Chub | 3.4  |  | **Soybean oil** | 2.9  |  | Pork side ribs | 2.3  |  | Chicken | 2.4  |  | Duck | 2.3  |  | **Soybean oil** | 2.7  |
|  | Dorking | 2.9  |  | Dorking | 2.3  |  | Egg (Red Skin) | 2.2  |  | Duck | 2.2  |  | Pork chop | 2.1  |  | Pork side ribs | 2.2  |
|  | Pork (fatty) | 2.1  |  | Chub | 2.2  |  | Cow milk | 2.1  |  | Pork chop | 1.8  |  | Pork side ribs | 2.0  |  | Lard | 2.2  |
|  | Chicken | 2.0  |  | Beef | 2.0  |  | Duck | 1.9  |  | Pork side ribs | 1.7  |  | Grass carp | 1.6  |  | Pork chop | 2.1  |
| 　 | Pork side ribs | 1.9  | 　 | Chicken | 1.9  | 　 | Chub | 1.8  | 　 | Cow milk | 1.7  | 　 | Pork (fore knuckle) | 1.6  | 　 | Chicken claw | 1.2  |

Values are proportions of MUFA contributed by corresponding items. Plant sources of MUFA highlighted in bold. MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid.

**Supplementary Table S2. Correlations between dietary fat intakes**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **MUFAs** | **PUFAs** | **SFAs** | **P-MUFAs** | **A-MUFAs** | **OA** | **P-OA** | **A-OA** | **PA** | **P-PA** | **A-PA** |
| **MUFAs** | 1.00  | 0.36  | 0.90  | 0.55  | 0.75  | 0.94  | 0.42  | 0.75  | 0.72  | -0.12  | 0.73  |
| **PUFAs** |  | 1.00  | 0.30  | 0.51  | 0.05  | 0.40  | 0.63  | 0.05  | 0.27  | 0.38  | 0.12  |
| **SFAs** |  |  | 1.00  | 0.28  | 0.86  | 0.93  | 0.25  | 0.86  | 0.86  | -0.01  | 0.82  |
| **P-MUFAs** |  |  |  | 1.00  | -0.05  | 0.43  | 0.85  | -0.05  | 0.06  | 0.16  | -0.02  |
| **A-MUFAs** |  |  |  |  | 1.00  | 0.78  | -0.10  | 1.00  | 0.85  | -0.26  | 0.94  |
| **OA** |  |  |  |  |  | 1.00  | 0.45  | 0.78  | 0.76  | -0.11  | 0.75  |
| **P-OA** |  |  |  |  |  |  | 1.00  | -0.11  | 0.05  | 0.23  | -0.06  |
| **A-OA** |  |  |  |  |  |  |  | 1.00  | 0.84  | -0.26  | 0.94  |
| **PA** |  |  |  |  |  |  |  |  | 1.00  | 0.08  | 0.91  |
| **P-PA** |  |  |  |  |  |  |  |  |  | 1.00  | -0.25  |
| **A-PA** | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 1.00  |

Values are Spearman correlation coefficients of dietary fats intakes at baseline. All *P* < 0.001. A-MUFA, MUFA from animal sources; A-OA, OA from animal sources; A-PA, PA from animal sources; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid; P-MUFA, MUFA from plant sources; P-OA, OA from plant sources; P-PA, PA from plant sources.

