#### Supplementary Figure 1: Causes of all-ages DALYs and deaths per 100,000 population in Japan in 2013 and 2019 for women

|    | Leading causes in 2013                            | DALYs per 100,000<br>(95% uncertainty intervals) |          |    | Leading causes in 2019                            | DALYs per 100,000<br>(95% uncertainty intervals) |
|----|---|--|----------|----|---|--|
| 1  | Low back pain                                     | 2175.42 (1547.27-2933.42)                        | ~~       | 1  | Alzheimer's disease and other dementias           | 2114.20 (1017.42-4077.00)                        |
| 2  | Alzheimer's disease and other dementias           | 1783.12 (828.55-3520.77)                         |          | 2  | Low back pain                                     | 2036.82 (1441.98-2742.03)                        |
| 3  | Stroke  | 1743.54 (1443.39–1969.91)                        |          | 3  | Stroke  | 1876.28 (1548.04-2136.23)                        |
| 4  | Other musculoskeletal disorders                   | 1069.38 (733.44-1476.78)                         | ~ /      | 4  | Ischemic heart disease                            | 1117.57 (867.73-1263.47)                         |
| 5  | Ischemic heart disease                            | 1048.92 (819.00-1174.99)                         |          | 5  | Other musculoskeletal disorders                   | 1112.66 (770.30-1550.65)                         |
| 6  | Osteoarthritis                                    | 1009.45 (515.02-2023.51)                         |          | 6  | Osteoarthritis                                    | 963.58 (483.94–1922.29)                          |
| 7  | Age-related and other hearing loss                | 777.53 (532.02–1083.42)                          |          | 7  | Age-related and other hearing loss                | 855.86 (589.74-1185.30)                          |
| 8  | Colon and rectum cancer                           | 643.84 (547.63–699.12)                           |          | 8  | Colon and rectum cancer                           | 678.56 (565.23-746.21)                           |
| 9  | Headache disorders                                | 625.43 (170.01–1293.63)                          |          | 9  | Falls   | 658.81 (493.45-875.19)                           |
| 10 | Breast cancer                                     | 620.56 (565.84–665.12)                           | ×        | 10 | Headache disorders                                | 612.00 (169.21-1262.94)                          |
| 11 | Falls   | 566.82 (424.81-750.86)                           | $\wedge$ | 11 | Diabetes mellitus                                 | 611.54 (442.39-819.05)                           |
| 12 | Tracheal, bronchus, and lung cancer               | 549.95 (463.62–595.73)                           | - 7      | 12 | Breast cancer                                     | 603.33 (543.13-659.55)                           |
| 13 | Chronic kidney disease                            | 538.72 (450.71–611.67)                           |          | 13 | Tracheal, bronchus, and lung cancer               | 581.82 (481.66-638.95)                           |
| 14 | Depressive disorders                              | 523.92 (369.59–711.78)                           |          | 14 | Chronic kidney disease                            | 555.92 (457.87-637.00)                           |
| 15 | Diabetes mellitus                                 | 499.22 (367.20-663.65)                           |          | 15 | Depressive disorders                              | 523.73 (369.72-708.23)                           |
| 16 | Endocrine, metabolic, blood, and immune disorders | 485.04 (341.58-659.93)                           |          | 16 | Endocrine, metabolic, blood, and immune disorders | 490.33 (342.49-671.13)                           |
| 17 | Gynecological diseases                            | 484.81 (333.87-690.76)                           | /        | 17 | Oral disorders                                    | 482.92 (295.91-748.36)                           |
| 18 | Self-harm   | 463.44 (444.15-478.90)                           | 7-       | 18 | Gynecological diseases                            | 476.46 (329.32-676.29)                           |
| 19 | Stomach cancer                                    | 462.95 (391.53–501.85)                           | $\vdash$ | 19 | Stomach cancer                                    | 446.97 (373.70-491.04)                           |
| 20 | Oral disorders                                    | 443.22 (269.07-696.53)                           |          | 20 | Pancreatic cancer                                 | 415.42 (346.15-456.46)                           |
| 21 | Pancreatic cancer                                 |  |          | 21 | Self-harm   |  |

|    | Leading causes in 2013                     | Deaths per 100,000<br>(95% uncertainty intervals) |        |    | Leading causes in 2019                     | Deaths per 100,000<br>(95% uncertainty intervals) |
|----|--|---|--------|----|--|---|
| 1  | Alzheimer's disease and other dementias    | 143.15 (41.43–325.78)                             |        | 1  | Alzheimer's disease and other dementias    | 174.06 (51.39–395.76)                             |
| 2  | Stroke                                     | 103.98 (75.97–120.11)                             |        | 2  | Stroke                                     | 119.92 (86.70-140.14)                             |
| 3  | Ischemic heart disease                     | 95.11 (69.15–109.74)                              |        | 3  | Ischemic heart disease                     | 108.26 (78.72-126.45)                             |
| 4  | Colon and rectum cancer                    | 40.98 (31.82-45.87)                               |        | 4  | Colon and rectum cancer                    | 46.80 (35.80-53.05)                               |
| 5  | Tracheal, bronchus, and lung cancer        | 35.99 (28.12-40.18)                               |        | 5  | Tracheal, bronchus, and lung cancer        | 41.02 (31.41-46.28)                               |
| 6  | Chronic kidney disease                     | 31.55 (22.86-36.41)                               |        | 6  | Chronic kidney disease                     | 36.60 (25.93-43.01)                               |
| 7  | Stomach cancer                             | 30.59 (23.74–34.29)                               |        | 7  | Stomach cancer                             | 32.17 (24.79-36.41)                               |
| 8  | Pancreatic cancer                          | 25.13 (19.97–27.87)                               |        | 8  | Pancreatic cancer                          | 28.78 (22.53-32.45)                               |
| 9  | Breast cancer                              | 23.53 (20.36-25.25)                               |        | 9  | Breast cancer                              | 24.29 (20.41-26.39)                               |
| 10 | Liver cancer                               | 17.53 (13.53–19.64)                               | ~ /    | 10 | Chronic obstructive pulmonary disease      | 20.19 (13.37-30.32)                               |
| 11 | Chronic obstructive pulmonary disease      | 17.28 (11.78-25.84)                               |        | 11 | Liver cancer                               | 18.91 (14.67–21.47)                               |
| 12 | Cirrhosis and other chronic liver diseases | 16.29 (12.70–18.97)                               |        | 12 | Cirrhosis and other chronic liver diseases | 17.45 (13.23-20.84)                               |
| 13 | Gallbladder and biliary tract cancer       | 15.63 (9.99–18.31)                                | ~      | 13 | Non-rheumatic valvular heart disease       | 17.08 (10.78-20.54)                               |
| 14 | Non-rheumatic valvular heart disease       | 13.70 (8.86–16.25)                                |        | 14 | Gallbladder and biliary tract cancer       | 17.05 (10.61-20.21)                               |
| 15 | Self-harm                                  | 12.90 (11.81–13.49)                               |        | 15 | Aortic aneurysm                            | 15.38 (11.40–17.78)                               |
| 16 | Aortic aneurysm                            | 12.40 (9.16–14.15)                                | $\sim$ | 16 | Hypertensive heart disease                 | 14.99 (9.45–18.25)                                |
| 17 | Hypertensive heart disease                 | 11.89 (7.65–14.28)                                |        | 17 | Self-harm                                  | 11.45 (10.34–12.21)                               |
| 18 | Parkinson's disease                        | 10.07 (7.44–11.52)                                |        | 18 | Parkinson's disease                        | 11.40 (8.49–13.11)                                |
| 19 | Atrial fibrillation and flutter            | 8.72 (6.01-12.82)                                 |        | 19 | Atrial fibrillation and flutter            | 10.79 (7.37–16.42)                                |
| 20 | Non-Hodgkin lymphoma                       | 8.38 (6.53-9.37)                                  |        | 20 | Non-Hodgkin lymphoma                       | 9.26 (7.12-10.46)                                 |

 Increase of consistent in ranking order ----- Decrease in ranking order

Non-communicable diseases excluding injuries Injuries

\* Data were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>.

#### Supplementary Figure 2: Causes of all-ages DALYs and deaths per 100,000 population in Japan in 2013 and 2019 for men

