3064 subjects

1556 controls and 1508 cases

60 subjects removed due to incomplete FFQ information

375 subjects removed due to the missing information on:

* Fruit/vegetables: 5 missing
* Beans: 48 missing
* Whole grains: 19 missing
* Read meat: 54 missing
* Processed meat: 16 missing
* Alcohol intake: 3 missing
* Physical activity: 174 missing
* BMI: 131 missing
* Menopausal status: 91 missing
* Smoking: 5 missing

The total number is **2629** in the final dataset, including 1310 controls and 1319 cases

3004 subjects

1523 controls and 1448 cases

Supplementary Figure S1. CONSORT diagram of this study

|  |  |  |  |
| --- | --- | --- | --- |
| Table S1. Healthy lifestyle index (HLI) components | | | |
| WCRF/AICR recommendations | HLI in LIBCSP | Categories | Scores |
| 1) Body fatness: Be a healthy weight | BMI at the interview (Kg/m2) | Premenopausal:  18.5-24.9  25.0-29.9  >29.9  Postmenopausal:  18.5-24.9  25.0-29.9  >29.9 | 0  0.5  1  1  0.5  0 |
| 2) Physical activity: Be physically active | Physical activity (hours/per week) | 0  0.69  >= 0.70 | 0  0.5  1 |
| 3) Plant foods: Eat a diet rich in wholegrains, vegetables, fruits, and beans | Total fruits and vegetables including juices in ½ cup servings per week | 0-18 ½ cup servings/week  19-34 servings/week  >=35+ servings/week | 0  0.25  0.5 |
| Beans servings per week | =< 2 servings  >2 - =<6 servings  > 6 servings | 0  0.15  0.25 |
| Whole grains intake per week | =< 2 servings  >2 - =<6 servings  > 6 servings | 0  0.15  0.25 |
| 4) Limit consumption of “fast foods” and other processed foods high in fat, starches or sugars. | NA | NA |  |
| 5) Animal foods: Limit consumption of red and processed meat | Red meat intake per week | > 4 times  1-4 times  < once | 0  0.25  0.50 |
| Processed meat intake per week | > 4 times  1-4 times  < once | 0  0.25  0.50 |
| 6) Limit consumption of sugar-sweetened drinks | NA | NA |  |
| 7) Alcoholic drinks Limit alcohol consumption | Lifetime alcohol intake (gram/day) | Non-drinkers  < 15  > =15 | 1  0.5  0 |
| 8) Do not use supplements for cancer prevention | NA | NA |  |
| 9) Breastfeed: For mothers: breastfeed your baby if you can | Lactation | Ever  Never | 1  0 |
| 10) After a cancer diagnosis: follow our recommendations if you can | NA | NA |  |
| Smoking is not included in the WCRF/AICR guidelines. | Smoking | Never smoker  Former smoker  Current smoker | 1  0.5  0 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table S2. Demographic characteristics of participants from LIBCSP by menopausal status | | | | | | |
| Characteristics | Premenopausal | |  | Postmenopausal | |  |
| Controls | Cases |  | Controls | Cases |  |
| (N = 457) | (N = 441) |  | (N = 853) | (N = 878) |  |
| Age at reference, mean (SD) | 43.91 (6.63) | 45.57 (6.38) | **<0.001** | 63.78 (9.32) | 65.12 (9.69) | **0.004** |