**Supplementary Table S3. Associations between OA and PA from plant and animal sources with T2D risk in the CHNS**

|  |  |  |
| --- | --- | --- |
|   | **Quartiles of MUFA intake** |  |
|   | **Q1** | **Q2** | **Q3** | **Q4** | ***P*-trend** |
| **OA** |  |  |  |  |  |
|  Range (% of energy) | ≤8.0 | 8.0-10.9 | 10.9-14.1 | ≥14.1 |  |
|  No. of cases (%) | 211 (5.6) | 271 (7.2) | 277 (7.4) | 255 (6.8) |  |
|  Age- and sex-adjusted HR (95% CI) | 1.00  | 1.25 (1.04-1.50) | 1.16 (0.97-1.39) | 0.92 (0.77-1.11) | 0.16  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.63 (1.26-2.13) | 1.84 (1.33-2.55) | 2.35 (1.59-3.47) | <.0001 |
| **P-OA** |  |  |  |  |  |
|  Range (% of energy) | ≤3.4 | 3.4-4.7 | 4.7-6.4 | ≥6.4 |  |
|  No. of cases (%) | 165 (4.4) | 238 (6.3) | 280 (7.5) | 331 (8.8) |  |
|  Age- and sex-adjusted HR (95% CI) | 1.00  | 1.20 (0.98-1.46) | 1.25 (1.03-1.52) | 1.42 (1.17-1.71) | 0.0004 |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.12 (0.91-1.39) | 1.25 (0.99-1.56) | 1.56 (1.20-2.02) | 0.0003 |
| **A-OA** |  |  |  |  |  |
|  Range (% of energy) | ≤3.1 | 3.1-5.6 | 5.6-8.3 | ≥8.3 |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 286 (7.6) | 194 (5.2) |  |
|  Age- and sex-adjusted HR (95% CI) | 1.00  | 1.19 (1.00-1.41) | 1.14 (0.96-1.35) | 0.71 (0.59-0.86) | 0.0003 |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.21 (0.96-1.53) | 1.21 (0.90-1.64) | 1.16 (0.79-1.71) | 0.50  |
|  |  |  |  |  |  |
| **PA** |  |  |  |  |  |
|  Range (% of energy) | ≤0.34 | 0.34-0.51 | 0.51-0.71 | ≥0.71 |  |
|  No. of cases (%) | 270 (7.2) | 258 (6.9) | 289 (7.7) | 197 (5.3) |  |
|  Age- and sex-adjusted HR (95% CI) | 1.00  | 0.97 (0.82-1.15) | 1.03 (0.87-1.21) | 0.65 (0.54-0.78) | <.0001 |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.77 (0.62-0.95) | 0.66 (0.51-0.85) | 0.44 (0.32-0.60) | <.0001 |
| **P-PA** |  |  |  |  |  |
|  Range (% of energy) | ≤0.03 | 0.03-0.06 | 0.06-0.14 | ≥0.14 |  |
|  No. of cases (%) | 138 (3.7) | 277 (7.4) | 330 (8.8) | 269 (7.2) |  |
|  Age- and sex-adjusted HR (95% CI) | 1.00  | 1.87 (1.52-2.29) | 2.31 (1.90-2.82) | 1.90 (1.55-2.34) | <.0001 |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.28 (1.02-1.60) | 1.64 (1.31-2.05) | 1.58 (1.23-2.03) | 0.0026 |
| **A-PA** |  |  |  |  |  |
|  Range (% of energy) | ≤0.23 | 0.23-0.41 | 0.41-0.60 | ≥0.60 |  |
|  No. of cases (%) | 272 (7.2) | 264 (7.0) | 277 (7.4) | 201 (5.4) |  |
|  Age- and sex-adjusted HR (95% CI) | 1.00  | 0.99 (0.84-1.18) | 1.00 (0.84-1.18) | 0.67 (0.55-0.80) | <.0001 |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.75 (0.60-0.93) | 0.61 (0.47-0.80) | 0.46 (0.33-0.63) | <.0001 |

Time-dependent Cox proportional hazard regression models were used to assess HRs (95% CIs) of diabetes. A-MUFA, animal-derived MUFA; CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid. P-MUFA, plant-derived MUFA; T2D, type 2 diabetes.

The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, percentages of energy intake from protein, SFAs, PUFAs, and remaining MUFAs.

**Supplementary Table S4. HRs (95% CI) for sensitivity analysis that further adjusting for vegetables and fruits consumption**

