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| SupplementaryTable 1. Baseline characteristics of participants according to type 2 diabetes status: Tehran Lipid and Glucose Study |
|  | Total population | Non-diabetes | Diabetes | *P* value |
| n/N | 2188 | 1954 | 234 |  |
| Continuous variables, Mean ± SE |  |  |  |  |
| Age at baseline (y) | 40.1 ± 0.3 | 39.2 ± 0.3 | 47.2 ± 0.8 | <0.001 |
| Physical activity (MET hour-week) | 35.1 ± 1.2 | 35.2 ± 1.4 | 36.7 ± 2.4 | 0.496 |
| BMI at baseline (kg/m2)  | 27.0 ± 0.1 | 26.6 ± 0.1 | 30.2 ± 0.3 | <0.001 |
| Categorical variables, number (%) |  |  |  |  |
| Men  | 989 (45.2) | 880 (45.0) | 109 (46.6) | 0.352 |
| Smoker at baseline | 272 (12.4) | 244 (12.5) | 28 (12.0) | 0.457 |
| Academic degrees | 594 (27.1) | 547 (28.0) | 47 (20.3) | <0.001 |
| Married  | 1697 (77.6) | 1491 (76.3) | 206 (88.0) | <0.001 |
| Family history of diabetes | 728 (33.3) | 616 (31.5) | 112 (47.9) | <0.001 |
| ***Dietary intake,*** Mean ± SE |  |  |  |  |
| Total energy (Kcal/d)  | 2280 ± 13.6 | 2292 ± 41 | 2180 ± 41 | 0.011 |
| Carbohydrate (% of total energy) | 59.1 ± 0.1 | 59.1 ± 0.1 | 59.4 ± 0.4 | 0.424 |
| Protein (% of total energy) | 14.6 ± 0.1 | 14.5 ± 0.1 | 15.0 ± 0.1 | 0.005 |
| Fat (% of total energy) | 29.6 ± 0.1 | 29.6 ± 0.1 | 29.0 ± 0.3 | 0.069 |
| Total fiber (g/d) | 44.3 ± 0.6 | 44.4 ± 0.6 | 43.9 ± 0.9 | 0.803 |
| Cholesterol (g/d) | 220 ± 3.3 | 189 ± 9.1 | 223 ± 10.4 | 0.001 |
| vitamin C (mg) | 164 ± 2.0 | 164.6 ± 2.1 | 161.6 ± 6.2 | 0.595 |
| Zinc (mg) | 12.6 ± 0.1 | 12.7 ± 0.2 | 12.2 ± 0.4 | 0.284 |
| Selenium (µg) | 121 ± 0.9 | 122 ± 1 | 117 ± 3 | 0.102 |
| Copper (mg) | 1.7 ± 0.01 | 1.7 ± 0.01 | 1.6 ± 0.04 | 0.122 |
| α-carotene (µg) | 1071 ± 18.7 | 1060 ± 19 | 1163 ± 57 | 0.092 |
| β-carotene (µg) | 3921 ± 55 | 3904 ± 58 | 4063 ± 57 | 0.380 |
| Vitamin E (mg) | 11.3 ± 0.1 | 11.4 ± 0.1 | 11.1 ± 0.1 | 0.320 |
| Vitamin A (µg) | 604 ± 6.9 | 606 ± 7 | 588 ± 21 | 0.433 |
| β-cryptoxanthin (µg) | 285 ± 4.4 | 285 ± 4.7 | 285 ± 5.7 | 0.984 |
| Magnesium (mg) | 439 ± 3 | 440 ± 3 | 433 ± 9 | 0.502 |
| Manganese (mg) | 10.1 ± 0.2 | 10.1 ± 0.2 | 9.4 ± 0.6 | 0.265 |
| MET, metabolic equivalent; BMI, body mass index |

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| Supplementary Table 2. Multivariable adjusted hazard ratio (95% confidence interval) for type 2 diabetes across tertiles of dietary antioxidants: Tehran Lipid and Glucose Study (2008-2018) |
|  | Tertiles of intakes |
| Variable | T1 | T2 | T3 | Ptrend |
| Vitamin A (µg/day) |  |  |  |  |
| n/N | 87/730 | 77/729 | 70/729 |  |
| Median intake | 346 | 541 | 839 |  |
| Range of intake | ≤ 444 | 445-662 | ≥ 663 |  |
| Model 1 | 1 | 0.88 (0.65-1.17) | 0.83 (0.61-1.12) | 0.387 |
| Model 2 | 1 | 0.82 (0.59-1.08) | 0.75 (0.61-1.09) | 0.269 |
| Selenium (µg/day) |  |  |  |  |
| n/N | 89/730 | 79/729 | 66/729 |  |
| Median intake | 81.9 | 114.8 | 160.1 |  |
| Range of intake | ≤ 99.0 | 99.1-134.1 | ≥ 134.2 |  |
| Model 1 | 1 | 0.99 (0.72-1.35) | 0.85 (0.59-1.14) | 0.453 |
| Model 2 | 1 | 1.09 (0.82-1.49) | 0.88 (0.62-1.17) | 0.253 |
| Manganese (mg/day) |  |  |  |  |
| n/N | 77/729 | 85/730 | 72/729 |  |
| Median intake | 5.7 | 8.3 | 12.3 |  |
| Range of intake | ≤ 7.0 | 7.1-9.9 | ≥ 10.0 |  |
| Model 1 | 1 | 1.15 (0.83-1.56) | 0.94 (0.67-1.31) | 0.459 |
| Model 2 | 1 | 1.19 (0.86-1.64) | 0.87 (0.62-1.21) | 0.239 |
| α-carotene (µg/day) |  |  |  |  |
| n/N | 73/730 | 74/729 | 87/729 |  |
| Median intake | 446 | 864 | 1609 |  |
| Range of intake | ≤ 645 | 646-1131 | ≥ 1132 |  |
| Model 1 | 1 | 0.96 (0.69-1.32) | 1.08 (0.77-1.45) | 0.685 |
| Model 2 | 1 | 0.99 (0.72-1.37) | 1.02 (0.74-1.41) | 0.853 |
| β-carotene (µg/day) |  |  |  |  |
| n/N | 76/730 | 77/729 | 81/729 |  |
| Median intake | 1832 | 3340 | 5701 |  |
| Range of intake | ≤ 2670 | 2671-4255 | ≥ 4256 |  |
| Model 1 | 1 | 1.03 (0.74-1.38) | 1.00 (0.74-1.37) | 0.902 |
| Model 2 | 1 | 1.01 (0.72-1.35) | 0.95 (0.71-1.32) | 0.839 |
| β-cryptoxanthin (µg/day) |  |  |  |  |
| n/N | 74/730 | 82/729 | 78/729 |  |
| Median intake | 119 | 422 | 431 |  |
| Range of intake | ≤ 175 | 175-315 | ≥ 316 |  |
| Model 1 | 1 | 1.12 (0.81-1.52) | 0.96 (0.71-1.32) | 0.674 |
| Model 2 | 1 | 1.17 (0.86-1.60) | 0.91 (0.67-1.24) | 0.328 |
| n/N: Number of MetS /number of subjectsModel 1 adjusted for age, sex, total energy intake, physical activity, and dietary cholesterol.Model 2 further adjusted for diabetes risk score |