**Supplementary Table 1.** **Baseline characteristics of subjects according to the incidence of gastric cancer**

|  |  |  |
| --- | --- | --- |
|  | Incidence rate of gastric cancer [n (%)] | *P* value |
|  | No (n = 200,642) | Yes (n = 1,920) |
| Fasting glucose variability (VIM (%)) | 8.79 (4.58) | 9.42(4.85) | < 0.001 |
| Fasting glucose (mg/dL) | 92.7 (81.2-104.2) | 93.2 (81.1-105.3) | 0.054 |
| Mean fasting glucose (mg/dL) | 91.3 (83.1-99.5) | 91.7 (83.4-100.0) | 0.038 |
| Age (years) | 55.9 (47.5-64.3) | 60.4 (51.1-69.7) | < 0.001 |
| Male [n (%)] | 110637 (55.1) | 1446 (75.3) | < 0.001 |
| Body mass index (kg/m2) | 23.8 (21.0-26.6) | 23.7 (20.8-26.6) | 0.118 |
| Systolic blood pressure (mmHg) | 124.7 (109.1-140.3) | 126.9 (110.8-143.0) | < 0.001 |
| Diastolic blood pressure (mmHg) | 77.8 (67.6-88.0) | 78.7 (68.3-89.1) | < 0.001 |
| Hemoglobin (g/dL) | 13.9 (12.4-15.4) | 14.1 (12.6-15.6) | < 0.001 |
| Total cholesterol (mg/dl) | 198.9 (163.1-234.7) | 195.1 (159.4-230.8) | < 0.001 |
| Current smoking [n (%)] | 36295 (18.1) | 486 (25.3) | < 0.001 |
| Heavy alcohol consumption [n (%)] | 18198 (9.1) | 290 (15.1) | < 0.001 |
| Regular exercise [n (%)] | 48267 (24.1) | 475 (24.7) | 0.486 |
| Low income level [n (%)] | 25914 (12.9) | 235 (12.2) | 0.027 |
| Family history of cancer [n (%)] | 51374 (25.6) | 534(27.8) | 0.379 |

Values are presented as mean ± standard deviation or number (%).

VIM; variability independent of the mean.

**Supplementary Table 2.** **Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to quartiles of fasting glucose variability assessed by VIM using attained age as a time scale**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fasting glucose variability quartiles | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Adjusted |
| Total |
| Q1 (n=50646) | 408 | 8510.17 | 47.94 | 1 (ref) | 1 (ref) |
| Q2 (n=50635) | 464 | 8440.28 | 54.97 | 1.11 (1.04-1.19) | 1.08 (1.01-1.16) |
| Q3 (n=50641) | 486 | 8468.33 | 57.39 | 1.16 (1.08-1.24) | 1.09 (1.02-1.17) |
| Q4 (n=50640) | 562 | 5880.01 | 95.58 | 1.31 (1.22-1.39) | 1.22 (1.15-1.30) |
| *P* for linear trend |  |  | <0.001 | <.0001 |
| NFG |
| Q1(n=37460) | 290 | 6279.71 | 46.18 | 1 (ref) | 1 (ref) |
| Q2(n=37419) | 334 | 6216.75 | 53.73 | 1.12 (1.03-1.22) | 1.08 (1.00-1.18) |
| Q3(n=37433) | 361 | 6240.04 | 57.85 | 1.18 (1.09-1.28) | 1.11 (1.03-1.21) |
| Q4(n=37444) | 388 | 6343.75 | 61.16 | 1.29 (1.19-1.39) | 1.20 (1.11-1.30) |
| *P* for linear trend |  |  | <0.001 | <0.001 |
| IFG |
| Q1(n=13196) | 118 | 2243.20 | 52.60 | 1 (ref) | 1 (ref) |
| Q2(n=13207) | 139 | 2226.23 | 62.44 | 1.03 (0.91-1.17) | 1.03 (0.90-1.17) |
| Q3(n=13201) | 129 | 2221.92 | 58.06 | 1.05 (0.92-1.19) | 1.03 (0.90-1.18) |
| Q4(n=13202) | 161 | 2266.93 | 71.02 | 1.29 (1.15-1.44) | 1.28 (1.12-1.45) |
| *P* for linear trend |  |  | <0.001 | 0.001 |