14 Esophageal cancer

16 Aortic aneurysm

19 Falls

17 Parkinson's disease

20 Non-Hodgkin lymphoma

15 Gallbladder and biliary tract cancer

18 Interstitial lung disease and pulmonary sarcoidosis

| Loong backminst         (95% uncertainty intervals)         (95% uncertainty intervals)           1         Stroke         1930 97 (1936 4–202.76)         1         Stroke         1944 66 (1926 85–248.54)           1         Low back pain         1365 72 (955.45–1859.41)         2         Ischemic heard disease         173.16 (1628.72–1852.90)           5         Self-harm         1938 76 (1180.77–1213.23)         5         Altheimer's disease and other dementias         1083.20 (468.30–2428.90)           6         Self-harm         10012 (197.99–1045.07)         7         Colon and rectum cancer         990.82 (905.03–103.65)           9         Age-reliated and other hearing loss         885.6 (616.79.4–2020.90)         9         Age-reliated and other hearing loss         885.157 (600.75–1252.22)           10         Otherm usculoskeletal disorders         798.71 (151.80–1061.39)         10         Diabetes mellitus         225.51 (00.77–1029.27)           11         Otherm usculoskeletal disorders         758.71 (151.80–843.04)         13         Falls         752.52 (600.77–1292.22)           12         Otherm usculoskeletal disorders         758.71 (151.80–101.10         11         Diabetes mellitus         225.51 (00.77–1292.22)           13         Falls         Golon and rectum cancer         990.82 (905.37–1032.22)         11   |    | Leading causes in 2013                     | DALYs per 100,000       |         |    | Leading causes in 2019                     | DALYs per 100,000       |
|---|----|--|-------------------------|---------|----|--|-------------------------|
| 2         Ischemic heart disease         100.08 (1673.66-1873.77)         2         Ischemic heart disease         1773.16 (1528.78-1866.40)           3         Tracheal, bronchus, and lung cancer         1505.77 (1400.29-1658.64)         3         Tracheal, horonchus, and lung cancer         155.177 (1400.29-1658.20)           5         Seff-ham         1038.76 (1180.77-1215.39)         5         Alzheimer's disease and other dementias         1005.20 (683.03-0248.20)           6         Somach cancer         958.81 (895.19-993.72)         5         Alzheimer's disease and other dementias         1005.20 (683.03-0248.20)           7         Colon and rectum cancer         968.85 (883.01-015.85)         9         Age-related and other hearing loss         805.02 (964.95-1154.77)         9         10         Chronic obstructive pulmonary disease         855.13 (716.30-1015.05)           10         Other musculoskeletal disorders         758.71 (519.08-1061.39)         10         Chronic obstructive pulmonary disease         855.13 (716.30-1015.05)           11         Diabetes mellitus         8225 (160.77-4008.87)         11         Diabetes mellitus         8225 (160.77-4008.87)           12         Urbrinic kidney disease         656.88 (513.69-404.13)         13         Falls         7152 (256.09-604.12)           13         Falls         Coronic distructive pulmonary disease   | 1  | Stroke                                     |                         |         | 1  | Stroke                                     | . , ,                   |
| 3         Tracheal, bronchus, and lung cancer         1604.37 (1492.91-1658.64)         3         Tracheal, bronchus, and lung cancer         155.157 (1430.69-1634.62)           4         Low back pain         1365.72 (555.45-1589.41)         Low back pain         1243.53 (872.57-1682.90)           6         Steff-Amm         1035.80 (966.65-1071.40)         5         Alzheimer's disease and other dementias         1368.65 (180.77-1252.27)           7         Colon and rectum cancer         954.81 (955.19-933.72)         8         Stomach cancer         960.82 (905.03-1036.85)           9         Age-related and other hearing loss         805.29 (566.59-102.91)         8         Stomach cancer         960.82 (905.03-1036.85)           10         Othronic obstructive pulmonary disease         758.71 (519.06-1061.39)         9         Age-related and other hearing loss         881.57 (60.07-1252.22)           11         Other musculoskeletal disorders         758.71 (519.06-1061.39)         11         Dahetes mellitus         829.51 (607.71-108.91)           12         Dahetes mellitus         528.61 (93.93-97.210.61)         14         Chronic okafner disease         646.06 (57.86-71.92.91)           13         Falls         Chronic okafner disease         52.08 (49.21-458.76)         15           14         Other musculoskeletal disorders         52.24 (50.64-58  |    |  |                         |         |    |  |                         |
| 4         Low back pain         1365.72 (955.45-1859.41)         4         Low back pain         1243.54 (872.57-1682.90)           5         Self-harm         1198.76 (1180.77-215.39)         5         Alzheimer's disease and other dementias         1005.20 (468.30-228.80)           6         Stomach cancer         954.81 (895.19-993.72)         5         Self-harm         1001.12 (75.99-1045.07)           7         Colon and rectum cancer         954.81 (895.19-993.72)         8         Stomach cancer         963.85 (883.91-1015.88)           8         Alzheimer's disease and other hearing loss         855.23 (456.95-1134.457)         7         Colon and rectum cancer         963.85 (883.91-1015.88)           10         Other musculoskeletal disorders         758.71 (519.08-1061.39)         10         Other musculoskeletal disorders         752.52 (561.09-115.22)           11         Diabetes mellitus         728.85 (503.13-71.10.61.39)         11         Diabetes mellitus         829.51 (607.74-108.98,71)           12         Liver cancer         643.67 (603.54-662.50)         11         Diabetes mellitus         715.22 (561.09-115.62)           14         Chronic kidney disease         124.12 (28.64-58.10.5)         15         Liver cancer         624.05 (77.29-665.94)           15         Liver cancer         624.05 (77.29-665.94)   |    |  |                         |         |    |  |                         |
| Self-harm         1198.76 (1180.77-1215.39)         5         Alzheimer's disease and other dementias         1005.20 (468.30-2428.90)           6         Stomach cancer         1033.80 (966.65-1071.40)         5         Self-harm         1010.12 (975.99-1045.07)           7         Colon and rectum cancer         954.81 (855.19-99.37)         Colon and rectum cancer         980.82 (906.30-1045.85)           8         Alzheimer's disease and other hearing loss         805.29 (466.30-2428.90)         5         Self-harm         1010.12 (975.99-1045.07)           10         Chronic obstructive pulmonary disease         755.71 (519.08-1061.39)         9         Age-related and other hearing loss         881.57 (160.75-125.22)           12         Diabetes mellitus         728.61 (539.93-952.68)         11         Diabetes mellitus         829.51 (607.74-1089.87)           13         Falls         752.22 (51.00-91.015.05)         14         Chronic kidney disease         649.69 (578.68-717.97)           14         Chronic kidney disease         649.69 (580.31-71.106)         14         Chronic kidney disease         52.04 (408.452.46-58.05)           15         User cancer         52.04 (408.452.46-58.05)         15         User cancer         52.04 (408.42-455.476)           14         Chronic kidney disease         102.01 (131.77-740.00)         19  |    | · · · ·                                    |                         |         |    | · · · · ·                                  |                         |
| 6         Stomach cancer         1035.80 (966.65-1071.40)         6         Self-harm         1010.12 (975.99-1045.07)           7         Colon and rectum cancer         994.81 (985.19-99.72)         8         8         Stomach cancer         990.82 (905.03-1036.85)           9         Age-related and other dementias         8805.29 (56.637-1154.57)         7         Colon and rectum cancer         990.83 (1839.31-1015.88)           9         Age-related and other hearing loss         805.29 (56.35-326.99)         10         Chronic obstructive pulmonary disease         85.13 (176.30-1015.05)           10         Other maculoskeletal disorders         736.81 (159.08-1061.61)         10         Diabetes mellitus         82.95 1 (607.74-1088.87)           12         Diabetes mellitus         72.86 (503.17-110.06)         11         Diabetes mellitus         71.52 (216.00-718.62)           14         Chronic kidney disease         66.65 (65.03.17-110.06)         13         Fails         71.52 (56.10-72.9-665.94)           15         Uver cancer         62.86 (56.30.17-110.02)         14         Chronic kidney disease         64.69 (64.93.4+54.49)           16         Cirrhois and other chronic liver diseases         52.44 (526.46+581.05)         15         14         Chronic kidney disease         42.27 (72.83.7+67.85)           19         <   |    |  | . ,                     |         |    |  |                         |
| 7       Colon and rectum cancer       954.81 (895.19-993.72)       7       Colon and rectum cancer       963.82 (905.03-1036.85)         8       Alzheimer's disease and other dementias       886.66 (367.94-2020.98)       9       Age-related and other hearing loss       881.51 (000.75-1252.22)         10       Chronic obstructive pulmonary disease       790.40 (666.55-926.99)       10       Chronic obstructive pulmonary disease       851.31 (716.30-1015.05)         11       Dibetes mellitus       823.51 (607.74-1089.87)       110       Dibetes mellitus       823.51 (607.74-1089.87)         12       Dibetes mellitus       823.51 (607.74-1089.87)       110       Dibetes mellitus       823.51 (607.74-1089.87)         13       Falis       653.88 (519.69-843.04)       13       Falis       715.22 (561.00-918.62)         14       Chronic kidney disease       645.69 (580.31-71.10.6)       14       Chronic kidney disease       624.05 (577.26-65.94)         15       Liver cancer       523.44 (526.46-581.05)       15       Liver cancer       530.90 (491.17-562.30)         16       Pancreatic cancer       523.44 (328.94-584.99)       17       Cirrhosis and other chronic liver diseases       520.86 (492.14-554.76)         19       Osteoarthritis       388.80 (197.22-784.72)       19       Osteoarthritis       421.32 (213.16   |    |  |                         | / ·     |    |  |                         |
| 8       Alzheimer's disease and other dementias       886.66 (367.94-202.98)       8       Stomach cancer       963.85 (883.91-1015.85)         9       Age-related and other hearing loss       881.57 (600.75-125.22.21)         10       Chronic obstructive pulmonary disease       755.71 (513.08-1061.39)       9       Age-related and other hearing loss       881.57 (600.77-1252.22.21)         11       Diabetes mellitus       725.71 (513.08-1061.39)       10       Diabetes mellitus       825.53 (167.74-1089.87)         12       Diabetes mellitus       725.61 (539.99-552.68)       11       Diabetes mellitus       825.53 (167.74-1089.87)         13       Falls       659.88 (519.69-683.04)       13       Falls       715.22 (561.00-918.62)         14       Chronic kidney disease       646.96 (580.31-71.06)       14       Chronic kidney disease       624.05 (577.29-655.94)         15       Liver cancer       523.64 (498.94-454.99)       15       Liver cancer       535.04 (492.14-554.76)         16       Oral disorders       402.31 (238.02-630.28)       18       Oral disorders       422.77 (263.87-687.85)         19       Osteoarthritis       38.80 (197.22-784.72)       20       Prostate cancer       333.57 (307.46-516.01)         12       Headache disorders       376.01 (317.7-740.00)       1   | -  |  |                         |         |    |  |                         |
| 9         Age-related and other hearing loss         805.29 (546.95-1154.57)         9         Age-related and other hearing loss         881.57 (600.75-1252.22)           10         Chronic obstructive pulmonary disease         790.40 (668.55-926.99)         10         Chronic obstructive pulmonary disease         855.13 (716.30-1015.05)           11         Diabetes mellitus         728.61 (539.93-952.68)         11         Diabetes mellitus         829.51 (607.74-1088.87)           12         Diabetes mellitus         728.61 (539.33-952.68)         12         Other musculoskeletal disorders         745.68 (510.11-1042.24)           13         Falls         659.88 (519.60-843.04)         13         Falls         715.22 (561.00-918.62)           14         Chronic kidney disease         644.69 (580.31-711.06)         14         Chronic kidney disease         644.69 (577.29-665.94)           15         Liver cancer         624.05 (577.29-665.94)         15         Liver cancer         53.09 (494.17-562.30)           16         Pancreatic cancer         52.84 (498.94-544.99)         17         Cirrhosis and other chronic liver diseases         52.08 (694.11-76.20)           18         Oral disorders         42.77 (28.37-687.85)         19         Osteoarthritis         42.77 (28.37-687.85)           19         Osteoarthritis         388.00 (197.  |    |  |                         |         |    |  |                         |
| 10         Chronic obstructive pulmonary disease         790.40 (668.55-926.99)         10         Chronic obstructive pulmonary disease         855.13 (716.30-1015.05)           11         Other musculoskeletal disorders         758.71 (519.08-1061.39)         11         Diabetes mellitus         829.51 (607.74-1089.87)           12         Diabetes mellitus         829.51 (607.74-1089.87)         12         Other musculoskeletal disorders         752.22 (561.00-918.62)           13         Falis         829.51 (607.74-1089.87)         12         Other musculoskeletal disorders         752.22 (561.00-918.62)           14         Chronic kidney disease         646.96 (580.31-711.06)         14         Chronic kidney disease         640.69 (578.68-712.97)           15         Liver cancer         624.05 (577.29-665.94)         15         Parcreatic cancer         530.09 (441.75-562.30)           16         Grichosis and other chronic liver diseases         52.84 (58.49.94-544.99)         16         Parcreatic cancer         533.50 (494.17-562.30)           17         Pancreatic cancer         536.05 (131.77-74.00)         20         Prostate cancer         93.57 (307.46-516.01)           18         Oral disorders         376.01 (131.77-74.00)         20         Prostate cancer         93.57 (307.46-516.01)           21         Headsche disorders  |    |  |                         |         |    |  |                         |
| 11         Other musculoskeletal disorders         758.71 (519.08-106.139)         11         Diabetes mellitus         829.51 (607.74-1089.87)           12         Diabetes mellitus         728.61 (539.93-952.68)         11         Diabetes mellitus         745.66 (510.11-1042.24)           13         Falls         659.88 (519.69-84.04)         12         Other musculoskeletal disorders         745.66 (510.11-1042.24)           14         Chronic kidney disease         644.67 (603.54-662.50)         14         Chronic kidney disease         644.67 (603.54-662.50)           15         Liver cancer         644.67 (603.54-662.50)         15         Liver cancer         528.46 (498.94-544.99)           16         Oral disorders         522.44 (526.46-581.05)         16         Pancreatic cancer         530.09 (494.17-562.30)           17         Pancreatic cancer         528.46 (498.94-544.99)         18         Oral disorders         520.86 (492.14-584.76)           18         Oral disorders         376.01 (131.77-740.00)         20         Prostate cancer         337.53 (307.46-516.01)           12         Ischemic heart disease         104.31 (93.00-110.11)         1         Ischemic heart disease         111.87 (97.86-119.98)           13         Ischemic heart disease         104.31 (93.00-110.21.41)         2         Stroke  |    |  |                         |         |    |  |                         |
| 12       Diabetes mellitus       728.61 (539.93-952.68)       12       Other musculoskeletal disorders       745.68 (510.11-1042.24)         13       Falls       659.88 (519.69-84.04)       13       Falls       75.22 (561.00-918.62)         14       Chronic kidney disease       646.96 (580.31-711.06)       14       Chronic kidney disease       649.69 (578.69-717.97)         15       Liver cancer       641.67 (603.34-662.50)       15       Liver cancer       520.86 (492.14-554.76)         16       Cirrhosis and other chronic liver diseases       552.44 (526.46-581.05)       16       Pancreatic cancer       535.09 (494.17-562.30)         17       Pancreatic cancer       528.66 (498.94-544.99)       17       Cirrhosis and other chronic liver diseases       520.86 (492.14-554.76)         18       Oral disorders       402.31 (238.02-630.28)       18       Oral disorders       42.77 (63.87-687.85)         19       Osteoarthritis       388.80 (197.22-784.72)       19       Osteoarthritis       42.13 (24.31-6-84.91.8)         20       Headache disorders       37.60.1 (31.77-740.00)       20       Prostate cancer       393.57 (307.46-516.01)         21       Headache disorders       21       Headache disorders       21       Headache disorders         2       Stroke       96.   |    |  |                         |         |    | · · ·                                      |                         |
| 13       Falls       659.88 (519.69-843.04)       13       Falls       715.22 (561.00-918.62)         14       Chronic kidney disease       649.69 (580.31-711.06)       14       Chronic kidney disease       649.69 (578.68-717.97)         15       Liver cancer       641.67 (603.54-662.50)       15       Liver cancer       624.05 (577.29-665.94)         16       Cirrbois and other chronic liver diseases       552.44 (526.46-581.05)       15       Liver cancer       533.09 (494.17-562.30)         17       Pancreatic cancer       533.09 (494.17-562.30)       17       Cirrbois and other chronic liver diseases       520.86 (492.14-554.76)         18       Oral disorders       402.31 (238.02-630.28)       18       Oral disorders       442.77 (263.87-687.85)         19       Osteoarthritis       388.00 (197.22-784.72)       19       Osteoarthritis       421.32 (213.16-849.18)         21       Headache disorders       376.01 (131.77-740.00)       20       Porstate cancer       393.57 (37.66-51.60.1)         23       Prostate cancer       91.73 (83.29-66.3)       1       Ischemic heart disease       111.87 (97.86-119.98)         1       Ischemic heart disease       104.31 (93.00-110.1)       1       Ischemic heart disease       111.87 (97.86-119.98)         2       Stroke <t< td=""><td>11</td><td></td><td>758.71 (519.08–1061.39)</td><td><math>\sim</math></td><td>11</td><td></td><td>829.51 (607.74–1089.87)</td></t<>  | 11 |  | 758.71 (519.08–1061.39) | $\sim$  | 11 |  | 829.51 (607.74–1089.87) |
| 14       Chronic kidney disease       646.96 (580.31–711.06)       14       Chronic kidney disease       649.69 (578.68–717.97)         15       Liver cancer       641.67 (603.54–662.50)       15       Liver cancer       624.05 (577.29–665.94)         16       Cirrhosis and other chronic liver diseases       552.44 (526.46–581.05)       15       Liver cancer       535.09 (494.17–562.30)         18       Oral disorders       402.31 (238.02–630.28)       17       Pancreatic cancer       535.09 (494.17–562.30)         19       Osteoarthritis       388.80 (197.22–784.72)       19       Osteoarthritis       42.132 (213.16–847.85)         20       Headache disorders       376.01 (131.77–740.00)       20       Prostate cancer       393.57 (307.46–516.01)         21       Headache disorders       104.31 (93.00–110.11)       1       Ischemic heart disease       104.31 (93.00–110.11)         2       Stroke       96.518 (85.10–102.14)       1       Ischemic heart disease       106.14 (19.27–114.32)         3       Tracheal, bronchus, and lung cancer       91.73 (83.29–96.03)       1       Ischemic heart disease       106.14 (19.27–114.32)         4       Alzheimer's disease and other dementias       63.12 (16.06–16.7.91)       1       Ischemic heart disease       106.14 (41.27–114.32)         3<   | 12 | Diabetes mellitus                          | 728.61 (539.93–952.68)  |         | 12 | Other musculoskeletal disorders            | 745.68 (510.11–1042.24) |
| 15       Liver cancer       641.67 (603.54-662.50)       15       Liver cancer       624.05 (577.29-665.94)         16       Cirrhosis and other chronic liver diseases       552.44 (526.46-581.05)       16       Pancreatic cancer       535.09 (494.17-562.30)         17       Pancreatic cancer       528.46 (498.94-584.99)       17       Cirrhosis and other chronic liver diseases       520.86 (492.14-554.76)         18       Oral disorders       402.31 (238.02-630.28)       18       Oral disorders       422.77 (263.87-687.85)         19       Osteoarthritis       388.80 (197.22-784.72)       19       Osteoarthritis       393.57 (307.46-516.01)         23       Prostate cancer       376.01 (131.77-740.00)       20       Prostate cancer       393.57 (307.46-516.01)         24       Headache disorders       376.01 (31.77-740.00)       20       Prostate cancer       393.57 (307.46-516.01)         23       Prostate cancer       1       Ischemic heart disease       104.31 (93.00-110.11)       1       Ischemic heart disease       111.87 (97.86-119.98)         24       Stroke       96.18 (68.10-102.14)       1       Ischemic heart disease       111.87 (97.86-119.98)         25       Stroke       106.14 (91.27-114.32)       3       Tracheal, bronchus, and lung cancer       94.58 (50.3-100.98)     <  | 13 | Falls                                      | 659.88 (519.69-843.04)  |         | 13 | Falls                                      | 715.22 (561.00-918.62)  |