|  |  |  |
| --- | --- | --- |
| 　 | **Quartiles of MUFA intake** |  |
|   | **Q1** | **Q2** | **Q3** | **Q4** | ***P*-trend** |
| **Total MUFA** |  |  |  |  |  |
|  No. of cases (%) | 221 (5.9) | 261 (7.0) | 278 (7.4) | 254 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.34 (1.05-1.72) | 1.44 (1.08-1.94) | 1.71 (1.21-2.43) | 0.0052  |
| **Plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 171 (4.6) | 255 (6.8) | 288 (7.7) | 300 (8.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.23 (1.00-1.51) | 1.27 (1.03-1.58) | 1.47 (1.16-1.87) | 0.0030  |
|  **Fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 171 (4.6) | 264 (7.0) | 275 (7.3) | 304 (8.1) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.31 (1.07-1.61) | 1.26 (1.02-1.56) | 1.57 (1.24-1.99) | 0.0011 |
|  **Non-fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 229 (6.1) | 255 (6.8) | 258 (6.9) | 272 (7.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.94 (0.78-1.13) | 0.93 (0.77-1.12) | 0.92 (0.76-1.11) | 0.40  |
| **Animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 283 (7.5) | 197 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.11 (0.88-1.39) | 1.00 (0.75-1.33) | 0.86 (0.60-1.24) | 0.37  |
|  **Fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 247 (6.6) | 289 (7.7) | 267 (7.1) | 211 (5.6) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.08 (0.91-1.30) | 1.04 (0.84-1.28) | 1.04 (0.79-1.38) | 0.78  |
|  **Non-fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 206 (5.5) | 258 (6.9) | 318 (8.5) | 232 (6.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.99 (0.82-1.21) | 1.17 (0.94-1.45) | 0.99 (0.75-1.30) | 0.63  |
|  |  |  |  |  |  |
| **OA** |  |  |  |  |  |
|  No. of cases (%) | 211 (5.6) | 271 (7.2) | 277 (7.4) | 255 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.62 (1.24-2.11) | 1.76 (1.27-2.44) | 2.19 (1.49-3.23) | 0.0004  |
| **Plant OA** |  |  |  |  |  |
|  No. of cases (%) | 165 (4.4) | 238 (6.3) | 280 (7.5) | 331 (8.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.11 (0.90-1.38) | 1.23 (0.98-1.54) | 1.50 (1.15-1.94) | 0.0016  |
| **Animal OA** |  |  |  |  |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 286 (7.6) | 194 (5.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.21 (0.96-1.52) | 1.21 (0.89-1.64) | 1.16 (0.79-1.70) | 0.47  |
| **PA** |  |  |  |  |  |
|  No. of cases (%) | 270 (7.2) | 258 (6.9) | 289 (7.7) | 197 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.77 (0.62-0.95) | 0.67 (0.52-0.87) | 0.46 (0.34-0.62) | <.0001 |
| **Plant PA** |  |  |  |  |  |
|  No. of cases (%) | 138 (3.7) | 277 (7.4) | 330 (8.8) | 269 (7.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.26 (1.01-1.57) | 1.58 (1.26-1.97) | 1.50 (1.17-1.93) | 0.0003  |
| **Animal PA** |  |  |  |  |  |
|  No. of cases (%) | 272 (7.2) | 264 (7.0) | 277 (7.4) | 201 (5.4) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.75 (0.61-0.93) | 0.64 (0.49-0.83) | 0.49 (0.36-0.68) | <.0001 |

HRs (95% CIs) were estimated using time-dependent Cox proportional hazards models. The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, vegetables and fruits, percentages of energy intake from protein, SFAs, PUFAs and remaining MUFAs. CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid; Q, quartile.