| Age at menarche, mean (SD) | 12.56 (1.60) | 12.51 (1.52) | 0.600 | 12.57 (1.63) | 12.63 (1.62) | 0.459 |
| Race (%) |  |  |  |  |  |  |
| White | 412 (90.2) | 416 (94.3) | 0.054 | 802 (94.0) | 824 (94.0) | 0.493 |
| Black | 29 (6.3) | 18 (4.1) |  | 32 (3.8) | 39 (4.4) |  |
| Others | 16 (3.5) | 7 (1.6) |  | 19 (2.2) | 14 (1.6) |  |
| Education levels (%) |  |  |  |  |  |  |
| Less than high school | 13 (2.9) | 15 (3.4) | 0.109 | 110 (12.9) | 145 (16.6) | 0.243 |
| High school graduate | 106 (23.2) | 131 (29.8) |  | 342 (40.1) | 349 (39.8) |  |
| Some college | 137 (30.0) | 120 (27.3) |  | 199 (23.4) | 188 (21.5) |  |
| College graduate | 106 (23.2) | 79 (18.0) |  | 93 (10.9) | 83 (9.5) |  |
| Post-college | 94 (20.6) | 95 (21.6) |  | 108 (12.7) | 111 (12.7) |  |
| Family history\*\*, yes (%) | 53 (11.7) | 93 (21.2) | **<0.001** | 121 (14.6) | 172 (20.4) | **0.002** |
| Menopausal status, premenopausal (%) | | |  |  |  |  |
| Parity status (%) |  |  |  |  |  |  |
| Nulliparous | 71 (15.5) | 68 (15.4) | 0.437 | 75 (8.8) | 107 (12.2) | **0.013** |
| 1 child | 57 (12.5) | 68 (15.4) |  | 59 (6.9) | 79 (9.0) |  |
| > 1 child | 329 (72.0) | 305 (69.2) |  | 719 (84.3) | 692 (78.8) |  |
| OC use, ever (%) | 306 (67.0) | 318 (72.1) | 0.109 | 291 (34.2) | 261 (29.8) | 0.058 |
| HRT use, ever (%) | 35 (7.7) | 65 (14.7) | **0.001** | 284 (33.3) | 282 (32.2) | 0.662 |
| Healthy lifestyle factors | |  |  |  |  |  |
| Plant foods, mean (SD) | 0.35 (0.26) | 0.37 (0.26) | 0.204 | 0.44 (0.26) | 0.40 (0.25) | **0.001** |
| Animal foods, mean (SD) | 0.06 (0.13) | 0.04 (0.10) | **0.014** | 0.04 (0.12) | 0.05 (0.12) | 0.466 |
| Alcohol users, % | 305 (66.7) | 295 (66.9) | 1.000 | 500 (58.6) | 510 (58.1) | 0.861 |
| Physical activity, >0.7hrs/week, % | 238 (52.1) | 248 (56.2) | 0.237 | 407 (47.7) | 366 (41.7) | **0.013** |
| BMI, mean (SD) | 25.62 (5.74) | 24.99 (5.06) | 0.079 | 26.73 (5.67) | 27.39 (5.70) | **0.016** |
| Smoker, % | 230 (50.3) | 237 (53.7) | 0.339 | 476 (55.8) | 486 (55.4) | 0.889 |
| Lactation, ever (%) | 199 (43.5) | 183 (41.5) | 0.580 | 269 (31.5) | 238 (27.1) | **0.049** |
| HLI, median (range) | 3.00  (0.50 – 6.25) | 3.00  (0.50 – 6.05) | 0.560 | 3.40  (0.50 – 6.50) | 3. 00  (0.25 – 5.75) | **<0.001** |
| HLI |  |  |  |  |  |  |
| Low (< 2.75) | 167 (36.5) | 176 (39.9) | 0.265 | 244 (28.6) | 320 (36.4) | **<0.001** |
| Intermediate (2.75 – 3.65) | 174 (38.1) | 145 (32.9) |  | 289 (33.9) | 302 (34.4) |  |
| High (> 3.65) | 116 (25.4) | 120 (27.2) |  | 320 (37.5) | 256 (29.2) |  |
| HRT = hormone replacement therapy; LIBCSP = Long Island Breast Cancer Study Project; OC = oral contraceptive; \* P values are from Student’s t test for continuous variables and chi-square for categorical variables; \*\* Family history of first degree. | | | | | | |