**Supplemental Table 1**. Relationship between percent Native American ancestry and **ER positive breast cancer** among postmenopausal non-Hispanic Whites and US Hispanics.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Percent Native American ancestry, quartiles** | **Percent****ER+ Cases** | **ER + Cases** **N (%)** | **Controls** **N (%)** | **Minimally Adjusted** **OR (95% CI)a** | **Multivariate Adjusted****OR (95% CI)b** |
| **Non-Hispanic White**  0, 1.80%1.81, 2.80%2.81, 4.70%>4.70% | 80.1%83.6%86.2%82.6% | n = 493149 (30.2)102 (20.7)119 (24.1)123 (25.0) | n = 979254 (25.9)237 (24.2)251 (25.6)237 (24.2) | 1.16 (0.86, 1.57)0.85 (0.62, 1.18)0.93 (0.68, 1.27)Referent*P*trend = 0.38 | 1.23 (0.90, 1.67)0.89 (0.64, 1.24)0.98 (0.71, 1.35)Referent*P*trend = 0.25 |
| **US Hispanic** |  | n = 348 | n =785 |  |  |
|  0, 32% 32.1, 43.0% 43.1, 54.0% >54.0% | 76.6%75.0%76.9%78.2% | 95 (27.3)84 (24.1)90 (25.9)79 (22.7) | 188 (24.0)181 (23.1)201 (25.6)215 (27.4) | 1.46 (1.02, 2.10)1.38 (0.95, 2.00)1.31 (0.91, 1.88)Referent*P*trend = 0.04 | 1.24 (0.84, 1.82)1.19 (0.80, 1.75)1.22 (0.84, 1.79)Referent*P*trend = 0.34 |

OR, odds ratio; CI, confidence interval. aAdjusted for referent age and study site

bAdjusted for referent age, study site, family history of breast cancer, parity, age at first birth, duration of breast feeding, body mass index in referent year, age at menarche, age at menopause, menopausal hormone therapy use, and alcohol consumption.

**Supplemental Table 2**. Relationship between percent Native American ancestry and **ER negative breast cancer** among postmenopausal non-Hispanic Whites and US Hispanics.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Percent Native American ancestry, quartiles, No. (%)** | **ER - Cases** | **Controls** | **Minimally Adjusted** **OR (95% CI)a** | **Multivariate Adjusted****OR (95% CI)b** |
| **Non-Hispanic White**  0, 1.80%1.81, 2.80%2.81, 4.70%>4.70% | n = 10237 (36.3)20 (19.6)19 (18.6)26 (25.5) | n = 979254 (25.9)237 (24.2)251 (25.6)237 (24.2) | 1.30 (0.76, 2.22)0.79 (0.43, 1.46)0.66 (0.36, 1.23)Referent*P*trend = 0.21 | 1.23 (0.71, 2.12)0.77 (0.41, 1.43)0.62 (0.33, 1.17)Referent*P*trend = 0.28 |
| **US Hispanic** | n = 106 | n =785 |  |  |
|  0, 32% 32.1, 43.0% 43.1, 54.0% >54.0% | 29 (27.4)28 (26.4)27 (25.5)22 (20.8) | 188 (24.0)181 (23.1)201 (25.6)215 (27.4) | 1.67 (0.92, 3.03)1.68 (0.92, 3.07)1.39 (0.76, 2.54)Referent*P*trend = 0.08 | 1.80 (0.96, 3.37)1.62 (0.86, 3.03)1.46 (0.78, 2.71)Referent*P*trend = 0.07 |

OR, odds ratio; CI, confidence interval. aAdjusted for referent age and study site

bAdjusted for referent age, study site, family history of breast cancer, parity, age at first birth, duration of breast feeding, body mass index in referent year, age at menarche, age at menopause, menopausal hormone therapy use, and alcohol consumption.