| 16       Cirrhosis and other chronic liver diseases       552.44 (526.46–581.05)       16       Pancreatic cancer       535.09 (494.17–562.3)         17       Pancreatic cancer       528.46 (498.94–544.99)       17       Cirrhosis and other chronic liver diseases       520.86 (492.14–554.76)         18       Oral disorders       402.31 (238.02–630.28)       18       Oral disorders       442.77 (263.87–687.85)         19       Osteoarthritis       388.80 (197.22–784.72)       19       Osteoarthritis       421.32 (213.16–849.18)         20       Headache disorders       376.01 (131.77–740.00)       20       Prostate cancer       393.57 (307.46–516.01)         21       Headache disorders       104.31 (93.00–110.11)       20       Headache disorders       21       Headache disorders         23       Prostate cancer       96.18 (85.10–102.14)       2       Stroke       106.14 (91.27–114.32)         3       Tracheal, bronchus, and lung cancer       91.73 (83.29–96.03)       3       Tracheal, bronchus, and lung cancer       94.95 (85.03–100.98)         4       Alzheimer's disease and other dementias       63.12 (16.66–167.91)       4       Alzheimer's disease and other dementias       81.63 (21.14–212.50)         5       Stomach cancer       57.52 (52.12–60.36)       5       Stomach cancer       57.95 (51.68  | 14 | Chronic kidney disease                     | 646.96 (580.31-711.06)  |         | 14 | Chronic kidney disease                     | 649.69 (578.68–717.97)  |
| 17       Pancreatic cancer       528.46 (498.94–544.99)       17       Cirrhosis and other chronic liver diseases       520.86 (492.14–554.76)         18       Oral disorders       402.31 (238.02–630.28)       18       Oral disorders       42.77 (263.87–687.85)         19       Osteoarthritis       388.80 (197.22–784.72)       19       Osteoarthritis       421.32 (213.16–849.18)         20       Headache disorders       376.01 (131.77–740.00)       20       Prostate cancer       393.57 (307.46–516.01)         23       Prostate cancer       0eths per 100,000<br>(95% uncertainty intervals)       1       Ischemic heart disease       111.87 (97.86–119.98)         1       Ischemic heart disease       104.31 (93.00–110.11)       1       Ischemic heart disease       111.87 (97.86–119.98)         2       Stroke       96.18 (85.10–102.14)       2       Stroke       106.14 (91.27–114.32)         3       Tracheal, bronchus, and lung cancer       91.73 (83.29–96.03)       3       Tracheal, bronchus, and lung cancer       94.95 (85.03–100.98)         4       Alzheimer's disease and other dementias       63.12 (16.06–167.91)       4       Alzheimer's disease and other dementias       81.63 (21.14–212.50)         5       Stomach cancer       57.95 (51.68–61.76)       5       50 colon and rectum cancer       53.12 (47.49–56.35)<  | 15 | Liver cancer                               | 641.67 (603.54-662.50)  |         | 15 | Liver cancer                               | 624.05 (577.29-665.94)  |
| 18       Oral disorders       402.31 (238.02–630.28)       18       Oral disorders       442.77 (263.87–687.85)         19       Osteoarthritis       388.80 (197.22–784.72)       19       Osteoarthritis       421.32 (213.16–849.18)         20       Headache disorders       376.01 (131.77–740.00)       20       Prostate cancer       393.57 (307.46–516.01)         23       Prostate cancer       393.57 (307.46–516.01)       21       Headache disorders         24       Leading causes in 2013       Deaths per 100,000 (95% uncertainty intervals)       21       Headache disorders         1       Ischemic heart disease       106.14 (93.00–110.11)       1       Ischemic heart disease       111.87 (97.86–119.98)         2       Stroke       96.18 (85.10–102.14)       3       Tracheal, bronchus, and lung cancer       94.95 (85.03–100.98)         3       Tracheal, bronchus, and lung cancer       91.73 (83.29–96.03)       3       Tracheal, bronchus, and lung cancer       94.95 (85.03–100.98)         4       Alzheimer's disease and other dementias       63.12 (16.06–167.91)       4       Alzheimer's disease and other dementias       81.63 (21.14–212.50)         5       Stomach cancer       57.95 (15.86–16.76)       5       Stomach cancer       57.95 (15.86–16.76)         6       Colon and rectum cancer   | 16 | Cirrhosis and other chronic liver diseases | 552.44 (526.46-581.05)  | ~       | 16 | Pancreatic cancer                          | 535.09 (494.17-562.30)  |
| 19       Osteoarthritis       388.80 (197.22–784.72)       19       Osteoarthritis       421.32 (213.16–84.18)         20       Headache disorders       376.01 (131.77–740.00)       20       Prostate cancer       393.57 (307.46–516.01)         23       Prostate cancer       21       Headache disorders       393.57 (307.46–516.01)         21       Leading causes in 2013       Deaths per 100,000<br>(95% uncertainty intervals)       1       Ischemic heart disease       111.87 (97.86–119.98)         2       Stroke       96.18 (85.10–102.14)       2       Stroke       106.14 (91.27–114.32)         3       Tracheal, bronchus, and lung cancer       91.73 (83.29–96.03)       3       Tracheal, bronchus, and lung cancer       94.95 (85.01–400.08)         4       Alzheimer's disease and other dementias       63.12 (16.06–167.91)       4       Alzheimer's disease and other dementias       81.63 (21.4–21.250)         5       Stomach cancer       57.65 (51.21–60.36)       6       Colon and rectum cancer       53.12 (47.49–56.35)         7       Liver cancer       34.33 (31.49–35.77)       8       Liver cancer       35.63 (20.8–30.69)         9       Self-harm       31.74 (30.81–32.31)       9       Chronic kidney disease       34.28 (29.22–37.28)         9       Self-harm       31.74 (26.37–2   | 17 | Pancreatic cancer                          | 528.46 (498.94–544.99)  |         | 17 | Cirrhosis and other chronic liver diseases | 520.86 (492.14-554.76)  |
| 20         Headache disorders         376.01 (131.77-740.00)         20         Prostate cancer         393.57 (307.46-516.01)           23         Prostate cancer         21         Headache disorders         21         Headache disorders           20         Leading causes in 2013         Deaths per 100,000<br>(95% uncertainty intervals)         Leading causes in 2019         Deaths per 100,000<br>(95% uncertainty intervals)           1         Ischemic heart disease         104.31 (93.00-110.11)         1         Ischemic heart disease         111.87 (97.86-119.98)           2         Stroke         96.18 (85.10-102.14)         2         Stroke         106.14 (91.27-114.32)           3         Tracheal, bronchus, and lung cancer         91.73 (83.29-90.03)         4         Alzheimer's disease and other dementias         81.63 (21.14-212.50)           5         Stomach cancer         57.62 (52.12-60.36)         5         Stomach cancer         57.95 (16.86-61.76)           5         Stomach cancer         48.22 (43.84-50.35)         7         Chronic obstructive pulmonary disease         39.64 (30.27-50.09)           8         Liver cancer         34.33 (31.49-35.77)         8         Liver cancer         35.53 (32.08-38.05)           9         Self-harm         31.74 (30.81-32.31)         9         Chronic kidney disease <td< td=""><td>18</td><td>Oral disorders</td><td>402.31 (238.02-630.28)</td><td></td><td>18</td><td>Oral disorders</td><td>442.77 (263.87-687.85)</td></td<> | 18 | Oral disorders                             | 402.31 (238.02-630.28)  |         | 18 | Oral disorders                             | 442.77 (263.87-687.85)  |
| 23Prostate cancer21Headache disordersLeading causes in 2013Deaths per 100,000<br>(55% uncertainty intervals)Leading causes in 2019Deaths per 100,000<br>(55% uncertainty intervals)1Ischemic heart disease104.31 (93.00-110.11)1Ischemic heart disease111.87 (97.86-119.98)2Stroke96.18 (85.10-102.14)2Stroke106.14 (91.27-114.32)3Tracheal, bronchus, and lung cancer91.73 (83.29-96.03)3Tracheal, bronchus, and lung cancer94.95 (85.03-100.98)4Alzheimer's disease and other dementias63.12 (16.06-167.91)4Alzheimer's disease and other dementias81.63 (21.14-212.50)5Stomach cancer57.62 (52.12-60.36)55Stomach cancer57.95 (51.68-61.76)6Colon and rectum cancer48.22 (43.84-50.35)7Chronic obstructive pulmonary disease39.64 (30.27-50.09)8Chronic obstructive pulmonary disease33.75 (26.35-42.03)9Chronic kidney disease34.28 (29.22-37.28)9Self-harm31.74 (30.81-32.31)9Chronic kidney disease34.28 (29.22-37.28)10Chronic kidney disease30.66 (26.71-32.61)11Self-harm27.73 (26.41-28.84)11Pancreatic cancer27.37 (26.41-28.64)12Prostate cancer26.35 (19.65-33.03)   | 19 | Osteoarthritis                             | 388.80 (197.22-784.72)  |         | 19 | Osteoarthritis                             | 421.32 (213.16-849.18)  |
| Leading causes in 2013Deaths per 100,000<br>(55% uncertainty intervals)Leading causes in 2019Deaths per 100,000<br>(95% uncertainty intervals)1Ischemic heart disease104.31 (93.00–110.11)1Ischemic heart disease111.87 (97.86–119.98)2Stroke96.18 (85.10–102.14)2Stroke106.14 (91.27–114.32)3Tracheal, bronchus, and lung cancer91.73 (83.29–96.03)3Tracheal, bronchus, and lung cancer94.95 (85.03–100.98)4Alzheimer's disease and other dementias63.12 (16.06–167.91)4Alzheimer's disease and other dementias86.63 (21.14–212.50)5Stomach cancer57.62 (52.12–60.36)5S tomach cancer57.95 (51.68–61.76)6Colon and rectum cancer48.22 (43.84–50.35)6Colon and rectum cancer53.12 (47.49–56.35)7Liver cancer34.33 (31.49–35.77)7Chronic obstructive pulmonary disease39.64 (30.27–50.09)8Chronic obstructive pulmonary disease33.75 (26.35–42.03)8Liver cancer35.53 (32.08–38.05)9Self-harm31.74 (30.81–32.31)9Chronic kidney disease34.28 (29.22–37.28)10Chronic kidney disease30.66 (26.71–32.61)10Pancreatic cancer29.88 (26.83–31.73)12Cirrhosis and other chronic liver diseases23.73 (21.97–25.73)12Prostate cancer26.55 (19.65–33.03)  | 20 | Headache disorders                         | 376.01 (131.77-740.00)  |         | 20 | Prostate cancer                            | 393.57 (307.46-516.01)  |
| Leading causes in 2013(95% uncertainty intervals)Leading causes in 2019(95% uncertainty intervals)1Ischemic heart disease104.31 (93.00-110.11)1Ischemic heart disease111.87 (97.86-119.98)2Stroke96.18 (85.10-102.14)2Stroke106.14 (91.27-114.32)3Tracheal, bronchus, and lung cancer91.73 (83.29-96.03)3Tracheal, bronchus, and lung cancer94.95 (85.01-102.14)4Alzheimer's disease and other dementias61.21 (16.06-167.91)4Alzheimer's disease and other dementias81.63 (12.14-212.50)5Stomach cancer57.62 (52.12-60.36)5Stomach cancer57.95 (51.68-61.76)6Colon and rectum cancer48.22 (43.84-50.35)6Colon and rectum cancer53.12 (47.49-56.35)7Liver cancer34.33 (31.49-35.77)7Chronic obstructive pulmonary disease39.64 (30.27-50.09)8Chronic colstructive pulmonary disease33.75 (26.35-42.03)8Liver cancer35.33 (20.8-38.05)9Self-harm31.74 (30.81-32.31)9Chronic kidney disease34.28 (29.22-37.28)10Chronic kidney disease36.66 (26.71-32.61)10Pancreatic cancer29.88 (26.8-31.73)11Pancreatic cancer27.54 (25.27-28.66)11Self-harm27.73 (26.41-28.84)12Cirrhosis and other chronic liver diseases23.73 (21.97-25.73)12Prostate cancer26.35 (19.65-33.03)  | 23 | Prostate cancer                            |                         |         | 21 | Headache disorders                         |                         |
| 2       Stroke       96.18 (85.10-102.14)       2       Stroke       106.14 (91.27-114.32)         3       Tracheal, bronchus, and lung cancer       91.73 (83.29-96.03)       3       Tracheal, bronchus, and lung cancer       94.95 (85.03-100.98)         4       Alzheimer's disease and other dementias       63.12 (16.06-167.91)       4       Alzheimer's disease and other dementias       81.63 (21.14-212.50)         5       Stomach cancer       57.62 (52.12-60.36)       5       Stomach cancer       57.95 (51.68-61.76)         6       Colon and rectum cancer       48.22 (43.84-50.35)       6       Colon and rectum cancer       53.12 (14.9-56.35)         7       Liver cancer       34.33 (31.49-35.77)       7       Chronic obstructive pulmonary disease       39.64 (30.27-50.09)         8       Chronic obstructive pulmonary disease       33.05 (26.37-42.03)       7       Chronic kidney disease       35.53 (32.08-38.05)         9       Self-harm       31.74 (30.81-32.31)       9       Chronic kidney disease       34.28 (29.22-37.28)         10       Chronic kidney disease       30.66 (26.71-32.61)       10       Pancreatic cancer       29.88 (26.83-31.73)         11       Pancreatic cancer       27.53 (26.41-28.84)       11       Self-harm       27.73 (26.41-28.84)         12   |    | Leading causes in 2013                     |                         |         |    | Leading causes in 2019                     |                         |
| 3       Tracheal, bronchus, and lung cancer       91.73 (83.29–96.03)         4       Alzheimer's disease and other dementias       63.12 (16.06–167.91)         5       Stomach cancer       57.62 (52.12–60.36)         6       Colon and rectum cancer       48.22 (43.84–50.35)         7       Liver cancer       34.33 (149–35.77)         8       Chronic bostructive pulmonary disease       33.75 (26.35–42.03)         9       Self-harm       31.74 (30.81–32.31)         9       Self-harm       31.74 (30.81–32.31)         10       Chronic kidney disease       33.07 (25.27–28.66)         11       Self-harm       27.54 (25.27–28.66)         12       Cirrhosis and other chronic liver diseases       23.73 (21.97–25.73)   | 1  | Ischemic heart disease                     | 104.31 (93.00-110.11)   |         | 1  | Ischemic heart disease                     | 111.87 (97.86–119.98)   |
| 4       Alzheimer's disease and other dementias       63.12 (16.06–167.91)       4       Alzheimer's disease and other dementias       81.63 (21.14–212.50)         5       Stomach cancer       57.62 (52.12–60.36)       5       Stomach cancer       57.95 (51.68–61.76)         6       Colon and rectum cancer       48.22 (43.84–50.35)       6       Colon and rectum cancer       53.12 (47.49–56.35)         7       Liver cancer       34.33 (31.49–35.77)       7       Chronic obstructive pulmonary disease       39.64 (30.27–50.09)         8       Chronic obstructive pulmonary disease       33.75 (26.35–42.03)       8       Liver cancer       35.53 (32.08–38.05)         9       Self-harm       31.74 (30.81–32.31)       9       Chronic kidney disease       34.28 (29.22–37.28)         10       Chronic kidney disease       30.66 (26.71–32.61)       10       Pancreatic cancer       29.88 (26.83–31.73)         11       Pancreatic cancer       27.54 (25.27–28.66)       11       Self-harm       27.73 (26.41–28.84)         12       Cirrhosis and other chronic liver diseases       23.73 (21.97–25.73)       12       Prostate cancer       26.35 (19.65–33.03)  | 2  | Stroke                                     | 96.18 (85.10-102.14)    |         | 2  | Stroke                                     | 106.14 (91.27–114.32)   |
| 5       Stomach cancer       57.62 (52.12–60.36)       5       Stomach cancer       57.95 (51.68–61.76)         6       Colon and rectum cancer       48.22 (43.84–50.35)       6       Colon and rectum cancer       53.12 (47.49–56.35)         7       Liver cancer       34.33 (31.49–35.77)       7       Chronic obstructive pulmonary disease       39.64 (30.27–50.09)         8       Chronic obstructive pulmonary disease       33.75 (26.35–42.03)       8       Liver cancer       35.53 (32.08–38.05)         9       Self-harm       31.74 (30.81–32.31)       9       Chronic kidney disease       34.28 (29.22–37.28)         10       Chronic kidney disease       30.66 (26.71–32.61)       10       Pancreatic cancer       29.88 (26.83–31.73)         11       Pancreatic cancer       27.54 (25.27–28.66)       11       Self-harm       27.73 (26.41–28.84)         12       Cirrhosis and other chronic liver diseases       23.73 (21.97–25.73)       12       Prostate cancer       26.35 (19.65–33.03)  | 3  | Tracheal, bronchus, and lung cancer        | 91.73 (83.29-96.03)     |         | 3  | Tracheal, bronchus, and lung cancer        | 94.95 (85.03-100.98)    |
| 6       Colon and rectum cancer       48.22 (43.84–50.35)       6       Colon and rectum cancer       53.12 (47.49–56.35)         7       Liver cancer       34.33 (31.49–35.77)       7       Chronic obstructive pulmonary disease       39.64 (30.27–50.09)         8       Chronic obstructive pulmonary disease       33.75 (26.35–42.03)       8       Liver cancer       35.53 (32.08–38.05)         9       Self-harm       31.74 (30.81–32.31)       9       Chronic kidney disease       34.28 (29.22–37.28)         10       Chronic kidney disease       30.66 (26.71–32.61)       10       Pancreatic cancer       29.88 (26.83–31.73)         11       Pancreatic cancer       27.53 (42.527–28.66)       11       Self-harm       27.73 (26.41–28.84)         12       Cirrhosis and other chronic liver diseases       23.73 (21.97–25.73)       12       Prostate cancer       26.35 (19.65–33.03)   | 4  | Alzheimer's disease and other dementias    | 63.12 (16.06-167.91)    |         | 4  | Alzheimer's disease and other dementias    | 81.63 (21.14-212.50)    |
| 7       Liver cancer       34.33 (31.49–35.77)       7       Chronic obstructive pulmonary disease       39.64 (30.27–50.09)         8       Chronic obstructive pulmonary disease       33.75 (26.35–42.03)       8       Liver cancer       35.53 (32.08–38.05)         9       Self-harm       31.74 (30.81–32.31)       9       Chronic kidney disease       34.28 (29.22–37.28)         10       Chronic kidney disease       30.66 (26.71–32.61)       10       Pancreatic cancer       29.88 (26.83–31.73)         11       Pancreatic cancer       27.54 (25.27–28.66)       11       Self-harm       27.73 (26.41–28.44)         12       Cirrhosis and other chronic liver diseases       23.73 (21.97–25.73)       12       Prostate cancer       26.35 (19.65–33.03)  | 5  | Stomach cancer                             | 57.62 (52.12-60.36)     |         | 5  | Stomach cancer                             | 57.95 (51.68–61.76)     |
| 8         Chronic obstructive pulmonary disease         33.75 (26.35–42.03)         8         Liver cancer         35.53 (32.08–38.05)         9         Chronic kidney disease         34.28 (29.22–37.28)         9         Chronic kidney disease         34.28 (29.22–37.28)         10         Pancreatic cancer         29.88 (26.83–31.73)         11         Pancreatic cancer         29.88 (26.83–31.73)         11         Self-harm         27.73 (26.41–28.84)         12         Prostate cancer         26.35 (19.65–33.03)  | 6  | Colon and rectum cancer                    | 48.22 (43.84-50.35)     |         | 6  | Colon and rectum cancer                    | 53.12 (47.49-56.35)     |
| 9         Self-harm         31.74 (30.81-32.31)         9         Chronic kidney disease         34.28 (29.22-37.28)           10         Chronic kidney disease         30.66 (26.71-32.61)         10         Pancreatic cancer         29.88 (26.83-31.73)           11         Pancreatic cancer         27.54 (25.27-28.66)         11         Self-harm         27.73 (26.41-28.84)           12         Cirrhosis and other chronic liver diseases         23.73 (21.97-25.73)         12         Prostate cancer         26.35 (19.65-33.03)  | 7  | Liver cancer                               | 34.33 (31.49–35.77)     | ~       | 7  | Chronic obstructive pulmonary disease      | 39.64 (30.27-50.09)     |
| 10         Chronic kidney disease         30.66 (26.71-32.61)         10         Pancreatic cancer         29.88 (26.83-31.73)           11         Pancreatic cancer         27.54 (25.27-28.66)         11         Self-harm         27.73 (26.41-28.84)           12         Cirrhosis and other chronic liver diseases         23.73 (21.97-25.73)         12         Prostate cancer         26.35 (19.65-33.03)   | 8  | Chronic obstructive pulmonary disease      | 33.75 (26.35-42.03)     | · · · · | 8  | Liver cancer                               | 35.53 (32.08-38.05)     |
| 11         Pancreatic cancer         27.54 (25.27-28.66)         11         Self-harm         27.73 (26.41-28.84)           12         Cirrhosis and other chronic liver diseases         23.73 (21.97-25.73)         12         Prostate cancer         26.35 (19.65-33.03)  | 9  | Self-harm                                  | 31.74 (30.81-32.31)     |         | 9  | Chronic kidney disease                     | 34.28 (29.22-37.28)     |
| 12         Cirrhosis and other chronic liver diseases         23.73 (21.97–25.73)         12         Prostate cancer         26.35 (19.65–33.03)  | 10 | Chronic kidney disease                     | 30.66 (26.71-32.61)     | $\sim$  | 10 | Pancreatic cancer                          | 29.88 (26.83-31.73)     |
|   | 11 | Pancreatic cancer                          | 27.54 (25.27-28.66)     | $\sim$  | 11 | Self-harm                                  | 27.73 (26.41-28.84)     |
| 13 Prostate cancer 21.88 (16.19–27.37) 13 Cirrhosis and other chronic liver diseases 23.79 (21.69–26.24)  | 12 | Cirrhosis and other chronic liver diseases | 23.73 (21.97-25.73)     |         | 12 | Prostate cancer                            | 26.35 (19.65-33.03)     |
|   | 13 | Prostate cancer                            | 21.88 (16.19-27.37)     | $\sim$  | 13 | Cirrhosis and other chronic liver diseases | 23.79 (21.69-26.24)     |

