Table S1. Nutrient intake and dietary patterns according to gender and stroke and their association with stroke risk

|  |  |  |  |
| --- | --- | --- | --- |
|  | Men (n=20,293) | Women (n=38,408) | Adjusted ORs and 95% CI |
| Health (n=19189) | Stroke (n=235) | Health (n=36294) | Stroke (n=437) |  |
| Energy intake1 | 89.5±0.29b | 85.7±1.63b | 99.7±0.19a | 98.8±1.74a\*\*\*+ | 0.841 (0.710-0.995) |
| Carbohydrate2 | 72.3±0.06a | 72.5±0.35a | 71.5±0.04c | 72.7±0.38b++ | 0.868 (0.737-1.023) |
| Fat3  | 13.6±0.05b | 13.4±0.35b | 13.9±0.03a | 13.8±0.25ab\*\* | 0.735 (0.560-0.965) |
| Protein4  | 13.1±0.02b | 12.9±0.17b | 13.6±0.02a | 13.5±0.12b\*\*\* | 0.967 (0.795-1.174) |
| BCAA5  | 15.1+0.03b | 14.8+0.23b | 15.9+0.02a | 16.0+0.17a\*\*\* | 1.102 (0.885-1.371) |
| Fiber 6 | 15.1±0.09a | 15.7±0.62a | 14.5±0.06b | 14.3±0.46ab\* | 1.193 (0.969-1.469) |
| Calcium7  | 411±2.43b | 415±16.9b | 459±1.57a | 470±12.3a\*\* | 1.020 (0.838-1.243) |
| Sodium8 | 2.53±0.01 | 2.61±0.09 | 2.38±0.01 | 2.35±0.07 | 0.882 (0.739-1.052) |
| Vitamin C9  | 97.1±0.63b | 102±4.41b | 110±0.41a | 111±3.22a\*\* | 1.021 (0.856-1.220) |
| Vitamin D10  | 5.17±0.05b | 5.11±0.27b | 7.08±0.03a | 6.63±0.28a\*\*\* | 1.042 (0.850-1.278) |
| Cholesterol11  | 163±1.17b | 164±8.17b | 172±0.76a | 179±5.97a\* | 1.134 (0.934-1.376) |
| DII 12  | -19.6±0.15b | -19.5±1.03ab | -20.1±0.10a | -20.7±0.75ab\*\* | 1.116 (0.927-1.344) |
| Flavonoids 13  | 31.2±0.27b | 30.5±1.55b | 42.3±0.18a | 41.5±1.66a\*\*\* | 0.945 (0.785-1.138) |
| Glycemic index14  | 51.1±0.09a | 50.8±0.64a | 47.6±0.06b | 47.1±0.47b\*\*\* | 0.886 (0.742-1.057) |
| Glycemic load15  | 160±0.32a | 159±2.23a | 146±0.21b | 145±1.62b\*\*\* | 1.055 (0.872-1.277) |
| KBD (Yes, %)16 | 138 (1.20) | 97 (1.23) | 306 (1.19) | 131(1.18) | 0.965 (0.808-1.152) |
| PBD (Yes, %)16 | 183 (1.19) | 52 (1.30)  | 265 (1.22) | 172(1.15)  | 1.000 (0.835-1.197) |
| WSD (Yes, %)16 | 108 (1.16) | 127 (1.25)  | 288 (1.21) | 149(1.15) | 1.076 (0.902-1.283) |
| RMD (Yes, %)16 | 163 (1.23) | 72 (1.16)  | 288 (1.21) | 149 (1.15)  | 0.981 (0.827-1.165) |

The values represent means ± standard errors or number of the subjects (percentage of each group). Adjusted odds ratio (ORs) and 95 % confidence intervals (CI) with the covariates of adjusting for age, gender, BMI, residence area, physical activity, education, smoking, and intake of alcohol, dietary fiber and energy. The cutoff points of the reference were as follows: 1estimated energy requirement (EER), 265 energy percent (en%); 315 en%; 413 En%; 518.6 g/day; 615 g/day; 7500 mg/day; 82.5 g/day; 9100 mg/day; 1010 ug/day; 11250 mg/day; 1233th percentiles; 1345 mg/day; 1441; 15127; 1675th percentiles.

\*Significantly different from the Low-PC group at P<0.05 and \*\* P<0.01. BCAA: Branched chain amino acids; DII, dietary inflammatory index; KBD: Korean balanced diet; PBD, plant-based diet; WSD, Western-style diet; RMD : Rice main diet

Table S2. Adjust means of the metabolic parameters according to genders and stroke

