**A low-carbohydrate dietary pattern characterised by high animal fat and protein during the first trimester is associated with an increased risk of gestational diabetes mellitus in Chinese women: A prospective cohort study**

**Supplementary Material**

**Supplemental Table 1.** Baseline characteristics of GDM and non-GDM groups

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Characteristics | GDM group | |  | non-GDM group | | *P* |
| n | % |  | n | % |
| Age at enrollment (years) |  |  |  |  |  | ＜0.001 |
| ≤24 | 74 | 14.2 |  | 195 | 20.9 |  |
| 25-29 | 260 | 50.0 |  | 514 | 55.0 |  |
| 30-34 | 122 | 23.5 |  | 165 | 17.6 |  |
| ≥35 | 64 | 12.3 |  | 61 | 6.5 |  |
| Pre-pregnancy BMI (kg/m2) |  |  |  |  |  | ＜0.001 |
| <18.5 | 57 | 11.0 |  | 163 | 17.4 |  |
| 18.5-23.9 | 388 | 74.6 |  | 682 | 73.0 |  |
| ≥24.0 | 75 | 14.4 |  | 90 | 9.6 |  |
| Educational level (schooling years) |  |  |  |  |  | 0.696 |
| ≤12 | 116 | 22.3 |  | 216 | 23.1 |  |
| 13-15 | 183 | 35.2 |  | 343 | 36.7 |  |
| ≥16 | 221 | 42.5 |  | 376 | 40.2 |  |
| Family income level (CNY/month) |  |  |  |  |  | 0.531 |
| ≤2999 | 17 | 3.3 |  | 31 | 3.3 |  |
| 3000-4999 | 158 | 30.4 |  | 272 | 29.1 |  |
| 5000-9999 | 228 | 43.8 |  | 445 | 47.6 |  |
| ≥10000 | 117 | 22.5 |  | 187 | 20.0 |  |
| Ethnicity of Han Chinese (%) | 512 | 98.5 |  | 906 | 96.9 | 0.070 |
| Work during early pregnancy (%) | 313 | 60.2 |  | 589 | 63.0 | 0.291 |
| Multiparity (%) | 147 | 28.3 |  | 237 | 25.3 | 0.226 |
| Family history of diabetes (%) | 99 | 19.0 |  | 153 | 16.4 | 0.196 |
| Smoking (%) | 15 | 2.9 |  | 30 | 3.2 | 0.732 |
| Alcohol drinking (%) | 35 | 6.7 |  | 73 | 7.8 | 0.453 |
| Physical activity\*(MET-hours/week) | 102.3 | (72.6, 131.1) |  | 104.8 | (73.1, 133.7) | 0.526 |
| Gestational weight gain before GDM diagnosis\* (kg) | 6.1 | (3.9, 8.2) |  | 6.2 | (4.2, 8.4) | 0.374 |

GDM, gestational diabetes mellitus; BMI, body mass index; CNY, Chinese Yuan; MET, metabolic equivalent of task.

\*Data of physical activity and gestational weight gain before GDM diagnosis were described by median and interquartile range