| <br>Increase of consistent in ranking order |
|---|
| <br>Decrease in ranking order               |

17.79 (16.47-18.45)

15.01 (10.04-16.31)

13.97 (12.45-14.79)

12.34 (4.71-17.55)

12.33 (10.76-13.11)

11.37 (9.84-12.10)

11.05 (9.90-11.56)

14 Esophageal cancer

16 Aortic aneurysm

18 Parkinson's disease

20 Non-Hodgkin lymphoma

19 Falls

15 Gallbladder and biliary tract cancer

17 Interstitial lung disease and pulmonary sarcoidosis

Non-communicable diseases excluding injuries Injuries

18.56 (16.88-19.86)

16.45 (10.85-18.28)

16.20 (14.14-17.65)

14.91 (12.83-16.20)

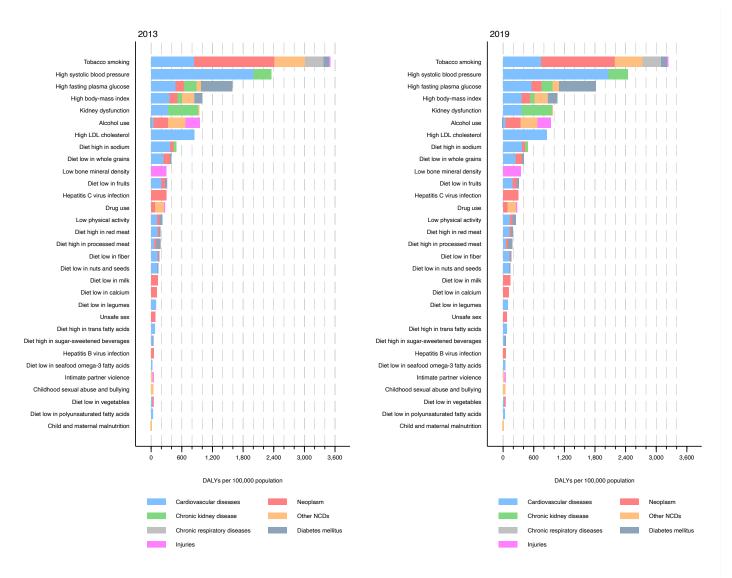
14.37 (5.23-20.94)

12.95 (11.03-14.09)

12.28 (10.91-13.33)

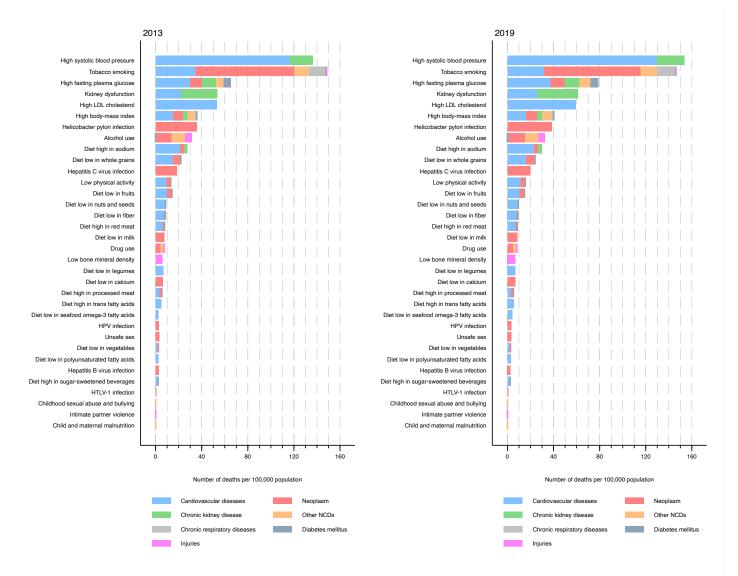
\* Data were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>.

Supplementary Figure 3: All-ages DALYs rate (per 100,000 population) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for both sexes combined

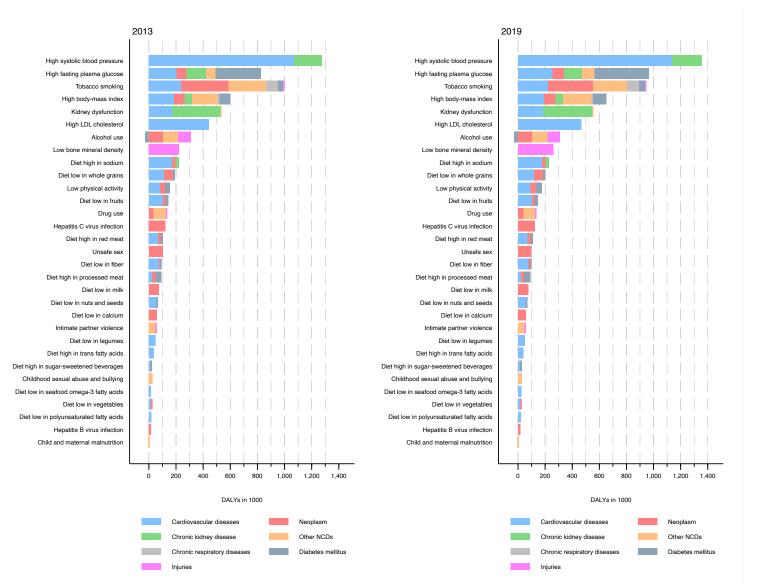


\* Data, except for hepatitis B and C virus infections, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCD: non-communicable disease; LDL: low-density lipoprotein. The order of risk factors is sorted by 2019 values.

Supplementary Figure 4: All-ages mortality rate (per 100,000) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for both sexes combined



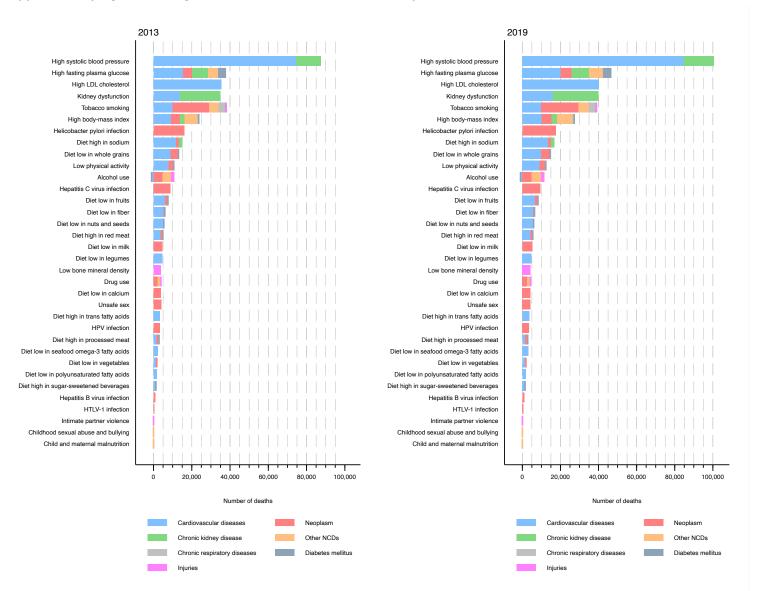
\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. NCD: non-communicable disease; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of risk factors is sorted by 2019 values.



#### Supplementary Figure 5: All-ages DALYs attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for women

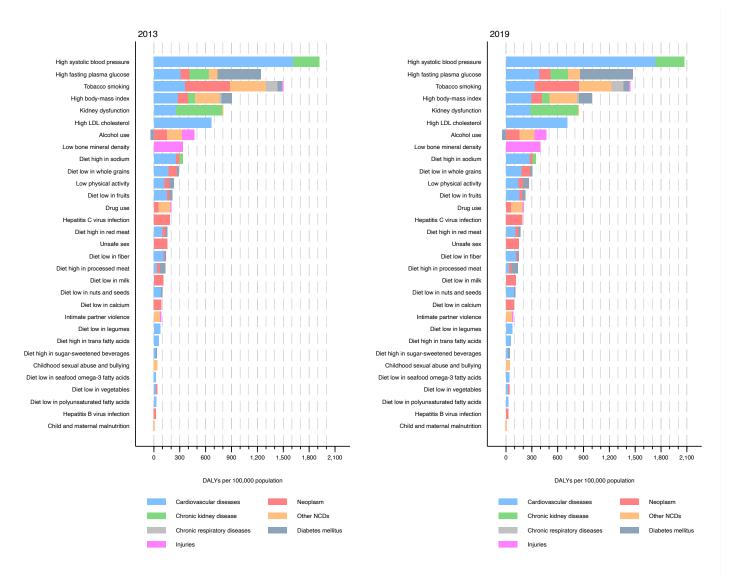
\* Data, except for hepatitis B and C virus infections, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCD: non-communicable disease; LDL: low-density lipoprotein. The order of risk factors is sorted by 2019 values.

Supplementary Figure 6: All-ages number of deaths attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for women



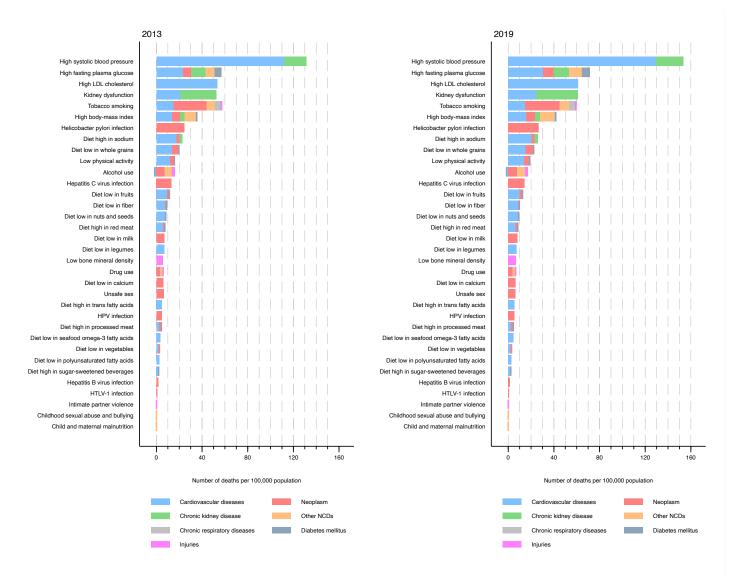
\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. NCD: non-communicable disease; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of risk factors is sorted by 2019 values.

### Supplementary Figure 7: All-ages DALYs rate (per 100,000 population) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for women

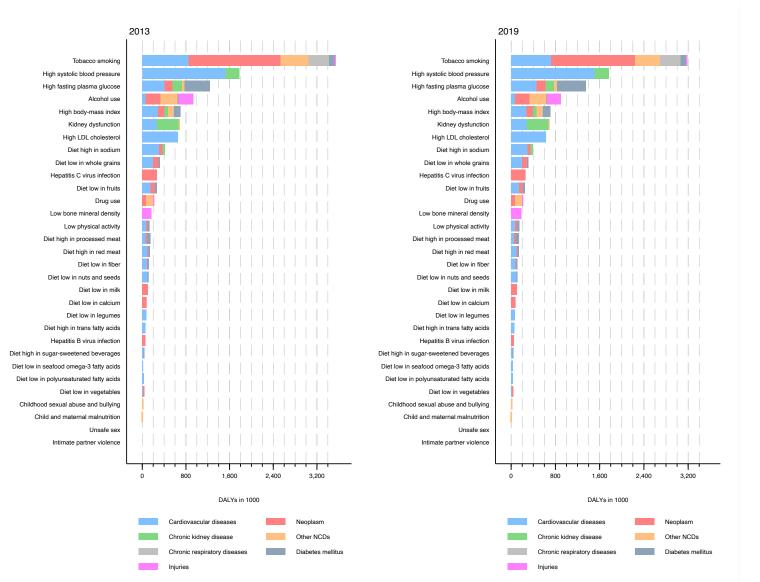


\* Data, except for hepatitis B and C virus infections, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCD: non-communicable disease; LDL: low-density lipoprotein. The order of risk factors is sorted by 2019 values.

### Supplementary Figure 8: All-ages mortality rate (per 100,000) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for women



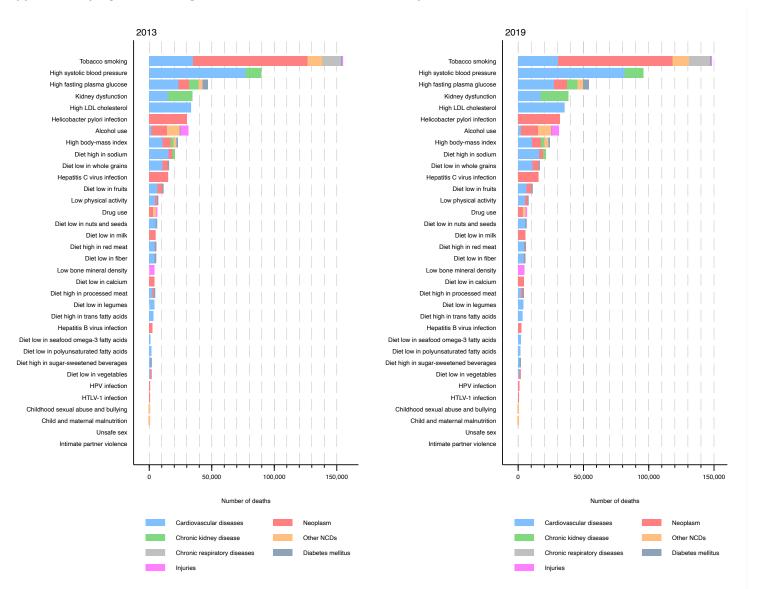
\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. NCD: non-communicable disease; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of risk factors is sorted by 2019 values.



#### Supplementary Figure 9: All-ages DALYs attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for men

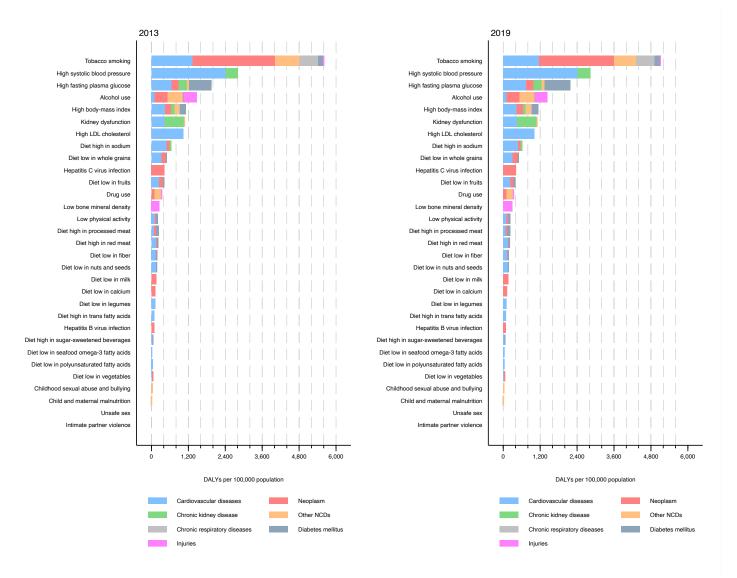
\* Data, except for hepatitis B and C virus infections, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCD: non-communicable disease; LDL: low-density lipoprotein. The order of risk factors is sorted by 2019 values.