Adjusted for age, sex, body mass index, smoking status, alcohol consumption, regular exercise, income level, family history of cancer, and mean fasting glucose level

**Supplementary Table 3. Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to quartiles of fasting glucose variability assessed by CV**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fasting glucose variability quartiles | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Model 1 | Model 2 | Model 3 | Model 4 |
| **Total** |
| Q1 (n=50640) | 418 | 295722.95 | 1.41 | 1 | 1 | 1 | 1 | 1 |
| Q2 (n=50656) | 448 | 293060.33 | 1.53 | 1.00 (0.93-1.07) | 1.03 (0.96-1.10) | 1.03 (0.96-1.10) | 1.02 (0.95-1.09) | 1.02 (0.95-1.09) |
| Q3 (n=50630) | 491 | 292373.14 | 1.68 | 1.11 (1.04-1.19) | 1.09 (1.02-1.17) | 1.09 (1.02-1.17) | 1.07 (1.00-1.15) | 1.07 (1.00-1.15) |
| Q4 (n=50636) | 563 | 294396.27 | 1.91 | 1.48 (1.39-1.58) | 1.29 (1.21-1.38) | 1.29 (1.21-1.37) | 1.24(1.17-1.33) | 1.25(1.17-1.33) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **NFG** |
| Q1(n=37460) | 286 | 219202.26 | 1.30 | 1 | 1 | 1 | 1 | 1 |
| Q2(n=37419) | 341 | 216851.01 | 1.57 | 1.04 (0.95-1.13) | 1.06(0.98-1.16) | 1.06(0.98-1.15) | 1.05(0.97-1.14) | 1.05 (0.97-1.14) |
| Q3(n=37433) | 357 | 216510.15 | 1.65 | 1.15 (1.06-1.25) | 1.12(1.03-1.22) | 1.12(1.03-1.22) | 1.10(1.01-1.19) | 1.10 (1.01-1.19) |
| Q4(n=37444) | 389 | 217918.25 | 1.79 | 1.47 (1.36-1.59) | 1.27(1.18-1.38) | 1.27(1.17-1.37) | 1.22(1.13-1.32) | 1.22 (1.13-1.32) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **IFG** |
| Q1(n=13196) | 121 | 76450.46 | 1.58 | 1 | 1 | 1 | 1 | 1 |
| Q2(n=13207) | 138 | 75963.10 | 1.82 | 0.95(0.84-1.08) | 0.99(0.88-1.13) | 0.99(0.87-1.12) | 0.98(0.86-1.11) | 1.00 (0.88-1.14) |
| Q3(n=13201) | 127 | 75922.61 | 1.67 | 0.96 (0.84-1.09) | 1.02(0.90-1.16) | 1.01(0.89-1.15) | 0.99(0.87-1.12) | 1.05 (0.92-1.20) |
| Q4(n=13202) | 161 | 76734.84 | 2.10 | 1.41 (1.26-1.59) | 1.34(1.19-1.50) | 1.31(1.17-1.47) | 1.26(1.13-1.42) | 1.39 (1.21-1.58) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

Model 1: adjusted for age and sex.

Model 2: adjusted for model 1 plus body mass index.

Model 3: adjusted for model 2 plus smoking status, alcohol consumption, regular exercise, income level, and family history of cancer.

Model 4: adjusted for model 3 plus mean fasting glucose level.

CV; coefficient of variation, NFG; normal fasting glucose, IFG; impaired fasting glucose.

