**Supplemental Table 2.** Baseline characteristics by categories of urinary ketone status among 99,869 participants who did not have hepatic steatosis at baseline and subsequent visit

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Overall |  | Ketonuria change category |
| None (G1) | Regressed (G2) | Developed (G3) | Persistent (G4) |
| Number of participants | 99,869 | 79,182 | 11,068 | 7,659 | 1,960 |
| Age (years) | 36.4 (6.2) | 36.6 (6.3) | 35.7 (5.6) | 35.9 (5.8) | 35.3 (5.5) |
| Men (%) | 41.9  | 43.5  | 40.2  | 32.0  | 26.3  |
| Seoul center (%) | 55.7  | 54.8  | 59.4  | 58.6  | 63.8  |
| Alcohol intakea (%) | 25.4  | 26.2  | 23.8  | 21.1  | 20.1  |
| Current smoker (%) | 14.9  | 15.9  | 12.2  | 10.3  | 6.3  |
| HEPA (%) | 14.7  | 14.5  | 15.7  | 14.2  | 16.1  |
| Education levelb (%) | 87.1  | 87.0  | 87.8  | 87.9  | 88.1  |
| Hypertension (%) | 4.2  | 4.4  | 3.3  | 3.2  | 3.3  |
| History of CVD (%) | 0.5  | 0.5  | 0.4  | 0.5  | 0.7  |
| Medication for hyperlipidemia (%) | 0.6  | 0.7  | 0.5  | 0.4  | 0.5  |
| Obesity (%) | 10.1  | 10.7  | 7.6  | 8.5  | 6.9  |
| Body mass index (kg/m2) | 21.7 (2.5) | 21.8 (2.5) | 21.3 (2.5) | 21.4 (2.5) | 21.0 (2.5) |
| SBP (mmHg) | 105.2 (11.7) | 105.4 (11.8) | 104.5 (11.5) | 104.3 (11.7) | 103.5 (11.7) |
| DBP (mmHg) | 67.1 (8.8) | 67.3 (8.9) | 66.2 (8.6) | 66.6 (8.6) | 65.4 (8.4) |
| Glucose (mg/dl) | 91.1 (7.5) | 92.0 (7.1) | 86.1 (8.3) | 91.4 (7.1) | 85.4 (8.5) |
| Total cholesterol (mg/dl) | 187.0 (31.2) | 187.1 (31.1) | 187.1 (31.9) | 185.7 (30.3) | 186.0 (31.4) |
| LDL-C (mg/dl) | 112.4 (28.9) | 112.8 (28.8) | 112.3 (30.2) | 109.4 (27.7) | 108.7 (28.9) |
| HDL-C (mg/dl) | 62.9 (14.6) | 62.2 (14.5) | 65.6 (14.7) | 65.1 (14.5) | 68.5 (14.4) |
| Triglycerides (mg/dl) | 74 (56-101) | 78 (59-106) | 59 (48-74) | 72 (55-95) | 56 (46-69) |
| ALT (U/L) | 14 (11-20) | 15 (11-20) | 15 (11-20) | 13 (11-18) | 13 (11-18) |
| AST (U/L) | 18 (15-21) | 18 (15-21) | 19 (16-22) | 17 (15-20) | 18 (16-21) |
| GGT (U/L) | 15 (11-22) | 16 (11-23) | 15 (11-21) | 14 (11-19) | 13 (10-18) |
| hsCRP (mg/L) | 0.3 (0.2-0.6) | 0.3 (0.2-0.6) | 0.3 (0.2-0.6) | 0.3 (0.2-0.5) | 0.3 (0.2-0.6) |
| HOMA-IR | 0.99 (0.67-1.40) | 1.05 (0.73-1.46) | 0.61 (0.39-0.91) | 1.02 (0.71-1.43) | 0.60 (0.40-0.90) |
| Total energy intake (kcal/d)c | 1511.8 (1158.3-1896.8) | 1518.0 (1165.4-1899.9) | 1493.5 (1147.0-1882.7) | 1494.8 (1135.8-1891.6) | 1436.2 (1083.3-1836.6) |
| Carbohyrate proportion (%) | 68.3 (62.7-73.3) | 68.4 (62.8-73.4) | 68.0 (62.3-72.9) | 67.8 (62.2-72.9) | 66.6 (61.1-72.0) |
| Fat proportion (%) | 18.1 (14.2-22.4) | 17.9 (14.1-22.2) | 18.3 (14.5-22.8) | 18.5 (14.5-22.9) | 19.3 (15.2-24.0) |
| Protein proportion (%) | 13.5 (12.1-15.2) | 13.5 (12.1-15.1) | 13.5 (12.1-15.2) | 13.6 (12.1-15.2) | 13.8 (12.3-15.4) |
| Carbohydrate <50 g/day (%)  | 3.0  | 2.9  | 3.2  | 3.3  | 4.0  |

Data are expressed as mean (standard deviation), median (interquartile range), or percentage.

Abbreviations: ALT, alanine aminotransferase; AST, aspartate transaminase; GGT, gamma-glutamyl transferase; HEPA, health-enhancing physical activity; HDL-C, high-density lipoprotein-cholesterol; hsCRP, high sensitivity C-reactive protein; HOMA-IR, homeostasis model assessment of insulin resistance; LDL-C, low-density lipoprotein-cholesterol

a ≥ 10 g of ethanol per day.

b ≥ College graduate.

c Among 78,698 participants with plausible estimated energy intake (within three standard deviations of the log-transformed mean energy intake).