**Supplemental Table 4.** Associations between diet quality scores (DQI-65+, HEI-2015 and AHEI-2010) and health status measures and metabolic markers for subjects aged ≥65y from UK NDNS years 2-6 with stepwise adjustment for confounding factors*1*.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Health marker** | **FDQI-65+PA** | | **NFDQI-65+PA** | | **NFDQI-65** | | **HEI-2015** | | **AHEI-2010** | |
| **B (95% CI)** | **P value** | **B (95% CI)** | **P value** | **B (95% CI)** | **P value** | **B (95% CI)** | **P value** | **B (95% CI)** | **P value** |
| **BMI***2* **(kg/m2)** | -0.18 (-0.30,-0.06) | 0.003 | -0.25 (-0.37,-0.12) | <0.001 | -0.21 (-0.34,-0.08) | 0.002 | -0.25 (-0.38,-0.12) | <0.001 | -0.29 (-0.42,-0.15) | <0.001 |
| -0.23 (-0.35,-0.10) | <0.001 | -0.30 (-0.43,-0.17) | <0.001 | -0.26 (-0.39,-0.12) | <0.001 | -0.29 (-0.42,-0.15) | <0.001 | -0.33 (-0.48,-0.19) | <0.001 |
| **Waist circumference***3* **(cm)** | -0.68 (-1.00,-0.35) | <0.001 | -0.90 (-1.24,-0.56) | <0.001 | -0.80 (-1.15,-0.44) | <0.001 | -0.99 (-1.36,-0.62) | <0.001 | -0.98 (-1.38,-0.58) | <0.001 |
| -0.22 (-0.39,-0.04) | 0.015 | -0.30 (-0.48,-0.11) | 0.002 | -0.26 (-0.46,-0.07) | 0.007 | -0.31 (-0.50,-0.12) | 0.002 | -0.07 (-0.28,0.14) | 0.530 |
| **Number of prescribed medicines***4,16* | -0.27 (-0.35,-0.19) | <0.001 | -0.22 (-0.30,-0.14) | <0.001 | -0.14 (-0.23,-0.05) | 0.002 | -0.19 (-0.28,-0.09) | <0.001 | -0.14 (-0.24,-0.04) | 0.005 |
| -0.27 (-0.35,-0.19) | <0.001 | -0.22 (-0.30,-0.13) | <0.001 | -0.13 (-0.22,-0.04) | 0.007 | -0.18 (-0.27,-0.08) | <0.001 | -0.13 (-0.23,-0.03) | 0.011 |
| **SBP***5* **(mmHg)** | -0.05 (-0.57,0.57) | 0.847 | -0.05 (-0.59,0.50) | 0.862 | -0.20 (-0.77,0.37) | 0.497 | 0.48 (-0.11,1.06) | 0.112 | 0.44 (-0.19,1.07) | 0.170 |
| 0.01 (-0.53,0.55) | 0.974 | 0.00 (-0.57,0.57) | 0.997 | -0.15 (-0.75,0.44) | 0.612 | 0.51 (-0.10,1.11) | 0.102 | 0.53 (-0.12,1.18) | 0.109 |
| **DBP***5* **(mmHg)** | -0.04 (-0.33,0.36) | 0.797 | -0.49 (-0.80,-0.18) | 0.002 | -0.68 (-1.00,-0.36) | <0.001 | -0.10 (-0.44,0.23) | 0.554 | -0.24 (-0.60,0.12) | 0.192 |
| -0.02 (-0.33,0.29) | 0.902 | -0.54 (-0.86,-0.21) | 0.001 | -0.74 (-1.07,-0.40) | <0.001 | -0.11 (-0.45,0.24) | 0.548 | -0.21 (-0.59,0.16) | 0.256 |
| **TC***6* **(mmol/L)** | 0.07 (0.02,0.11) | 0.006 | 0.02 (-0.03,0.07) | 0.511 | 0.01 (-0.04,0.07) | 0.580 | 0.00 (-0.05,0.05) | 0.942 | 0.06 (0.00,0.11) | 0.042 |
| 0.04 (-0.01,0.08) | 0.109 | 0.01 (-0.04,0.05) | 0.761 | 0.01 (-0.04,0.06) | 0.664 | 0.01 (-0.04,0.06) | 0.697 | 0.02 (-0.04,0.07) | 0.403 |
| **LDL***7,15* **(mmol/L)** | 0.01 (0.00,0.02) | 0.002 | 0.00 (0.00,0.01) | 0.174 | 0.00 (0.00,0.01) | 0.333 | 0.00 (-0.01,0.01) | 0.889 | 0.01 (0.00,0.02) | 0.031 |
| 0.01 (0.00,0.01) | 0.050 | 0.00 (0.00,0.01) | 0.255 | 0.00 (0.00,0.01) | 0.359 | 0.00 (0.00,0.01) | 0.537 | 0.00 (0.00,0.01) | 0.385 |
| **HDL***6,15* **(mmol/L)** | 0.01 (0.01,0.02) | <0.001 | 0.01 (0.00,0.01) | 0.041 | 0.00 (0.00,0.01) | 0.124 | 0.01 (0.00,0.02) | 0.001 | 0.01 (0.00,0.01) | 0.035 |
| 0.01 (0.00,0.01) | 0.001 | 0.00 (0.00,0.01) | 0.291 | 0.00 (0.00,0.01) | 0.477 | 0.01 (0.00,0.01) | 0.076 | 0.01 (0.00,0.01) | 0.084 |
| **TC:HDL ratio***6,15* | -0.01 (-0.01,0.00) | 0.075 | 0.00 (-0.01,0.00) | 0.176 | 0.00 (-0.01,0.00) | 0.286 | -0.01 (-0.01,0.00) | 0.037 | -0.01 (-0.01,0.00) | 0.132 |
