

# Web appendix: Supplementary material

**Appendix Table 1: Distribution of CVD and stroke deaths by region in the Asia Cohort Consortium CVD Project**

| Diseases of the circulatory system<br>(total cardiovascular disease) | ICD-7   | ICD-8   | ICD-9   | ICD-10  | Cohorts by geographic regions |       |                                          |
|----------------------------------------------------------------------|---------|---------|---------|---------|-------------------------------|-------|------------------------------------------|
|                                                                      |         |         |         |         | India and<br>Bangladesh       | Japan | China,<br>Korea,<br>Taiwan,<br>Singapore |
| Overall CVD                                                          | 400-468 | 390-458 | 390-459 | I00-I99 |                               |       |                                          |
| Ischemic heart disease                                               | 420     | 410-414 | 410-414 | I20-I25 | 2,246                         | 2,967 | 4,377                                    |
| Cerebrovascular disease (total stroke)                               | 330-334 | 430-438 | 430-438 | I60-I69 | 829                           | 6,418 | 7,138                                    |
| Hemorrhagic stroke                                                   | 330-331 | 430-431 | 430-432 | I60-I62 | -                             | 2,499 | 3,223                                    |
| Ischemic stroke (Cerebral infarction)                                | 332     | 432-435 | 433-435 | I63     | -                             | 2,668 | 2,214                                    |

**Appendix Table 2: Hazard ratios (HR) for the association between BMI and CVD mortality in East Asians by sex**

| Sex/CVD                              | Body mass index at baseline (Kg/m <sup>2</sup> ) |              |              |              |           |              |              |              |              |              |
|--------------------------------------|--------------------------------------------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|--------------|
|                                      | <15.0                                            | 15.0-17.4    | 17.5-19.9    | 20.0-22.4    | 22.5-24.9 | 25.0-27.4    | 27.5-29.9    | 30.0-32.4    | 32.5-34.9    | 35.0-50.0    |
| <b>Men</b>                           |                                                  |              |              |              |           |              |              |              |              |              |
| Total n                              | 687                                              | 9316         | 54136        | 114371       | 120124    | 65626        | 21809        | 5785         | 1168         | 578          |
| CVD, 21156 total cases               | 127                                              | 1106         | 4056         | 6134         | 5502      | 2745         | 1010         | 325          | 89           | 62           |
| HR <sup>a</sup>                      | 1.89                                             | 1.23         | 1.03         | 0.95         | Ref       | 1.09         | 1.32         | 1.58         | 2.19         | 2.18         |
| (95% CI)                             | (1.31, 2.71)                                     | (1.02, 1.47) | (0.93, 1.15) | (0.89, 1.01) | Ref       | (1.02, 1.17) | (1.22, 1.43) | (1.37, 1.82) | (1.67, 2.89) | (1.25, 3.8)  |
| CHD, 5370 total cases                | 23                                               | 182          | 783          | 1468         | 1646      | 826          | 295          | 110          | 28           | 9            |
| HR <sup>a</sup>                      | 1.89                                             | 0.87         | 0.82         | 0.86         | Ref       | 1.15         | 1.36         | 1.75         | 3.60         | 2.76         |
| (95% CI)                             | (0.77, 4.62)                                     | (0.61, 1.25) | (0.68, 0.99) | (0.76, 0.97) | Ref       | (1.03, 1.29) | (1.12, 1.67) | (1.24, 2.47) | (2.18, 5.94) | (0.71,10.75) |
| Stroke, 9559 total cases             | 44                                               | 429          | 1954         | 2813         | 2422      | 1222         | 453          | 143          | 38           | 41           |
| HR <sup>a</sup>                      | 5.10                                             | 1.20         | 1.16         | 0.95         | Ref       | 1.08         | 1.32         | 1.72         | 2.25         | 2.22         |
| (95% CI)                             | (0.47,55.04)                                     | (0.92, 1.57) | (0.99, 1.35) | (0.87, 1.03) | Ref       | (1.00, 1.18) | (1.17, 1.49) | (1.4, 2.12)  | (1.47, 3.43) | (1.54, 3.2)  |
| Ischemic stroke, 3149 total cases    | 14                                               | 141          | 602          | 938          | 773       | 445          | 156          | 45           | 17           | 18           |
| HR <sup>a</sup>                      | 1.63                                             | 1.09         | 1.01         | 0.93         | Ref       | 1.30         | 1.61         | 1.98         | 3.70         | 2.68         |
| (95% CI)                             | (0.39, 6.84)                                     | (0.85, 1.40) | (0.87, 1.17) | (0.83, 1.04) | Ref       | (1.13, 1.49) | (1.31, 1.97) | (1.39, 2.82) | (1.82, 7.51) | (1.52, 4.71) |
| Hemorrhagic stroke, 3577 total cases | 15                                               | 153          | 750          | 1070         | 886       | 434          | 176          | 65           | 15           | 13           |
| HR <sup>a</sup>                      | 1.27                                             | 1.07         | 1.24         | 1.03         | Ref       | 0.98         | 1.20         | 2.15         | 3.07         | 2.21         |
| (95% CI)                             | (0.62, 2.56)                                     | (0.85, 1.34) | (0.95, 1.62) | (0.88, 1.21) | Ref       | (0.85, 1.13) | (0.97, 1.47) | (1.51, 3.07) | (1.72, 5.48) | (1.09, 4.48) |
| <b>Women</b>                         |                                                  |              |              |              |           |              |              |              |              |              |
| Total n                              | 1345                                             | 12371        | 57008        | 115490       | 123478    | 70718        | 30647        | 10883        | 3042         | 1857         |
| CVD, 17582 total cases               | 245                                              | 1269         | 3218         | 4288         | 4209      | 2376         | 1150         | 516          | 156          | 155          |
| HR <sup>a</sup>                      | 2.13                                             | 1.18         | 1.12         | 0.94         | Ref       | 1.07         | 1.22         | 1.59         | 1.64         | 1.94         |
| (95% CI)                             | (1.35, 3.35)                                     | (1.08, 1.28) | (1.00, 1.27) | (0.88, 1.01) | Ref       | (0.98, 1.16) | (1.12, 1.32) | (1.38, 1.83) | (1.29, 2.08) | (1.34, 2.82) |
| CHD, 3772 total cases                | 35                                               | 219          | 569          | 856          | 1078      | 532          | 267          | 142          | 44           | 30           |
| HR <sup>a</sup>                      | 1.99                                             | 0.97         | 0.88         | 0.92         | Ref       | 1.13         | 1.37         | 2.09         | 2.14         | 2.21         |
| (95% CI)                             | (0.74, 5.37)                                     | (0.78, 1.19) | (0.74, 1.04) | (0.81, 1.04) | Ref       | (0.98, 1.30) | (1.05, 1.78) | (1.64, 2.66) | (1.41, 3.26) | (1.11, 4.40) |
| Stroke, 7942 total cases             | 94                                               | 493          | 1434         | 1934         | 1888      | 1143         | 570          | 249          | 64           | 73           |
| HR <sup>a</sup>                      | 1.34                                             | 1.08         | 1.04         | 0.89         | Ref       | 1.07         | 1.21         | 1.57         | 1.32         | 1.82         |
| (95% CI)                             | (0.77, 2.34)                                     | (0.82, 1.44) | (0.87, 1.26) | (0.79, 1.00) | Ref       | (0.95, 1.20) | (1.07, 1.37) | (1.29, 1.90) | (0.87, 1.99) | (1.25, 2.65) |
| Ischemic stroke, 2622 total cases    | 36                                               | 159          | 460          | 664          | 595       | 396          | 174          | 95           | 24           | 19           |

