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| **Supplementary table 1.** Hazard ratios (HRs) and 95% confidence intervals (CIs) for pancreatic cancer risk according to smoking status. A pooled analysis of ten population-based cohort studies in Japan |
|  |  | Smoking status |
|  |  | Never |  | Former |  | Current |
| 　 | 　 | 　 | 　 |
| ***Males*** |  |  |  |  |  |  |
| Number of subjects (*N*) |  | 34767 |  | 40046 |  | 92107 |
| Person-years (*N*)  |  | 472219 |  | 505672 |  | 1193243 |
| Number of cases (*N*) |  | 157 |  | 223 |  | 581 |
| Crude rate (per 100,000) |  | 33.2  |  | 44.1  |  | 48.7  |
| HR (model 1) Overall |  | 1.00 (ref) |  | 1.14 (0.92-1.41) |  | **1.62 (1.36-1.94)** |
| HR (model 2) Overall |  | 1.00 (ref) |  | 1.10 (0.89-1.36) |  | **1.59 (1.32-1.91)** |
| HR (model 3) Overall |  | 1.00 (ref) |  | 1.12 (0.89-1.42) |  | **1.64 (1.34-2.00)** |
| HR (model 1) excluding early cases |  | 1.00 (ref) |  | 1.10 (0.88-1.39) |  | **1.60 (1.32-1.95)** |
| HR (model 2) excluding early cases |  | 1.00 (ref) |  | 1.06 (0.84-1.34) |  | **1.58 (1.30-1.92)** |
| HR (model 3) excluding early cases | 　 | 1.00 (ref) | 　 | 1.06 (0.82-1.35) | 　 | **1.63 (1.32-2.02)** |
| ***Females*** |  |  |  |  |  |  |
| Number of subjects (*N*) |  | 167918 |  | 4466 |  | 14850 |
| Person-years (*N*)  |  | 2287817 |  | 51938 |  | 184705 |
| Number of cases (*N*) |  | 703 |  | 28 |  | 87 |
| Crude rate (per 100,000) |  | 30.7  |  | 53.9  |  | 47.1  |
| HR (model 1) Overall |  | 1.00 (ref) |  | **1.86 (1.27-2.73)** |  | **1.94 (1.55-2.43)** |
| HR (model 2) Overall |  | 1.00 (ref) |  | **1.77 (1.19-2.62)** |  | **1.81 (1.43-2.30)** |
| HR (model 3) Overall |  | 1.00 (ref) |  | **1.90 (1.23-2.95)** |  | **1.75 (1.34-2.30)** |
| HR (model 1) excluding early cases |  | 1.00 (ref) |  | **1.82 (1.17-2.83)** |  | **1.95 (1.53-2.49)** |
| HR (model 2) excluding early cases |  | 1.00 (ref) |  | **1.80 (1.15-2.81)** |  | **1.81 (1.40-2.34)** |
| HR (model 3) excluding early cases | 　 | 1.00 (ref) | 　 | **1.98 (1.22-3.21)** | 　 | **1.77 (1.33-2.36)** |
| 1. Model 1 was adjusted for age and area (for multicentric studies, namely JPHC-I, JPHC-II, JACC, and LSS). |
| 2. Model 2 was adjusted for age, area, BMI (<23, 23 to <25, and ≥25 kg/m2), alcohol consumption [men: nondrinker, occasional drinker (less than once a week), and current drinker (<23, 23 to <46, 46 to <69, and ≥69 ethanol g/day); women: nondrinker, occasional drinker and current drinker (<23 and ≥23 ethanol g/day)], and history of diabetes. |
| 3. Model 3 was adjusted for age, area, BMI (< 23, 23 to <25, and ≥25 kg/m2), alcohol consumption [men: nondrinker, occasional drinker (less than once a week), and current drinker (<23, 23 to <46, 46 to <69, and ≥69 ethanol g/day); women: nondrinker, occasional drinker and current drinker (<23 and ≥23 ethanol g/day)], history of diabetes, ETS during childhood, and ETS at home and/or at work. We excluded TAKAYAMA and LSS in which no information on ETS was available. |
| 4. HRs values in bold show statistical significance (*P* < 0.05). |
