|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Table 1: Participant Characteristics (Matched by Smoking Status)** | | | | |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  | Cases (N=1,716) | Controls (N=2,159) | P-value |  |  |  |
|  |  | N (%) | N (%) |  |  |  |  |
| Age, Mean (SD) a |  | 60.59 (10.50) | 60.94 (10.18) | 0.3 |  |  |  |
| Gender a |  |  |  |  |  |  |  |
| Male |  | 904 (52.68) | 1097 (50.81) |  |  |  |  |
| Female |  | 812 (47.32) | 1062 (49.19) | 0.25 |  |  |  |
| Smoking Status a |  |  |  |  |  |  |  |
| Never |  | 308 (19.95) | 389 (18.02) |  |  |  |  |
| Former |  | 778 (45.34) | 949 (43.96) |  |  |  |  |
| Current |  | 630 (36.71) | 821 (38.03) | 0.65 |  |  |  |
| Pack Years, Mean (SD) |  | 40.56 (33.84) | 34.73 (31.93) | <0.001 |  |  |  |
|  |  |  |  |  |  |  |  |
| BMI |  |  |  |  |  |  |  |
| Underweight/Normal |  | 750 (43.71) | 690 (31.96) |  |  |  |  |
| Overweight |  | 621 (36.19) | 858 (39.74) |  |  |  |  |
| Obese |  | 345 (20.10) | 611 (28.30) | <0.001 |  |  |  |
| Physical Activityb |  |  |  |  |  |  |  |
| Low |  | 410 (23.89) | 516 (23.90) |  |  |  |  |
| Medium |  | 546 (31.82) | 682 (31.59) |  |  |  |  |
| High |  | 459 (26.75) | 712 (32.98) |  |  |  |  |
| Unknown |  | 301 (17.54) | 249 (11.53) | <0.001 |  |  |  |
| Years of Educationb |  |  |  |  |  |  |  |
| Less than 12 |  | 688 (40.14) | 546 (25.34) |  |  |  |  |
| 12 to 15 |  | 510 (29.75) | 748 (34.71) |  |  |  |  |
| 16+ |  | 516 (30.11) | 861 (39.95) | <0.001 |  |  |  |
|  |  |  |  |  |  |  |  |
| Family History of Cancerb |  |  |  |  |  |  |  |
| No |  | 1295 (75.78) | 1796 (83.50) |  |  |  |  |
| Yes |  | 414 (24.22) | 355 (16.50) | <0.001 |  |  |  |
| Emphysemab |  |  |  |  |  |  |  |
| No |  | 1403 (82.72) | 1998 (92.67) |  |  |  |  |
| Yes |  | 293 (17.28) | 158 (7.33) | <0.001 |  |  |  |
| Pneumoniab |  |  |  |  |  |  |  |
| No |  | 1010 (59.34) | 1513 (70.24) |  |  |  |  |
| Yes |  | 692 (40.66) | 641 (29.76) | <0.001 |  |  |  |
| Hay feverb |  |  |  |  |  |  |  |
| No |  | 1418 (83.81) | 1705 (79.04) |  |  |  |  |
| Yes |  | 274 (16.19) | 452 (20.96) | <0.001 |  |  |  |
| Histologic Subtype |  |  |  |  |  |  |  |
| Adenocarcinoma |  | 914 (53.26) | NA |  |  |  |  |
| Squamous Cell Carcinoma |  | 352 (21.10) | NA |  |  |  |  |
| Other |  | 440 (25.64) | NA |  |  |  |  |
| Dietary Factors |  |  |  |  |  |  |  |
| Glycemic Load, Mean (SD) |  | 135.82 (62.83) | 136.34 (55.81) | 0.78 |  |  |  |
| Glycemic Index, Mean (SD) |  | 53.65 (5.17) | 52.82 (4.24) | <0.001 |  |  |  |
| Glycemic Index, available carbohydrate, Mean (SD) |  | 58.27 (5.29) | 57.68 (4.25) | <0.001 |  |  |  |
| Carbohydrate g/day, Mean(SD) |  | 251.08 (110.90) | 256 (99.67) | 0.0003 |  |  |  |
| Fiber g/day, Mean (SD) |  | 19.29 (9.55) | 21.26 (10.03) | <0.001 |  |  |  |
| Meat intake g/day, Mean (SD) |  | 125.34 (77.62) | 127.29 (73.84) | 0.44 |  |  |  |
| \* Matching variables: Controls were frequency matched to cases according to age in 5 year categories, gender, and smoking status (never, former, and current). Former smoking controls were further frequency matched to former smoking cases according to the number of years since smoking cessation (in 5 year categories) | | | | | |  |  |