**Supplementary Table 4. Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to quartiles of fasting glucose variability assessed by SD**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fasting glucose variability quartiles | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Model 1 | Model 2 | Model 3 | Model 4 |
| **Total** |
| Q1 (n=50616) | 402 | 295822.96 | 1.36 | 1 | 1 | 1 | 1 | 1 |
| Q2 (n=51237) | 467 | 296484.60 | 1.58 | 1.07 (0.99-1.14) | 1.08 (1.01-1.16) | 1.08 (1.01-1.16) | 1.07 (1.00-1.15) | 1.07 (1.00-1.15) |
| Q3 (n=49702) | 488 | 286794.32 | 1.70 | 1.14 (1.06-1.22) | 1.11 (1.03-1.19) | 1.11 (1.04-1.19) | 1.09 (1.02-1.17) | 1.09 (1.02-1.17) |
| Q4 (n=51007) | 563 | 296450.82 | 1.90 | 1.54 (1.45-1.65) | 1.30 (1.22-1.39) | 1.30 (1.22-1.39) | 1.26 (1.18-1.34) | 1.26 (1.18-1.34) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| NFG |
| Q1(n=37231) | 288 | 218016.02 | 1.32 | 1 | 1 | 1 | 1 | 1 |
| Q2(n=37106) | 335 | 215102.19 | 1.56 | 1.06 (0.97-1.15) | 1.07(0.98-1.17) | 1.07(0.98-1.16) | 1.06(0.98-1.16) | 1.06 (0.98-1.16) |
| Q3(n=37988) | 360 | 219709.88 | 1.64 | 1.15 (1.06-1.25) | 1.12(1.03-1.21) | 1.12(1.03-1.22) | 1.10(1.01-1.20) | 1.10 (1.02-1.20) |
| Q4(n=37431) | 390 | 217653.59 | 1.79 | 1.51 (1.40-1.63) | 1.27(1.18-1.37) | 1.27(1.18-1.37) | 1.23(1.14-1.33) | 1.24 (1.15-1.34) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| IFG |
| Q1(n=13198) | 116 | 76422.89 | 1.52 | 1 | 1 | 1 | 1 | 1 |
| Q2(n=13200) | 135 | 75922.02 | 1.78 | 0.99 (0.87-1.12) | 1.03(0.91-1.17) | 1.03(0.90-1.17) | 1.01(0.89-1.15) | 1.03(0.91-1.17) |
| Q3(n=13188) | 129 | 75888.67 | 1.70 | 0.98 (0.86-1.11) | 1.03(0.91-1.17) | 1.02(0.90-1.16) | 1.00(0.88-1.13) | 1.04 (0.91-1.18) |
| Q4(n=13220) | 167 | 76837.44 | 2.17 | 1.49 (1.33-1.67) | 1.37(1.22-1.54) | 1.35(1.20-1.52) | 1.30(1.16-1.46) | 1.37(1.21-1.56) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

Model 1: adjusted for age and sex.

Model 2: adjusted for model 1 plus body mass index.

Model 3: adjusted for model 2 plus smoking status, alcohol consumption, regular exercise, income level, and family history of cancer.

