**Supplemental Table 1.** **Association of post-diagnosis E-DII with all-cause mortality, breast cancer-specific mortality and CVD mortality among 1,702 women diagnosed with invasive breast cancer in the WHI-DM-Control and OS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Most anti-inflammatory diet** |  |  | **Most pro-inflammatory diet** | ***P*trend*a*** |
|  | **E-DII score quartile 1**  **(-6.81, -4.49)** | **E-DII score quartile 2**  **(-4.48, -3.46)** | **E-DII score quartile 3**  **(-3.45, -2.01)** | **E-DII score quartile 4**  **(-2.00, 3.79)** |
| **N** | 404 | 415 | 422 | 461 |  |
| **Death from any cause (n)** | 100 | 124 | 113 | 141 |  |
| **Age and energy - adjusted HR (95% CI)** | 0.66 (0.51-0.86) | 0.87 (0.68-1.10) | 0.77 (0.60-0.98) | 1.00 (referent) | 0.003 |
| **Multivariable adjusted HR (95% CI)b** | 0.79 (0.60-1.05) | 1.00 (0.77-1.29) | 0.88 (0.68-1.14) | 1.00 (referent) | 0.20 |
| **Death from breast cancer (n)** | 41 | 49 | 42 | 46 |  |
| **Age and energy -adjusted HR (95% CI)** | 0.91 (0.59-1.39) | 1.10 (0.74-1.66) | 0.97 (0.64-1.48) | 1.00 (referent) | 0.85 |
| **Multivariable-adjusted HR (95% CI)b** | 0.98 (0.62-1.55) | 1.20 (0.78-1.84) | 1.12 (0.73-1.72) | 1.00 (referent) | 0.77 |
| **Death from CVD (n)** | 11 | 24 | 25 | 29 |  |
| **Age and energy -adjusted HR (95% CI)** | 0.34 (0.17-0.69) | 0.79 (0.46-1.37) | 0.77 (0.45-1.32) | 1.00 (referent) | 0.01 |
| **Multivariable-adjusted HR (95% CI)b** | 0.37 (0.18-0.78) | 0.77 (0.43-1.39) | 0.82 (0.46-1.45) | 1.00 (referent) | 0.02 |

a *P*trend was calculated using the continuous E-DIITM in the COX proportional hazards regression model.

b Adjusted for age group at diagnosis, estrogen receptor status, progesterone receptor status, race/ethnicity, WHI components, smoking status at baseline, income levels, cancer stage, education level, years from cancer diagnosis to FFQ, baseline physical activity in MET-h/week, total energy intake per day, body mass index at baseline, hormone replacement use status at baseline, with the covariate of time-dependent status before and after post-diagnosis FFQ.

**Supplemental Table 2.** **Association of post-diagnosis E-DII with all-cause mortality, breast cancer-specific mortality and CVD mortality among 1,285 breast cancer survivors whose FFQ completed at least 1 year after diagnosis in the WHI-DM and OS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Most anti-inflammatory diet** |  |  | **Most pro-inflammatory diet** | ***P*trend*a*** |
|  | **E-DII score quartile 1**  **(-6.81, -4.49)** | **E-DII score quartile 2**  **(-4.48, -3.46)** | **E-DII score quartile 3**  **(-3.45, -2.01)** | **E-DII score quartile 4**  **(-2.00, 3.79)** |
| **N** | 339 | 322 | 316 | 308 |  |
| **Death from any cause (n)** | 82 | 96 | 72 | 95 |  |
| **Age and energy - adjusted HR (95% CI)** | 0.68 (0.50-0.92) | 0.86 (0.65-1.15) | 0.67 (0.50-0.92) | 1.00 (referent) | 0.02 |
| **Multivariable adjusted HR (95% CI)b** | 0.82 (0.59-1.13) | 1.03 (0.76-1.41) | 0.78 (0.57-1.08) | 1.00 (referent) | 0.42 |
| **Death from breast cancer (n)** | 32 | 39 | 27 | 29 |  |
| **Age and energy -adjusted HR (95% CI)** | 0.93 (0.55-1.55) | 1.23 (0.76-1.99) | 0.89 (0.52-1.50) | 1.00 (referent) | 0.95 |
| **Multivariable-adjusted HR (95% CI)b** | 1.23 (0.70-2.16) | 1.54 (0.90-2.63) | 1.12 (0.64-1.97) | 1.00 (referent) | 0.30 |
| **Death from CVD (n)** | 12 | 20 | 15 | 17 |  |
| **Age and energy -adjusted HR (95% CI)** | 0.56 (0.27-1.19) | 1.00 (0.52-1.92) | 0.75 (0.37-1.50) | 1.00 (referent) | 0.12 |
| **Multivariable-adjusted HR (95% CI)b** | 0.69 (0.30-1.60) | 1.26 (0.60-2.65) | 0.93 (0.43-2.00) | 1.00 (referent) | 0.58 |

a *P*trend was calculated using the continuous E-DIITM in the COX proportional hazards regression model.

b Adjusted for age group at diagnosis, estrogen receptor status, progesterone receptor status, race/ethnicity, WHI components, smoking status at baseline, income levels, cancer stage, education level, years from cancer diagnosis to FFQ, baseline physical activity in MET-h/week, total energy intake per day, body mass index at baseline, hormone replacement use status at baseline, with the covariate of time-dependent status before and after post-diagnosis FFQ.