| -0.01 (-0.01,0.00) | 0.044 | 0.00 (-0.01,0.00) | 0.494 | 0.00 (-0.01,0.00) | 0.701 | 0.00 (-0.01,0.00) | 0.179 | 0.00 (-0.01,0.00) | 0.247 |
| **TG***7,15* **(mmol/L)** | -0.02 (-0.03,-0.01) | <0.001 | -0.02 (-0.02,-0.01) | <0.001 | -0.02 (-0.02,-0.01) | <0.001 | -0.02 (-0.03,-0.01) | <0.001 | -0.02 (-0.03,-0.01) | <0.001 |
| -0.01 (-0.02,-0.01) | 0.001 | -0.01 (-0.02,0.00) | 0.017 | -0.01 (-0.02,0.00) | 0.024 | -0.01 (-0.02,0.00) | 0.008 | -0.01 (-0.02,0.00) | 0.017 |
| **CRP***8,15,16* **(mg/L)** | -0.05 (-0.06,-0.04) | <0.001 | -0.06 (-0.08,-0.05) | <0.001 | -0.05 (-0.07,-0.04) | <0.001 | -0.06 (-0.07,-0.04) | <0.001 | -0.05 (-0.07,-0.03) | <0.001 |
| -0.05 (-0.06,-0.03) | <0.001 | -0.05 (-0.07,-0.04) | <0.001 | -0.05 (-0.06,-0.03) | <0.001 | -0.05 (-0.06,-0.03) | <0.001 | -0.04 (-0.06,-0.02) | <0.001 |
| **Fasting glucose***9, 16* **(mmol/L)** | -0.01 (-0.05,0.02) | 0.471 | -0.01 (-0.05,0.03) | 0.490 | -0.01 (-0.05,0.03) | 0.685 | -0.01 (-0.05,0.03) | 0.565 | 0.01 (-0.03,0.06) | 0.551 |
| 0.00 (-0.04,0.03) | 0.847 | 0.00 (-0.04,0.04) | 0.894 | 0.01 (-0.03,0.05) | 0.647 | -0.01 (-0.05,0.04) | 0.781 | 0.03 (-0.01,0.08) | 0.160 |
| **HbA1c***10, 16* **(%)** | -0.01 (-0.03,0.00) | 0.128 | -0.01 (-0.03,0.01) | 0.322 | -0.01 (-0.03,0.01) | 0.299 | 0.00 (-0.02,0.01) | 0.665 | -0.01 (-0.03,0.02) | 0.651 |
| 0.00 (-0.02,0.02) | 0.985 | 0.01 (-0.01,0.02) | 0.583 | 0.01 (-0.02,0.02) | 0.641 | 0.01 (-0.01,0.03) | 0.409 | 0.01 (-0.01,0.03) | 0.538 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Health marker** | **FDQI-65+PA** | | **NFDQI-65+PA** | | **NFDQI-65** | | **HEI-2015** | | **AHEI-2010** | |
| **OR (95% CI)** | **P value** | **OR (95% CI)** | **P value** | **OR (95% CI)** | **P value** | **OR (95% CI)** | **P value** | **OR (95% CI)** | **P value** |
| **Self-assessed health***12*  Good or very good | 1.27 (1.19,1.37) | <0.001 | 1.20 (1.11,1.29) | <0.001 | 1.13 (1.05,1.22) | 0.001 | 1.24 (1.14,1.34) | <0.001 | 1.12 (1.03,1.22) | 0.008 |
| 1.23 (1.14,1.33) | <0.001 | 1.16 (1.07,1.25) | <0.001 | 1.08 (1.00,1.17) | 0.066 | 1.20 (1.11,1.30) | <0.001 | 0.95 (0.93,0.98) | 0.001 |
| **Longstanding illness***12* | 0.92 (0.87,0.98) | 0.013 | 0.91 (0.85,0.97) | 0.006 | 0.95 (0.89,1.02) | 0.173 | 0.93 (0.86,0.99) | 0.029 | 0.96 (0.89,1.03) | 0.258 |
| 0.92 (0.86,0.99) | 0.018 | 0.91 (0.85,0.98) | 0.008 | 0.96 (0.89,1.03) | 0.245 | 0.93 (0.86,1.00) | 0.041 | 0.96 (0.89,1.04) | 0.333 |
| **Activities limited due to illness***13, 16* | 0.88 (0.81,0.95) | 0.001 | 0.87 (0.80,0.95) | 0.002 | 0.93 (0.85,1.01) | 0.087 | 0.86 (0.79,0.94) | 0.001 | 0.88 (0.79,0.97) | 0.012 |
| 0.89 (0.82,0.97) | 0.009 | 0.89 (0.82,0.97) | 0.011 | 0.95 (0.87,1.05) | 0.305 | 0.87 (0.80,0.96) | 0.003 | 0.89 (0.80,0.99) | 0.027 |
| **Hypertension***5*  SBP >140 mmHg or  DBP >90 mmHg or  Taking BP lowering medication | 0.98 (0.92,1.04) | 0.501 | 1.00 (0.94,1.07) | 0.915 | 1.00 (0.93,1.07) | 0.938 | 1.04 (0.96,1.11) | 0.352 | 0.97 (0.90,1.05) | 0.406 |
| 1.01 (0.94,1.09) | 0.803 | 1.04 (0.96,1.13) | 0.292 | 1.03 (0.95,1.12) | 0.496 | 1.05 (0.97,1.15) | 0.225 | 1.00 (0.92,1.10) | 0.953 |
| **Metabolic syndrome***14*  ≥3 of the following:  Waist circumference <102cm (men) and <88cm (women)  TG >1.7mmol/L  HDL-C <1.03 (men) and <1.04mmol/L (women)  BP >130/85mmHg  Fasting glucose >6.1mmol/L | 0.80 (0.70,0.92) | 0.001 | 0.84 (0.73,0.96) | 0.013 | 0.86 (0.74,0.98) | 0.028 | 0.79 (0.67,0.93) | 0.004 | 0.76 (0.64,0.89) | 0.001 |