Model 4: adjusted for model 3 plus mean fasting glucose level.

SD; standard deviation, NFG; normal fasting glucose, IFG; impaired fasting glucose.

**Supplementary Table 5. Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to quartiles of fasting glucose variability assessed by ASV**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fasting glucose variability quartiles | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Model 1 | Model 2 | Model 3 | Model 4 |
| **Total** |
| Q1 (n=46092) | 374 | 268445.33 | 1.39 | 1 | 1 | 1 | 1 | 1 |
| Q2 (n=53625) | 463 | 310032.96 | 1.49 | 1.03 (0.96-1.11) | 1.02 (0.95-1.10) | 1.02 (0.95-1.10) | 1.01 (0.94-1.09) | 1.01 (0.94-1.09) |
| Q3 (n=51584) | 513 | 297938.19 | 1.72 | 1.20 (1.11-1.28) | 1.13(1.06-1.21) | 1.13 (1.06-1.22) | 1.11 (1.04-1.20) | 1.11 (1.04-1.19) |
| Q4 (n=51261) | 570 | 299136.21 | 1.91 | 1.52 (1.42-1.62) | 1.24 (1.16-1.33) | 1.25 (1.17-1.34) | 1.21 (1.14-1.30) | 1.21(1.13-1.30) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **NFG** |
| Q1(n=37583) | 303 | 219415.21 | 1.38 | 1 | 1 | 1 | 1 | 1 |
| Q2(n=36372) | 312 | 210607.37 | 1.48 | 1.01 (0.93-1.10) | 1.01(0.93-1.10) | 1.01(0.93-1.10) | 1.00 (0.92-1.09) | 1.00 (0.92-1.09) |
| Q3(n=36195) | 351 | 209353.19 | 1.68 | 1.16 (1.07-1.26) | 1.11(1.03-1.21) | 1.11(1.03-1.21) | 1.10 (1.01-1.19) | 1.10 (1.01-1.19) |
| Q4(n=39606) | 407 | 231105.91 | 1.76 | 1.45 (1.35-1.57) | 1.21(1.12-1.31) | 1.21(1.12-1.31) | 1.18 (1.09-1.28) | 1.19 (1.10-1.28) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **IFG** |
| Q1(n=12695) | 112 | 73274.95 | 1.53 | 1 | 1 | 1 | 1 | 1 |
| Q2(n=12512) | 112 | 71854.88 | 1.56 | 1.02 (0.89-1.16) | 1.05 (0.91-1.19) | 1.04 (0.91-1.18) | 1.02 (0.90-1.17) | 1.04 (0.91-1.19) |
| Q3(n=13650) | 137 | 78561.59 | 1.74 | 1.14 (1.00-1.29) | 1.13 (1.00-1.28) | 1.12 (1.99-1.28) | 1.10 (0.97-1.25) | 1.12 (0.99-1.28) |
| Q4(n=13949) | 186 | 81379.60 | 2.29 | 1.54 (1.37-1.74) | 1.36 (1.21-1.53) | 1.34 (1.19-1.51) | 1.30 (1.15-1.46) | 1.34 (1.18-1.51) |
| *P* for linear trend |  |  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