**Supplementary Table S5. HRs (95% CI) for sensitivity analysis that further adjusting for dietary cholesterol intake**

|  |  |  |
| --- | --- | --- |
| 　 | **Quartiles of MUFA intake** |  |
|   | **Q1** | **Q2** | **Q3** | **Q4** | ***P*-trend** |
| **Total MUFA** |  |  |  |  |  |
|  No. of cases (%) | 221 (5.9) | 261 (7.0) | 278 (7.4) | 254 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.41 (1.10-1.80) | 1.59 (1.18-2.14) | 1.96 (1.38-2.79) | 0.0004 |
| **Plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 171 (4.6) | 255 (6.8) | 288 (7.7) | 300 (8.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.22 (1.00-1.50) | 1.28 (1.03-1.58) | 1.53 (1.21-1.94) | 0.0007 |
|  **Fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 171 (4.6) | 264 (7.0) | 275 (7.3) | 304 (8.1) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.33 (1.08-1.63) | 1.28 (1.03-1.58) | 1.62 (1.28-2.05) | 0.0004 |
|  **Non-fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 229 (6.1) | 255 (6.8) | 258 (6.9) | 272 (7.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.92 (0.76-1.10) | 0.91 (0.75-1.09) | 0.91 (0.75-1.10) | 0.36  |
| **Animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 283 (7.5) | 197 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.17 (0.93-1.47) | 1.07 (0.80-1.44) | 0.95 (0.66-1.37) | 0.68  |
|  **Fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 247 (6.6) | 289 (7.7) | 267 (7.1) | 211 (5.6) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.11 (0.93-1.33) | 1.06 (0.86-1.31) | 1.06 (0.80-1.40) | 0.68  |
|  **Non-fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 206 (5.5) | 258 (6.9) | 318 (8.5) | 232 (6.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.07 (0.87-1.30) | 1.29 (1.03-1.61) | 1.07 (0.81-1.42) | 0.28  |
|  |  |  |  |  |  |
| **OA** |  |  |  |  |  |
|  No. of cases (%) | 211 (5.6) | 271 (7.2) | 277 (7.4) | 255 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.67 (1.28-2.17) | 1.90 (1.37-2.64) | 2.46 (1.66-3.63) | <.0001 |
| **Plant OA** |  |  |  |  |  |
|  No. of cases (%) | 165 (4.4) | 238 (6.3) | 280 (7.5) | 331 (8.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.12 (0.91-1.38) | 1.25 (1.00-1.57) | 1.57 (1.21-2.04) | 0.0004 |
| **Animal OA** |  |  |  |  |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 286 (7.6) | 194 (5.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.24 (0.98-1.57) | 1.25 (0.92-1.69) | 1.21 (0.82-1.78) | 0.37  |
| **PA** |  |  |  |  |  |
|  No. of cases (%) | 270 (7.2) | 258 (6.9) | 289 (7.7) | 197 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.80 (0.65-1.00) | 0.71 (0.55-0.92) | 0.49 (0.36-0.67) | <.0001 |
| **Plant PA** |  |  |  |  |  |
|  No. of cases (%) | 138 (3.7) | 277 (7.4) | 330 (8.8) | 269 (7.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.28 (1.03-1.60) | 1.62 (1.29-2.02) | 1.55 (1.21-1.99) | 0.0001 |
| **Animal PA** |  |  |  |  |  |
|  No. of cases (%) | 272 (7.2) | 264 (7.0) | 277 (7.4) | 201 (5.4) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.77 (0.62-0.96) | 0.65 (0.49-0.86) | 0.51 (0.36-0.71) | <.0001 |

HRs (95% CIs) were estimated using time-dependent Cox proportional hazards models. The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, cholesterol, percentages of energy intake from protein, SFAs, PUFAs and remaining MUFAs. CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid; Q, quartile.

**Supplementary Table S6. HRs (95% CI) for sensitivity analysis that further adjusting for alternative healthy eating index**

|  |  |  |
| --- | --- | --- |
| 　 | **Quintiles of MUFA intake** |  |
|   | **Q1** | **Q2** | **Q3** | **Q4** | ***P*-trend** |
| **Total MUFA** |  |  |  |  |  |
|  No. of cases (%) | 221 (5.9) | 261 (7.0) | 278 (7.4) | 254 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.38 (1.08-1.76) | 1.48 (1.10-1.99) | 1.73 (1.21-2.47) | 0.0054 |
| **Plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 171 (4.6) | 255 (6.8) | 288 (7.7) | 300 (8.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.25 (1.02-1.53) | 1.27 (1.03-1.57) | 1.47 (1.16-1.87) | 0.0037 |
|  **Fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 171 (4.6) | 264 (7.0) | 275 (7.3) | 304 (8.1) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.32 (1.08-1.61) | 1.25 (1.01-1.55) | 1.58 (1.25-2.00) | 0.0010  |
|  **Non-fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 229 (6.1) | 255 (6.8) | 258 (6.9) | 272 (7.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.89 (0.74-1.07) | 0.89 (0.73-1.07) | 0.87 (0.72-1.06) | 0.20  |
| **Animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 283 (7.5) | 197 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.12 (0.92-1.38) | 1.04 (0.79-1.37) | 0.81 (0.56-1.18) | 0.31  |
|  **Fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 247 (6.6) | 289 (7.7) | 267 (7.1) | 211 (5.6) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.08 (0.91-1.30) | 1.03 (0.83-1.26) | 1.00 (0.76-1.33) | 0.97  |
|  **Non-fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 206 (5.5) | 258 (6.9) | 318 (8.5) | 232 (6.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.02 (0.84-1.23) | 1.20 (0.97-1.49) | 0.99 (0.75-1.30) | 0.60  |
|  |  |  |  |  |  |
| **OA** |  |  |  |  |  |
|  No. of cases (%) | 211 (5.6) | 271 (7.2) | 277 (7.4) | 255 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.65 (1.27-2.14) | 1.87 (1.35-2.60) | 2.43 (1.64-3.60) | <.0001 |
| **Plant OA** |  |  |  |  |  |
|  No. of cases (%) | 165 (4.4) | 238 (6.3) | 280 (7.5) | 331 (8.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.12 (0.91-1.38) | 1.24 (0.99-1.55) | 1.54 (1.19-2.00) | 0.0007 |
| **Animal OA** |  |  |  |  |  |
|  No. of cases (%) | 250 (6.7) | 284 (7.6) | 286 (7.6) | 194 (5.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.21 (0.96-1.53) | 1.23 (0.90-1.66) | 1.20 (0.81-1.77) | 0.38  |
| **PA** |  |  |  |  |  |
|  No. of cases (%) | 270 (7.2) | 258 (6.9) | 289 (7.7) | 197 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.78 (0.63-0.96) | 0.68 (0.52-0.87) | 0.45 (0.33-0.61) | <.0001 |
| **Plant PA** |  |  |  |  |  |
|  No. of cases (%) | 138 (3.7) | 277 (7.4) | 330 (8.8) | 269 (7.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.26 (1.01-1.57) | 1.61 (1.29-2.01) | 1.56 (1.22-2.01) | <.0001 |
| **Animal PA** |  |  |  |  |  |
|  No. of cases (%) | 272 (7.2) | 264 (7.0) | 277 (7.4) | 201 (5.4) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.75 (0.60-0.93) | 0.62 (0.48-0.81) | 0.47 (0.34-0.64) | <.0001 |