#### Supplementary Figure 10: All-ages number of deaths attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for men



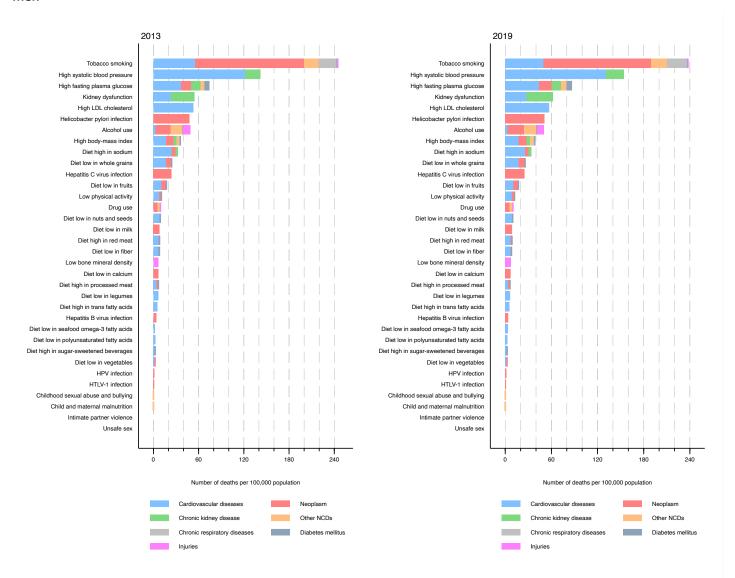
\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. NCD: non-communicable disease; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of risk factors is sorted by 2019 values.

### Supplementary Figure 11: All-ages DALYs rate (per 100,000 population) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for men



\* Data, except for hepatitis B and C virus infections, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCD: non-communicable disease; LDL: low-density lipoprotein. The order of risk factors is sorted by 2019 values.

### Supplementary Figure 12: All-ages mortality rate (per 100,000) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for men



\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. NCD: non-communicable disease; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of risk factors is sorted by 2019 values.

|                  |        |   | 2013  | 3   | 2019  | 9   | PAF   | *     |
|------------------|--------|---|-------|-----|-------|-----|-------|-------|
| Risk factor      | ICD-10 | Cause   | Women | Men | Women | Men | Women | Men   |
| HPV infection    | C01    | Malignant neoplasm of base of tongue                        | 5     | 23  | 6     | 37  | 46.0  | 46.0  |
| HPV infection    | C02    | Malignant neoplasm of other and unspecified parts of tongue | 501   | 729 | 533   | 821 | 4.3   | 4.3   |
| HPV infection    | C03    | Malignant neoplasm of gum                                   | 612   | 623 | 653   | 482 | 4.3   | 4.3   |
| HPV infection    | C04    | Malignant neoplasm of floor of mouth                        | 70    | 198 | 64    | 179 | 4.3   | 4.3   |
| HPV infection    | C05    | Malignant neoplasm of palate                                | 44    | 43  | 54    | 51  | 4.3   | 4.3   |
| HPV infection    | C06    | Malignant neoplasm of other and unspecified parts of mouth  | 231   | 206 | 273   | 242 | 4.3   | 4.3   |
| HPV infection    | C09    | Malignant neoplasm of tonsil                                | 1     | 24  | 4     | 19  | 46.0  | 46.0  |
| HPV infection    | C10    | Malignant neoplasm of oropharynx                            | 136   | 746 | 164   | 932 | 46.0  | 46.0  |
| HPV infection    | C21    | Malignant neoplasm of anus and anal canal                   | 180   | 170 | 230   | 235 | 88.0  | 88.0  |
| HPV infection    | C51    | Malignant neoplasm of vulva                                 | 214   | _   | 273   | _   | 48.0  | _     |
| HPV infection    | C52    | Malignant neoplasm of vagina                                | 127   | _   | 143   | _   | 78.0  | _     |
| HPV infection    | C53    | Malignant neoplasm of cervix uteri                          | 2682  | _   | 2955  | _   | 100.0 | _     |
| HPV infection    | C60    | Malignant neoplasm of penis                                 | -     | 139 | -     | 159 | -     | 51.0  |
| HTLV-1 infection | C91.5  | Adult T-cell lymphoma/leukaemia [HTLV-1-associated]         | 500   | 528 | 430   | 489 | 100.0 | 100.0 |

Supplementary Table 1: Number of deaths from the Vital Statistics by ICD-10 codes in 2013 and 2019, and PAF of HPV infections and HYLV-1 infection in relation to each cause of death

ICD-10: the 10th revision of the International Statistical Classification of Diseases and Related Health Problems; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1; PAF: population attributable fraction.

\* Data were extracted from the following previous studies: Plummer M, de Martel C, Vignat J, Ferlay J, Bray F, Franceschi S. Global burden of cancers attributable to infections in 2012: a synthetic analysis. *Lancet Glob Health* 2016; **4**(9): e609-16; Lin Y, Wang C, Kikuchi S, et al. Burden of cancer attributable to infection in Japan in 2015. GHM Open 2021; 1(2): 63-9.

| Year | Risk factors                           | Cause                   | DALYs     | Number of deaths |
|------|--|-------------------------|-----------|------------------|
| 2013 | Alcohol use                            | Cardiovascular diseases | 58930.80  | 747.95           |
| 2013 | Alcohol use                            | Neoplasms               | 372916.88 | 17377.96         |
| 2013 | Alcohol use                            | Other NCDs              | 439689.04 | 14985.15         |
| 2013 | Alcohol use                            | Diabetes mellitus       | -18698.70 | -221.49          |
| 2013 | Alcohol use                            | Injurie                 | 364541.28 | 7756.45          |
| 2019 | Alcohol use                            | Cardiovascular diseases | 67447.16  | 1185.92          |
| 2019 | Alcohol use                            | Neoplasms               | 368657.94 | 18285.47         |
| 2019 | Alcohol use                            | Other NCDs              | 425555.41 | 15244.11         |
| 2019 | Alcohol use                            | Diabetes mellitus       | -21652.40 | -234.78          |
| 2019 | Alcohol use                            | Injurie                 | 334562.81 | 7073.53          |
| 2013 | Child and maternal malnutrition        | Other NCDs              | 389.55    | 4.39             |
| 2019 | Child and maternal malnutrition        | Other NCDs              | 303.68    | 3.42             |
| 2013 | Childhood sexual abuse and bullying    | Other NCDs              | 52949.51  | 74.86            |
| 2019 | Childhood sexual abuse and bullying    | Other NCDs              | 51834.78  | 73.60            |
| 2013 | Diet high in processed meat            | Cardiovascular diseases | 86290.63  | 4207.19          |
| 2013 | Diet high in processed meat            | Neoplasms               | 55905.91  | 2671.80          |
| 2013 | Diet high in processed meat            | Diabetes mellitus       | 99888.66  | 834.81           |
| 2019 | Diet high in processed meat            | Cardiovascular diseases | 73401.70  | 3845.18          |
| 2019 | Diet high in processed meat            | Neoplasms               | 52096.18  | 2639.37          |
| 2019 | Diet high in processed meat            | Diabetes mellitus       | 108947.52 | 815.24           |
| 2013 | Diet high in red meat                  | Cardiovascular diseases | 166580.08 | 8024.92          |
| 2013 | Diet high in red meat                  | Neoplasms               | 37726.12  | 1832.93          |
| 2013 | Diet high in red meat                  | Diabetes mellitus       | 35665.70  | 342.25           |
| 2019 | Diet high in red meat                  | Cardiovascular diseases | 168019.55 | 8745.72          |
| 2019 | Diet high in red meat                  | Neoplasms               | 38566.11  | 2015.55          |
| 2019 | Diet high in red meat                  | Diabetes mellitus       | 42862.12  | 374.83           |
| 2013 | Diet high in sodium                    | Cardiovascular diseases | 486884.06 | 27348.39         |
| 2013 | Diet high in sodium                    | Neoplasms               | 79943.82  | 4684.18          |
| 2013 | Diet high in sodium                    | Chronic kidney disease  | 65992.77  | 3511.16          |
| 2019 | Diet high in sodium                    | Cardiovascular diseases | 479427.88 | 29506.63         |
| 2019 | Diet high in sodium                    | Neoplasms               | 73464.70  | 4677.41          |
| 2019 | Diet high in sodium                    | Chronic kidney disease  | 64716.29  | 3903.45          |
| 2013 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 37259.29  | 2571.72          |
| 2013 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 24626.48  | 256.03           |
| 2019 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 38328.11  | 2857.54          |
| 2019 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 30959.07  | 290.44           |
| 2013 | Diet high in trans fatty acids         | Cardiovascular diseases | 97283.50  | 6480.17          |
| 2019 | Diet high in trans fatty acids         | Cardiovascular diseases | 95911.49  | 6984.21          |
| 2013 | Diet low in calcium                    | Neoplasms               | 139603.84 | 8027.69          |
| 2019 | Diet low in calcium                    | Neoplasms               | 139003.97 | 8636.08          |
| 2013 | Diet low in fiber                      | Cardiovascular diseases | 169112.22 | 9567.80          |
| 2013 | Diet low in fiber                      | Neoplasms               | 20735.14  | 1208.50          |
| 2013 | Diet low in fiber                      | Diabetes mellitus       | 22174.85  | 246.30           |

### Supplementary Table 2: All-age DALYs and number of deaths attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for both sexes combined

| 2019 | Diet low in fiber                       | Cardiovascular diseases | 161553.47 | 9989.71             |
|------|---|-------------------------|-----------|---------------------|
| 2019 | Diet low in fiber                       | Neoplasms               | 20500.04  | 1296.40             |
| 2019 | Diet low in fiber                       | Diabetes mellitus       | 25319.61  | 258.91              |
| 2019 | Diet low in fruits                      | Cardiovascular diseases | 257288.81 | 12820.94            |
| 2013 | Diet low in fruits                      | Neoplasms               | 99799.90  | 5471.86             |
| 2013 | Diet low in fruits                      | Diabetes mellitus       | 49687.80  | 499.72              |
|      | Diet low in fruits                      | Cardiovascular diseases |           |                     |
| 2019 | Diet low in fruits                      |                         | 245154.25 | 13305.56<br>5391.82 |
| 2019 |   | Neoplasms               | 91451.66  |                     |
| 2019 | Diet low in fruits                      | Diabetes mellitus       | 54886.55  | 508.50              |
| 2013 | Diet low in legumes                     | Cardiovascular diseases | 127031.62 | 8447.49             |
| 2019 | Diet low in legumes                     | Cardiovascular diseases | 118017.91 | 8763.29             |
| 2013 | Diet low in milk                        | Neoplasms               | 174654.22 | 9787.92             |
| 2019 | Diet low in milk                        | Neoplasms               | 178533.45 | 10793.89            |
| 2013 | Diet low in nuts and seeds              | Cardiovascular diseases | 160334.44 | 10996.69            |
| 2013 | Diet low in nuts and seeds              | Diabetes mellitus       | 19111.75  | 219.17              |
| 2019 | Diet low in nuts and seeds              | Cardiovascular diseases | 157237.62 | 11794.82            |
| 2019 | Diet low in nuts and seeds              | Diabetes mellitus       | 22340.00  | 235.86              |
| 2013 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 49921.66  | 3246.76             |
| 2019 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 48406.09  | 3442.81             |
| 2013 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 28727.66  | 3181.22             |
| 2019 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 55854.02  | 5257.55             |
| 2013 | Diet low in vegetables                  | Cardiovascular diseases | 46426.44  | 2967.01             |
| 2013 | Diet low in vegetables                  | Neoplasms               | 4235.23   | 230.03              |
| 2019 | Diet low in vegetables                  | Cardiovascular diseases | 45484.98  | 3207.28             |
| 2019 | Diet low in vegetables                  | Neoplasms               | 4107.70   | 240.51              |
| 2013 | Diet low in whole grains                | Cardiovascular diseases | 318843.53 | 19572.02            |
| 2013 | Diet low in whole grains                | Neoplasms               | 155385.27 | 8625.96             |
| 2013 | Diet low in whole grains                | Diabetes mellitus       | 34764.11  | 364.23              |
| 2019 | Diet low in whole grains                | Cardiovascular diseases | 313456.31 | 20999.52            |
| 2019 | Diet low in whole grains                | Neoplasms               | 158507.73 | 9487.80             |
| 2019 | Diet low in whole grains                | Diabetes mellitus       | 40497.85  | 389.97              |
| 2013 | Drug use                                | Neoplasms               | 106501.30 | 5411.86             |
| 2013 | Drug use                                | Other NCDs              | 228993.69 | 4216.93             |
| 2013 | Drug use                                | Injurie                 | 9258.50   | 189.70              |
| 2019 | Drug use                                | Neoplasms               | 111888.73 | 6057.20             |
| 2019 | Drug use                                | Other NCDs              | 222359.04 | 4310.66             |
| 2019 | Drug use                                | Injurie                 | 7762.70   | 161.79              |
| 2013 | HPV infection                           | Neoplasms               | NA        | 3832.82             |
| 2019 | HPV infection                           | Neoplasms               | NA        | 4366.53             |
| 2013 | HTLV-1 infection                        | Neoplasms               | NA        | 1028.00             |
| 2019 | HTLV-1 infection                        | Neoplasms               | NA        | 919.00              |
| 2013 | Helicobacter pylori infection           | Neoplasms               | NA        | 46272.78            |
| 2019 | Helicobacter pylori infection           | Neoplasms               | NA        | 49283.78            |
| 2013 | Hepatitis B virus infection             | Neoplasms               | 71950.26  | 3407.12             |
| 2019 | Hepatitis B virus infection             | Neoplasms               | 67538.50  | 3368.15             |
| 2013 | Hepatitis C virus infection             | Neoplasms               | 391420.16 | 23930.62            |
|      |   |                         |           |                     |

| 2019 | Hepatitis C virus infection  | Neoplasms               |
|------|------------------------------|-------------------------|
| 2013 | High LDL cholesterol         | Cardiovascular disease  |
| 2019 | High LDL cholesterol         | Cardiovascular disease  |
| 2013 | High body-mass index         | Cardiovascular disease  |
| 2013 | High body-mass index         | Neoplasms               |
| 2013 | High body-mass index         | Chronic kidney disease  |
| 2013 | High body-mass index         | Other NCDs              |
| 2013 | High body-mass index         | Chronic respiratory dis |
| 2013 | High body-mass index         | Diabetes mellitus       |
| 2019 | High body-mass index         | Cardiovascular disease  |
| 2019 | High body-mass index         | Neoplasms               |
| 2019 | High body-mass index         | Chronic kidney disease  |
| 2019 | High body-mass index         | Other NCDs              |
| 2019 | High body-mass index         | Chronic respiratory dis |
| 2019 | High body-mass index         | Diabetes mellitus       |
| 2013 | High fasting plasma glucose  | Cardiovascular disease  |
| 2013 | High fasting plasma glucose  | Neoplasms               |
| 2013 | High fasting plasma glucose  | Chronic kidney disease  |
| 2013 | High fasting plasma glucose  | Other NCDs              |
| 2013 | High fasting plasma glucose  | Diabetes mellitus       |
| 2019 | High fasting plasma glucose  | Cardiovascular disease  |
| 2019 | High fasting plasma glucose  | Neoplasms               |
| 2019 | High fasting plasma glucose  | Chronic kidney disease  |
| 2019 | High fasting plasma glucose  | Other NCDs              |
| 2019 | High fasting plasma glucose  | Diabetes mellitus       |
| 2013 | High systolic blood pressure | Cardiovascular disease  |
| 2013 | High systolic blood pressure | Chronic kidney disease  |
| 2019 | High systolic blood pressure | Cardiovascular disease  |
| 2019 | High systolic blood pressure | Chronic kidney disease  |
| 2013 | Intimate partner violence    | Other NCDs              |
| 2013 | Intimate partner violence    | Injurie                 |
| 2019 | Intimate partner violence    | Other NCDs              |
| 2019 | Intimate partner violence    | Injurie                 |
| 2013 | Kidney dysfunction           | Cardiovascular disease  |
| 2013 | Kidney dysfunction           | Chronic kidney disease  |
| 2013 | Kidney dysfunction           | Other NCDs              |
| 2019 | Kidney dysfunction           | Cardiovascular disease  |
| 2019 | Kidney dysfunction           | Chronic kidney disease  |
| 2019 | Kidney dysfunction           | Other NCDs              |
| 2013 | Low bone mineral density     | Injurie                 |
| 2019 | Low bone mineral density     | Injurie                 |
| 2013 | Low physical activity        | Cardiovascular disease  |
| 2013 | Low physical activity        | Neoplasms               |
| 2013 | Low physical activity        | Diabetes mellitus       |
| 2019 | Low physical activity        | Cardiovascular disease  |
| 2019 | Low physical activity        | Neoplasms               |
|      |                              |                         |