**Supplemental Table 3**. Relationship between risk factors and **ER positive breast cancer** among postmenopausal non-Hispanic Whites and US Hispanics according to percent Native American ancestry.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Non-Hispanic White** |  | **US Hispanic 0-43% NA** |  | **US Hispanic 44-100% NA** | Pinteraction |
|  |  | **Cases** **(n = 493)** | **OR (95% CI)a** |  | **Cases****(n =179)** | **OR (95% CI)a** |  | **Cases****(n =169)** | **OR (95% CI)a** |
| Ageb, y |  |  | 0.99 (0.97, 1.00) |  |  | 1.02 (1.00, 1.05) |  |  | 1.01 (0.99, 1.03) | 0.05 |
| Family history of breast cancer, No. (%) Yes No |  | 116 (23.5)377 (76.5) | **1.63(1.23, 2.14)**Referent |  |  38 (21.2)141 (78.8) | *1.56 (0.95, 2.56)*Referent |  |  30 (17.8)139 (82.3) | **1.85 (1.08, 3.17)**Referent | 0.89 |
| No. births and age at first birthc, No. (%) Nulliparous 1-2, <25 y 1-2, ≥25 y  ≥3, <25 y ≥3, ≥25 y  |  | 76 (15.4)100 (20.3)107 (21.7)162 (32.9)48 (9.7) | 1.15 (0.77, 1.71)1.16 (0.83, 1.60)*1.33 (0.97, 1.83)*Referent1.02 (0.68, 1.51) |  |  15 (8.4)31 (17.3)38 (21.2)76 (42.5)19 (10.6) | 0.98 (0.46, 2.10)1.32 (0.73, 2.38)*1.60 (0.94, 2.75)*Referent0.99 (0.52, 1.87) |  |  21 (12.4)26 (15.4)23 (13.6)84 (49.7)15 (8.9) | **2.77 (1.29, 5.94)***1.65 (0.92, 2.95)**1.29 (0.71, 2.36)*Referent0.61 (0.32, 1.17) | 0.28 |
| Breastfeedingd, mos, No. (%) None <12 >12  |  | 237 (48.1)154 (31.2)102 (20.7) | 1.09 (0.78, 1.51)0.88 (0.64, 1.21)Referent*P*trend= 0.48 |  | 91 (50.8)45 (25.1)43 (24.0) | 1.39 (0.85, 2.27)0.78 (0.46, 1.34)Referent*P*trend= 0.11 |  | 77 (45.6)51 (30.2)41 (24.3) | 1.40 (0.84, 2.35)1.30 (0.77, 2.17)Referent*P*trend= 0.21 | 0.10 |
| Body mass indexb, kg/m2, No. (%) <25.0 25.0-29.9 ≥30 |  | 192 (39.0)143 (29.0)158 (32.1) | Referent1.00 (0.76, 1.31)*1.18 (0.90, 1.55)**P*trend= 0.26 |  | 45 (25.1)54 (30.2)80 (44.7) | Referent0.77 (0.46, 1.29)0.86 (0.52, 1.43)*P*trend= 0.66 |  | 23 (13.6)60 (35.5)86 (50.9) | Referent1.38 (0.74, 2.56)1.54 (0.84, 2.81)*P*trend= 0.18 | 0.93 |
| Age at menarche, y, No. (%)  <11 12-13 >14 |  | 112 (22.7)257 (52.1)124 (25.2) | *1.28 (0.92, 1.77)*1.01 (0.77, 1.32)Referent*P*trend= 0.17 |  | 58 (32.4)78 (43.6)43 (24.0) | ***1.79 (1.06, 3.05)***1.19 (0.74, 1.90)Referent*P*trend= 0.03 |  | 44 (26.0)72 (42.6)53 (31.4) | 1.10 (0.65, 1.87)0.80 (0.51, 1.26)Referent*P*trend= 0.82 | 0.56 |
| Age at menopause, y, No. (%)  <50 >50  |  | 264 (53.6)229 (46.5) | Referent**1.43(1.13, 1.81)** |  | 109 (60.9) 70 (39.1) | Referent1.00 (0.67, 1.49) |  | 102 (60.4) 67 (39.6) | Referent**1.71 (1.12, 2.61)** | 0.18 |
| Hormone therapy useb, No. (%) Current Former  Never |  | 263 (53.4) 97 (19.7)133 (27.0) | 0.99 (0.76, 1.30)**0.60(0.43, 0.83)**Referent*P*trend= 0.59 |  | 78 (43.6)33 (18.4)68 (38.0) | **1.57 (1.00, 2.45)****0.53 (0.32, 0.90)**Referent*P*trend= 0.05 |  | 63 (37.3)32 (18.9)74 (43.8) | **2.03 (1.27, 3.25)****0.54 (0.32, 0.88)**Referent*P*trend= 0.02 | 0.11 |
| Alcohol consumptione, g/day, No. (%) None  <10  >10 |  | 221 (44.8)190 (38.5) 82 (16.6) | Referent**1.32 (1.03, 1.69)***1.36 (0.97, 1.91)**P*trend= 0.03 |  | 107 (59.8) 55 (30.7)17 (9.5) | Referent1.16 (0.75, 1.78)1.18 (0.59, 2.34)*P*trend *=* 0.49 |  | 120 (71.0) 40 (23.7) 9 (5.3) | Referent1.16 (0.71, 1.88)1.08 (0.46, 2.55)*P*trend *=* 0.63 | 0.99 |