**Supplemental Table 3. Comparison of important demographic and lifestyle factors and clinical characteristics between study sample and all invasive breast cancer patients in the WHI**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Study population (n=2,150)** | **Total breast cancer cases in the WHIa**  **(n=8,310)** | ***Pb*** |
|  | **Mean (SE)** | **Mean (SE)** |  |
| **Age at baseline (years)** | 63.5 (0.2) | 62.9 (0.1) | 0.002 |
| **Age at breast cancer diagnosis (years)** | 66.2 (0.2) | 70.4 (0.1) | <.0001 |
| **Years from breast cancer diagnosis to death from any cause** | 7.8 (0.2) | 6.0 (0.1) | <.0001 |
| **BMI at enrollment (kg/m2)** | 28.2 (0.1) | 28.2 (0.1) | 0.65 |
| **Physical activity at baseline in Met-hours/week** | 12.0 (0.3) | 12.2 (0.2) | 0.49 |
|  | **N (%)c** | **N (%)c** |  |
| **WHI components** |  |  | <.0001 |
| DM-control | 734 (34.1) | 751 (9.1) |  |
| DM-intervention | 448 (20.8) | 476 (5.7) |  |
| OS | 968 (45.0) | 4,556 (54.8) |  |
| CAD | 0 | 1,999 (24.1) |  |
| HRT | 0 | 528 (6.3) |  |
| **Race/Ethnicity** |  |  | 0.31 |
| Black/African-American | 118 (5.5) | 548 (6.6) |  |
| Hispanic/Latino | 53 (2.5) | 202 (2.4) |  |
| White non-Hispanic | 1,903 (88.5) | 7,260 (87.4) |  |
| Other | 76 (3.5) | 300 (3.6) |  |
| **Education level** |  |  | 0.25 |
| High school or below | 543 (25.3) | 2,288 (27.5) |  |
| Some college | 617 (28.7) | 2,264 (27.2) |  |
| College | 274 (12.7) | 1,027 (12.4) |  |
| Postgraduate | 699 (32.5) | 2,678 (32.2) |  |
| Missing | 17 (0.8) | 53 (0.7) |  |
| **Income level** |  |  | 0.74 |
| <20,000 | 255 (11.9) | 987 (11.9) |  |
| 20,000-49,999 | 917 (42.7) | 3,487 (42.0) |  |
| >=50,000 | 861 (40.0) | 3,333 (40.1) |  |
| Missing | 117 (5.4) | 503 (6.0) |  |
| **Cancer stage** |  |  | 0.10 |
| In-situ | 0 | 1 (0.0) |  |
| Localized | 1,606 (74.7) | 6,199 (74.6) |  |
| Regional | 508 (23.6) | 1,896 (22.8) |  |
| Distant | 16 (0.7) | 120 (1.5) |  |
| Unknown | 20 (0.9) | 94 (1.1) |  |
| **Smoke status at enrollment** |  |  | 0.18 |
| Never smoked | 1,036 (48.2) | 4,010 (48.3) |  |
| Past smoker | 967 (45.0) | 3,683 (44.3) |  |
| Current smoker | 112 (5.2) | 514 (6.2) |  |
| Missing | 35 (1.6) | 103 (1.2) |  |
| **Estrogen receptor status** |  |  | <.0001 |
| Positive | 1631 (75.9) | 6,616 (79.6) |  |
| Negative | 299 (13.9) | 1,153 (13.9) |  |
| Othersd | 220 (10.2) | 541 (6.5) |  |
| **Progesterone receptor status** |  |  | <.0001 |
| Positive | 1,339 (62.3) | 5,545 (66.7) |  |
| Negative | 546 (25.4) | 2,101 (25.3) |  |
| Otherse | 265 (12.3) | 664 (8.0) |  |

a Thesecases have invasive breast cancer as their first primary cancer.

b P value was calculated from independent t-test for continuous variables and from Chi-Square test for categorical variables.

c The sum of percentages for some categorical variables may not add up to 100% because of rounding.

d This category included data from borderline status, ordered/ results not available, unknown/not done, or missing.

e This category included data from borderline status, ordered/ results not available, or unknown/not done.