**Supplemental Table 1** Examples of food items constituting the 16 food groups (derived from the TMCHC FFQ)a

|  |  |
| --- | --- |
| ***Plant Food Groups*** |  |
| *Healthy* |  |
| Whole grains | Coarse grains, tuber crop |
| Fruits | Citrus, pome, bananas, berries, mango/persimmon/apricot, pitaya/pineapple/mangosteen/loquat/durian, watermelon, cantaloupe/papaya/muskmelon, lychee/longan, jujube, peach/black plum/plum/red bayberry/cherry, sugarcane |
| Vegetables | Dark leafy vegetables/cauliflower, light-colored leafy vegetables/cauliflower, root vegetables, radish/lettuce/asparagus/garlic wonton/wonton white/onion, fresh beans, melons and eggplant, tomatoes, green pepper/red pepper, mushrooms, algae |
| Nuts | Nuts with fat, starchy nuts |
| Beans | Soybean and its products, mixed beans |
| Vegetable oil |  |
| Tea & coffee | Coffee, tea |
| *Less healthy* |  |
| Juices | Freshly squeezed fruit and vegetable juices |
| Refined grains | Rice and its products, wheat flour and its products |
| Sugar-sweetened beverages | Carbonated drinks, fruit and vegetable juice drinks, tea drinks, rice wine |
| Sweets and desserts | Honey, jams, preserves, chocolates, candies, cake, snacks |
| **Animal Food Groups** |  |
| Dairy | Ordinary milk, yogurt, formula milk, milk drinks, ice cream |
| Eggs | Chicken egg/duck egg/quail egg/pigeon egg |
| Meat | Pork/pork ribs, beef, poultry, liver/blood, other internal organs |
| Fish | Freshwater fish, saltwater fish, shrimp/crab, mollusc |
| Animal fat |  |

aFood items of the semi-quantitative FFQ were formed based on food nutrient composition and eating habits of Chinese. FFQ, food frequency questionnaire; TMCHC, Tongji Maternal and Child Health Cohort

**Supplemental Table 2** Characteristics of daily intake of 16 food groups of 2,099 participants

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Food groups | Median (IQR) | P20 | P40 | P60 | P80 |
| Whole grains, g/d | 15.0 (5.4-34.3) | 3.9 | 10.7 | 21.4 | 40.7 |
| Refined grains, g/d | 200.0 (150.0-250.0) | 150.0 | 178.6 | 210.0 | 268.6 |
| Fruits, g/d | 365.8 (232.9-525.8) | 200.8 | 315.0 | 420.0 | 575.7 |
| Vegetables, g/d | 311.6 (183.3-478.8) | 156.4 | 257.6 | 378.4 | 525.9 |
| Nuts, g/d | 11.4 (2.9-18.0) | 1.7 | 7.7 | 13.4 | 20.0 |
| Beans, g/d | 10.0 (2.9-20.0) | 0.4 | 6.6 | 13.0 | 21.5 |
| Vegetable oil, g/d | 30.0 (25.0-35.0) | 25.0 | 30.0 | 30.0 | 35.0 |
| Sweets and desserts, g/d | 0.1 (0.0-8.6) | 0.0 | 0.0 | 1.4 | 10.7 |
| Dairy, g/d | 185.7 (76.6-290.9) | 57.5 | 142.9 | 237.3 | 321.5 |
| Eggs, g/d | 40.0 (22.9-50.0) | 21.4 | 40.0 | 42.9 | 50.0 |
| Meat, g/d | 50.0 (25.0-75.0) | 20.1 | 38.6 | 56.1 | 85.7 |
| Fish, g/d | 22.9 (7.9-49.8) | 5.7 | 16.1 | 30.7 | 57.1 |
| Juices, ml/d | 0.0 (0.0-0.0) | 0.0 | 0.0 | 0.0 | 0.0 |
| Tea & coffee, ml/d | 0.0 (0.0-0.0) | 0.0 | 0.0 | 0.0 | 0.0 |
| Sugar-sweetened beverages, ml/d | 0.0 (0.0-0.0) | 0.0 | 0.0 | 0.0 | 0.0 |
| Animal fat, g/d | 0.0 (0.0-0.0) | 0.0 | 0.0 | 0.0 | 0.0 |