|                                      |              |              |              |              |     |              |              |               |              |              |
|--------------------------------------|--------------|--------------|--------------|--------------|-----|--------------|--------------|---------------|--------------|--------------|
| HR <sup>a</sup>                      | 1.68         | 1.17         | 1.07         | 0.82         | Ref | 1.12         | 1.09         | 2.10          | 1.65         | 1.64         |
| (95% CI)                             | (0.55, 5.12) | (0.79, 1.75) | (0.87, 1.31) | (0.66, 1.02) | Ref | (0.92, 1.37) | (0.87, 1.38) | (1.51, 2.91)  | (0.99, 2.74) | (0.76, 3.51) |
| Hemorrhagic stroke, 3181 total cases | 26           | 184          | 534          | 801          | 757 | 453          | 267          | 105           | 24           | 30           |
| HR <sup>a</sup>                      | 1.45         | 1.10         | 1.03         | 1.00         | Ref | 1.02         | 1.37         | 1.49          | 1.91         | 2.83         |
| (95% CI)                             | (0.88, 2.42) | (0.88, 1.37) | (0.86, 1.24) | (0.88, 1.13) | Ref | (0.88, 1.19) | (1.15, 1.64) | ( 1.10, 2.02) | (1.12, 3.24) | (1.34, 5.96) |

<sup>a</sup>The analyses for the calculation of hazard ratios were adjusted for, baseline age, cigarette smoking (never/ever), alcohol consumption (never/ever), educational attainment (no formal education, primary, secondary, trade/technical, university degree, post-university degree, other), marital status (single, married, separated, widowed, divorced), urban residence and baseline status of cancer. All analyses exclude first three years of follow-up.