HRs (95% CIs) were estimated using time-dependent Cox proportional hazards models. The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, AHEI-2010, percentages of energy intake from protein, SFAs, PUFAs and remaining MUFAs. CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid; Q, quartile.

**Supplementary Table S7. HRs (95% CI) for sensitivity analysis that excluding T2D cases within the first 3 years of follow-up**

|  |  |  |
| --- | --- | --- |
| 　 | **Quartiles of MUFA intake** |  |
|   | **Q1** | **Q2** | **Q3** | **Q4** | ***P*-trend** |
| **Total MUFA** |  |  |  |  |  |
|  No. of cases (%) | 206 (5.5) | 236 (6.3) | 255 (6.8) | 237 (6.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.35 (1.05-1.74) | 1.50 (1.10-2.03) | 1.81 (1.26-2.61) | 0.0024  |
| **Plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 151 (4.0) | 237 (6.3) | 269 (7.2) | 277 (7.4) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.28 (1.03-1.58) | 1.33 (1.06-1.66) | 1.53 (1.19-1.96) | 0.0018  |
|  **Fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 152 (4.1) | 243 (6.5) | 261 (7.0) | 278 (7.5) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.36 (1.10-1.68) | 1.35 (1.08-1.68) | 1.61 (1.26-2.06) | 0.0007 |
|  **Non-fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 203 (5.4) | 238 (6.4) | 240 (6.4) | 253 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.93 (0.77-1.13) | 0.93 (0.76-1.14) | 0.94 (0.77-1.15) | 0.59  |
| **Animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 243 (6.5) | 251 (6.7) | 256 (6.9) | 184 (4.9) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.99 (0.79-1.26) | 0.89 (0.66-1.20) | 0.78 (0.54-1.13) | 0.17  |
|  **Fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 232 (6.2) | 266 (7.1) | 236 (6.3) | 200 (5.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.07 (0.89-1.29) | 0.96 (0.77-1.20) | 0.96 (0.72-1.27) | 0.65  |
|  **Non-fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 196 (5.2) | 241 (6.5) | 287 (7.7) | 210 (5.6) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.02 (0.84-1.25) | 1.17 (0.94-1.47) | 0.95 (0.72-1.26) | 0.86  |
|  |  |  |  |  |  |
| **OA** |  |  |  |  |  |
|  No. of cases (%) | 199 (5.3) | 244 (6.5) | 252 (6.8) | 239 (6.4) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.58 (1.20-2.09) | 1.76 (1.25-2.48) | 2.29 (1.53-3.44) | 0.0002  |
| **Plant OA** |  |  |  |  |  |
|  No. of cases (%) | 149 (4.0) | 218 (5.8) | 260 (7.0) | 307 (8.2) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.13 (0.91-1.42) | 1.28 (1.01-1.62) | 1.58 (1.21-2.08) | 0.0005  |
| **Animal OA** |  |  |  |  |  |
|  No. of cases (%) | 243 (6.5) | 250 (6.7) | 260 (7.0) | 181 (4.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.10 (0.87-1.41) | 1.12 (0.82-1.53) | 1.07 (0.72-1.60) | 0.73  |
| **PA** |  |  |  |  |  |
|  No. of cases (%) | 257 (6.9) | 231 (6.2) | 259 (7.0) | 187 (5.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.73 (0.58-0.91) | 0.63 (0.48-0.82) | 0.45 (0.33-0.62) | <.0001 |
| **Plant PA** |  |  |  |  |  |
|  No. of cases (%) | 127 (3.4) | 251 (6.7) | 303 (8.1) | 253 (6.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.29 (1.03-1.63) | 1.66 (1.32-2.09) | 1.66 (1.28-2.15) | <.0001 |
| **Animal PA** |  |  |  |  |  |
|  No. of cases (%) | 259 (6.9) | 240 (6.4) | 250 (6.7) | 185 (5.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.72 (0.58-0.91) | 0.59 (0.45-0.78) | 0.45 (0.32-0.63) | <.0001 |