**Supplemental Table 3** Characteristics of 2,099 participants according to the diagnosis of GDMa

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristic | Overall | GDM | Non-GDM | *P* valueb |
| No. of women | 2099 | 169 | 1930 |  |
| Age, y | 28.0 (26.0-30.0) | 29.0 (27.0-31.0) | 28.0 (26.0-30.0) | <0.001 |
| Pre-pregnancy BMI, kg/m2 | 20.4 (18.8-22.2) | 21.2 (19.6-23.3) | 20.3 (18.8-22.1) | <0.001 |
| Weight gain before GDM diagnosis | 8.2 (6.1-10.3) | 8.7 (6.9-11.5) | 8.1 (6.0-10.1) | 0.002 |
| Ethnicity |  |  |  | 0.942 |
| Han Chinese | 2051 (97.7) | 165 (97.6) | 1886 (97.7) |  |
| Other | 48 (2.3) | 4 (2.4) | 44 (2.3) |  |
| Education, y |  |  |  | 0.697 |
| ≤12 | 291 (13.9) | 22 (13.0) | 269 (13.9) |  |
| 13-15 | 517 (24.6) | 39 (23.1) | 478 (24.8) |  |
| ≥16 | 1244 (59.3) | 107 (63.3) | 1137 (58.9) |  |
| Missing | 47 (2.2) | 1 (0.6) | 46 (2.4) |  |
| Average personal income, CNY/month |  | 0.921 |
| <5000 | 787 (37.5) | 64 (37.9) | 723 (37.5) |  |
| 5000-9999 | 889 (42.4) | 69 (40.8) | 820 (42.5) |  |
| ≥10000 | 387 (18.4) | 29 (17.2) | 358 (18.5) |  |
| Missing | 36 (1.7) | 7 (4.1) | 29 (1.5) |  |
| Parity |  |  |  | 0.022 |
| Nulliparous | 1769 (84.3) | 132 (78.1) | 1637 (84.8) |  |
| Multiparous | 330 (15.7) | 37 (21.9) | 293 (15.2) |  |
| Family history of diabetes |  |  | <0.001 |
| Yes | 174 (8.3) | 26 (15.4) | 148 (7.7) |  |
| No | 1887 (89.9) | 138 (81.7) | 1749 (90.6) |  |
| Missing | 38 (1.8) | 5 (3.0) | 33 (1.7) |  |
| Sleep quality |  |  |  | 0.977 |
| Poor | 49 (2.3) | 4 (2.4) | 45 (2.3) |  |
| Good | 2050 (97.7) | 165 (97.6) | 1885 (97.7) |  |
| Leisure-time physical activity  |  | 0.023 |
| Yes | 762 (36.3) | 75 (44.4) | 687 (35.6) |  |
| No | 1337 (63.7) | 94 (55.6) | 1243 (64.4) |  |
| Drinking before pregnancy |  | 0.987 |
| Yes | 260 (12.4) | 21 (12.4) | 239 (12.4) |  |
| No | 1839 (87.6) | 148 (87.6) | 1691 (87.6) |  |
| Smoking before pregnancy |  | 0.733 |
| Yes | 266 (12.7) | 20 (11.8) | 246 (12.7) |  |
| No | 1833 (87.3) | 149 (88.2) | 1684 (87.3) |  |
| Energy, kcal/d | 1928.8 (1635.7-2281.4) | 1917.6 (1617.8-2212.2) | 1929.8 (1637.4-2287.1) | 0.361 |
| Gestational age at FFQ, wk | 25.0 (23.0-26.0) | 25.0 (23.0-26.0) | 25.0 (23.0-26.0) | 0.800 |
| Gestational age at OGTT, wk | 26.0 (25.0-27.0) | 26.0 (25.0-27.0) | 26.0 (25.0-27.0) | 0.686 |

aValues were median (IQR), n (%). BMI, body mass index; CNY, China Yuan; FFQ, food frequency questionnaire; GDM, gestational diabetes mellitus; OGTT, oral glucose tolerance test.

bBased on the Wilcoxon rank-sum test for continuous data and chi-square tests for categorical data.