| 5. Between-study heterogeneity was evaluated using the *Q-*statistic and *I2-*statistic. *Q-*statistic was considered as statistically significant when *P* <0.10; 0% of *I2-*statistic represented no heterogeneity. *Q-*statistics were not statistically significant in all risk estimates. *I2-*statistics were 0% in all risk estimates except those for male former smoking (model 1, 2.5%; model 3, 1.6%). |
| BMI, body mass index; ETS, environmental tobacco smoke; JPHC, Japan Public Health Center-based Prospective Study; JACC, Japan Collaborative Cohort Study; TAKAYAMA, Takayama Study; LSS, Life Span Study |

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| **Supplementary table 2.** Hazard ratios (HRs) and 95% confidence intervals (CIs) for pancreatic cancer risk according to smoking status in strata of environmental tobacco smoke (ETS) exposure. A pooled analysis of ten population-based cohort studies in Japan |
|  | Smoking status |
|  | Males |  | Females |
| Never | Former | Current |  | Never | Former | Current |
| ETS duringchildhood | No | Number of subjects (*N*) | 12131 | 10005 | 20180 | 　 | 46880 | 735 | 2373 |
| Person-years (*N*)  | 170675 | 130129 | 268032 |  | 684951 | 9127 | 31321 |
| Number of cases (*N*) | 52 | 62 | 135 |  | 199 | 7 | 18 |
| Crude rate (per 100,000) | 30.5 | 47.6 | 50.4 |  | 29.1 | 76.7 | 57.5 |
| HR (model 2) Overall | 1.00 (ref) | 1.35 (0.92-1.98) | **1.63 (1.16-2.27)** |  | 1.00 (ref) | **14.55 (5.80-36.51)** | **3.05 (1.84-5.06)** |
| Yes | Number of subjects (*N*) | 17322 | 22647 | 57175 |  | 89606 | 2337 | 8942 |
| Person-years (*N*)  | 236129 | 287475 | 745048 |  | 1206942 | 26663 | 109580 |
| Number of cases (*N*) | 80 | 119 | 355 |  | 368 | 15 | 49 |
| Crude rate (per 100,000) | 33.9 | 41.4 | 47.6 |  | 30.5 | 56.3 | 44.7 |
| HR (model 2) Overall | 1.00 (ref) | 0.98 (0.73-1.32) | **1.47 (1.14-1.89)** |  | 1.00 (ref) | **1.86 (1.10-3.14)** | **1.65 (1.14-2.40)** |
| ETS at homeand/or at work | No | Number of subjects (*N*) | 11269 | 11528 | 16770 | 　 | 46159 | 955 | 2076 |
| Person-years (*N*)  | 151807 | 143061 | 210637 |  | 658869 | 11193 | 25778 |
| Number of cases (*N*) | 50 | 67 | 109 |  | 212 | 8 | 13 |
| Crude rate (per 100,000) | 32.9 | 46.8 | 51.7 |  | 32.2 | 71.5 | 50.4 |
| HR (model 2) Overall | 1.00 (ref) | 1.21 (0.73-2.00) | **1.78 (1.22-2.61)** |  | 1.00 (ref) | **2.50 (1.17-5.33)** | **2.40 (1.32-4.36)** |
| Yes | Number of subjects (*N*) | 17164 | 19677 | 55147 |  | 83060 | 2028 | 8681 |
| Person-years (*N*)  | 240082 | 259074 | 729045 |  | 1132736 | 23821 | 107960 |
| Number of cases (*N*) | 70 | 101 | 332 |  | 299 | 13 | 45 |
| Crude rate (per 100,000) | 29.2 | 39.0 | 45.5 |  | 26.4 | 54.6 | 41.7 |
| HR (model 2) Overall | 1.00 (ref) | 1.10 (0.76-1.59) | **1.58 (1.20-2.08)** |  | 1.00 (ref) | **2.28 (1.29-4.03)** | **2.04 (1.48-2.82)** |
| 1. Model 2 was adjusted for age, area (for multicentric studies, namely JPHC-I, JPHC-II, JACC, and LSS), BMI (<23, 23 to <25, and ≥25 kg/m2), alcohol consumption [men: nondrinker, occasional drinker (less than once a week), and current drinker (<23, 23 to <46, 46 to <69, and ≥69 ethanol g/day); women: nondrinker, occasional drinker and current drinker (<23 and ≥23 ethanol g/day)], and history of diabetes. We excluded TAKAYAMA and LSS in which no information on ETS was available. |