| b Missing; years of education N=6, family history of cancer N=15, emphysema N=23, pneumonia N=19, hay fever N=26; unknown physical activity N=550 | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Table 2: Associations Between Lung Cancer Risk and Energy -Adjusted Quintilea of Dietary Glycemic Load, Glycemic Index** | | | | | | | | | | |
| **and Glycemic Index (Total Available Carbohydrate) Intake in Analysis Matched for Smoking b** | | | | | | |  |  |  |  |
| **Overall** | | Q1 | Q2 | Q3 | Q4 | Q5 | P-trend |  |  |  |
| Glycemic Load | |  |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 312/433 | 319/431 | 371/428 | 327/432 | 387/435 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.03 (0.83-1.28) | 1.12 (0.90-1.39) | 1.00 (0.80-1.24) | 1.14 (0.92-1.40) | 0.24 |  |  |  |
| Glycemic Index | |  |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 296/434 | 285/431 | 326/428 | 341/435 | 468/431 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.01 (0.81-1.26) | 1.12 (0.90-1.38) | 1.08 (0.87-1.34) | 1.40 (1.13-1.73) | <0.001 |  |  |  |
| Glycemic Index (Available Carbohydrate) | | |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 300/432 | 301/432 | 306/432 | 367/433 | 442/430 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.03 (0.83-1.27) | 1.03 (0.83-1.28) | 1.21 (0.98-1.50) | 1.34 (1.08-1.65) | 0.001 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **By Histologic Subtype; Adenocarcinoma** | | | |  |  |  |  |  |  |  |
| Glycemic Load | |  |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 165/433 | 176/431 | 185/428 | 170/432 | 218/435 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.05 (0.81-1.37) | 1.05 (0.80-1.37) | 0.97 (0.74-1.26) | 1.19 (0.93-1.53) | 0.32 |  |  |  |
| Glycemic Index | |  |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 170/434 | 170/431 | 172/428 | 169/435 | 233/431 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.05 (0.81-1.36) | 1.03 (0.79-1.33) | 0.97 (0.75-1.26) | 1.29 (1.00-1.66) | 0.11 |  |  |  |
| Glycemic Index (Available Carbohydrate) | | |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 171/432 | 178/432 | 154/432 | 191/433 | 220/430 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.09 (0.84-1.41) | 0.92 (0.71-1.20) | 1.11 (0.86-1.44) | 1.25 (0.97-1.60) | 0.002 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **By Histologic Subtype; Squamous Cell Carcinoma** | | | |  |  |  |  |  |  |  |
| Glycemic Load | |  |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 70/433 | 64/431 | 84/428 | 66/432 | 78/435 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 0.91 (0.61-1.34) | 1.24 (0.86-1.80) | 0.94 (0.64-1.38) | 1.04 (0.64-1.38) | 0.81 |  |  |  |
| Glycemic Index | |  |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 51/434 | 48/431 | 79/428 | 78/435 | 106/431 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 0.95 (0.62-1.47) | 1.52 (1.02-2.25) | 1.39 (0.94-2.07) | 1.73 (1.18-2.54) | <0.001 |  |  |  |
| Glycemic Index (Available Carbohydrate) | | |  |  |  |  |  |  |  |  |
|  | Cases/Controls | 51/432 | 57/432 | 70/432 | 84/433 | 100/430 |  |  |  |  |
|  | Fully-Adjustedb | 1 (REF) | 1.06 (0.69-1.60) | 1.34 (0.89-2.00) | 1.55 (1.05-2.30) | 1.63 (1.11-2.39) | 0.002 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| a quintiles based on distribution in controls, by gender | | | |  |  |  |  |  |  |  |