## Supplemental Table 2. Baseline characteristics of participants according to quartiles of the animal LCD score

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Characteristics | Quartiles of the animal LCD score | | | | | | | | *P* |
| Quartile 1 (*n* 332) | | Quartile 2 (*n* 359) | | Quartile 3 (*n* 357) | | Quartile 4 (*n* 407) | |
| n | % | n | % | n | % | n | % |
| Age at enrollment (years) |  |  |  |  |  |  |  |  |  |
| ≤24 | 71 | 21.4 | 58 | 16.2 | 64 | 17.9 | 76 | 18.7 | 0.404 |
| 25-29 | 174 | 52.4 | 203 | 56.5 | 187 | 52.4 | 210 | 51.6 |  |
| 30-34 | 64 | 19.3 | 74 | 20.6 | 67 | 18.8 | 82 | 20.1 |  |
| ≥35 | 23 | 6.9 | 24 | 6.7 | 39 | 10.9 | 39 | 9.6 |  |
| Pre-pregnancy BMI (kg/m2) |  |  |  |  |  |  |  |  |  |
| <18.5 | 46 | 13.9 | 50 | 13.9 | 55 | 15.4 | 69 | 17.0 | 0.865 |
| 18.5-23.9 | 245 | 73.8 | 270 | 75.2 | 264 | 74.0 | 291 | 71.5 |  |
| ≥24.0 | 41 | 12.3 | 39 | 10.9 | 38 | 10.6 | 47 | 11.5 |  |
| Educational level (schooling years) |  |  |  |  |  |  |  |  |  |
| ≤12 | 84 | 25.3 | 87 | 24.2 | 75 | 21.0 | 86 | 21.1 | 0.126 |
| 13-15 | 134 | 40.4 | 122 | 34.0 | 131 | 36.7 | 139 | 34.2 |  |
| ≥16 | 114 | 34.3 | 150 | 41.8 | 151 | 42.3 | 182 | 44.7 |  |
| Family income level (CNY/month) |  |  |  |  |  |  |  |  |  |
| ≤2999 | 10 | 3.0 | 11 | 3.1 | 12 | 3.4 | 15 | 3.7 | 0.242 |
| 3000-4999 | 115 | 34.6 | 109 | 30.4 | 89 | 24.9 | 117 | 28.7 |  |
| 5000-9999 | 147 | 44.3 | 170 | 47.3 | 178 | 49.9 | 178 | 43.8 |  |
| ≥10000 | 60 | 18.1 | 69 | 19.2 | 78 | 21.8 | 97 | 23.8 |  |
| Ethnicity of Han Chinese (%) | 321 | 96.7 | 346 | 96.4 | 350 | 98.0 | 401 | 98.5 | 0.184 |
| Work during early pregnancy (%) | 201 | 60.5 | 220 | 61.3 | 225 | 63.0 | 256 | 62.9 | 0.879 |
| Multiparity (%) | 97 | 29.2 | 107 | 29.8 | 87 | 24.4 | 93 | 22.9 | 0.075 |
| Family history of diabetes (%) | 46 | 13.9 | 60 | 16.7 | 58 | 16.2 | 88 | 21.6 | 0.038 |
| Smoking (%) | 13 | 3.9 | 11 | 3.1 | 11 | 3.1 | 10 | 2.5 | 0.729 |
| Alcohol drinking (%) | 26 | 7.8 | 22 | 6.1 | 26 | 7.3 | 34 | 8.4 | 0.687 |
| Physical activity\* (MET-hours/week) | 97.9 | (68.1, 131.2) | 106.3 | (75.8, 137.3) | 102.2 | (73.8, 131.1) | 106.4 | (73.8, 132.9) | 0.237 |
| Gestational weight gain before GDM diagnosis\* (kg) | 6.0 | (4.0, 8.0) | 5.8 | (4.0, 8.0) | 6.4 | (4.0, 8.4) | 6.4 | (4.6, 8.7) | 0.056 |

LCD, low-carbohydrate diet; BMI, body mass index; CNY, Chinese Yuan; MET, metabolic equivalent of task.

\*Data of physical activity and gestational weight gain before GDM diagnosis were described by median and interquartile range.