| 2. HRs values in bold show statistical significance (*P* < 0.05). |
| BMI, body mass index; JPHC, Japan Public Health Center-based Prospective Study; JACC, Japan Collaborative Cohort Study; TAKAYAMA, Takayama Study; LSS, Life Span Study |

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| **Supplementary table 3.** Hazard ratios (HRs) and 95% confidence intervals (CIs) for pancreatic cancer risk according to cumulative smoking exposure in strata of environmental tobacco smoke (ETS) exposure. A pooled analysis of ten population-based cohort studies in Japan |
|  | Cumulative smoking exposure by pack-years |
|  | Males |  | Females |
| 0 | >0 to 20 | >20 |  | 0 | >0 to 20 | >20 |
| ETS duringchildhood | No | Number of subjects (*N*) | 12131 | 8647 | 21250 | 　 | 46880 | 2280 | 773 |
| Person-years (*N*)  | 170675 | 119108 | 275614 |  | 684951 | 30589 | 9316 |
| Number of cases (*N*) | 52 | 36 | 158 |  | 199 | 14 | 9 |
| Crude rate (per 100,000) | 30.5 | 30.2 | 57.3 |  | 29.1 | 45.8 | 96.6 |
| HR (model 2) Overall | 1.00 (ref) | 1.00 (0.63-1.58) | **1.71 (1.23-2.38)** |  | 1.00 (ref) | **2.99 (1.36-6.56)** | **5.96 (2.98-11.93)** |
| Yes | Number of subjects (*N*) | 17322 | 18687 | 59898 |  | 89606 | 7704 | 3291 |
| Person-years (*N*)  | 236129 | 252109 | 765403 |  | 1206942 | 95520 | 37197 |
| Number of cases (*N*) | 80 | 78 | 384 |  | 368 | 44 | 19 |
| Crude rate (per 100,000) | 33.9 | 30.9 | 50.2 |  | 30.5 | 46.1 | 51.1 |
| HR (model 2) Overall | 1.00 (ref) | 1.07 (0.77-1.49) | **1.38 (1.07-1.78)** |  | 1.00 (ref) | **1.70 (1.21-2.39)** | 1.61 (0.99-2.63) |
| ETS at homeand/or at work | No | Number of subjects (*N*) | 11269 | 8233 | 19730 | 　 | 46159 | 2098 | 864 |
| Person-years (*N*)  | 151807 | 106697 | 243277 |  | 658869 | 26288 | 9948 |
| Number of cases (*N*) | 50 | 40 | 132 |  | 212 | 14 | 7 |
| Crude rate (per 100,000) | 32.9 | 37.5 | 54.3 |  | 32.2 | 53.3 | 70.4 |
| HR (model 2) Overall | 1.00 (ref) | 1.28 (0.80-2.05) | **1.60 (1.04-2.44)** |  | 1.00 (ref) | **2.27 (1.27-4.04)** | **2.73 (1.24-6.02)** |
| Yes | Number of subjects (*N*) | 17164 | 17982 | 56186 |  | 83060 | 7508 | 3024 |
| Person-years (*N*)  | 240082 | 249627 | 730371 |  | 1132736 | 95119 | 34532 |
| Number of cases (*N*) | 70 | 66 | 361 |  | 299 | 40 | 20 |
| Crude rate (per 100,000) | 29.2 | 26.4 | 49.4 |  | 26.4 | 42.1 | 57.9 |
| HR (model 2) Overall | 1.00 (ref) | 1.02 (0.72-1.45) | **1.58 (1.19-2.08)** |  | 1.00 (ref) | **1.88 (1.32-2.67)** | **2.65 (1.66-4.23)** |
| 1. Model 2 was adjusted for age, area (for multicentric studies, namely JPHC-I, JPHC-II, JACC, and LSS), BMI (<23, 23 to <25, and ≥25 kg/m2), alcohol consumption [men: nondrinker, occasional drinker (less than once a week), and current drinker (<23, 23 to <46, 46 to <69, and ≥69 ethanol g/day); women: nondrinker, occasional drinker and current drinker (<23 and ≥23 ethanol g/day)], and history of diabetes. We excluded TAKAYAMA and LSS in which no information on ETS was available. |
| 2. HRs values in bold show statistical significance (*P* < 0.05). |
| BMI, body mass index; JPHC, Japan Public Health Center-based Prospective Study; JACC, Japan Collaborative Cohort Study; TAKAYAMA, Takayama Study; LSS, Life Span Study |