| bSame as original fully-adjusted model (Tables 2 and 3) | | | |  |  |  |  |  |  |  |
| Missing; years of education N=6, family history of cancer N=15, emphysema N=23, pneumonia N=19, hay fever N=26; | | | | | | | |  |  |  |
| unknown physical activity N=550 | | |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Table 3. Associations Between Lung Cancer Risk and Energy -Adjusted Quintilesa of Dietary Glycemic Load, Glycemic Index** | | | | | | | | | | | | | | | | | | | | |  |  |  |  | |
| **and Glycemic Index (Total Available Carbohydrate) Intake in Analysis Matched for Smoking, Stratified by Smoking Status and Years of Education** | | | | | | | | | | | | | | | | | | | | |  |  |  |  | |
|  |  |  | |  |  |  |  |  |  | | | | |  |  |  |
|  |  | Smoking Status | | | | Years of Education | | | | | | | | | | | | |  |  |  |  |
|  |  | Never | | Ever | | <12 | | 12 + | | | | | | | | | | |  |  |  |  |
| Glycemic Load | | Cases/ Controls | OR (95%CI) | Cases/ Controls | OR (95%CI) | Cases/ Controls | OR (95%CI) | Cases/ Controls | OR (95%CI) | | | | | | | | | |  |  |  |  |
|  | Q1 | 39/67 | 1 (REF) | 273/366 | 1 (REF) | 104/101 | 1 (REF) | 208/332 | 1 (REF) | | | | | | | | | |  |  |  |  |
|  | Q2 | 52/72 | 1.27 (0.73-2.19) | 266/359 | 0.97 (0.77-1.22) | 109/113 | 1.00 (0.66-1.52) | 210/318 | 1.09 (0.84-1.41) | | | | | | | | | |  |  |  |  |
|  | Q3 | 61/81 | 1.28 (0.74-2.20) | 309/345 | 1.08 (0.85-1.36) | 155/109 | 1.38 (0.91-2.08) | 216/319 | 1.03 (0.79-1.33) | | | | | | | | | |  |  |  |  |
|  | Q4 | 73/88 | 1.42 (0.84-2.40) | 254/343 | 0.91 (0.72-1.16) | 146/105 | 1.37 (0.91-2.06) | 181/327 | 0.88 (0.67-1.14) | | | | | | | | | |  |  |  |  |
|  | Q5 | 83/81 | 1.67 (1.00-2.81) | 304/354 | 1.03 (0.82-1.29) | 174/118 | 1.59 (1.07-2.36) | 213/317 | 1.02 (0.79-1.32) | | | | | | | | | |  |  |  |
|  | P-trend |  | 0.05 |  | 0.99 |  | 0.01 |  | 0.67 | | | | | | | | | |  |  |  |
|  |  |  |  |  | P-interaction = 0.05 |  |  |  | P-interaction = 0.02 | | | | | | | | | |  |  |  |
| Glycemic Index | |  |  |  |  |  |  |  |  | | | | | | | | | |  |  |  |
|  | Q1 | 49/84 | 1 (REF) | 247/350 | 1 (REF) | 86/78 | 1 (REF) | 210/356 | 1(REF) | | | | | | | | | |  |  |  |
|  | Q2 | 65/83 | 1.37 (0.84-2.42) | 220/348 | 0.89 (0.70-1.13) | 85/97 | 0.90 (0.57-1.43) | 200/334 | 1.09 (0.85-1.41) | | | | | | | | | |  |  |  |
|  | Q3 | 62/83 | 1.30 (0.79-2.13) | 264/345 | 1.05 (0.83-1.33) | 103/113 | 1.03 (0.66-1.61) | 223/315 | 1.23 (0.96-1.59) | | | | | | | | | |  |  |  |
|  | Q4 | 60/72 | 1.47 (0.88-2.44) | 281/363 | 0.98 (0.78-1.24) | 170/112 | 1.61 (1.05-2.48) | 171/323 | 0.96 (0.74-1.59) | | | | | | | | | |  |  |  |
|  | Q5 | 72/67 | 1.88 (1.14-3.10) | 396/364 | 1.26 (1.00-1.58) | 244/146 | 1.65 (1.10-2.49) | 224/285 | 1.33 (1.03-1.71) | | | | | | | | | |  |  |  |
|  | P-trend |  | 0.02 |  | 0.03 |  | <0.001 |  | 0.54 | | | | | | | | | |  |  |  |
|  |  |  |  |  | P-interaction = 0.43 |  |  |  | P-interaction = 0.01 | | | | | | | | | |  |  |  |
| Glycemic Index (Available Carbohydrate) | | | |  |  |  |  |  |  | | | | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  | | | | | | | | | |  |  |  |
|  | Q1 | 53/84 | 1 (REF) | 247/347 | 1(REF) | 93/87 | 1 REF) | 207/345 | 1 (REF) | | | | | | | | | |  |  |  |  |
|  | Q2 | 50/89 | 0.86 (0.51-1.41) | 251/343 | 1.05 (0.83-1.34) | 99/104 | 1.07 (0.69-1.67) | 202/328 | 1.11 (0.86-1.43) | | | | | | | | | |  |  |  |  |