## Supplemental Table 3. Dietary intakes of participants according to quartiles of the animal LCD score

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dietary intakes | Quartiles of the animal LCD score | | | | | | | | *P* |
| Quartile 1 (*n* 329) | | Quartile 2 (*n* 364) | | Quartile 3 (*n* 373) | | Quartile 4 (*n* 389) | |
| median | IQR | median | IQR | median | IQR | median | IQR |
| Total energy (kJ/d) | 7335.8 | (5802.0, 8963.0) | 7522.0 | (6240.4, 8908.2) | 7661.3 | (6566.0, 8819.0) | 7477.2 | (6200.7, 8997.7) | 0.219 |
| Total fat (%E) | 26.1 | (23.7, 28.9) | 30.7 | (28.9, 32.5) | 34.3 | (32.0, 36.7) | 38.6 | (36.0, 42.3) | <0.001 |
| Animal fat (%E) | 6.5 | (5.0, 8.3) | 10.9 | (9.5, 12.5) | 14.0 | (12.2, 15.8) | 19.1 | (16.5, 21.9) | <0.001 |
| Plant fat (%E) | 19.1 | (17.3, 21.5) | 19.2 | (17.1, 22.0) | 19.7 | (17.5, 22.3) | 19.0 | (17.1, 21.5) | 0.129 |
| Total protein (%E) | 10.2 | (9.2, 11.1) | 11.5 | (10.4, 12.7) | 12.6 | (11.5, 13.8) | 14.4 | (12.9, 16.2) | <0.001 |
| Animal protein (%E) | 2.5 | (1.5, 3.8) | 4.3 | (3.5, 5.2) | 5.7 | (4.8, 6.8) | 8.1 | (6.7, 9.8) | <0.001 |
| Plant protein (%E) | 7.8 | (6.9, 8.5) | 7.0 | (6.4, 7.8) | 6.7 | (6.0, 7.4) | 6.1 | (5.3, 6.9) | <0.001 |
| Carbohydrate (%E) | 63.4 | (60.4, 66.3) | 57.7 | (56.0, 59.5) | 53.1 | (50.9, 55.0) | 46.7 | (43.2, 49.1) | <0.001 |
| Dietary fibre\* (g/d) | 12.2 | (9.7, 16.1) | 11.6 | (9.0, 14.9) | 11.0 | (8.9, 14.6) | 11.2 | (8.4, 13.8) | <0.001 |
| Dietary glycaemic index\* | 61.2 | (56.5, 66.7) | 61.2 | (56.4, 65.2) | 59.7 | (54.5, 64.5) | 56.9 | (52.0, 61.1) | <0.001 |
| Dietary glycaemic load\* | 177.0 | (161.0, 194.8) | 163.5 | (149.8, 176.1） | 147.7 | (133.0, 159.8) | 123.7 | (108.7, 137.2) | <0.001 |
| Refined grains (g/d) | 215.2 | (163.1, 295.5) | 214.3 | （163.2, 262.9） | 191.7 | (152.2, 237.0) | 159.0 | (115.0, 200.0) | <0.001 |
| Whole grains (g/d) | 10.5 | (0.0, 52.2) | 9.0 | （0.0, 40.0） | 13.7 | (0.0, 48.1) | 12.3 | (0.0, 46.7) | 0.432 |
| Tubers (g/d) | 27.3 | (0.0, 83.2) | 33.3 | (0.0, 83.3) | 25.0 | (0.0, 65.6) | 28.0 | (0.0, 76.0) | 0.283 |
| Fruits (g/d) | 312.4 | (198.3, 481.1) | 299.3 | (172.7, 428.0) | 283.0 | (187.8, 405.4) | 265.5 | (171.5, 394.0) | 0.013 |
| Vegetables (g/d) | 232.9 | (145.5, 365.0) | 243 | （149.5, 350.8） | 259.8 | (170.8, 368.9) | 263.0 | (170.8, 368.9) | 0.047 |
| Red meat (g/d) | 16.0 | (3.6, 32.4) | 37.2 | (20.0, 63.3) | 52.3 | (31.7, 77.7) | 75.3 | (46.4, 114.0) | <0.001 |
| Poultry (g/d) | 0.0 | (0.0, 0.0) | 0.0 | (0.0, 10.0) | 0.0 | (0.0, 22.8) | 0.0 | (0.0, 34.0) | <0.001 |
| Fish (g/d) | 0.0 | (0.0, 0.0) | 0.0 | (0.0, 8.6) | 0.0 | (0.0, 26.7) | 0.0 | (0.0, 47.7) | <0.001 |
| Eggs (g/d) | 16.7 | (0.0, 41.7) | 33.3 | (6.3, 50.0） | 38.8 | (16.7, 50.0) | 50.0 | (26.7, 61.1) | <0.001 |
| Dairy (g/d) | 0.0 | (0.0, 120) | 83.3 | (0.0, 184.4) | 158.4 | (59.7, 250) | 200.0 | (83.3, 258.3) | <0.001 |
| Legumes (g/d) | 1.3 | (0.0, 9.5) | 2.7 | (0.0, 10.3) | 3.4 | (0.0, 12.0) | 3.4 | (0.0, 10.8) | 0.268 |
| Nuts (g/d) | 1.9 | (0.0, 12.7) | 4.9 | (0.0, 15.0) | 7.4 | (0.0, 19.7) | 7.4 | (0.0, 15.5) | <0.001 |

LCD, low-carbohydrate diet; IQR, interquartile range; %E, percentage of energy intake.