**Supplemental Table 4** Associations of per 6 points increment of diverse versions of PDI with risk of GDMa

|  |  |  |
| --- | --- | --- |
| Versions | OR (95% CI) | *P* valueb |
| Whole grains excluded | 0.71 (0.55, 0.90) | 0.005 |
| Refined grains excluded | 0.71 (0.56, 0.90) | 0.005 |
| Fruits excluded | 0.75 (0.59, 0.96) | 0.021 |
| Vegetables excluded | 0.70 (0.55, 0.89) | 0.004 |
| Nuts excluded | 0.70 (0.55, 0.88) | 0.003 |
| Beans excluded | 0.68 (0.53, 0.87) | 0.003 |
| Vegetable oil excluded | 0.75 (0.59, 0.95) | 0.016 |
| Sweets and desserts excluded | 0.70 (0.54, 0.89) | 0.004 |
| Dairy excluded | 0.74 (0.57, 0.96) | 0.021 |
| Eggs excluded | 0.76 (0.59, 0.98) | 0.032 |
| Meat excluded | 0.65 (0.50, 0.85) | 0.001 |
| Fish excluded | 0.72 (0.56, 0.91) | 0.007 |
| Less healthy plant food groups(refined grains & sweets and desserts) excluded | 0.70 (0.54, 0.90) | 0.006 |

aValues were ORs (95% CIs) from multiple logistic regression models. GDM, gestational diabetes mellitus; PDI, overall plant-based diet index.

bAdjusted for age, ethnicity, education, income, pre-pregnancy BMI, parity, family history of diabetes, smoking status, drinking status, exercise, sleep quality, weight gain before GDM diagnosis, energy, juices, tea & coffee, sugar-sweetened beverages and animal fat, and the consumptions of food groups excluded from PDI.

**Supplemental Table 5** Associations of hPDI and uPDI with GDM risk in the Tongji Maternal and Child Health Cohortstudya

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Prevalence of GDM, % (n) | Crude Model | Model 1b | Model 2c |
| hPDI |  |  |  |  |
| Per IQR (6 points) | 0.88 (0.72,1.09) | 0.76 (0.60,0.97) | 0.76 (0.60,0.97) |
| Q1(20-33) | 8.7 (566) | 1.00 | 1.00 | 1.00 |
| Q2(34-36) | 7.8 (528) | 0.89 (0.58, 1.37) | 0.82 (0.51, 1.30) | 0.81 (0.51, 1.29) |
| Q3(37-39) | 9.2 (511) | 1.07 (0.70, 1.63) | 0.87 (0.55, 1.39) | 0.86 (0.54, 1.36) |
| Q4(40-52) | 6.5 (494) | 0.73 (0.46, 1.16) | 0.55 (0.32, 0.94) | 0.55 (0.33, 0.94) |
| *P* for trend |  | 0.316 | 0.047 | 0.045 |
| uPDI |  |  |  |  |
| Per IQR (8 points) | 0.97 (0.79,1.19) | 0.90 (0.69,1.18) | 0.89 (0.68,1.17) |
| Q1(20-33) | 7.8 (563) | 1.00 | 1.00 | 1.00 |
| Q2(34-36) | 7.9 (543) | 1.01 (0.67, 1.57) | 0.97 (0.59, 1.60) | 0.95 (0.58, 1.57) |
| Q3(37-39) | 8.8 (480) | 1.13 (0.73, 1.76) | 1.12 (0.67, 1.89) | 1.11 (0.66, 1.87) |
| Q4(40-52) | 7.8 (513) | 1.00 (0.64, 1.56) | 0.96 (0.54, 1.68) | 0.95 (0.54, 1.67) |
| *P* for trend |  | 0.926 | 0.947 | 0.917 |

aLogistic regression models were adopted and values were ORs (95% CIs). BMI, body mass index; CI, confidence interval; CNY, China Yuan; GDM, gestational diabetes mellitus; hPDI, healthful plant-based diet index; IQR, interquartile range; OR, odds ratio; Q1–Q4, quartiles 1–4; uPDI, unhealthful plant-based diet index.

bAdjusted for age, ethnicity, education, income, pre-pregnancy BMI, parity, family history of diabetes, smoking status, drinking status, exercise, sleep quality, weight gain before GDM diagnosis, and energy.

cAdjusted for age, ethnicity, education, income, pre-pregnancy BMI, parity, family history of diabetes, smoking status, drinking status, exercise, sleep quality, weight gain before GDM diagnosis, energy, juice, tea & coffee, sugar-sweetened beverages and animal fat.