| Neoplasms                    | 383625.19  | 25051.50  |
|------------------------------|------------|-----------|
| Cardiovascular diseases      | 1098180.88 | 68788.78  |
| Cardiovascular diseases      | 1098334.88 | 75782.03  |
| Cardiovascular diseases      | 471109.91  | 19826.05  |
| Neoplasms                    | 204838.77  | 10894.04  |
| Chronic kidney disease       | 116647.45  | 5043.33   |
| Other NCDs                   | 293028.75  | 9392.42   |
| Chronic respiratory diseases | 22690.56   | 232.16    |
| Diabetes mellitus            | 193850.38  | 1445.98   |
| Cardiovascular diseases      | 466874.38  | 21024.39  |
| Neoplasms                    | 207154.09  | 11740.97  |
| Chronic kidney disease       | 114633.69  | 5615.01   |
| Other NCDs                   | 321541.23  | 11681.06  |
| Chronic respiratory diseases | 23452.75   | 250.30    |
| Diabetes mellitus            | 228163.19  | 1510.36   |
| Cardiovascular diseases      | 621306.38  | 38848.36  |
| Neoplasms                    | 216978.36  | 13171.44  |
| Chronic kidney disease       | 313019.53  | 16110.77  |
| Other NCDs                   | 115394.76  | 8497.74   |
| Diabetes mellitus            | 792262.38  | 8190.04   |
| Cardiovascular diseases      | 717172.38  | 47646.45  |
| Neoplasms                    | 243409.91  | 15793.96  |
| Chronic kidney disease       | 286796.81  | 16892.76  |
| Other NCDs                   | 153133.70  | 11691.59  |
| Diabetes mellitus            | 917207.31  | 8784.08   |
| Cardiovascular diseases      | 2601975.75 | 151478.14 |
| Chronic kidney disease       | 452756.88  | 25484.87  |
| Cardiovascular diseases      | 2645609.50 | 166023.95 |
| Chronic kidney disease       | 477260.88  | 30360.66  |
| Other NCDs                   | 49350.63   | 0.00      |
| Injurie                      | 7787.61    | 71.09     |
| Other NCDs                   | 47613.55   | 0.00      |
| Injurie                      | 7821.76    | 66.85     |
| Cardiovascular diseases      | 437405.84  | 29030.57  |
| Chronic kidney disease       | 766899.56  | 40340.07  |
| Other NCDs                   | 13050.30   | 0.00      |
| Cardiovascular diseases      | 461401.41  | 33093.30  |
| Chronic kidney disease       | 768793.31  | 45324.43  |
| Other NCDs                   | 15305.70   | 0.00      |
| Injurie                      | 387035.31  | 7695.78   |
| Injurie                      | 445611.97  | 8920.78   |
| Cardiovascular diseases      | 156742.94  | 12649.80  |
| Neoplasms                    | 64210.21   | 4243.01   |
| Diabetes mellitus            | 67639.34   | 917.31    |
| Cardiovascular diseases      | 169430.09  | 14615.16  |
| Neoplasms                    | 69114.70   | 4896.53   |

| 2019 | Low physical activity | Diabetes mellitus            | 81577.53   | 1024.62   |
|------|-----------------------|------------------------------|------------|-----------|
| 2013 | Tobacco smoking       | Cardiovascular diseases      | 1090582.62 | 45051.94  |
| 2013 | Tobacco smoking       | Neoplasms                    | 2036222.25 | 110735.50 |
| 2013 | Tobacco smoking       | Other NCDs                   | 783271.72  | 16873.07  |
| 2013 | Tobacco smoking       | Chronic respiratory diseases | 466942.22  | 18555.35  |
| 2013 | Tobacco smoking       | Diabetes mellitus            | 138337.58  | 1114.51   |
| 2013 | Tobacco smoking       | Injurie                      | 29190.91   | 542.00    |
| 2019 | Tobacco smoking       | Cardiovascular diseases      | 950184.62  | 40650.62  |
| 2019 | Tobacco smoking       | Neoplasms                    | 1846583.88 | 107019.90 |
| 2019 | Tobacco smoking       | Other NCDs                   | 699115.83  | 18153.41  |
| 2019 | Tobacco smoking       | Chronic respiratory diseases | 463008.19  | 19833.55  |
| 2019 | Tobacco smoking       | Diabetes mellitus            | 146938.16  | 1069.25   |
| 2019 | Tobacco smoking       | Injurie                      | 28246.11   | 511.17    |
| 2013 | Unsafe sex            | Neoplasms                    | 103031.44  | 4172.02   |
| 2019 | Unsafe sex            | Neoplasms                    | 97453.56   | 4210.49   |

\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCDs: non-communicable diseases; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of the risk factors is sorted alphabetically.

|      | ventable behavioral and metabolic risk |                         |            |                |
|------|--|-------------------------|------------|----------------|
| Year | Risk factors                           | Cause                   | DALYs rate | Mortality rate |
| 2013 | Alcohol use                            | Cardiovascular diseases | 45.45      | 0.58           |
| 2013 | Alcohol use                            | Neoplasms               | 287.62     | 13.40          |
| 2013 | Alcohol use                            | Other NCDs              | 339.12     | 11.56          |
| 2013 | Alcohol use                            | Diabetes mellitus       | -14.42     | -0.17          |
| 2013 | Alcohol use                            | Injurie                 | 281.16     | 5.98           |
| 2019 | Alcohol use                            | Cardiovascular diseases | 52.78      | 0.93           |
| 2019 | Alcohol use                            | Neoplasms               | 288.49     | 14.31          |
| 2019 | Alcohol use                            | Other NCDs              | 333.02     | 11.93          |
| 2019 | Alcohol use                            | Diabetes mellitus       | -16.94     | -0.18          |
| 2019 | Alcohol use                            | Injurie                 | 261.81     | 5.54           |
| 2013 | Child and maternal malnutrition        | Other NCDs              | 0.30       | 0.00           |
| 2019 | Child and maternal malnutrition        | Other NCDs              | 0.24       | 0.00           |
| 2013 | Childhood sexual abuse and bullying    | Other NCDs              | 40.84      | 0.06           |
| 2019 | Childhood sexual abuse and bullying    | Other NCDs              | 40.56      | 0.06           |
| 2013 | Diet high in processed meat            | Cardiovascular diseases | 66.55      | 3.24           |
| 2013 | Diet high in processed meat            | Neoplasms               | 43.12      | 2.06           |
| 2013 | Diet high in processed meat            | Diabetes mellitus       | 77.04      | 0.64           |
| 2019 | Diet high in processed meat            | Cardiovascular diseases | 57.44      | 3.01           |
| 2019 | Diet high in processed meat            | Neoplasms               | 40.77      | 2.07           |
| 2019 | Diet high in processed meat            | Diabetes mellitus       | 85.26      | 0.64           |
| 2013 | Diet high in red meat                  | Cardiovascular diseases | 128.48     | 6.19           |
| 2013 | Diet high in red meat                  | Neoplasms               | 29.10      | 1.41           |
| 2013 | Diet high in red meat                  | Diabetes mellitus       | 27.51      | 0.26           |
| 2019 | Diet high in red meat                  | Cardiovascular diseases | 131.48     | 6.84           |
| 2019 | Diet high in red meat                  | Neoplasms               | 30.18      | 1.58           |
| 2019 | Diet high in red meat                  | Diabetes mellitus       | 33.54      | 0.29           |
| 2013 | Diet high in sodium                    | Cardiovascular diseases | 375.52     | 21.09          |
| 2013 | Diet high in sodium                    | Neoplasms               | 61.66      | 3.61           |
| 2013 | Diet high in sodium                    | Chronic kidney disease  | 50.90      | 2.71           |
| 2019 | Diet high in sodium                    | Cardiovascular diseases | 375.17     | 23.09          |
| 2019 | Diet high in sodium                    | Neoplasms               | 57.49      | 3.66           |
| 2019 | Diet high in sodium                    | Chronic kidney disease  | 50.64      | 3.05           |
| 2013 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 28.74      | 1.98           |
| 2013 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 18.99      | 0.20           |
| 2019 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 29.99      | 2.24           |
| 2019 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 24.23      | 0.23           |
| 2013 | Diet high in trans fatty acids         | Cardiovascular diseases | 75.03      | 5.00           |
| 2019 | Diet high in trans fatty acids         | Cardiovascular diseases | 75.05      | 5.47           |
| 2013 | Diet low in calcium                    | Neoplasms               | 107.67     | 6.19           |
| 2019 | Diet low in calcium                    | Neoplasms               | 108.78     | 6.76           |
| 2013 | Diet low in fiber                      | Cardiovascular diseases | 130.43     | 7.38           |
| 2013 | Diet low in fiber                      | Neoplasms               | 15.99      | 0.93           |
| 2013 | Diet low in fiber                      | Diabetes mellitus       | 17.10      | 0.19           |

## Supplementary Table 3: All-age DALYs rate (per 100,000) and mortality rate (per 100,000) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for both sexes combined

| 2019 | Diet low in fiber                       | Cardiovascular diseases | 126.42 | 7.82  |
|------|---|-------------------------|--------|-------|
| 2019 | Diet low in fiber                       | Neoplasms               | 16.04  | 1.01  |
| 2019 | Diet low in fiber                       | Diabetes mellitus       | 19.81  | 0.20  |
| 2013 | Diet low in fruits                      | Cardiovascular diseases | 198.44 | 9.89  |
| 2013 | Diet low in fruits                      | Neoplasms               | 76.97  | 4.22  |
| 2013 | Diet low in fruits                      | Diabetes mellitus       | 38.32  | 0.39  |
| 2019 | Diet low in fruits                      | Cardiovascular diseases | 191.84 | 10.41 |
| 2019 | Diet low in fruits                      | Neoplasms               | 71.56  | 4.22  |
| 2019 | Diet low in fruits                      | Diabetes mellitus       | 42.95  | 0.40  |
| 2013 | Diet low in legumes                     | Cardiovascular diseases | 97.98  | 6.52  |
| 2019 | Diet low in legumes                     | Cardiovascular diseases | 92.35  | 6.86  |
| 2013 | Diet low in milk                        | Neoplasms               | 134.70 | 7.55  |
| 2019 | Diet low in milk                        | Neoplasms               | 139.71 | 8.45  |
| 2013 | Diet low in nuts and seeds              | Cardiovascular diseases | 123.66 | 8.48  |
| 2013 | Diet low in nuts and seeds              | Diabetes mellitus       | 14.74  | 0.1   |
| 2019 | Diet low in nuts and seeds              | Cardiovascular diseases | 123.05 | 9.23  |
| 2019 | Diet low in nuts and seeds              | Diabetes mellitus       | 17.48  | 0.18  |
| 2013 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 38.50  | 2.50  |
| 2019 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 37.88  | 2.69  |
| 2013 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 22.16  | 2.4   |
| 2019 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 43.71  | 4.1   |
| 2013 | Diet low in vegetables                  | Cardiovascular diseases | 35.81  | 2.2   |
| 2013 | Diet low in vegetables                  | Neoplasms               | 3.27   | 0.13  |
| 2019 | Diet low in vegetables                  | Cardiovascular diseases | 35.59  | 2.5   |
| 2019 | Diet low in vegetables                  | Neoplasms               | 3.21   | 0.19  |
| 2013 | Diet low in whole grains                | Cardiovascular diseases | 245.91 | 15.10 |
| 2013 | Diet low in whole grains                | Neoplasms               | 119.84 | 6.6   |
| 2013 | Diet low in whole grains                | Diabetes mellitus       | 26.81  | 0.23  |
| 2019 | Diet low in whole grains                | Cardiovascular diseases | 245.29 | 16.4  |
| 2019 | Diet low in whole grains                | Neoplasms               | 124.04 | 7.4   |
| 2019 | Diet low in whole grains                | Diabetes mellitus       | 31.69  | 0.3   |
| 2013 | Drug use                                | Neoplasms               | 82.14  | 4.1   |
| 2013 | Drug use                                | Other NCDs              | 176.61 | 3.2   |
| 2013 | Drug use                                | Injurie                 | 7.14   | 0.1   |
| 2019 | Drug use                                | Neoplasms               | 87.56  | 4.74  |
| 2019 | Drug use                                | Other NCDs              | 174.01 | 3.3   |
| 2019 | Drug use                                | Injurie                 | 6.07   | 0.13  |
| 2013 | HPV infection                           | Neoplasms               | NA     | 2.9   |
| 2019 | HPV infection                           | Neoplasms               | NA     | 3.4   |
| 2013 | HTLV-1 infection                        | Neoplasms               | NA     | 0.79  |
| 2019 | HTLV-1 infection                        | Neoplasms               | NA     | 0.72  |
| 2013 | Helicobacter pylori infection           | Neoplasms               | NA     | 35.6  |
| 2019 | Helicobacter pylori infection           | Neoplasms               | NA     | 38.5  |
| 2013 | Hepatitis B virus infection             | Neoplasms               | 55.49  | 2.63  |
| 2019 | Hepatitis B virus infection             | Neoplasms               | 52.85  | 2.64  |
| 2013 | Hepatitis C virus infection             | Neoplasms               | 301.89 | 18.46 |

| 2019 | Hepatitis C virus infection  | Neoplasms                    | 300.20  | 19.60  |
|------|------------------------------|------------------------------|---------|--------|
| 2013 | High LDL cholesterol         | Cardiovascular diseases      | 846.99  | 53.05  |
| 2019 | High LDL cholesterol         | Cardiovascular diseases      | 859.49  | 59.30  |
| 2013 | High body-mass index         | Cardiovascular diseases      | 363.35  | 15.29  |
| 2013 | High body-mass index         | Neoplasms                    | 157.99  | 8.40   |
| 2013 | High body-mass index         | Chronic kidney disease       | 89.97   | 3.89   |
| 2013 | High body-mass index         | Other NCDs                   | 226.00  | 7.24   |
| 2013 | High body-mass index         | Chronic respiratory diseases | 17.50   | 0.18   |
| 2013 | High body-mass index         | Diabetes mellitus            | 149.51  | 1.12   |
| 2019 | High body-mass index         | Cardiovascular diseases      | 365.35  | 16.45  |
| 2019 | High body-mass index         | Neoplasms                    | 162.11  | 9.19   |
| 2019 | High body-mass index         | Chronic kidney disease       | 89.71   | 4.39   |
| 2019 | High body-mass index         | Other NCDs                   | 251.62  | 9.14   |
| 2019 | High body-mass index         | Chronic respiratory diseases | 18.35   | 0.20   |
| 2019 | High body-mass index         | Diabetes mellitus            | 178.55  | 1.18   |
| 2013 | High fasting plasma glucose  | Cardiovascular diseases      | 479.19  | 29.96  |
| 2013 | High fasting plasma glucose  | Neoplasms                    | 167.35  | 10.16  |
| 2013 | High fasting plasma glucose  | Chronic kidney disease       | 241.42  | 12.43  |
| 2013 | High fasting plasma glucose  | Other NCDs                   | 89.00   | 6.55   |
| 2013 | High fasting plasma glucose  | Diabetes mellitus            | 611.04  | 6.32   |
| 2019 | High fasting plasma glucose  | Cardiovascular diseases      | 561.22  | 37.29  |
| 2019 | High fasting plasma glucose  | Neoplasms                    | 190.48  | 12.36  |
| 2019 | High fasting plasma glucose  | Chronic kidney disease       | 224.43  | 13.22  |
| 2019 | High fasting plasma glucose  | Other NCDs                   | 119.83  | 9.15   |
| 2019 | High fasting plasma glucose  | Diabetes mellitus            | 717.75  | 6.87   |
| 2013 | High systolic blood pressure | Cardiovascular diseases      | 2006.81 | 116.83 |
| 2013 | High systolic blood pressure | Chronic kidney disease       | 349.20  | 19.66  |
| 2019 | High systolic blood pressure | Cardiovascular diseases      | 2070.30 | 129.92 |
| 2019 | High systolic blood pressure | Chronic kidney disease       | 373.48  | 23.76  |
| 2013 | Intimate partner violence    | Other NCDs                   | 38.06   | 0.00   |
| 2013 | Intimate partner violence    | Injurie                      | 6.01    | 0.05   |
| 2019 | Intimate partner violence    | Other NCDs                   | 37.26   | 0.00   |
| 2019 | Intimate partner violence    | Injurie                      | 6.12    | 0.05   |
| 2013 | Kidney dysfunction           | Cardiovascular diseases      | 337.36  | 22.39  |
| 2013 | Kidney dysfunction           | Chronic kidney disease       | 591.48  | 31.11  |
| 2013 | Kidney dysfunction           | Other NCDs                   | 10.07   | 0.00   |
| 2019 | Kidney dysfunction           | Cardiovascular diseases      | 361.07  | 25.90  |
| 2019 | Kidney dysfunction           | Chronic kidney disease       | 601.61  | 35.47  |
| 2019 | Kidney dysfunction           | Other NCDs                   | 11.98   | 0.00   |
| 2013 | Low bone mineral density     | Injurie                      | 298.51  | 5.94   |
| 2019 | Low bone mineral density     | Injurie                      | 348.71  | 6.98   |
| 2013 | Low physical activity        | Cardiovascular diseases      | 120.89  | 9.76   |
| 2013 | Low physical activity        | Neoplasms                    | 49.52   | 3.27   |
| 2013 | Low physical activity        | Diabetes mellitus            | 52.17   | 0.71   |
| 2019 | Low physical activity        | Cardiovascular diseases      | 132.59  | 11.44  |
| 2019 | Low physical activity        | Neoplasms                    | 54.09   | 3.83   |

| 2019 | Low physical activity | Diabetes mellitus            | 63.84   | 0.80  |
|------|-----------------------|------------------------------|---------|-------|
| 2013 | Tobacco smoking       | Cardiovascular diseases      | 841.13  | 34.75 |
| 2013 | Tobacco smoking       | Neoplasms                    | 1570.47 | 85.41 |
| 2013 | Tobacco smoking       | Other NCDs                   | 604.11  | 13.01 |
| 2013 | Tobacco smoking       | Chronic respiratory diseases | 360.14  | 14.31 |
| 2013 | Tobacco smoking       | Diabetes mellitus            | 106.69  | 0.86  |
| 2013 | Tobacco smoking       | Injurie                      | 22.51   | 0.42  |
| 2019 | Tobacco smoking       | Cardiovascular diseases      | 743.56  | 31.81 |
| 2019 | Tobacco smoking       | Neoplasms                    | 1445.03 | 83.75 |
| 2019 | Tobacco smoking       | Other NCDs                   | 547.09  | 14.21 |
| 2019 | Tobacco smoking       | Chronic respiratory diseases | 362.32  | 15.52 |
| 2019 | Tobacco smoking       | Diabetes mellitus            | 114.99  | 0.84  |
| 2019 | Tobacco smoking       | Injurie                      | 22.10   | 0.40  |
| 2013 | Unsafe sex            | Neoplasms                    | 79.46   | 3.22  |
| 2019 | Unsafe sex            | Neoplasms                    | 76.26   | 3.29  |