\*Dietary variables were adjusted for total energy intake by the residual method.

## Supplemental Table 4. Baseline characteristics of participants according to quartiles of the plant LCD score

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Characteristics | Quartiles of the plant LCD score | | | | | | | | *P* |
| Quartile 1 (*n* 348) | | Quartile 2 (*n* 339) | | Quartile 3 (*n* 337) | | Quartile 4 (*n* 431) | |
| n | % | n | % | n | % | n | % |
| Age at enrollment (years) |  |  |  |  |  |  |  |  |  |
| ≤24 | 71 | 20.4 | 72 | 21.2 | 60 | 17.8 | 66 | 15.3 | 0.497 |
| 25-29 | 190 | 54.6 | 175 | 51.6 | 180 | 53.4 | 229 | 53.1 |  |
| 30-34 | 60 | 17.2 | 64 | 18.9 | 70 | 20.8 | 93 | 21.6 |  |
| ≥35 | 27 | 7.8 | 28 | 8.3 | 27 | 8.0 | 43 | 10.0 |  |
| Pre-pregnancy BMI (kg/m2) |  |  |  |  |  |  |  |  |  |
| <18.5 | 40 | 11.5 | 64 | 18.9 | 40 | 11.9 | 76 | 17.6 | 0.035 |
| 18.5-23.9 | 272 | 78.2 | 234 | 69.0 | 258 | 76.5 | 306 | 71.0 |  |
| ≥24.0 | 36 | 10.3 | 41 | 12.1 | 39 | 11.6 | 49 | 11.4 |  |
| Educational level (schooling years) |  |  |  |  |  |  |  |  |  |
| ≤12 | 93 | 26.7 | 85 | 25.1 | 75 | 22.3 | 79 | 18.3 | 0.075 |
| 13-15 | 116 | 33.4 | 129 | 38.0 | 124 | 36.8 | 157 | 36.5 |  |
| ≥16 | 139 | 39.9 | 125 | 36.9 | 138 | 40.9 | 195 | 45.2 |  |
| Family income level (CNY/month) |  |  |  |  |  |  |  |  |  |
| ≤2999 | 13 | 3.7 | 12 | 3.5 | 10 | 3.0 | 13 | 3.0 | 0.539 |
| 3000-4999 | 103 | 29.6 | 101 | 29.8 | 112 | 33.2 | 114 | 26.5 |  |
| 5000-9999 | 156 | 44.9 | 153 | 45.2 | 159 | 47.2 | 205 | 47.5 |  |
| ≥10000 | 76 | 21.8 | 73 | 21.5 | 56 | 16.6 | 99 | 23.0 |  |
| Ethnicity of Han Chinese (%) | 338 | 97.1 | 329 | 97.1 | 329 | 97.6 | 422 | 97.9 | 0.855 |
| Work during early pregnancy (%) | 202 | 58.0 | 210 | 61.9 | 225 | 66.8 | 265 | 61.5 | 0.132 |
| Multiparity (%) | 104 | 29.9 | 103 | 30.4 | 80 | 23.7 | 97 | 22.5 | 0.023 |
| Family history of diabetes (%) | 51 | 14.7 | 56 | 16.5 | 61 | 18.1 | 84 | 19.5 | 0.329 |
| Smoking (%) | 14 | 4.0 | 10 | 2.9 | 8 | 2.4 | 13 | 3.0 | 0.655 |
| Alcohol drinking (%) | 35 | 10.1 | 20 | 5.9 | 21 | 6.2 | 32 | 7.4 | 0.148 |
| Physical activity\* (MET-hours/week) | 101.6 | (69.8, 132.9) | 102.0 | (66.1, 129.2) | 107.1 | (81.9, 133.9) | 103.4 | (71.4, 136.0) | 0.031 |
| Gestational weight gain before GDM diagnosis\* (kg) | 6.2 | (4.0, 8.2) | 5.8 | (3.6, 7.9) | 6.1 | (4.2, 8.4) | 6.3 | (4.6, 8.7) | 0.042 |

LCD, low-carbohydrate diet; BMI, body mass index; CNY, Chinese Yuan; MET, metabolic equivalent of task.