HRs (95% CIs) were estimated using time-dependent Cox proportional hazards models. The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, percentages of energy intake from protein, SFAs, PUFAs and remaining MUFAs. CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid; Q, quartile.

**Supplementary Table S8. HRs (95% CI) for sensitivity analysis that restricting the analysis to those with blood glucose biomarkers (*n*=7,708)**

|  |  |  |
| --- | --- | --- |
| 　 | **Quartiles of MUFA intake** |  |
|   | **Q1** | **Q2** | **Q3** | **Q4** | ***P*-trend** |
| **Total MUFA** |  |  |  |  |  |
|  No. of cases (%) | 177 (9.2) | 209 (10.9) | 207 (10.7) | 279 (14.5) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.43 (1.08-1.89) | 1.31 (0.94-1.84) | 1.70 (1.16-2.50) | 0.022  |
| **Plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 141 (7.3) | 215 (11.2) | 230 (11.9) | 286 (14.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.11 (0.88-1.38) | 1.06 (0.84-1.34) | 1.37 (1.06-1.77) | 0.027  |
|  **Fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 143 (7.4) | 215 (11.2) | 237 (12.3) | 277 (14.4) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.17 (0.94-1.46) | 1.14 (0.91-1.44) | 1.40 (1.09-1.81) | 0.018  |
|  **Non-fried plant MUFA** |  |  |  |  |  |
|  No. of cases (%) | 207 (10.7) | 210 (10.9) | 204 (10.6) | 251 (13.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.85 (0.70-1.04) | 0.80 (0.65-0.98) | 0.92 (0.76-1.13) | 0.44  |
| **Animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 216 (11.2) | 220 (11.4) | 214 (11.1) | 222 (11.5) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.05 (0.82-1.34) | 0.93 (0.68-1.27) | 0.92 (0.63-1.33) | 0.54  |
|  **Fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 235 (12.2) | 222 (11.5) | 205 (10.6) | 210 (10.9) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.94 (0.78-1.15) | 0.83 (0.66-1.04) | 0.97 (0.72-1.29) | 0.42  |
|  **Non-fried animal MUFA** |  |  |  |  |  |
|  No. of cases (%) | 201 (10.4) | 198 (10.3) | 237 (12.3) | 236 (12.3) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.85 (0.69-1.06) | 0.94 (0.74-1.19) | 0.95 (0.72-1.27) | 0.91  |
|  |  |  |  |  |  |
| **OA** |  |  |  |  |  |
|  No. of cases (%) | 174 (9.0) | 207 (10.7) | 211 (11.0) | 280 (14.5) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.50 (1.11-2.02) | 1.42 (0.98-2.06) | 1.82 (1.18-2.78) | 0.021  |
|  **Plant OA** |  |  |  |  |  |
|  No. of cases (%) | 140 (7.3) | 192 (10.0) | 231 (12.0) | 309 (16.0) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.07 (0.85-1.34) | 1.13 (0.88-1.43) | 1.42 (1.08-1.87) | 0.0093  |
|  **Animal OA** |  |  |  |  |  |
|  No. of cases (%) | 216 (11.2) | 215 (11.2) | 220 (11.4) | 221 (11.5) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.11 (0.86-1.43) | 1.14 (0.82-1.58) | 1.15 (0.77-1.71) | 0.52  |
| **PA** |  |  |  |  |  |
|  No. of cases (%) | 229 (11.9) | 191 (9.9) | 225 (11.7) | 227 (11.8) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.82 (0.65-1.04) | 0.71 (0.54-0.93) | 0.63 (0.46-0.86) | 0.0040  |
|  **Plant PA** |  |  |  |  |  |
|  No. of cases (%) | 142 (7.4) | 254 (13.2) | 250 (13.0) | 226 (11.7) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 1.11 (0.88-1.39) | 1.19 (0.94-1.49) | 1.09 (0.84-1.42) | 0.46  |
|  **Animal PA** |  |  |  |  |  |
|  No. of cases (%) | 229 (11.9) | 201 (10.4) | 229 (11.9) | 213 (11.1) |  |
|  Multivariable-adjusted HR (95% CI) | 1.00  | 0.80 (0.63-1.02) | 0.79 (0.59-1.05) | 0.60 (0.42-0.84) | 0.0063  |