Model 1: adjusted for age and sex.

Model 2: adjusted for model 1 plus body mass index.

Model 3: adjusted for model 2 plus smoking status, alcohol consumption, regular exercise, income level, and family history of cancer.

Model 4: adjusted for model 3 plus mean fasting glucose level.

 ASV; average successive variability, NFG; normal fasting glucose, IFG; impaired fasting glucose.

**Supplementary Table 6.** **Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to deciles of fasting glucose variability assessed by VIM**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fasting glucose variability decile | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Adjusted |
| **Total** |  |  |  |  |  |
| D1 (n=20265) | 154 | 119219.57 | 1.29 | 1 (ref) | 1 (ref) |
| D2 (n=20246) | 160 | 117882.87 | 1.36 | 0.96 (0.86-1.08) | 0.97 (0.87-1.08) |
| D3 (n=20257) | 181 | 117586.03 | 1.54 | 1.01 (0.90-1.12) | 1.01(0.91-1.13) |
| D4 (n=20272) | 187 | 117205.72 | 1.60 | 1.06 (0.95-1.18) | 1.09 (0.98-1.22) |
| D5 (n=20241) | 190 | 116870.41 | 1.63 | 1.04 (0.93-1.16) | 1.04 (0.93-1.16) |
| D6 (n=20259) | 201 | 117047.59 | 1.72 | 1.08 (0.96-1.20) | 1.04 (0.93-1.16) |
| D7 (n=20259) | 198 | 116891.02 | 1.69 | 1.17 (1.05-1.30) | 1.13 (1.01-1.26) |
| D8 (n=20251) | 184 | 117073.38 | 1.57 | 1.14 (1.03-1.27) | 1.05 (0.94-1.17) |
| D9 (n=20257) | 208 | 117313.82 | 1.77 | 1.38 (1.24-1.53) | 1.20 (1.09-1.34) |
| D10 (n=20255) | 257 | 118462.29 | 2.17 | 1.79 (1.62-1.97) | 1.36 (1.23-1.50) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **NFG** |  |  |  |  |  |
| D1 (n=14976) | 111 | 88294.54 | 1.26 | 1 (ref) | 1 (ref) |
| D2 (n=14972) | 119 | 87331.57 | 1.36 | 0.96 (0.84-1.10) | 0.99 (0.86-1.13) |
| D3 (n=14979) | 132 | 87034.53 | 1.52 | 0.99 (0.87-1.13) | 1.03 (0.90-1.17) |
| D4 (n=14979) | 136 | 86888.09 | 1.57 | 1.04 (0.91-1.18) | 1.07 (0.94-1.22) |
| D5 (n=14972) | 126 | 86664.92 | 1.45 | 1.02 (0.89-1.16) | 1.04 (0.92-1.19) |
| D6 (n=14976) | 141 | 86561.31 | 1.63 | 1.07 (0.94-1.22) | 1.05 (0.92-1.20) |
| D7 (n=14974) | 140 | 86675.91 | 1.62 | 1.11 (0.98-1.26) | 1.09 (0.96-1.24) |
| D8 (n=14981) | 150 | 86631.73 | 1.73 | 1.21 (1.06-1.37) | 1.11 (0.98-1.26) |
| D9 (n=14972) | 138 | 86927.41 | 1.59 | 1.31 (1.16-1.48) | 1.16 (1.02-1.31) |
| D10 (n=14975) | 180 | 87471.67 | 2.06 | 1.73 (1.54-1.94) | 1.33 (1.18-1.50) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **IFG**  |  |  |  |  |  |
| D1 (n=5287) | 42 | 30803.58 | 1.36 | 1 (ref) | 1 (ref) |
| D2 (n=5274) | 45 | 30487.17 | 1.48 | 0.95 (0.78-1.16) | 0.99 (0.81-1.20) |
| D3 (n=5281) | 58 | 30406.92 | 1.91 | 0.98 (0.80-1.19) | 1.05 (0.86-1.29) |
| D4 (n=5278) | 42 | 30289.73 | 1.39 | 0.88 (0.72-1.08) | 0.96 (0.78-1.18) |
| D5 (n=5283) | 70 | 30398.51 | 2.30 | 1.07 (0.88-1.30) | 1.16 (0.95-1.41) |
| D6 (n=5281) | 45 | 30344.08 | 1.48 | 0.92 (0.75-1.12) | 1.01 (0.82-1.24) |
| D7 (n=5280) | 53 | 30367.12 | 1.75 | 0.93 (0.76-1.13) | 1.06 (0.86-1.30) |
| D8 (n=5281) | 56 | 30459.59 | 1.84 | 1.15 (0.95-1.40) | 1.23 (1.01-1.50) |
| D9 (n=5281) | 61 | 30568.95 | 2.00 | 1.22 (1.01-1.47) | 1.24 (1.02-1.52) |
| D10 (n=5280) | 75 | 30945.36 | 2.42 | 1.73 (1.45-2.05) | 1.60 (1.33-1.93) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |

Adjusted for age, sex, body mass index, smoking status, alcohol consumption, regular exercise, income level, family history of cancer, and mean fasting glucose level.

VIM; variability in mean, NFG; normal fasting glucose, IFG; impaired fasting glucose.

**Supplementary Table 7.** **Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to deciles of fasting glucose variability assessed by CV**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fasting glucose variability decile | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Adjusted |
| **Total** |  |  |  |  |  |
| D1 (n=20256) | 149 | 119080.36 | 1.25 | 1 (ref) | 1 (ref) |
| D2 (n=20256) | 165 | 117888.62 | 1.40 | 1.03 (0.92-1.15) | 1.06 (0.94-1.18) |
| D3 (n=20254) | 189 | 117548.74 | 1.61 | 1.03 (0.92-1.15) | 1.07 (0.96-1.20) |
| D4 (n=20259) | 183 | 117101.52 | 1.56 | 1.06 (0.95-1.18) | 1.11 (0.99-1.24) |
| D5 (n=20271) | 180 | 117164.05 | 1.54 | 1.04 (0.93-1.16) | 1.05 (0.94-1.18) |
| D6 (n=20242) | 219 | 116761.10 | 1.88 | 1.17 (1.05-1.31) | 1.16 (1.04-1.30) |
| D7 (n=20256) | 182 | 117067.55 | 1.55 | 1.13 (1.01-1.26) | 1.12 (1.00-1.24) |
| D8 (n=20262) | 196 | 117091.77 | 1.67 | 1.16 (1.04-1.29) | 1.11 (1.00-1.24) |
| D9 (n=20250) | 204 | 117263.05 | 1.74 | 1.41 (1.27-1.57) | 1.26 (1.13-1.39) |
| D10 (n=20256) | 253 | 118585.94 | 2.13 | 1.80 (1.63-1.98) | 1.41 (1.28-1.56) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **NFG** |  |  |  |  |  |
| D1 (n=14982) | 111 | 88250.37 | 1.26 | 1 (ref) | 1 (ref) |
| D2 (n=14972) | 121 | 87416.23 | 1.38 | 0.98 (0.86-1.12) | 1.01 (0.88-1.15) |
| D3 (n=14974) | 134 | 86968.95 | 1.54 | 1.07 (0.93-1.21) | 1.10 (0.96-1.25) |
| D4 (n=14977) | 123 | 86864.84 | 1.42 | 1.00 (0.88-1.15) | 1.04 (0.91-1.19) |
| D5 (n=14972) | 138 | 86541.80 | 1.59 | 1.06 (0.93-1.21) | 1.09 (0.96-1.25) |
| D6 (n=14969) | 151 | 86511.90 | 1.75 | 1.14 (1.00-1.30) | 1.14 (1.00-1.29) |
| D7 (n=14982) | 137 | 86814.66 | 1.58 | 1.13 (0.99-1.28) | 1.10 (0.96-1.25) |
| D8 (n=14968) | 142 | 86559.48 | 1.64 | 1.17 (1.03-1.33) | 1.10 (0.97-1.26) |
| D9 (n=14985) | 132 | 86982.55 | 1.52 | 1.38 (1.22-1.56) | 1.22 (1.08-1.38) |
| D10 (n=14975) | 184 | 87570.90 | 2.10 | 1.74 (1.55-1.96) | 1.36 (1.21-1.53) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **IFG** |  |  |  |  |  |
| D1 (n=5280) | 44 | 30766.35 | 1.43 | 1 (ref) | 1 (ref) |
| D2 (n=5281) | 47 | 30547.58 | 1.54 | 0.97 (0.79-1.18) | 1.00 (0.82-1.22) |
| D3 (n=5283) | 54 | 30341.58 | 1.78 | 0.95 (0.78-1.16) | 1.03 (0.84-1.26) |
| D4 (n=5278) | 48 | 30372.44 | 1.58 | 0.91 (0.75-1.12) | 1.00 (0.81-1.22) |
| D5 (n=5281) | 66 | 30385.60 | 2.17 | 1.00 (0.82-1.22) | 1.08 (0.88-1.32) |
| D6 (n=5281) | 45 | 30337.77 | 1.48 | 0.94 (0.77-1.14) | 1.04 (0.85-1.28) |
| D7 (n=5282) | 56 | 30359.78 | 1.84 | 0.94 (0.77-1.14) | 1.09 (0.88-1.33) |
| D8 (n=5279) | 52 | 30418.50 | 1.71 | 1.11 (0.92-1.34) | 1.21 (0.99-1.48) |
| D9 (n=5281) | 55 | 30623.07 | 1.80 | 1.18 (0.98-1.42) | 1.25 (1.02-1.53) |
| D10 (n=5280) | 80 | 30918.34 | 2.59 | 1.71 (1.44-2.03) | 1.63 (1.35-1.98) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |

Adjusted for age, sex, body mass index, smoking status, alcohol consumption, regular exercise, income level, family history of cancer, and mean fasting glucose level.

CV; coefficient of variation, NFG; normal fasting glucose, IFG; impaired fasting glucose.