\*Data of physical activity and gestational weight gain before GDM diagnosis were described by median and interquartile range.

## Supplemental Table 5. Dietary intakes of participants according to quartiles of the plant LCD score

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dietary intakes | Quartiles of the plant LCD score | | | | | | | | *P* |
| Quartile 1 (*n* 348) | | Quartile 2 (*n* 339) | | Quartile 3 (*n* 337) | | Quartile 4 (*n* 431) | |
| median | IQR | median | IQR | median | IQR | median | IQR |
| Total energy (kJ/d) | 7313.6 | (5952.2, 8811.5） | 7388.1 | (6066.4, 8610.3) | 7686.0 | (6486.5, 9030.3) | 7696.0 | (6299.8, 9042.5) | 0.020 |
| Total fat (%E) | 29.6 | (26.1, 32.9) | 31.1 | (27.2, 35.7) | 33.0 | (30.0, 36.6) | 36.2 | (33.0, 40.2) | <0.001 |
| Animal fat (%E) | 12.5 | (9.0, 16.3) | 12.6 | (8.2, 17.9) | 12.4 | (9.1, 17.0) | 12.9 | (9.4, 16.5) | 0.870 |
| Plant fat (%E) | 16.5 | (16.0, 17.4) | 18.1 | (17.2, 19.1) | 20.0 | (19.0, 21.5） | 23.0 | (21.1, 25.6) | <0.001 |
| Total protein (%E) | 11.2 | (10.0, 12.6) | 11.8 | (10.4, 13.3) | 12.1 | (10.7, 14.1) | 13.2 | (12.0, 15.1) | <0.001 |
| Animal protein (%E) | 4.9 | (3.6, 6.9) | 5.1 | (3.2, 6.9) | 5.0 | (3.4, 7.0) | 5.5 | (3.8, 7.3) | 0.075 |
| Plant protein (%E) | 6.1 | (5.5, 6.7) | 6.7 | (5.9, 7.6) | 6.9 | (6.2, 7.7) | 7.7 | (6.8, 8.7) | <0.001 |
| Carbohydrate (%E) | 59.1 | (54.9, 63.4) | 57.0 | (50.8, 61.5) | 54.7 | (50.3, 58.4） | 49.7 | (45.7, 54.1) | <0.001 |
| Dietary fibre\* (g/d) | 9.9 | (7.6, 12.6) | 10.5 | (8.3, 13.4) | 11.8 | (9.3, 15.0) | 13.2 | (10.7, 16.1) | <0.001 |
| Dietary glycaemic index\* | 61.4 | (56.0, 65.8) | 60.5 | (55.4, 65.5) | 60.1 | (55.6, 65.0) | 57.5 | (52.6, 62.1) | <0.001 |
| Dietary glycaemic load\* | 163.6 | (147.0, 180.1) | 158.3 | (137.2, 178.9) | 153.4 | (132.9, 169.9) | 134.7 | (115.7, 149.9) | <0.001 |
| Refined grains (g/d) | 201.2 | (150.0, 268.2) | 206.7 | (155.4,263.6) | 199.9 | (157.1, 251.1) | 170.6 | (123.1, 213.1) | <0.001 |
| Whole grains (g/d) | 0.0 | (0.0, 24.9) | 8.3 | (0.0, 40.7） | 16.7 | (0.0, 50.3) | 20.0 | (0.0, 64.1) | <0.001 |
| Tubers (g/d) | 31.0 | (0.0, 90.0) | 18.7 | (0.0, 68.7) | 30.0 | (0.0, 68.5) | 32.2 | (0.0, 80.0) | 0.232 |
| Fruits (g/d) | 306.9 | (195.4, 461.9) | 294.0 | (183.0, 415.3) | 283.2 | (180.9, 425.5) | 274.5 | (180.7, 394.3) | 0.087 |
| Vegetables (g/d) | 198.3 | (125.6, 299.3) | 239.8 | (154.0, 361.8) | 262.7 | (182.3, 377.6) | 287.4 | (183.9, 394.4) | <0.001 |
| Red meat (g/d) | 39.2 | (16.0, 72.0) | 40.8 | (16.0, 73.5) | 45.5 | (22.5, 75.0) | 49.3 | (24.0, 80.2) | 0.011 |
| Poultry (g/d) | 0.0 | (0.0, 16.0) | 0.0 | (0.0, 16.7) | 0.0 | (0.0, 14.2) | 0.0 | (0.0, 16.7) | 0.555 |
| Fish (g/d) | 0.0 | (0.0, 9.6) | 0.0 | (0.0, 18.0) | 0.0 | (0.0, 24.9) | 0.0 | (0.0, 21.6) | 0.002 |
| Eggs (g/d) | 27.8 | (0.0, 50.0) | 33.3 | (7.8, 50.0) | 33.3 | (16.7, 50.0) | 39.6 | (16.7, 54.1) | 0.005 |
| Dairy (g/d) | 125.0 | (0.0, 243.4) | 125.0 | (0.0, 250.0) | 111.0 | (0.0, 224.7) | 125.0 | (0.0, 236.1) | 0.904 |
| Legumes (g/d) | 0.0 | (0.0, 3.4) | 1.4 | (0.0, 7.7) | 4.4 | (0.0, 10.3) | 9.3 | (0.0, 22.6) | <0.001 |
| Nuts (g/d) | 0.0 | (0.0, 0.0) | 2.5 | (0.0, 7.6) | 9.3 | (0.0, 15.8) | 17.6 | (8.3, 28.1) | <0.001 |