**Appendix Table 3: Hazard ratios (HR) for the association between BMI and CVD mortality in South Asians by sex**

|                          | Body mass index at baseline (Kg/m <sup>2</sup> ) |              |              |              |           |              |              |               |              |              |
|--------------------------|--------------------------------------------------|--------------|--------------|--------------|-----------|--------------|--------------|---------------|--------------|--------------|
|                          | <15.0                                            | 15.0-17.4    | 17.5-19.9    | 20.0-22.4    | 22.5-24.9 | 25.0-27.4    | 27.5-29.9    | 30.0-32.4     | 32.5-34.9    | 35.0-50      |
| <b>Men</b>               |                                                  |              |              |              |           |              |              |               |              |              |
| Total n                  | 2782                                             | 15184        | 31344        | 37265        | 30019     | 16401        | 6041         | 2124          | 592          | 277          |
| CVD, 5410 total cases    | 191                                              | 700          | 1176         | 1410         | 1064      | 559          | 196          | 79            | 17           | 18           |
| HR <sup>a</sup>          | 0.97                                             | 0.85         | 0.91         | 0.96         | Ref       | 1.06         | 1.09         | 1.36          | 1.06         | 1.74         |
| (95% CI)                 | (0.76, 1.24)                                     | (0.74, 0.97) | (0.81, 1.02) | (0.86, 1.07) | Ref       | (0.92, 1.21) | ( 0.9, 1.34) | ( 1.00, 1.84) | (0.58, 1.93) | ( 0.9, 3.35) |
| CHD, 3433 total cases    | 112                                              | 413          | 719          | 895          | 697       | 375          | 143          | 56            | 11           | 12           |
| HR <sup>a</sup>          | 0.85                                             | 0.79         | 0.82         | 0.93         | Ref       | 1.07         | 1.32         | 1.30          | 1.23         | 2.20         |
| (95% CI)                 | (0.61, 1.18)                                     | (0.66, 0.94) | (0.71, 0.95) | (0.82, 1.07) | Ref       | (0.91, 1.27) | (1.04, 1.66) | (0.88, 1.92)  | (0.61, 2.48) | (1.04, 4.65) |
| Stroke, 1199 total cases | 37                                               | 183          | 286          | 312          | 224       | 114          | 28           | 8             | 3            | 4            |
| HR <sup>a</sup>          | 0.95                                             | 0.84         | 0.90         | 0.92         | Ref       | 1.01         | 0.74         | 0.91          | 1.32         | 1.88         |
| (95% CI)                 | (0.58, 1.54)                                     | (0.63, 1.11) | (0.72, 1.14) | (0.73, 1.16) | Ref       | (0.75, 1.36) | (0.45, 1.24) | ( 0.40, 2.07) | (0.32, 5.41) | (0.26,13.51) |
| <b>Women</b>             |                                                  |              |              |              |           |              |              |               |              |              |
| Total n                  | 3972                                             | 16001        | 28052        | 31620        | 28498     | 19493        | 10158        | 4864          | 1659         | 1086         |
| CVD, 2780 total cases    | 138                                              | 385          | 574          | 618          | 489       | 305          | 137          | 87            | 28           | 19           |
| HR <sup>a</sup>          | 0.93                                             | 0.87         | 0.89         | 0.98         | Ref       | 1.00         | 0.95         | 1.04          | 0.91         | 1.31         |
| (95% CI)                 | (0.71, 1.22)                                     | (0.72, 1.04) | (0.76, 1.05) | (0.85, 1.14) | Ref       | (0.83, 1.20) | (0.75, 1.2)  | (0.77, 1.42)  | (0.53, 1.56) | (0.72, 2.40) |
| CHD, 1373 total cases    | 68                                               | 166          | 253          | 320          | 254       | 161          | 72           | 50            | 15           | 14           |
| HR <sup>a</sup>          | 0.82                                             | 0.77         | 0.87         | 1.02         | Ref       | 1.07         | 1.03         | 1.12          | 1.15         | 3.07         |
| (95% CI)                 | (0.55, 1.23)                                     | (0.59, 1.00) | (0.69, 1.08) | (0.83, 1.26) | Ref       | (0.84, 1.38) | (0.75, 1.41) | (0.74, 1.70)  | (0.59, 2.26) | (1.56, 6.07) |
| Stroke, 884 total cases  | 41                                               | 130          | 218          | 204          | 142       | 83           | 38           | 19            | 6            | 3            |
| HR <sup>a</sup>          | 0.95                                             | 0.94         | 1.04         | 1.00         | Ref       | 0.94         | 0.95         | 1.03          | 0.76         | 1.00         |
| (95% CI)                 | (0.59, 1.52)                                     | (0.69, 1.28) | (0.79, 1.36) | (0.77, 1.32) | Ref       | (0.67, 1.34) | (0.61, 1.49) | (0.56, 1.89)  | (0.24, 2.40) | (0.13, 7.51) |

<sup>a</sup>The analyses for the calculation of hazard ratios were adjusted for, baseline age, cigarette smoking (never/ever), alcohol consumption (never/ever), educational attainment (no formal education, primary, secondary, trade/technical, university degree, post-university degree, other), marital status (single, married, separated, widowed, divorced), urban residence and baseline status of cancer. All analyses exclude first three years of follow-up.