\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCDs: non-communicable diseases; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of the risk factors is sorted alphabetically.

| Year | Risk factors                           | Cause                   | DALYs     | Number of deaths |
|------|--|-------------------------|-----------|------------------|
| 2013 | Alcohol use                            | Cardiovascular diseases | -4769.32  | -951.31          |
| 2013 | Alcohol use                            | Neoplasms               | 104126.20 | 4695.02          |
| 2013 | Alcohol use                            | Other NCDs              | 112780.66 | 4403.19          |
| 2013 | Alcohol use                            | Diabetes mellitus       | -21851.72 | -229.54          |
| 2013 | Alcohol use                            | Injurie                 | 93029.66  | 1695.29          |
| 2019 | Alcohol use                            | Cardiovascular diseases | -2555.15  | -892.24          |
| 2019 | Alcohol use                            | Neoplasms               | 104404.38 | 5066.85          |
| 2019 | Alcohol use                            | Other NCDs              | 112936.65 | 4727.80          |
| 2019 | Alcohol use                            | Diabetes mellitus       | -26081.85 | -246.76          |
| 2019 | Alcohol use                            | Injurie                 | 89108.32  | 1577.24          |
| 2013 | Child and maternal malnutrition        | Other NCDs              | 175.33    | 1.97             |
| 2019 | Child and maternal malnutrition        | Other NCDs              | 134.56    | 1.51             |
| 2013 | Childhood sexual abuse and bullying    | Other NCDs              | 27613.69  | 11.11            |
| 2019 | Childhood sexual abuse and bullying    | Other NCDs              | 27076.05  | 11.01            |
| 2013 | Diet high in processed meat            | Cardiovascular diseases | 26072.47  | 1618.87          |
| 2013 | Diet high in processed meat            | Neoplasms               | 22749.92  | 1173.30          |
| 2013 | Diet high in processed meat            | Diabetes mellitus       | 41019.68  | 370.72           |
| 2019 | Diet high in processed meat            | Cardiovascular diseases | 23199.27  | 1570.05          |
| 2019 | Diet high in processed meat            | Neoplasms               | 21405.61  | 1184.09          |
| 2019 | Diet high in processed meat            | Diabetes mellitus       | 46851.95  | 376.05           |
| 2013 | Diet high in red meat                  | Cardiovascular diseases | 67651.83  | 3780.15          |
| 2013 | Diet high in red meat                  | Neoplasms               | 21425.00  | 1041.65          |
| 2013 | Diet high in red meat                  | Diabetes mellitus       | 14418.11  | 163.88           |
| 2019 | Diet high in red meat                  | Cardiovascular diseases | 70846.44  | 4270.82          |
| 2019 | Diet high in red meat                  | Neoplasms               | 21799.19  | 1146.16          |
| 2019 | Diet high in red meat                  | Diabetes mellitus       | 18183.91  | 184.30           |
| 2013 | Diet high in sodium                    | Cardiovascular diseases | 172352.42 | 11894.31         |
| 2013 | Diet high in sodium                    | Neoplasms               | 24162.12  | 1597.90          |
| 2013 | Diet high in sodium                    | Chronic kidney disease  | 25665.56  | 1576.59          |
| 2019 | Diet high in sodium                    | Cardiovascular diseases | 178760.23 | 13439.42         |
| 2019 | Diet high in sodium                    | Neoplasms               | 22757.14  | 1643.12          |
| 2019 | Diet high in sodium                    | Chronic kidney disease  | 25710.71  | 1796.04          |
| 2013 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 13281.14  | 1214.41          |
| 2013 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 10321.05  | 129.15           |
| 2019 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 14344.62  | 1388.49          |
| 2019 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 13656.64  | 149.72           |
| 2013 | Diet high in trans fatty acids         | Cardiovascular diseases | 36701.42  | 3208.21          |
| 2019 | Diet high in trans fatty acids         | Cardiovascular diseases | 38052.25  | 3571.02          |
| 2013 | Diet low in calcium                    | Neoplasms               | 58052.58  | 3869.23          |
| 2019 | Diet low in calcium                    | Neoplasms               | 58857.39  | 4247.07          |
| 2013 | Diet low in fiber                      | Cardiovascular diseases | 74716.44  | 5189.55          |
| 2013 | Diet low in fiber                      | Neoplasms               | 9601.15   | 648.91           |
| 2013 | Diet low in fiber                      | Diabetes mellitus       | 9637.87   | 133.05           |

# Supplementary Table 4: All-age DALYs and number of deaths attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for women

| 2019 | Diet low in fiber                       | Cardiovascular diseases | 75233.11  | 5613.02  |
|------|---|-------------------------|-----------|----------|
| 2019 | Diet low in fiber                       | Neoplasms               | 9768.26   | 713.00   |
| 2019 | Diet low in fiber                       | Diabetes mellitus       | 11618.38  | 143.80   |
| 2013 | Diet low in fruits                      | Cardiovascular diseases | 102913.06 | 6135.46  |
| 2013 | Diet low in fruits                      | Neoplasms               | 21201.93  | 1351.68  |
| 2013 | Diet low in fruits                      | Diabetes mellitus       | 19245.44  | 244.16   |
| 2019 | Diet low in fruits                      | Cardiovascular diseases | 102950.30 | 6685.46  |
| 2019 | Diet low in fruits                      | Neoplasms               | 21252.98  | 1465.23  |
| 2019 | Diet low in fruits                      | Diabetes mellitus       | 22598.41  | 260.78   |
| 2013 | Diet low in legumes                     | Cardiovascular diseases | 49730.73  | 4460.60  |
| 2019 | Diet low in legumes                     | Cardiovascular diseases | 49194.60  | 4802.56  |
| 2013 | Diet low in milk                        | Neoplasms               | 72510.68  | 4634.63  |
| 2019 | Diet low in milk                        | Neoplasms               | 75290.08  | 5211.0   |
| 2013 | Diet low in nuts and seeds              | Cardiovascular diseases | 58184.57  | 5319.32  |
| 2013 | Diet low in nuts and seeds              | Diabetes mellitus       | 7925.82   | 111.13   |
| 2019 | Diet low in nuts and seeds              | Cardiovascular diseases | 60177.07  | 5877.6   |
| 2019 | Diet low in nuts and seeds              | Diabetes mellitus       | 9694.22   | 122.1    |
| 2013 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 18348.59  | 1580.8   |
| 2019 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 18762.30  | 1737.12  |
| 2013 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 15821.57  | 2114.20  |
| 2019 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 25805.90  | 3086.7   |
| 2013 | Diet low in vegetables                  | Cardiovascular diseases | 21098.71  | 1669.6   |
| 2013 | Diet low in vegetables                  | Neoplasms               | 733.32    | 49.23    |
| 2019 | Diet low in vegetables                  | Cardiovascular diseases | 21409.35  | 1828.7   |
| 2019 | Diet low in vegetables                  | Neoplasms               | 728.64    | 52.7     |
| 2013 | Diet low in whole grains                | Cardiovascular diseases | 113647.62 | 9011.1   |
| 2013 | Diet low in whole grains                | Neoplasms               | 63247.92  | 3989.4   |
| 2013 | Diet low in whole grains                | Diabetes mellitus       | 14143.09  | 176.8    |
| 2019 | Diet low in whole grains                | Cardiovascular diseases | 117905.69 | 10043.34 |
| 2019 | Diet low in whole grains                | Neoplasms               | 65471.58  | 4471.13  |
| 2019 | Diet low in whole grains                | Diabetes mellitus       | 17243.72  | 194.20   |
| 2013 | Drug use                                | Neoplasms               | 36639.44  | 2121.6   |
| 2013 | Drug use                                | Other NCDs              | 92926.65  | 1696.0   |
| 2013 | Drug use                                | Injurie                 | 2261.04   | 47.0     |
| 2019 | Drug use                                | Neoplasms               | 39766.98  | 2457.8   |
| 2019 | Drug use                                | Other NCDs              | 90061.42  | 1769.50  |
| 2019 | Drug use                                | Injurie                 | 1854.02   | 39.73    |
| 2013 | HPV infection                           | Neoplasms               | NA        | 3170.1   |
| 2019 | HPV infection                           | Neoplasms               | NA        | 3547.8   |
| 2013 | HTLV-1 infection                        | Neoplasms               | NA        | 500.0    |
| 2019 | HTLV-1 infection                        | Neoplasms               | NA        | 430.00   |
| 2013 | Helicobacter pylori infection           | Neoplasms               | NA        | 16080.88 |
| 2019 | Helicobacter pylori infection           | Neoplasms               | NA        | 17493.3  |
| 2013 | Hepatitis B virus infection             | Neoplasms               | 16456.26  | 939.30   |
| 2019 | Hepatitis B virus infection             | Neoplasms               | 15883.52  | 960.88   |
| 2013 | Hepatitis C virus infection             | Neoplasms               | 121794.17 | 8784.92  |

