**Table S1.** Food sources of dietary fructose in urban and rural residents (g/d)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Urban | | | |  | Rural | | | | | *p*-Value |
|  | Mean | P25th | Median | P75th |  | Mean | | P25th | Median | P75th |  |
| Grain and grain products | 0.95 | 0.37 | 0.65 | 1.19 |  | 1.15 | | 0.45 | 0.81 | 1.45 | <0.001 |
| Fruits and fruit products | 3.98 | 0.00 | 0.00 | 5.71 |  | 1.73 | | 0.00 | 0.00 | 1.10 | <0.001 |
| Vegetables and vegetable products | 2.90 | 1.46 | 2.45 | 3.81 |  | 2.71 | | 1.24 | 2.16 | 3.58 | <0.001 |
| Milk and milk products | 0.29 | 0.00 | 0.00 | 0.05 |  | 0.05 | | 0.00 | 0.00 | 0.00 | <0.001 |
| Meat, poultry, fish, and related products | 0.41 | 0.13 | 0.29 | 0.54 |  | 0.28 | | 0.03 | 0.17 | 0.41 | <0.001 |
| Eggs and egg products | 0.55 | 0.00 | 0.39 | 0.84 |  | 0.32 | | 0.00 | 0.00 | 0.52 | <0.001 |
| Legumes and legume products | 0.36 | 0.00 | 0.17 | 0.47 |  | 0.23 | | 0.00 | 0.00 | 0.26 | <0.001 |
| Nuts, seeds, and related products | 0.10 | 0.00 | 0.00 | 0.00 |  | 0.06 | | 0.00 | 0.00 | 0.00 | <0.001 |
| Sugars and sweets | 0.23 | 0.00 | 0.00 | 0.00 |  | 0.06 | | 0.00 | 0.00 | 0.00 | <0.001 |
| Nonalcoholic beverages | 0.16 | 0.00 | 0.00 | 0.00 |  | 0.10 | | 0.00 | 0.00 | 0.00 | <0.001 |
| Alcoholic beverages | 0.49 | 0.00 | 0.00 | 0.00 |  | 0.63 | | 0.00 | 0.00 | 0.00 | 0.308 |
| Snacks | 1.14 | 0.00 | 0.06 | 1.36 |  | 0.25 | 0.00 | | 0.00 | 0.00 | <0.001 |
| Miscellaneous foods | 0.06 | 0.00 | 0.00 | 0.02 |  | 0.04 | 0.00 | | 0.00 | 0.00 | <0.001 |

Abbreviation: P = percentile

**Table S2.** Stratified analysis of the association between dietary fructose intake and risk of MetS by physical activity in rural residents

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Dietary fructose intake | | | | *p*-Value |
|  | Q1 | Q2 | Q3 | Q4 |
| Physical activity |  |  |  |  |  |
| MetS, n (%) | 42 (34.4) | 57 (37.3) | 69 (34.9) | 75 (32.6) | 0.829 |
| Mode1 | 1.00 | 1.13 (0.69, 1.86) | 1.02 (0.63, 1.64) | 0.92 (0.58, 1.47) | 0.829 |
| Mode2 | 1.00 | 1.02 (0.61, 1.71) | 0.99 (0.60, 1.63) | 0.95 (0.58, 1.57) | 0.992 |
| Mode3 | 1.00 | 0.99 (0.55, 1.79) | 1.06 (0.60, 1.88) | 1.03 (0.58, 1.83) | 0.995 |
| Non- physical activity |  |  |  |  |  |
| MetS, n (%) | 724 (24.1) | 711 (24.1) | 737 (25.2) | 658 (22.8) | 0.192 |
| Mode1 | 1.00 | 1.00 (0.89, 1.12) | 1.06 (0.94, 1.20) | 0.93 (0.82, 1.05) | 0.192 |
| Mode2 | 1.00 | 1.04 (0.92, 1.17) | 1.15 (1.01, 1.30) | 1.05 (0.92, 1.20) | 0.151 |
| Mode3 | 1.00 | 1.03 (0.89, 1.18) | 1.14 (0.99, 1.31) | 1.03 (0.89, 1.19) | 0.264 |

Mode1: crude; Mode2: adjusted gender, age, education, marital status, smoking, alcohol, income, energy, protein, fat, carbohydrate, TC; Mode3: mode2 plus BMI.