**Supplementary Table 8.** **Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to deciles of fasting glucose variability assessed by SD**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fasting glucose variability decile | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Adjusted |
| **Total** |  |  |  |  |  |
| D1 (n=19954) | 152 | 117306.24 | 1.30 | 1 (ref) | 1 (ref) |
| D2 (n=20547) | 166 | 119861.65 | 1.38 | 0.99 (0.89-1.11) | 0.99 (0.89-1.11) |
| D3 (n=20270) | 175 | 117424.96 | 1.49 | 0.98 (0.87-1.09) | 1.00 (0.89-1.12) |
| D4 (n=20176) | 190 | 116867.63 | 1.63 | 1.06 (0.95-1.19) | 1.08 (0.96-1.20) |
| D5 (n=20220) | 181 | 116752.99 | 1.55 | 1.07 (0.96-1.20) | 1.07 (0.96-1.20) |
| D6 (n=20363) | 196 | 117743.10 | 1.66 | 1.03 (0.92-1.15) | 1.01 (0.90-1.13) |
| D7 (n=20329) | 207 | 117339.78 | 1.76 | 1.20 (1.07-1.33) | 1.13 (1.02-1.30) |
| D8 (n=20255) | 183 | 116895.84 | 1.57 | 1.18 (1.06-1.32) | 1.09 (0.97-1.20) |
| D9 (n=20154) | 214 | 116768.99 | 1.83 | 1.38 (1.24-1.53) | 1.19 (1.07-1.32) |
| D10 (n=20294) | 256 | 118591.52 | 2.16 | 1.82 (1.65-2.01) | 1.37 (1.24-1.51) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **NFG** |  |  |  |  |  |
| D1 (n=14975) | 110 | 88291.93 | 1.25 | 1 (ref) | 1 (ref) |
| D2 (n=15006) | 121 | 87564.17 | 1.38 | 0.94 (0.83-1.08) | 0.97 (0.85-1.11) |
| D3 (n=15061) | 123 | 87607.39 | 1.40 | 0.96 (0.84-1.10) | 0.99 (0.86-1.13) |
| D4 (n=14866) | 142 | 86108.54 | 1.65 | 1.06 (0.93-1.20) | 1.10 (0.96-1.25) |
| D5 (n=15051) | 134 | 87238.04 | 1.54 | 1.02 (0.89-1.16) | 1.03 (0.90-1.17) |
| D6 (n=14773) | 130 | 85303.71 | 1.52 | 1.07 (0.94-1.22) | 1.06 (0.93-1.21) |
| D7 (n=15099) | 154 | 87434.57 | 1.76 | 1.12 (0.98-1.27) | 1.11 (0.97-1.26) |
| D8 (n=14761) | 134 | 85320.32 | 1.57 | 1.17 (1.03-1.33) | 1.08 (0.95-1.23) |
| D9 (n=15240) | 151 | 88456.51 | 1.71 | 1.34 (1.18-1.51) | 1.18 (1.05-1.34) |
| D10 (n=14924) | 174 | 87156.49 | 2.00 | 1.71 (1.53-1.93) | 1.31 (1.16-1.47) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **IFG** |  |  |  |  |  |
| D1 (n=5278) | 42 | 30748.23 | 1.37 | 1 (ref) | 1 (ref) |
| D2 (n=5262) | 47 | 30401.96 | 1.55 | 0.99 (0.81-1.20) | 1.01 (0.83-1.24) |
| D3 (n=5291) | 54 | 30457.09 | 1.77 | 0.94 (0.77-1.15) | 1.02 (0.84-1.25) |
| D4 (n=5291) | 48 | 30375.66 | 1.58 | 0.91 (0.74-1.12) | 0.98 (0.80-1.21) |
| D5 (n=5282) | 60 | 30396.29 | 1.97 | 1.05 (0.86-1.28) | 1.12 (0.92-1.40) |
| D6 (n=5276) | 54 | 30259.93 | 1.78 | 0.97 (0.79-1.18) | 1.06 (0.87-1.30) |
| D7 (n=5285) | 47 | 30414.69 | 1.55 | 0.88 (0.72-1.06) | 0.98 (0.80-1.21) |
| D8 (n=5302) | 57 | 30688.71 | 1.86 | 1.16 (0.96-1.40) | 1.17 (0.96-1.43) |
| D9 (n=5273) | 62 | 30485.17 | 2.03 | 1.33 (1.10-1.60) | 1.35 (1.11-1.64) |
| D10 (n=5266) | 76 | 30843.30 | 2.46 | 1.73 (1.46-2.07) | 1.53 (1.27-1.85) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |

Adjusted for age, sex, body mass index, smoking status, alcohol consumption, regular exercise, income level, family history of cancer, and mean fasting glucose level.

SD; standard deviation, NFG; normal fasting glucose, IFG; impaired fasting glucose.