OR, odds ratio; CI, confidence interval. Results in bold are statistically significant, results in italics are marginally significant.

aAdjusted for study site (San Francisco Bay Area Breast Cancer Study versus 4-Corners) and all the listed factors.

bIn referent year.

cIncludes live or still birth

dIncludes both parous and non-parous women.

eAlcohol consumption was based on lifetime average intake (4-Corners and Mexico subjects), or intake during the reference year (SFBCS).

**Supplemental Table 4**. Relationship between risk factors and **ER negative breast cancer** among postmenopausal non-Hispanic Whites and US Hispanics according to percent Native American ancestry.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Non-Hispanic White** |  | **US Hispanic 0-43% NA** |  | **US Hispanic 44-100% NA** | Pinteraction |
|  |  | **Cases** **(n = 102, 17.1%)** | **NHW ER-** |  | **Cases****(n = 57, 24.1%)** | **Low NA ER-** |  | **Cases****(n = 49, 22.5%)** | **High NA ER-** |
| Ageb, y |  |  | 0.96 (0.94, 0.98) |  |  | 0.97 (0.94, 1.01) |  |  | 0.97 (0.94, 1.01) | 0.45 |
| Family history of breast cancer, No. (%) Yes No |  | 21 (20.6)81 (79.4) | *1.48(0.87, 2.51)*Referent |  | 16 (28.1)41 (71.9) | **3.10 (1.51, 6.38)**Referent |  | 7 (14.3)42 (85.7) | 1.65 (0.66 , 4.12)Referent | 0.44 |
| No. births and age at first birthc, No. (%) Nulliparous 1-2, <25 y 1-2, ≥25 y  ≥3, <25 y ≥3, ≥25 y  |  | 11 (10.8)23 (22.6)16 (15.7)37 (36.3)15 (14.7) | 0.66 (0.30, 1.47)1.11 (0.62, 2.00)0.86 (0.45, 1.62)Referent*1.82 (0.94, 3.55)* |  | 3 (5.3)6 (10.5)8 (14.0)33 (57.9)7 (12.3) | 0.34 (0.10, 1.33)**0.30 (010, 0.85)***0.42 (0.17, 1.05)*Referent0.75 (0.30, 1.91) |  | 4 (8.2) 7 (14.3) 5 (10.2)24 (49.0) 9 (18.4) | 1.27 (0.35, 4.56)1.31 (0.48, 3.59)0.84 (0.69, 2.54)Referent1.33 (0.56, 3.17) | 0.51 |
| Breastfeedingd, mos, No. (%) None <12 >12  |  | 47 (46.1)31 (30.4)24 (23.5) | 1.28 (0.71, 2.30)0.85 (0.47, 1.52)Referent*P*trend= 0.33 |  | 22 (38.6)21 (36.8)14 (24.6) | 1.38 (0.62, 3.04)1.42 (0.65, 3.14)Referent*P*trend= 0.45 |  | 24 (49.0)10 (20.4)15 (30.6) | 1.67 (0.77, 3.63)0.74 (0.30, 1.81)Referent*P*trend= 0.17 | 0.42 |