**Table S3.** Stratified analysis of the association between dietary fructose intake and risk of MetS by gender

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Dietary fructose intake | | | | *p*-Value |
|  | Q1 | Q2 | Q3 | Q4 |
| **Urban** |  |  |  |  |  |
| Male |  |  |  |  |  |
| MetS, n (%) | 426 (30.7) | 509 (33.3) | 527 (37.1) | 512 (36.1) | **0.001** |
| Mode1 | 1.00 | 1.13 (0.96, 1.32) | 1.33 (1.14, 1.56) | 1.27 (1.09, 1.49) | **0.001** |
| Mode2 | 1.00 | 1.09 (0.93, 1.28) | 1.21 (1.03, 1.43) | 1.08 (0.90, 1.28) | 0.128 |
| Mode3 | 1.00 | 1.06 (0.84, 1.33) | 1.32 (1.05, 1.67) | 1.19 (0.94, 1.51) | 0.077 |
| Female |  |  |  |  |  |
| MetS, n (%) | 593 (31.6) | 573 (33.0) | 582 (31.6) | 515 (27.9) | **0.007** |
| Mode1 | 1.00 | 1.07 (0.93, 1.22) | 1.00 (0.87, 1.15) | 0.84 (0.73, 0.96) | **0.007** |
| Mode2 | 1.00 | 1.08 (0.94, 1.25) | 1.02 (0.88, 1.18) | 0.90 (0.76, 1.05) | 0.101 |
| Mode3 | 1.00 | 1.04 (0.88, 1.21) | 1.00 (0.85, 1.18) | 0.87 (0.73, 1.03) | 0.184 |
| **Rural** |  |  |  |  |  |
| Male |  |  |  |  |  |
| MetS, n (%) | 262 (20.4) | 319 (22.1) | 343 (23.0) | 362 (22.8) | 0.354 |
| Mode1 | 1.00 | 1.11 (0.92, 1.34) | 1.17 (0.97, 1.40) | 1.15 (0.96, 1.38) | 0.354 |
| Mode2 | 1.00 | 1.10 (0.91, 1.33) | 1.16 (0.96, 1.41) | 1.15 (0.95, 1.40) | 0.429 |
| Mode3 | 1.00 | 1.12 (0.89, 1.39) | 1.19 (0.95, 1.48) | 1.15 (0.92, 1.45) | 0.493 |
| Female |  |  |  |  |  |
| MetS, n (%) | 502 (27.5) | 453 (27.0) | 462 (28.5) | 370 (24.3) | 0.052 |
| Mode1 | 1.00 | 0.98 (0.84, 1.14) | 1.05 (0.91, 1.22) | 0.85 (0.73, 0.99) | 0.052 |
| Mode2 | 1.00 | 1.00 (0.86, 1.17) | 1.13 (0.96, 1.32) | 0.96 (0.81, 1.13) | 0.198 |
| Mode3 | 1.00 | 0.98 (0.83, 1.17) | 1.12 (0.94, 1.34) | 0.94 (0.78, 1.14) | 0.248 |

Mode1: crude; Mode2: adjusted gender, age, education, marital status, smoking, alcohol, physical activity, income, energy, protein, fat, carbohydrate, TC; Mode3: mode2 plus BMI.

**Table S4.** Stratified analysis of the association between dietary fructose intake and risk of MetS by smoking

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Dietary fructose intake | | | | *p*-Value |
|  | Q1 | Q2 | Q3 | Q4 |
| **Urban** |  |  |  |  |  |
| Smoking |  |  |  |  |  |
| MetS, n (%) | 229 (29.5) | 247 (29.2) | 263 (33.9) | 221 (33.2) | 0.091 |
| Mode1 | 1.00 | 0.99 (0.80, 1.22) | 1.23 (0.99, 1.52) | 1.19 (0.95, 1.49) | 0.091 |
| Mode2 | 1.00 | 0.97 (0.78, 1.20) | 1.15 (0.91, 1.44) | 1.04 (0.82, 1.34) | 0.442 |
| Mode3 | 1.00 | 0.97 (0.76, 1.25) | 1.09 (0.84, 1.42) | 0.98 (0.74, 1.30) | 0.793 |
| Ever/Never-smoking |  |  |  |  |  |
| MetS, n (%) | 790 (31.7) | 835 (34.5) | 846 (34.0) | 806 (31.0) | **0.021** |
| Mode1 | 1.00 | 1.13 (1.01, 1.27) | 1.11 (0.98, 1.25) | 0.97 (0.86, 1.09) | **0.021** |
| Mode2 | 1.00 | 1.12 (0.99, 1.27) | 1.09 (0.97, 1.24) | 0.95 (0.84, 1.09) | **0.027** |
| Mode3 | 1.00 | 1.06 (0.93, 1.21) | 1.07 (0.93, 1.23) | 0.96 (0.83, 1.10) | 0.317 |
| **Rural** |  |  |  |  |  |
| Smoking |  |  |  |  |  |
| MetS, n (%) | 159 (18.2) | 175 (19.3) | 205 (21.5) | 212 (20.6) | 0.301 |
| Mode1 | 1.00 | 1.08 (0.85, 1.37) | 1.23 (0.98, 1.56) | 1.17 (0.93, 1.47) | 0.301 |
| Mode2 | 1.00 | 1.05 (0.82, 1.34) | 1.18 (0.93, 1.51) | 1.10 (0.86, 1.42) | 0.566 |
| Mode3 | 1.00 | 1.08 (0.81, 1.42) | 1.30 (0.98, 1.71) | 1.15 (0.86, 1.53) | 0.295 |
| Ever/Never-smoking |  |  |  |  |  |
| MetS, n (%) | 607 (27.0) | 593 (27.0) | 601 (27.8) | 521 (25.0) | 0.201 |
| Mode1 | 1.00 | 1.00 (07, 1.14) | 1.04 (0.91, 1.19) | 0.90 (0.79, 1.03) | 0.201 |
| Mode2 | 1.00 | 1.03 (0.90, 1.18) | 1.13 (0.98, 1.30) | 1.02 (0.88, 1.18) | 0.303 |
| Mode3 | 1.00 | 1.02 (0.88, 1.19) | 1.11 (0.95, 1.30) | 1.00 (0.85, 1.18) | 0.511 |