**Supplementary Table 9.** **Hazard ratios and 95% confidence intervals for the incidence of gastric cancer according to deciles of fasting glucose variability assessed by ASV**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fasting glucose variability decile | Events (n) | Follow-up duration (person-years) | Incidence rate (per 1000 person-years) | Unadjusted | Adjusted |
| **Total** |  |  |  |  |  |
| D1 (n=19751) | 152 | 115605.24 | 1.31 | 1 (ref) | 1 (ref) |
| D2 (n=19691) | 178 | 114072.29 | 1.56 | 1.01 (0.90-1.13) | 1.05 (0.94-1.18) |
| D3 (n=21246) | 152 | 123732.71 | 1.23 | 0.96 (0.85-1.07) | 0.95 (0.85-1.07) |
| D4 (n=22100) | 201 | 127871.57 | 1.57 | 1.08 (0.96-1.20) | 1.08 (0.96-1.20) |
| D5 (n=16929) | 154 | 97196.48 | 1.58 | 1.05 (0.94-1.18) | 1.06 (0.94-1.19) |
| D6 (n=19852) | 214 | 114629.45 | 1.87 | 1.15 (1.03-1.28) | 1.13 (1.01-1.26) |
| D7 (n=22111) | 203 | 127862.69 | 1.59 | 1.18 (1.06-1.31) | 1.10 (0.98-1.20) |
| D8 (n=20766) | 206 | 120157.69 | 1.71 | 1.29 (1.16-1.44) | 1.17 (1.05-1.30) |
| D9 (n=19306) | 212 | 112063.78 | 1.89 | 1.39 (1.25-1.55) | 1.20 (1.08-1.33) |
| D10 (n=20810) | 248 | 122360.79 | 2.03 | 1.77 (1.60-1.95) | 1.32 (1.19-1.46) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **NFG** |  |  |  |  |  |
| D1 (n=15788) | 116 | 92872.40 | 1.25 | 1 (ref) | 1 (ref) |
| D2 (n=15579) | 145 | 90477.49 | 1.60 | 1.07 (0.94-1.22) | 1.12 (0.98-1.27) |
| D3 (n=13452) | 92 | 77840.24 | 1.18 | 0.90 (0.79-1.04) | 0.96 (0.83-1.10) |
| D4 (n=15771) | 125 | 92075.96 | 1.36 | 1.07 (0.94-1.21) | 1.06 (0.93-1.21) |
| D5 (n=13365) | 137 | 76756.48 | 1.78 | 1.07 (0.94-1.20) | 1.11 (0.97-1.27) |
| D6 (n=16047) | 162 | 92669.35 | 1.75 | 1.15 (1.01-1.30) | 1.16 (1.02-1.31) |
| D7 (n=15826) | 149 | 91917.14 | 1.62 | 1.25 (1.11-1.42) | 1.18 (1.04-1.33) |
| D8 (n=13717) | 125 | 79119.75 | 1.58 | 1.25 (1.10-1.42) | 1.18 (1.04-1.34) |
| D9 (n=15410) | 153 | 89684.31 | 1.71 | 1.35 (1.20-1.54) | 1.18 (1.04-1.33) |
| D10 (n=14801) | 169 | 87068.55 | 1.94 | 1.70 (1.51-1.91) | 1.31(1.16-1.48) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |
| **IFG** |  |  |  |  |  |
| D1 (n=5067) | 47 | 29323.22 | 1.60 | 1 (ref) | 1 (ref) |
| D2 (n=5452) | 43 | 31532.84 | 1.36 | 0.88(0.71-1.08) | 0.90 (0.73-1.11) |
| D3 (n=5304) | 49 | 30396.42 | 1.61 | 0.97(0.79-1.18) | 1.01 (0.82-1.24) |
| D4 (n=5233) | 51 | 30106.27 | 1.69 | 1.02(0.83-1.24) | 1.03 (0.84-1.26) |
| D5 (n=5504) | 49 | 31631.23 | 1.55 | 0.85 (0.69-1.05) | 0.90 (0.73-1.11) |
| D6 (n=5123) | 51 | 29411.35 | 1.73 | 1.02 (0.83-1.25) | 1.05 (0.85-1.28) |
| D7 (n=5465) | 59 | 31502.44 | 1.87 | 1.11 (0.91-1.35) | 1.12 (0.91-1.36) |
| D8 (n=4862) | 49 | 28055.78 | 1.75 | 1.16 (0.95-1.41) | 1.13 (0.93-1.39) |
| D9 (n=5517) | 78 | 32125.53 | 2.43 | 1.38 (1.14-1.66) | 1.28 (1.05-1.54) |
| D10 (n=5279) | 71 | 30985.95 | 2.29 | 1.61 (1.34-1.93) | 1.30 (1.08-1.57) |
| *P* value |  |  |  | <0.001 | <0.001 |
| *P* for linear trend |  | 　 | 　 | <0.001 | <0.001 |

Adjusted for age, sex, body mass index, smoking status, alcohol consumption, regular exercise, income level, family history of cancer, and mean fasting glucose level.

ASV; average successive variability, NFG; normal fasting glucose, IFG; impaired fasting glucose.