LCD, low-carbohydrate diet; IQR, interquartile range; %E, percentage of energy intake.

\*Dietary variables were adjusted for total energy intake by the residual method.

## Supplemental Table 6. The exploration of the main dietary contributors for the association between the animal LCD score and GDM risk\*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Quartiles of the animal LCD score | | | |  |
| Quartile1 | Quartile 2 | Quartile 3 | Quartile 4 | *P* for trend |
| RR(95%CI) | RR(95%CI) | RR(95%CI) | RR(95%CI) |  |
| Adjusted model | 1.00(Reference) | 1.17(0.94, 1.46) | 1.34(1.08, 1.66) | 1.28(1.03, 1.58) | 0.012 |
| Adjusted model + carbohydrate (%E) | 1.00(Reference) | 1.19(0.93, 1.52) | 1.37(1.03, 1.83) | 1.34(0.91, 1.96) | 0.083 |
| Adjusted model + total fat (%E) | 1.00(Reference) | 1.14(0.90, 1.43) | 1.26(0.98, 1.63) | 1.17(0.86, 1.59) | 0.250 |
| Adjusted model + animal fat (%E) | 1.00(Reference) | 1.17(0.92, 1.48) | 1.33(1.02, 1.74) | 1.26(0.88, 1.80) | 0.109 |
| Adjusted model + plant fat (%E) | 1.00(Reference) | 1.17(0.94, 1.46) | 1.33(1.08, 1.65) | 1.28(1.03, 1. 59) | 0.011 |
| Adjusted model + total protein (%E) | 1.00(Reference) | 1.23(0.98, 1.54) | 1.46(1.16, 1.84) | 1.48(1.14, 1.93) | 0.001 |
| Adjusted model + animal protein (%E) | 1.00(Reference) | 1.27(1.00, 1.60) | 1.53(1.18, 1.97) | 1.61(1.16, 2.23) | 0.001 |
| Adjusted model + plant protein (%E) | 1.00(Reference) | 1.16(0.93, 1.45) | 1.32(1.06, 1.65) | 1.25(1.00, 1.58) | 0.030 |
| Adjusted model + dietary fibre† (g/d) | 1.00(Reference) | 1.18(0.94, 1.47) | 1.34(1.09, 1.67) | 1.29(1.04, 1.60) | 0.010 |
| Adjusted model + dietary glycaemic index† | 1.00(Reference) | 1.18(0.94, 1.46) | 1.34(1.09, 1.66) | 1.31(1.05, 1.62) | 0.006 |
| Adjusted model + dietary glycaemic load† | 1.00(Reference) | 1.22(0.97, 1.52) | 1.43(1.14, 1.78) | 1.43(1.12, 1.84) | 0.001 |
| Adjusted model + refined grains (g/d) | 1.00(Reference) | 1.18(0.94, 1.46) | 1.34(1.08, 1.67) | 1.29(1.02, 1.62) | 0.016 |
| Adjusted model + whole grains (g/d) | 1.00(Reference) | 1.18(0.94, 1.47) | 1.35(1.09, 1.66) | 1.29(1.04, 1.59) | 0.010 |
| Adjusted model + tubers (g/d) | 1.00(Reference) | 1.18(0.95, 1.47) | 1.35(1.09, 1.67) | 1.29(1.04, 1.60) | 0.009 |
| Adjusted model + fruits (g/d) | 1.00(Reference) | 1.18(0.94, 1.46) | 1.35(1.09, 1.67) | 1.29(1.04, 1.60) | 0.010 |
| Adjusted model + vegetables (g/d) | 1.00(Reference) | 1.18(0.94, 1.46) | 1.34(1.08, 1.66) | 1.28(1.03, 1.58) | 0.012 |
| Adjusted model + red meat (g/d) | 1.00(Reference) | 1.17(0.94, 1.47) | 1.34(1.07, 1.67) | 1.28(1.00, 1.64) | 0.027 |
| Adjusted model + poultry (g/d) | 1.00(Reference) | 1.19(0.95, 1.48) | 1.37(1.10, 1.69) | 1.33(1.07, 1.66) | 0.004 |
| Adjusted model + fish (g/d) | 1.00(Reference) | 1.17(0.94, 1.46) | 1.34(1.08, 1.66) | 1.28(1.03, 1.59) | 0.015 |
| Adjusted model + eggs (g/d) | 1.00(Reference) | 1.16(0.93, 1.45) | 1.32(1.06, 1.65) | 1.26(1.01, 1.57) | 0.024 |
| Adjusted model + dairy (g/d) | 1.00(Reference) | 1.16(0.94, 1.45) | 1.32(1.06, 1.63) | 1.25(1.01, 1.57) | 0.032 |
| Adjusted model + legumes (g/d) | 1.00(Reference) | 1.17(0.94, 1.46) | 1.34(1.09, 1.66) | 1.28(1.04, 1.59) | 0.010 |
| Adjusted model + nuts (g/d) | 1.00(Reference) | 1.16(0.93, 1.45) | 1.32(1.07, 1.63) | 1.27(1.03, 1.58) | 0.014 |