HRs (95% CIs) were estimated using time-dependent Cox proportional hazards models. The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, percentages of energy intake from protein, SFAs, PUFAs and remaining MUFAs. CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; OA, oleic acid; PA, palmitoleic acid; Q, quartile.

**Supplementary Table S9. HRs (95% CIs) for associations between plant and animal MUFA intakes with diabetes in subgroups**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 　 | **Quartiles of plant MUFA intake** | 　 | 　 | 　 | **Quartiles of animal MUFA intake** | 　 | 　 |
| **Covariates** | **Q1** | **Q2** | **Q3** | **Q4** | ***P* trend** | ***P*  interaction** | 　 | **Q1** | **Q2** | **Q3** | **Q4** | ***P* trend** | ***P* interaction** |
| **Age** |  |  |  |  |  | 0.30  |  |  |  |  |  |  | 0.94  |
|  <50 yr | 1  | 1.19 (0.91-1.56) | 1.18 (0.89-1.58) | 1.48 (1.07-2.05) | 0.034  |  |  | 1  | 1.14 (0.82-1.59) | 1.02 (0.67-1.54) | 0.84 (0.50-1.40) | 0.43  |  |
|  ≥50 yr | 1  | 1.15 (0.84-1.58) | 1.34 (0.97-1.84) | 1.60 (1.13-2.28) | 0.0043  |  |  | 1  | 1.08 (0.79-1.48) | 1.05 (0.70-1.57) | 0.90 (0.54-1.51) | 0.73  |  |
| **Sex** |  |  |  |  |  | 0.61  |  |  |  |  |  |  | 0.84  |
|  Men | 1  | 1.20 (0.91-1.58) | 1.24 (0.92-1.67) | 1.41 (1.00-1.99) | 0.045  |  |  | 1  | 1.28 (0.92-1.76) | 1.05 (0.69-1.59) | 0.87 (0.52-1.47) | 0.48  |  |
|  Women | 1  | 1.24 (0.91-1.68) | 1.29 (0.95-1.76) | 1.55 (1.11-2.16) | 0.013  |  |  | 1  | 0.96 (0.70-1.32) | 0.93 (0.63-1.39) | 0.81 (0.49-1.34) | 0.44  |  |
| **BMI** |  |  |  |  |  | 0.0011  |  |  |  |  |  |  | 0.089  |
|  <24 | 1  | 1.38 (1.06-1.80) | 1.38 (1.04-1.82) | 1.89 (1.39-2.59) | 0.0002  |  |  | 1  | 0.95 (0.71-1.28) | 1.03 (0.71-1.51) | 0.81 (0.50-1.31) | 0.53  |  |
|  ≥24 | 1  | 1.06 (0.77-1.46) | 1.18 (0.85-1.64) | 1.11 (0.77-1.61) | 0.49  |  |  | 1  | 1.33 (0.93-1.90) | 0.99 (0.63-1.54) | 0.87 (0.50-1.52) | 0.37  |  |
| **Smoking status** |  |  |  |  |  | 0.11  |  |  |  |  |  |  | 0.37  |
|  Never | 1  | 1.25 (0.98-1.59) | 1.35 (1.05-1.73) | 1.59 (1.21-2.09) | 0.0010  |  |  | 1  | 1.02 (0.79-1.32) | 0.95 (0.68-1.32) | 0.82 (0.54-1.24) | 0.35  |  |
|  Former or current | 1  | 1.25 (0.85-1.85) | 1.12 (0.73-1.71) | 1.28 (0.79-2.09) | 0.48  |  |  | 1  | 1.44 (0.92-2.27) | 1.20 (0.66-2.16) | 0.93 (0.44-1.96) | 0.74  |  |
| **Alcohol**  |  |  |  |  |  | 0.28  |  |  |  |  |  |  | 0.57  |
|  Abstainer | 1  | 1.19 (0.94-1.52) | 1.30 (1.01-1.66) | 1.53 (1.16-2.02) | 0.0024  |  |  | 1  | 1.10 (0.85-1.42) | 0.99 (0.71-1.37) | 0.84 (0.55-1.28) | 0.41  |  |
