**Supplemental Table 1.** Characteristics of participants with prostate cancer in the Health Professionals Follow-up Study at diagnosis by ERG status.

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| --- | --- | --- | --- |
|  | **1986-2012** |  | **1986-2009** |
| **Characteristic** | **All cases** |  | **ERG Negative** | **ERG Positive** | **ERG Unavailable** |
| Number | 6,411 |  | 496 | 449 | 5,123 |
| Age at diagnosis, years (SD) | 70.2 (7.4) |  | 66.1 (5.8) | 65.3 (6.1) | 70.9 (7.4) |
| Year of Diagnosis, % |  |  |  |  |  |
|  1986-1990 | 7.4 |  | 7.3 | 10 | 7.7 |
|  1991-1995 | 23 |  | 33 | 35 | 23 |
|  1996-2000 | 24 |  | 31 | 30 | 24 |
|  2001-2005 | 23 |  | 20 | 16 | 25 |
|  2006-2012 | 23 |  | 9.1 | 8.7 | 20 |
| PSA Level, ng/mL (SD) | 17.5 (145) |  | 10.3 (12.3) | 9.7 (11.5) | 18.5 (157) |
|  Missing,% | 18 |  | 11 | 9.1 | 21 |
| Gleason Score, % |  |  |  |  |  |
|  2-6 | 47 |  | 54 | 57 | 46 |
|  7 | 23 |  | 24 | 25 | 22 |
|  8-10 | 10 |  | 9.3 | 5.6 | 10 |
|  Missing | 20 |  | 13 | 12 | 22 |
| Clinical Stage, % |  |  |  |  |  |
|  T1 / T2 | 81 |  | 92 | 90 | 78 |
|  T3 | 2.9 |  | 2.8 | 4.7 | 2.9 |
|  T4 / N1 / M1 | 4.7 |  | 2.8 | 2.5 | 5.1 |
|  Missing | 12 |  | 2.6 | 2.9 | 14 |
| Total activity, MET-h/wk (SD)a | 27.8 (22.6) |  | 28.0 (23.2) | 27.3 (20.2) | 27.4 (22.9) |
| Vigorous activity, MET-h/wk (SD)a | 10.2 (15.2) |  | 10.8 (15.5) | 9.7 (13.7) | 10.0 (15.4) |
| Caucasian, % | 96 |  | 96 | 98 | 96 |
| Family history of prostate cancer, % | 20 |  | 24 | 22 | 20 |
| Diabetes, % | 7.5 |  | 4.8 | 4.7 | 7.9 |
| Current Smoking, % | 4.8 |  | 6.9 | 5.8 | 4.7 |
| Multivitamin Use, % | 58 |  | 54 | 51 | 58 |
| Had PSA Test, % | 58 |  | 52 | 49 | 58 |
| Height, inches (SD) | 70.1 (2.7) |  | 70.2 (2.7) | 70.4 (2.8) | 70.0 (2.7) |
| Current BMI, kg/m2 (SD) | 25.9 (3.5) |  | 26.1 (3.2) | 25.8 (3.5) | 25.9 (3.6) |
| Dietary & nutrient intakes (SD)a |  |  |  |  |  |
|  Total calories, kcal/day  | 1,965 (541) |  | 1,979 (528) | 1,966 (531) | 1,958 (544) |
|  Calcium, mg/day  | 962 (376) |  | 924 (363) | 940 (371) | 965 (381) |
|  α-linolenic acid, grams/day | 1.1 (0.3) |  | 1.1 (0.3) | 1.1 (0.3) | 1.1 (0.3) |
|  Supplemental vitamin E, mg/day  | 62.5 (85.3) |  | 55.7 (80.9) | 50.2 (79.4) | 64.3 (87.2) |
|  Tomato sauce, servings/week | 1.0 (1.1) |  | 0.9 (0.8) | 0.9 (0.8) | 1.0 (1.1) |
|  Alcohol, grams/day  | 11.7 (13.9) |  | 12.3 (14.9) | 12.2 (13.5) | 11.6 (13.9) |
|  Coffee, cups/day  | 1.8 (1.5) |  | 1.9 (1.6) | 1.9 (1.6) | 1.8 (1.5) |
| PSA: prostate-specific antigen; BMI: body mass index.aValues are cumulative averages updated from baseline to prostate cancer diagnosis. |  |

**Supplemental Table 2.** Hazard ratios and 95% confidence intervals for total and vigorous physical activity (MET-h/wk) quintiles and risk of ERG-positive and ERG-negative prostate cancer in a highly screened subcohort of the Health Professionals Follow-up Study, with follow-up from 1996 to 2009

|  |  |  |
| --- | --- | --- |
|  | **Cases Assayed for ERG in a Highly Screened Subcohorta** |  |
|  | **No. of cases** | **Multivariable HR (95% CI)b** |  |
|  | **ERG Negative** | **ERG Positive** | **ERG Negative** | **ERG Positive** | ***P*heterogeneity** |
| Total activity quintile |  |  |  |  | 0.4c |
|  Q1 | 25 | 17 | 1 (Reference) | 1 (Reference) |  |
|  Q2 | 24 | 18 | 0.85 (0.48, 1.51) | 1.04 (0.52, 2.08) |  |
|  Q3 | 25 | 25 | 0.80 (0.45, 1.42) | 1.29 (0.68, 2.45) |  |
|  Q4 | 24 | 17 | 0.75 (0.42, 1.34) | 0.80 (0.40, 1.63) |  |
|  Q5 | 22 | 9 | 0.70 (0.39, 1.27) | 0.44 (0.19, 1.02) |  |
|  *P*trend |  |  | 0.3 | 0.02 | 0.3d |
| Vigorous activity quintile |  |  |  |  | 0.2c |
|  Q1 | 27 | 20 | 1 (Reference) | 1 (Reference) |  |
|  Q2 | 23 | 16 | 0.70 (0.40, 1.25) | 0.68 (0.34, 1.34) |  |
|  Q3 | 20 | 22 | 0.54 (0.29, 0.98) | 0.89 (0.47, 1.71) |  |
|  Q4 | 26 | 20 | 0.66 (0.37, 1.16) | 0.63 (0.33, 1.22) |  |
|  Q5 | 24 | 8 | 0.57 (0.32, 1.02) | 0.26 (0.11, 0.62) |  |
|  *P*trend |  |  | 0.2 | 0.002 | 0.06d |
| aHighly screened subcohort of 13,859 men who reported having a PSA test on the 1994 and 1996 questionnaires, with follow-up starting in 1996.bMultivariable models adjusted for age (months), calendar time (months), race (Caucasian or other), family history of prostate cancer in father or brother (yes or no), intensity of prostate-specific antigen testing (yes or no), smoking (never, former/quit >10 years ago, former/quit ≤10 years ago, or current), diabetes (yes or no), current BMI (kg/m2; ≤22, 23 to <25, 25 to <27.5, ≥27.5), multivitamin use (yes or no), intake total calories (quintiles), coffee (cups/day; 0, >0 to 1, >1 to 2, >2 to 3, >3), calcium (quintiles), alcohol (quintiles), and vitamin E supplements (quintiles); models with vigorous activity are additionally adjusted for non-vigorous activity (quintiles).cBased on a likelihood ratio test with 4 degrees of freedom using quintiles as the exposure. dBased on a likelihood ratio test with 1 degree of freedom using continuous trend variable as the exposure. |