**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. | | | | | |