|  | Q3 | 66/72 | 1.45 (0.89-2.38) | 240/360 | 0.93 (0.73-1.18) | 93/105 | 0.88 (0.56-1.38) | 213/327 | 1.14 (0.88-1.48) | | | | | | | | | |  |  |  |  |
|  | Q4 | 66/70 | 1.53 (0.93-2.51) | 301/363 | 1.12 (0.88-1.41) | 171/107 | 1.84 (1.21-2.81) | 196/326 | 1.11 (0.85-1.43) | | | | | | | | | |  |  |  |  |
|  | Q5 | 73/73 | 1.57 (0.96-2.55) | 369/357 | 1.27 (1.01 -1.59) | 232/143 | 1.75 (1.18-2.61) | 210/287 | 1.24 (0.96-1.61) | | | | | | | | | |  |  |  |  | | |
|  | P-trend |  |  |  | 0.04 |  | <0.001 |  | 0.15 | | | | | | | | | |  |  |  |  | | |
|  |  | |  |  | P-interaction = 0.25 |  |  |  | P-interaction = 0.02 | | | | | | | | | |  |  |  |  | | |
|  |  |  |  |  |  |  |  |  |  | | | | | | | | | |  |  |  |  | | |
| a quintiles based on distribution in controls, by gender | | | | |  |  |  |  |  |  |  |  |  | | | | |  | | |
| Fully Adjusted Model –where appropriate | | | |  |  |  |  |  |  |  |  |  |  | | | | |  | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Table 4: Participant Characteristics in Controls, by Smoking Status** | | | |  |  |  |
|  | Ever Smoker (N=1820) |  | Never Smoker (N=593) |  |  |  |
|  | N (%) |  | N (%) |  |  |  |
| Age, Mean (SD) | 61.29 (9.69) |  | 59.18 (12.30) | <0.001 |  |  |
| Gender |  |  |  |  |  |  |
| Male | 1012 (55.60) |  | 220 (37.10) |  |  |  |
| Female | 808 (44.40) |  | 373 (62.90) | <0.001 |  |  |
| BMI |  |  |  |  |  |  |
| Underweight/Normal | 581 (31.92) |  | 193 (32.55) |  |  |  |
| Overweight | 733 (40.27) |  | 222 (37.44) |  |  |  |
| Obese | 506 (27.80) |  | 178 (30.03) | 0.42 |  |  |
| Physical Activity |  |  |  |  |  |  |
| Low | 540 (33.21) |  | 126 (25.05) |  |  |  |
| Medium | 512 (31.49) |  | 137 (27.24) |  |  |  |
| High | 574 (35.30) |  | 240 (47.71) | <0.001 |  |  |
| Year of Education |  |  |  |  |  |  |
| Less than 12 | 460 (25.32) |  | 143 (24.16) |  |  |  |
| 12 to 15 | 648 (35.66) |  | 177 (29.90) |  |  |  |
| 16+ | 709 (39.02) |  | 272 (45.95) | <0.01 |  |  |
|  |  |  |  |  |  |  |
| Family History of Cancer |  |  |  |  |  |  |
| No | 1509 (83.28) |  | 507 (85.79) |  |  |  |
| Yes | 303 (16.72) |  | 84 (14.21) | 0.15 |  |  |
| Emphysema |  |  |  |  |  |  |
| No | 1659 (91.30) |  | 591 (99.66) |  |  |  |
| Yes | 158 (8.70) |  | 2 (0.34) | <0.001 |  |  |
| Pneumonia |  |  |  |  |  |  |
| No | 1253 (69.04) |  | 464 (78.25) |  |  |  |
| Yes | 562 (30.96) |  | 129 (21.75) | <0.001 |  |  |
| Hay fever |  |  |  |  |  |  |
| No | 1458 (80.20) |  | 439 (74.03) |  |  |  |
| Yes | 360 (19.80) |  | 154 (25.97) | 0.001 |  |  |
| Dietary Factors |  |  |  |  |  |  |
| Glycemic Load, Mean (SD) | 138.05 (57.43) |  | 131.05 (54.75) | 0.01 |  |  |
| Glycemic Index, Mean (SD) | 52.96 (4.33) |  | 52.07 (4.14) | <0.001 |  |  |
| Glycemic Index, available carbohydrate, Mean (SD) | 57.78 (4.31) |  | 57.11 (4.27) | 0.001 |  |  |
| Carbohydrate g/day, Mean(SD) | 260.40 (101.80) |  | 250.76 (100.91) | 0.4 |  |  |
| Fiber g/day, Mean (SD) | 21.26 (9.89) |  | 21.81 (10.48) | 0.001 |  |  |
| Meat intake g/day, Mean (SD) | 130.44 (76.15) |  | 116.82 (68.23) | 0.001 |  |  |
| Missing; years of education N=4, family history of cancer N=10, emphysema N=3, pneumonia N=5, | | | | | | |
| Hay fever N=2;unknown physical activity N=284 | |  |  |  |  |  |