| 0.76 (0.65,0.90) | 0.001 | 0.83 (0.70,0.99) | 0.039 | 0.86 (0.72,1.02) | 0.081 | 0.80 (0.66,0.97) | 0.020 | 0.78 (0.63,0.96) | 0.019 |
| 1 Values are unstandardised B coefficient for continuous variables of change in dependent variable intake by 5% increase in DQI-65+, AHEI-2010 or HEI-2015 total score and OR for categorical variables indicating odds of health outcome based on standard unit increase in DQI-65+, AHEI-2010 or HEI-2015 total score; maximum score available 120 points (NFDQI-65, AHEI-2010, HEI-2015 scores adjusted to maximum 120 points for comparison); P-values are test for significance of relationship between DQI-65+ or HEI-2010 score and nutrient intake by linear regression for continuous variables or significance of OR by logistic regression for categorical variables; models adjusted for confounders by stepwise approach; models displayed linearly; AHEI-2010, Alternative Healthy Eating Index-2010; BMI, body mass index; CI, confidence intervals; CRP, C-reactive protein; DBP, diastolic blood pressure; DQI-65+, Diet Quality Index for older adults; FDQI-65+PA, Food-based Diet Quality Index for older adults with physical activity; HbA1C, glycated haemoglobin; HDL, high-density lipoprotein cholesterol; HEI-2015, Healthy Eating Index-2015; LDL, low-density lipoprotein cholesterol; NDNS, National Diet and Nutrition Survey; NFDQI-65, Nutrient and Food-based Diet Quality Index for older adults; NFDQI-65+ PA, Nutrient and Food-based Diet Quality Index for older adults with physical activity; OR, odds ratio; SBP, systolic blood pressure; TAG, triacylglycerols; TC, total cholesterol.  2 *n*=767; NDNS interviewer weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex and smoking.  3 *n*=566; NDNS nurse weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI and smoking.  4 *n*=471; NDNS nurse weights applied.  5 *n*=419; NDNS nurse weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI, waist circumference, blood pressure medication (for SBP and DBP) and smoking.  6 *n*=333; NDNS blood weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI, waist circumference, lipid medication and smoking.  7 *n*=330; NDNS blood weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI, waist circumference, lipid medication and smoking.  8 *n*=381; NDNS blood weights applied.  9 *n*=336; known diabetics excluded; NDNS blood weights applied.  10 *n*=333; known diabetics excluded; NDNS blood weights applied.  11 *n*=443; NDNS nurse weights applied.  12 *n*=451; NDNS interviewer weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI, waist circumference and smoking.  13 *n*=291; NDNS interviewer weights applied.  14 *n*=321; subjects included if 5 variables available or ≥3 variables available when ≥3 variables meet criteria for metabolic syndrome; NDNS blood weights applied; model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI, blood pressure medication, lipid medication and smoking.  15 log10 transformation applied to improve normality; unstandardized B coefficient and CI is log-increase in variable by 5% change in dietary score.  16 Model 1 adjusted for age and sex; model 2 adjusted for age, sex, BMI, waist circumference and smoking. | | | | | | | | | | |