Mode1: crude; Mode2: adjusted gender, age, education, marital status, alcohol, physical activity, income, energy, protein, fat, carbohydrate, TC; Mode3: mode2 plus BMI.

**Table S5.** Stratified analysis of the association between dietary fructose intake and risk of MetS by alcohol use

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Dietary fructose intake | | | | *p*-Value |
|  | Q1 | Q2 | Q3 | Q4 |
| **Urban** |  |  |  |  |  |
| Alcohol |  |  |  |  |  |
| MetS, n (%) | 249 (26.6) | 296 (29.5) | 360 (34.1) | 380 (31.9) | **0.002** |
| Mode1 | 1.00 | 1.15 (0.95, 1.41) | 1.43 (1.18, 1.74) | 1.29 (1.07, 1.56) | **0.002** |
| Mode2 | 1.00 | 1.14 (0.93, 1.39) | 1.40 (1.15, 1.71) | 1.26 (1.02, 1.55) | **0.009** |
| Mode3 | 1.00 | 1.06 (0.84, 1.34) | 1.34 (1.06, 1.69) | 1.22 (0.96, 1.54) | 0.056 |
| Ever/Never- alcohol |  |  |  |  |  |
| MetS, n (%) | 770 (33.1) | 786 (34.7) | 749 (33.9) | 647 (31.2) | 0.083 |
| Mode1 | 1.00 | 1.08 (0.95, 1.22) | 1.04 (0.92, 1.17) | 0.92 (0.81, 1.04) | 0.083 |
| Mode2 | 1.00 | 1.07 (0.94, 1.21) | 1.00 (0.88, 1.14) | 0.87 (0.76, 1.01) | 0.349 |
| Mode3 | 1.00 | 1.02 (0.89, 1.18) | 0.97 (0.84, 1.13) | 0.87 (0.74, 1.01) | 0.144 |
| **Rural** |  |  |  |  |  |
| Alcohol |  |  |  |  |  |
| MetS, n (%) | 148 (18.7) | 192 (20.0) | 226 (22.9) | 274 (22.0) | 0.115 |
| Mode1 | 1.00 | 1.08 (0.85, 1.38) | 1.29 (1.02, 1.63) | 1.23 (0.98, 1.53) | 0.115 |
| Mode2 | 1.00 | 1.05 (0.82, 1.34) | 1.23 (0.96, 1.57) | 1.14 (0.89, 1.45) | 0.355 |
| Mode3 | 1.00 | 1.06 (0.80, 1.39) | 1.25 (0.95, 1.65) | 1.14 (0.87, 1.50) | 0.401 |
| Ever/Never-alcohol |  |  |  |  |  |
| MetS, n (%) | 616 (26.5) | 580 (26.9) | 579 (27.2) | 458 (24.5) | 0.204 |
| Mode1 | 1.00 | 1.02 (0.89, 1.17) | 1.04 (0.91, 1.18) | 0.90 (0.78, 1.03) | 0.204 |
| Mode2 | 1.00 | 1.05 (0.92, 1.21) | 1.11 (0.97, 1.28) | 1.00 (0.86, 1.16) | 0.345 |
| Mode3 | 1.00 | 1.04 (0.89, 1.21) | 1.11 (0.95, 1.30) | 0.97 (0.82, 1.15) | 0.395 |

Mode1: crude; Mode2: adjusted gender, age, education, marital status, smoking, physical activity, income, energy, protein, fat, carbohydrate, TC; Mode3: mode2 plus BMI.