LCD, low-carbohydrate diet; GDM, gestational diabetes mellitus; RR, relative risk; CI, confidence interval.

\*Adjusted model was adjusted for ethnicity (Han Chinese or others), maternal age (≤24, 25-29, 30-34, or ≥35 years), pre-pregnancy BMI (<18.5, 18.5-23.9, or ≥24.0 kg/m2), educational level (≤12, 13-15, or ≥16 years), average personal income (≤2999, 3000-4999, 5000-9999 , or ≥10000 Chinese Yuan), parity (primiparity or multiparity), family history of diabetes (yes or no), smoking (yes or no), alcohol (yes or no), physical activity (MET-hours/week), total energy intake (kJ/d) and gestational weight gain before GDM diagnosis (kg). All models were analyzed by the Poisson regression with robust standard errors.

†Dietary variables were adjusted for total energy intake by the residual method.

## Supplemental Table 7. Stratified analysis of the association between LCD scores and risk of GDM\*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Age | |  | Pre-pregnancy BMI | |  | Family history of diabetes | |  | Physical activity | |
| <35 years | ≥35 years |  | <24.0 kg/m2 | ≥24.0 kg/m2 |  | yes | no |  | <median | ≥median |
| **Overall LCD score** |  |  |  |  |  |  |  |  |  |  |  |
| Q1 [RR(95%CI)] | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |
| Q2 [RR(95%CI)] | 1.11(0.87, 1.40) | 0.99(0.51, 1.92) |  | 0.97(0.76, 1.24) | 1.91(1.11, 3.29) |  | 0.94(0.56, 1.59) | 1.13(0.89, 1.44) |  | 1.10(0.82, 1.46) | 1.08(0.77, 1.52) |
| Q3 [RR(95%CI)] | 1.27(1.01, 1.59) | 1.05(0.61, 1.80) |  | 1.16(0.92, 1.45) | 1.62(0.94, 2.58) |  | 1.10(0.68, 1.76) | 1.28(1.01, 1.61) |  | 1.24(0.95, 1.63) | 1.20(0.86, 1.68) |
| Q4 [RR(95%CI)] | 1.17(0.92, 1.48) | 1.38(0.83, 2.29) |  | 1.13(0.90, 1.42) | 1.87(1.09, 3.20) |  | 0.93(0.58, 1.51) | 1.29(1.02, 1.63) |  | 1.27(0.96, 1.68) | 1.14(0.81, 1.60) |
| *P* for interaction | 0.347 | |  | 0.067 | |  | 0.641 | |  | 0.944 | |
| **Animal LCD score** |  |  |  |  |  |  |  |  |  |  |  |
| Q1 [RR(95%CI)] | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |
| Q2 [RR(95%CI)] | 1.20(0.95, 1.53) | 1.01(0.52, 1.95) |  | 1.13(0.88, 1.45) | 1.30(0.85, 1.99) |  | 0.92(0.55, 1.55) | 1.25(0.98, 1.59) |  | 1.04(0.77, 1.40) | 1.34(0.96, 1.89) |
| Q3 [RR(95%CI)] | 1.36(1.07, 1.72) | 1.20(0.71, 2.02) |  | 1.35(1.07, 1.71) | 1.05(0.65, 1.71) |  | 1.13(0.70, 1.82) | 1.37(1.08, 1.74) |  | 1.31(1.00, 1.71) | 1.34(0.95, 1.90) |
| Q4 [RR(95%CI)] | 1.29(1.02, 1.63) | 1.12(0.65, 1.92) |  | 1.27(1.00, 1.60) | 1.46(0.93, 2.29) |  | 0.91(0.58, 1.42) | 1.40(1.11, 1.78) |  | 1.31(1.00, 1.72) | 1.27(0.90, 1.79) |
| *P* for interaction | 0.908 | |  | 0.506 | |  | 0.300 | |  | 0.462 | |
| **Plant LCD score** |  |  |  |  |  |  |  |  |  |  |  |
| Q1 [RR(95%CI)] | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |  | 1.00(reference) | 1.00(reference) |
| Q2 [RR(95%CI)] | 1.02(0.81, 1.29) | 0.63(0.33, 1.18) |  | 0.94(0.74, 1.18) | 1.14(0.65, 2.00) |  | 0.76(0.45, 1.27) | 0.98(0.77, 1.24) |  | 0.96(0.72, 1.28) | 1.02(0.73, 1.42) |
| Q3 [RR(95%CI)] | 1.09(0.87, 1.37) | 1.33(0.76, 2.35) |  | 1.02(0.81, 1.28) | 1.76(1.04, 2.99) |  | 0.69(0.41, 1.17) | 1.18(0.94, 1.48) |  | 1.09(0.82, 1.43) | 1.07(0.78,1.46) |
| Q4 [RR(95%CI)] | 1.12(0.90, 1.39) | 1.12(0.67, 1.86) |  | 1.04(0.84, 1.29) | 1.61(0.95, 2.72) |  | 1.14(0.74, 1.76) | 1.05(0.84, 1.32) |  | 1.13(0.87, 1.46) | 1.08(0.79, 1.48) |
| *P* for interaction | 0.222 | |  | 0.175 | |  | 0.060 | |  | 0.933 | |

LCD, low-carbohydrate diet; GDM, gestational diabetes mellitus; Q, quartile; RR, relative risk; CI, confidence interval.

\*Models were adjusted for maternal age (≤24, 25-29, 30-34, or ≥35 years), pre-pregnancy BMI (<18.5, 18.5-23.9, or ≥24.0 kg/m2), ethnicity (Han Chinese or others), educational level (≤12, 13-15, or ≥16 years), family income level (≤2999, 3000-4999, 5000-9999 , or ≥10000 CNY/month), parity (primiparity or multiparity), family history of diabetes (yes or no), smoking (yes or no), alcohol drinking (yes or no), physical activity (MET-hours/week), total energy intake (kJ/d) and gestational weight gain before GDM diagnosis (kg) except the corresponding subgroup variates. All models were performed by the Poisson regression with robust standard errors.