|  Drinker | 1  | 1.30 (0.88-1.91) | 1.20 (0.79-1.82) | 1.38 (0.86-2.22) | 0.30  |  |  | 1  | 1.09 (0.68-1.74) | 0.94 (0.52-1.67) | 0.78 (0.38-1.59) | 0.39  |  |
| **Physical activity** |  |  |  |  |  | 0.35  |  |  |  |  |  |  | 0.71  |
|  Low  | 1  | 1.29 (0.98-1.70) | 1.42 (1.08-1.88) | 1.74 (1.28-2.36) | 0.0004  |  |  | 1  | 1.09 (0.81-1.46) | 0.94 (0.66-1.35) | 0.85 (0.55-1.32) | 0.33  |  |
|  Moderate to vigorous | 1  | 1.11 (0.81-1.52) | 1.06 (0.75-1.51) | 1.17 (0.78-1.76) | 0.54  |  |  | 1  | 1.14 (0.79-1.63) | 1.02 (0.62-1.68) | 0.80 (0.40-1.59) | 0.69  |  |
| **North-south position** |  |  |  |  | 0.24  |  |  |  |  |  |  | 0.15  |
|  Southern | 1  | 1.47 (1.06-2.03) | 1.26 (0.90-1.77) | 1.48 (1.04-2.12) | 0.12  |  |  | 1  | 1.36 (0.90-2.05) | 1.17 (0.72-1.91) | 0.92 (0.52-1.63) | 0.33  |  |
|  Northern | 1  | 1.05 (0.80-1.38) | 1.23 (0.93-1.63) | 1.47 (1.06-2.05) | 0.011  |  |  | 1  | 0.99 (0.75-1.31) | 0.89 (0.61-1.29) | 0.74 (0.44-1.23) | 0.29  |  |
| **Site** |  |  |  |  |  | 0.32  |  |  |  |  |  |  | 0.27  |
|  Urban | 1  | 1.12 (0.76-1.65) | 1.32 (0.90-1.94) | 1.64 (1.08-2.50) | 0.0082  |  |  | 1  | 1.17 (0.74-1.85) | 1.31 (0.77-2.26) | 0.95 (0.50-1.80) | 0.71  |  |
|  Rural | 1  | 1.27 (1.00-1.62) | 1.24 (0.96-1.61) | 1.37 (1.02-1.85) | 0.071  |  |  | 1  | 1.14 (0.88-1.48) | 0.88 (0.62-1.26) | 0.87 (0.55-1.38) | 0.43  |  |
| **Individual income** |  |  |  |  |  | 0.56  |  |  |  |  |  |  | 0.94  |
|  Below median | 1  | 1.19 (0.90-1.59) | 1.26 (0.93-1.71) | 1.24 (0.87-1.77) | 0.24  |  |  | 1  | 1.04 (0.76-1.44) | 0.97 (0.64-1.48) | 0.71 (0.41-1.23) | 0.28  |  |
|  Above median | 1  | 1.17 (0.86-1.58) | 1.15 (0.84-1.56) | 1.52 (1.09-2.14) | 0.020  | 　 | 　 | 1  | 1.14 (0.81-1.60) | 0.88 (0.58-1.35) | 0.85 (0.51-1.43) | 0.32  | 　 |

HRs (95% CIs) were estimated using time-dependent Cox proportional hazards models. The multivariable model was adjusted for age, sex, BMI (in kg/m2; <18.5, 18.5-23.9, 24-27.9, or ≥28), education (less than high school, high school, some college, or at least college), marital status (never married, married or living as married, widowed/divorced/separated, or unknown), income (quartile), north-south position (north or south), and site (urban or rural), physical activity (no regular activity, low to moderate activity, or vigorous activity), smoking (never, former, current, or unknown), alcohol drinking status (abstainer or drinker), history of hypertension (yes, no, or unknown), intake of total energy, percentages of energy intake from protein, SFAs, PUFAs and remaining MUFAs. P values for interactions were tested by likelihood-ratio test. CI, confidence interval; HR, hazard ratio; MUFA, monounsaturated fatty acid; Q, quartile.