|  Body mass indexb, kg/m2, No. (%) <25.0 25.0-29.9 ≥30 |  | 30 (29.4)35 (34.3)37 (36.3) | Referent*1.52 (0.90, 2.58)**1.50 (0.89, 2.54)**P*trend= 0.13 |  | 22 (38.6)18 (31.6)17 (29.8) | Referent 0.56 (0.27, 1.16)**0.30 (0.14, 0.65)***P*trend= 0.002 |  | 9 (18.4)21 (42.9)19 (38.8) | Referent 1.06 (0.42, 2.63)0.66 (0.26, 1.69)*P*trend= 0.25 | 0.18 |
| Age at menarche, y, No. (%)  <11 12-13 >14 |  | 27 (26.4)56 (54.9)19 (18.6) | **1.95 (1.03, 3.67)**1.47 (0.85, 2.54)Referent*P*trend= 0.04 |  | 14 (24.6)24 (42.1)19 (33.3) | 1.45 (0.62, 3.37)0.86 (0.43, 1.73)Referent*P*trend= 0.48 |  | 12 (24.5)22 (44.9)15 (30.6) | 1.22 (0.51, 2.92)0.95 (0.46, 1.98)Referent*P*trend= 0.70 | 0.49 |
| Age at menopause, y, No. (%)  <50 >50  |  | 69 (67.7)33 (32.4) | Referent0.97(0.60, 1.54) |  | 40 (70.2)17 (29.8) | Referent0.69 (0.36, 1.35) |  | 30 (61.2)19 (38.8) | Referent1.69 (0.86, 3.33) | 0.10 |
| Hormone therapy useb, No. (%) Current Former  Never |  | 54 (52.9)25 (24.5)23 (22.6) | 1.20 (0.70, 2.04)1.16 (0.62, 2.16)Referent*P*trend= 0.53 |  | 17 (29.8)16 (28.1)24 (42.1) | 1.02 (0.48, 2.16)0.84 (0.40, 1.75)Referent*P*trend= 0.99 |  | 15 (30.6)7 (14.3)27 (55.1) | 1.43 (0.67, 3.08)**0.31 (0.13, 0.75)**Referent*P*trend= 0.92 | 0.06 |
| Alcohol consumptione, g/day, No. (%) None  <10  >10 |  | 64 (62.8)27 (26.5)11 (10.8) | Referent0.66 (0.40, 1.07)0.77 (0.38, 1.55)*P*trend= 0.18 |  | 39 (68.4)12 (21.1) 6 (10.5) | Referent0.64 (0.31, 1.35)1.49 (0.55, 4.08)*P*trend *=* 0.49 |  | 37 (75.5)9 (18.4) 3 (6.1) | Referent0.99 (0.43, 2.28)1.17 (0.31, 4.42)*P*trend *=* 0.88 | 0.84 |

OR, odds ratio; CI, confidence interval. Results in bold are statistically significant, results in italics are marginally significant.

aAdjusted for study site (San Francisco Bay Area Breast Cancer Study versus 4-Corners) and all the listed factors.

bIn referent year.

cIncludes live or still birth

dIncludes both parous and non-parous women.

eAlcohol consumption was based on lifetime average intake (4-Corners and Mexico subjects), or intake during the reference year (SFBCS).