|  |  |  |  |
| --- | --- | --- | --- |
|  | Men | Women | Adjusted ORs and 95% CI |
| Health (n=19613) | Stroke (n=368) | Health (n=37597) | Stroke (n=314) |
| MetS (N, %) | 190 (1.19) | 45(1.31)  | 391 (1.21) | 46 (1.03) | 1.000 (0.780-1.282) |
| BMI (kg/m2) 1 | 24.4±0.03a | 24.1±0.19a | 23.6±0.02b | 23.7±0.14b\*\*\* | 0.915 (0.772-1.086) |
| Waist circumference2 | 85.4±0.07a | 84.6±0.51a | 78.3±0.05b | 78.0±0.37b\*\*\* | 0.887 (0.726-1.084) |
| Fasting serum glucose (mg/dl)3  | 97.5±0.19a | 95.6±1.29a | 93.9±0.12b | 92.4±0.96b\*\*\*+ | 0.798 (0.590-1.080) |
| HbA1c (%)4  | 5.68±0.01 | 5.63±0.07 | 5.73±0.01 | 5.67±0.05 | 0.986 (0.666-1.460) |
| Total-C (mg/dl)5  | 189±0.34b | 192±2.36b | 202±0.22a | 201±1.72a\*\*\* | 0.986 (0.814-1.194) |
| LDL-C (mg/dl)6  | 113±0.31b | 114±2.17b | 122±0.2a | 120±1.58a\*\*\* | 0.891 (0.709-1.120) |
| HDL-C (mg/dl)7 | 49.7±0.12b | 49.2±0.82b | 55.9±0.08a | 56.8±0.7a\*\*\* | 0.980 (0.821-1.171) |
| TG (mg/dl)8 | 133±0.78b | 147±5.43a | 121±0.51c | 122±3.97c\*\*\*+ | 1.149 (0.965-1.368) |
| SBP (mmHg)9 | 125±0.13a | 126±0.92a | 121±0.09b | 120±0.67b\*\*\* | 0.889 (0.745-1.059) |
| DBP (mmHg)10 | 78.0±0.09b | 78.8±0.62b | 74.5±0.06a | 73.9±0.45a\*\*\* | 0.823 (0.610-1.111) |
| eGFR11  | 83.8±0.15b | 84.5±1.02ab | 87.0±0.10a | 87.6±0.74a\*\*\* | 0.900 (0.708-1.144) |
| Serum ALT12 | 25.6±0.21a | 25.8±1.46a | 20.7±0.14b | 20.8±1.09b\*\*\* | 0.970 (0.747-1.259) |
| Serum AST13 | 24.8±0.22 | 24.9±1.52 | 23.2±0.14 | 23.1±1.13 | 0.995 (0.673-1.470) |
| Serum CRP14  | 0.14±0.004 | 0.11±0.03 | 0.14±0.003 | 0.15±0.02 | 0.910 (0.451-1.836) |
| WBC15  | 5.77±0.02 | 5.58±0.12 | 5.66±0.01 | 5.60±0.09 | 0.888 (0.748-1.054) |

Values represented adjusted means and standard errors after adjusting for covariates of age, BMI, residence area, income, education, smoking and drinking status, and physical activity. The values represent means ± standard errors or number of the subjects (percentage of each group). Adjusted odds ratio (ORs) and 95 % confidence intervals (CI) with the covariates of adjusting for age, gender, BMI, residence area, physical activity, education, smoking, and intake of alcohol, dietary fiber and energy. The cutoff points of the reference were as follows: 1< 25 kg/m2; 2< 90 cm for men and 85 cm for women; 3 <110 mg/dL plus anti-diabetic medication; 4 <6.5 % plus anti-diabetic medication;5 <230 mg/dL plus dyslipidemia medication; 6<160 mg/dL plus dyslipidemia medication; 7 <40 mg/dL for men and <50 mg/dL for women plus dyslipidemia medication; 8<150 mg/dL plus dyslipidemia medication; 9<140 mmHg plus hypertension medication; 10 <90 mmHg plus hypertension medication; 11 < 70; 12 <35 IU/L; 13 < 40 IU/L; 14 <1.0 mg/dL; 15<5.6X109 /L. \*Significantly different from the Non-MetS (Normal-control) group at P<0.05, \*\* P<0.01, and \*\*\* P<0.001. eGFR, estimated glomerular filtration rate; SBP: Systolic blood pressure; DBP: Diastolic blood pressure; Total-C, total cholesterol; HDL-C: High density lipoprotein cholesterol; LDL-C: Low density lipoprotein cholesterol; TG: Triglycerides; HbA1c: Glycosylated hemoglobin. \* Significantly different by gender at P<0.05, \*\* at P<0.01, and \*\*\* at P<0.001. + Significantly different by stroke at P<0.05.

Table S3. Binding energy of food components with *CYP1A1* rs143070677 wild (WT) and mutated types (MT)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | WT | MT |  | WT | MT |
| Cyanidin 3-dicaffeoyl-sophoroside 5-glucoside | -7.9 | -10.2 | Dimalonylawobanin | -10 | -8.1 |
| Theaflavate A | -8.5 | -10.5 | Lepidine E | -10.1 | -8.9 |
| Artobiloxanthone | -8.2 | -10.5 | cis-Geranylgeranylbixin | -10.5 | -8.6 |
| Delphinidin 3,5-di(6''-malonylglucoside) | -6.7 | -10 | Zucchini factor B | -10 | -8.1 |
| Gambiriin B3 | -8.3 | -10.5 | Isoscoparin 7-glucoside | -10.7 | -8.2 |
| (9Z,9'Z)-7,7',8,8'-Tetrahydrolycopene | -8.9 | -10.4 | Epoxyfumitremorgin C | -10.2 | -8.6 |
| Acrimarine N | -8.7 | -11.6 | Avenalumin II | -10.4 | -8.9 |

Supplementary Figure S1. The distribution of genetic variants related to stroke risk

1. Manhattan plot of genetic variants related to stroke risk



1. Q-Q plot of genetic variants related to stroke risk



Figure S2. Gene expression according to the alleles of the selected SNPs for stroke risk in different tissues

 A B



C D



E F

 