| 2019Hepatitis C virus infectionNeoplasms122770.702013High LDL cholesterolCardiovascular diseases442578.662019High LDL cholesterolCardiovascular diseases142578.662013High body-mass indexCardiovascular diseases18454.562013High body-mass indexNeoplasms79511.452013High body-mass indexChronic kidney disease54025.332013High body-mass indexChronic respiratory diseases18425.652013High body-mass indexChronic respiratory diseases193024.032019High body-mass indexCardiovascular diseases193024.032019High body-mass indexChronic kidney disease54663.702019High body-mass indexChronic kidney disease14195.612019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexChronic respiratory diseases14195.612019High fasting plasma glucoseCardiovascular diseases20633.842013High fasting plasma glucoseChronic kidney disease14668.062013High fasting plasma glucoseDiabetes mellitus31745.622019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease13267.162019High fasting plasma glucoseChronic kidney disease1135872.16 </th <th></th> <th></th> <th></th> <th></th>  |      |                              |                              |            |
|---|------|------------------------------|------------------------------|------------|
| 2019High LDL cholesterolCardiovascular diseases467099.812013High body-mass indexNeoplasms79511.452013High body-mass indexChronic kidney disease54025.332013High body-mass indexOther NCDS189904.132013High body-mass indexDiabetes mellitus77803.292014High body-mass indexDiabetes mellitus77803.292015High body-mass indexCardiovascular diseases193024.032019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexOther NCDs210213.132019High body-mass indexChronic kidney disease146866.052013High fasting plasma glucoseCardiovascular diseases12058.662013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742014High fasting plasma glucoseCardiovascular diseases123058.772019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease1072398.702019High systolic blood pres   | 2019 | Hepatitis C virus infection  | Neoplasms                    | 122770.70  |
| 2013High body-mass indexCardiovascular diseases184854.562013High body-mass indexNeoplasms79511.452013High body-mass indexChronic kidney disease54025.332013High body-mass indexOther NCDs189904.132013High body-mass indexDiabetes mellitus77803.292014High body-mass indexCardiovascular diseases193024.032019High body-mass indexCardiovascular diseases193024.032019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseChronic kidney disease25382.222019High fasting plasma glucoseChronic kidney disease25382.222019High fasting plasma glucoseChronic kidney disease25382.272019High fasting plasma glucoseChronic kidney disease25382.222019High fasting plasma glucoseChronic kidney disease202915.342019High fasting plasma glucoseChronic kidney disease202915.342019High fasting plasma glucoseChronic kidney disease202915.342019High fasting pla   | 2013 | High LDL cholesterol         | Cardiovascular diseases      | 442578.66  |
| 2013High body-mass indexNeoplasms79511.452013High body-mass indexChronic kidney disease54025.332013High body-mass indexOther NCDs189904.132013High body-mass indexDiabetes mellitus77803.292019High body-mass indexCardiovascular diseases193024.032019High body-mass indexCardiovascular diseases193024.032019High body-mass indexChronic kidney disease54663.702019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexChronic respiratory diseases14195.6122019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseOther NCDs97596.522013High fasting plasma glucoseChronic kidney disease14686.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseChronic kidney disease253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease1072398.702014High fasting plasma glucoseChronic kidney disease12953.832019High systolic blood pressureChronic kidney disease12953.832019High systolic  | 2019 | High LDL cholesterol         | Cardiovascular diseases      | 467099.81  |
| 2013High body-mass indexChronic kidney disease54025.332013High body-mass indexOther NCDs189904.132013High body-mass indexDiabetes mellitus77803.292019High body-mass indexCardiovascular diseases193024.032019High body-mass indexCardiovascular diseases193024.032019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexOther NCDs210213.132019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseCardiovascular diseases25389.222019High fasting plasma glucoseNeoplasms8557.742019High fasting plasma glucoseCardiovascular diseases133058.772019High fasting plasma glucoseChronic kidney disease13058.772019High fasting plasma glucoseChronic kidney disease1072398.702014High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease129653.832013Intimate partner violenceInjurie7787.612019High systolic blood pressure<   | 2013 | High body-mass index         | Cardiovascular diseases      | 184854.56  |
| 2013High body-mass indexOther NCDs189904.132013High body-mass indexDiabetes mellitus77803.292014High body-mass indexDiabetes mellitus77803.292019High body-mass indexCardiovascular diseases193432.562019High body-mass indexNeoplasms82683.592019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexDiabetes mellitus97606.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseNeoplasms85577.422019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease133278.702019High fasting plasma glucoseDiabetes mellitus400667.812019High systolic blood pressureChronic kidney disease1135872.162019High systolic blood pressureChronic kidney disease21298.732013High systolic blood pressureChronic kidney disease1135872.162019High systolic blood pressureChronic kidney disease1135872.162019High systolic blood pressure  | 2013 | High body-mass index         | Neoplasms                    | 79511.45   |
| 2013High body-mass indexChronic respiratory diseases13432.562013High body-mass indexDiabetes mellitus77803.292019High body-mass indexCardiovascular diseases193024.032019High body-mass indexNeoplasms82683.592019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseOther NCDs67826.742014High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.382019High fasting plasma glucoseDiabetes mellitus400675.382019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400675.382019High fasting plasma glucoseDiabetes mellitus400675.382019High fasting plasma glucoseDiabetes mellitus </td <td>2013</td> <td>High body-mass index</td> <td>Chronic kidney disease</td> <td>54025.33</td>                           | 2013 | High body-mass index         | Chronic kidney disease       | 54025.33   |
| 2013High body-mass indexDiabetes mellitus77803.292019High body-mass indexCardiovascular diseases193024.032019High body-mass indexNeoplasms82683.592019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases20633.842013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742019High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseCardiovascular diseases133058.772019High fasting plasma glucoseDiabetes mellitus31324.852019High fasting plasma glucoseDiabetes mellitus400667.812019High fasting plasma glucoseDiabetes mellitus40067.812019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease21965.832019High systolic blood pressureChronic kidney disease21965.832019High systolic blood pressureChronic kidney disease1135872.162019High systolic blood pressureChronic kidney disease1135872.16  | 2013 | High body-mass index         | Other NCDs                   | 189904.13  |
| 2019High body-mass indexCardiovascular diseases193024.032019High body-mass indexNeoplasms82683.592019High body-mass indexOther NCDs210213.132019High body-mass indexOther NCDs210213.132019High body-mass indexOther NCDs210213.132019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases23892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseOther NCDs91342.852019High systolic blood pressureCardiovascular diseases113287.162013High systolic blood pressureChronic kidney disease210953.432013High systolic blood pressureChronic kidney disease123872.162019High systolic blood pressureChronic kidney disease113287.612019High systolic blood pressureChronic kidney disease113287.612019High systolic blood pressure </td <td>2013</td> <td>High body-mass index</td> <td>Chronic respiratory diseases</td> <td>13432.56</td>            | 2013 | High body-mass index         | Chronic respiratory diseases | 13432.56   |
| 2019High body-mass indexNeoplasms82683.592019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases20633.842013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseOther NCDs91342.852019High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease1072398.702013High systolic blood pressureChronic kidney disease1072398.702013High systolic blood pressureChronic kidney disease1272398.702013High systolic blood pressureChronic kidney disease1272398.702013Intimate partner violenceOther NCDs49330.632014High systolic blood pressureChronic kidney disease12765.332015Hi   | 2013 | High body-mass index         | Diabetes mellitus            | 77803.29   |
| 2019High body-mass indexChronic kidney disease54663.702019High body-mass indexOther NCDs210213.132019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases20633.842013High fasting plasma glucoseChronic respiratory diseases146868.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseOther NCDs67826.742019High fasting plasma glucoseChronic kidney disease253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease210295.342019High systolic blood pressureChronic kidney disease213872.162019High systolic blood pressureChronic kidney disease21365.832013Intimate partner violenceInjurie7787.612013Intimate partner violenceInjurie7787.612013Intimate partner violenceInjurie357991.342013Kidney dysfunctionChro  | 2019 | High body-mass index         | Cardiovascular diseases      | 193024.03  |
| 2019High body-mass indexOther NCDs210213.132019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease2195.342019High systolic blood pressureChronic kidney disease1135872.162019High systolic blood pressureChronic kidney disease1135872.162019High systolic blood pressureChronic kidney disease1135872.162013Inimate partner violenceInjurie7787.612013Inimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney   | 2019 | High body-mass index         | Neoplasms                    | 82683.59   |
| 2019High body-mass indexChronic respiratory diseases14195.612019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease2129653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie782.1762019Intimate partner violenceInjurie782.1762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease36228.112013Kidney dysf   | 2019 | High body-mass index         | Chronic kidney disease       | 54663.70   |
| 2019High body-mass indexDiabetes mellitus97506.522013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureCardiovascular diseases1172398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases11760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease357928.132013Kidney dysfunctionChronic kidney disease327242.852013Kidney dy   | 2019 | High body-mass index         | Other NCDs                   | 210213.13  |
| 2013High fasting plasma glucoseCardiovascular diseases206333.842013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases11760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease35791.342013Kidney dysfunctionChronic kidney disease127268.412013Kidney dysfunctionCardiovascular diseases127268.412013 <t< td=""><td>2019</td><td>High body-mass index</td><td>Chronic respiratory diseases</td><td>14195.61</td></t<> | 2019 | High body-mass index         | Chronic respiratory diseases | 14195.61   |
| 2013High fasting plasma glucoseNeoplasms70258.662013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases1372.932013Kidney dysfunctionChronic kidney disease36422.812019Kidney dysfunctionChronic kidney disease37991.342019Kidney dysfunctionChronic kidney disease36422.8412019Kidney dysfunctionChronic kidney disease36422.8412019Kidney dysfunctionChronic kidney disease36422.8412019Kidney dysfunction   | 2019 | High body-mass index         | Diabetes mellitus            | 97506.52   |
| 2013High fasting plasma glucoseChronic kidney disease146868.062013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases1372.992013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease36422.812019Kidney dysfunctionChronic kidney disease36422.842019Kidney dysfunctionChronic kidney disease36422.842013Kidney dysfunctionChronic kidney disease36422.8.12014Kidney dysfunctionChronic kidney disease36422.8.12015Kidney dysfunction  | 2013 | High fasting plasma glucose  | Cardiovascular diseases      | 206333.84  |
| 2013High fasting plasma glucoseOther NCDs67826.742013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseNeoplasms85577.942019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionCardiovascular diseases364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus <td>2013</td> <td>High fasting plasma glucose</td> <td>Neoplasms</td> <td>70258.66</td>  | 2013 | High fasting plasma glucose  | Neoplasms                    | 70258.66   |
| 2013High fasting plasma glucoseDiabetes mellitus331745.622019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseNeoplasms85577.942019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionCardiovascular diseases364228.412019Kidney dysfunctionCardiovascular diseases364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney diseases364228.412013Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases8440.442013Low physical activ   | 2013 | High fasting plasma glucose  | Chronic kidney disease       | 146868.06  |
| 2019High fasting plasma glucoseCardiovascular diseases253892.222019High fasting plasma glucoseNeoplasms85577.942019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High sytolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342014Kidney dysfunctionChronic kidney disease364228.412015Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412013Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityD  | 2013 | High fasting plasma glucose  | Other NCDs                   | 67826.74   |
| 2019High fasting plasma glucoseNeoplasms85577.942019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseDiabetes mellitus400667.812013High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7787.612013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease364228.412014Kidney dysfunctionChronic kidney disease364228.412015Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityDiabetes mellitus33759.132014Low physical activityDiabetes mellitus33759.132015Low physical activityCardiovascular diseases <t< td=""><td>2013</td><td>High fasting plasma glucose</td><td>Diabetes mellitus</td><td>331745.62</td></t<>                      | 2013 | High fasting plasma glucose  | Diabetes mellitus            | 331745.62  |
| 2019High fasting plasma glucoseChronic kidney disease133058.772019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureChronic kidney disease219653.832013High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412013Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.   | 2019 | High fasting plasma glucose  | Cardiovascular diseases      | 253892.22  |
| 2019High fasting plasma glucoseOther NCDs91342.852019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionChronic kidney disease185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.432013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.13   | 2019 | High fasting plasma glucose  | Neoplasms                    | 85577.94   |
| 2019High fasting plasma glucoseDiabetes mellitus400667.812013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureCardiovascular diseases219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionCardiovascular diseases364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45   | 2019 | High fasting plasma glucose  | Chronic kidney disease       | 133058.77  |
| 2013High systolic blood pressureCardiovascular diseases1072398.702013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632019Intimate partner violenceInjurie7787.612019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | High fasting plasma glucose  | Other NCDs                   | 91342.85   |
| 2013High systolic blood pressureChronic kidney disease202915.342019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | High fasting plasma glucose  | Diabetes mellitus            | 400667.81  |
| 2019High systolic blood pressureCardiovascular diseases1135872.162019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2013 | High systolic blood pressure | Cardiovascular diseases      | 1072398.70 |
| 2019High systolic blood pressureChronic kidney disease219653.832013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252014Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2013 | High systolic blood pressure | Chronic kidney disease       | 202915.34  |
| 2013Intimate partner violenceOther NCDs49350.632013Intimate partner violenceInjurie7787.612019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | High systolic blood pressure | Cardiovascular diseases      | 1135872.16 |
| 2013Intimate partner violenceInjurie7787.612019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionCardiovascular diseases364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | High systolic blood pressure | Chronic kidney disease       | 219653.83  |
| 2019Intimate partner violenceOther NCDs47613.552019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionCardiovascular diseases364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45   | 2013 | Intimate partner violence    | Other NCDs                   | 49350.63   |
| 2019Intimate partner violenceInjurie7821.762013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityDiabetes mellitus33759.132019Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45   | 2013 | Intimate partner violence    | Injurie                      | 7787.61    |
| 2013Kidney dysfunctionCardiovascular diseases171760.842013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityCardiovascular diseases84440.442013Low physical activityCardiovascular diseases35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45   | 2019 | Intimate partner violence    | Other NCDs                   | 47613.55   |
| 2013Kidney dysfunctionChronic kidney disease357991.342013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | Intimate partner violence    | Injurie                      | 7821.76    |
| 2013Kidney dysfunctionOther NCDs3906.202019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45   | 2013 | Kidney dysfunction           | Cardiovascular diseases      | 171760.84  |
| 2019Kidney dysfunctionCardiovascular diseases185282.112019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2013 |                              | Chronic kidney disease       | 357991.34  |
| 2019Kidney dysfunctionChronic kidney disease364228.412019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2013 | Kidney dysfunction           | Other NCDs                   | 3906.20    |
| 2019Kidney dysfunctionOther NCDs4541.262013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45   | 2019 | • •                          |                              | 185282.11  |
| 2013Low bone mineral densityInjurie221738.252019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | Kidney dysfunction           | •                            | 364228.41  |
| 2019Low bone mineral densityInjurie259854.332013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2019 | Kidney dysfunction           | Other NCDs                   | 4541.26    |
| 2013Low physical activityCardiovascular diseases84440.442013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  | 2013 | •                            | -                            | 221738.25  |
| 2013Low physical activityNeoplasms35100.272013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  |      | •                            | Injurie                      | 259854.33  |
| 2013Low physical activityDiabetes mellitus33759.132019Low physical activityCardiovascular diseases94455.45  |      |                              |                              |            |
| 2019Low physical activityCardiovascular diseases94455.45  |      |                              | -                            |            |
|   | 2013 |                              |                              | 33759.13   |
| 2019Low physical activityNeoplasms38026.79  |      |                              |                              |            |
|   | 2019 | Low physical activity        | Neoplasms                    | 38026.79   |

9400.62

35295.86

40177.75

9076.57

4682.84

2584.80

6757.23

137.36

652.20

10210.92 5171.16

> 2987.19 8306.55

> > 153.14

714.09

15537.50

4597.75

8454.00

5296.02

4032.23

20034.62 5972.73

8969.64

7306.93

4436.76

74519.96

12879.54

84592.67 15880.24

0.00

71.09

0.00

66.85

13919.89

20963.93 0.00

16022.11

23980.87

3705.97

4325.56

7827.56

2491.20

536.46

9208.77

2902.39

0.00

| 2019 | Low physical activity | Diabetes mellitus            | 42207.89  | 607.94   |
|------|-----------------------|------------------------------|-----------|----------|
| 2013 | Tobacco smoking       | Cardiovascular diseases      | 240289.70 | 10006.64 |
| 2013 | Tobacco smoking       | Neoplasms                    | 346521.88 | 19107.71 |
| 2013 | Tobacco smoking       | Other NCDs                   | 276101.67 | 5060.88  |
| 2013 | Tobacco smoking       | Chronic respiratory diseases | 90428.28  | 3429.07  |
| 2013 | Tobacco smoking       | Diabetes mellitus            | 36786.26  | 331.68   |
| 2013 | Tobacco smoking       | Injurie                      | 8072.94   | 86.11    |
| 2019 | Tobacco smoking       | Cardiovascular diseases      | 223367.14 | 9789.15  |
| 2019 | Tobacco smoking       | Neoplasms                    | 332794.34 | 19646.64 |
| 2019 | Tobacco smoking       | Other NCDs                   | 247413.32 | 5434.25  |
| 2019 | Tobacco smoking       | Chronic respiratory diseases | 90781.95  | 3671.75  |
| 2019 | Tobacco smoking       | Diabetes mellitus            | 43332.55  | 349.79   |
| 2019 | Tobacco smoking       | Injurie                      | 8393.80   | 86.42    |
| 2013 | Unsafe sex            | Neoplasms                    | 103031.44 | 4172.02  |
| 2019 | Unsafe sex            | Neoplasms                    | 97453.56  | 4210.49  |

\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCDs: non-communicable diseases; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of the risk factors is sorted alphabetically.

| Year | Risk factors                           | Cause                   | DALYs rate | Mortality rate |
|------|--|-------------------------|------------|----------------|
| 2013 | Alcohol use                            | Cardiovascular diseases | -7.18      | -1.43          |
| 2013 | Alcohol use                            | Neoplasms               | 156.69     | 7.07           |
| 2013 | Alcohol use                            | Other NCDs              | 169.72     | 6.63           |
| 2013 | Alcohol use                            | Diabetes mellitus       | -32.88     | -0.35          |
| 2013 | Alcohol use                            | Injurie                 | 139.99     | 2.55           |
| 2019 | Alcohol use                            | Cardiovascular diseases | -3.90      | -1.36          |
| 2019 | Alcohol use                            | Neoplasms               | 159.35     | 7.73           |
| 2019 | Alcohol use                            | Other NCDs              | 172.38     | 7.22           |
| 2019 | Alcohol use                            | Diabetes mellitus       | -39.81     | -0.38          |
| 2019 | Alcohol use                            | Injurie                 | 136.01     | 2.41           |
| 2013 | Child and maternal malnutrition        | Other NCDs              | 0.26       | 0.00           |
| 2019 | Child and maternal malnutrition        | Other NCDs              | 0.21       | 0.00           |
| 2013 | Childhood sexual abuse and bullying    | Other NCDs              | 41.55      | 0.02           |
| 2019 | Childhood sexual abuse and bullying    | Other NCDs              | 41.33      | 0.02           |
| 2013 | Diet high in processed meat            | Cardiovascular diseases | 39.23      | 2.44           |
| 2013 | Diet high in processed meat            | Neoplasms               | 34.23      | 1.77           |
| 2013 | Diet high in processed meat            | Diabetes mellitus       | 61.73      | 0.56           |
| 2019 | Diet high in processed meat            | Cardiovascular diseases | 35.41      | 2.40           |
| 2019 | Diet high in processed meat            | Neoplasms               | 32.67      | 1.81           |
| 2019 | Diet high in processed meat            | Diabetes mellitus       | 71.51      | 0.57           |
| 2013 | Diet high in red meat                  | Cardiovascular diseases | 101.80     | 5.69           |
| 2013 | Diet high in red meat                  | Neoplasms               | 32.24      | 1.57           |
| 2013 | Diet high in red meat                  | Diabetes mellitus       | 21.70      | 0.25           |
| 2019 | Diet high in red meat                  | Cardiovascular diseases | 108.13     | 6.52           |
| 2019 | Diet high in red meat                  | Neoplasms               | 33.27      | 1.75           |
| 2019 | Diet high in red meat                  | Diabetes mellitus       | 27.75      | 0.28           |
| 2013 | Diet high in sodium                    | Cardiovascular diseases | 259.36     | 17.90          |
| 2013 | Diet high in sodium                    | Neoplasms               | 36.36      | 2.40           |
| 2013 | Diet high in sodium                    | Chronic kidney disease  | 38.62      | 2.37           |
| 2019 | Diet high in sodium                    | Cardiovascular diseases | 272.84     | 20.51          |
| 2019 | Diet high in sodium                    | Neoplasms               | 34.73      | 2.51           |
| 2019 | Diet high in sodium                    | Chronic kidney disease  | 39.24      | 2.74           |
| 2013 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 19.99      | 1.83           |
| 2013 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 15.53      | 0.19           |
| 2019 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 21.89      | 2.12           |
| 2019 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 20.84      | 0.23           |
| 2013 | Diet high in trans fatty acids         | Cardiovascular diseases | 55.23      | 4.83           |
| 2019 | Diet high in trans fatty acids         | Cardiovascular diseases | 58.08      | 5.45           |
| 2013 | Diet low in calcium                    | Neoplasms               | 87.36      | 5.82           |
| 2019 | Diet low in calcium                    | Neoplasms               | 89.83      | 6.48           |
| 2013 | Diet low in fiber                      | Cardiovascular diseases | 112.44     | 7.81           |
| 2013 | Diet low in fiber                      | Neoplasms               | 14.45      | 0.98           |
| 2013 | Diet low in fiber                      | Diabetes mellitus       | 14.50      | 0.20           |

## Supplementary Table 5: All-age DALYs rate (per 100,000) and mortality rate (per 100,000) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for women

| 2019 | Diet low in fiber                       | Cardiovascular diseases | 114.83 | 8.57  |
|------|---|-------------------------|--------|-------|
| 2019 | Diet low in fiber                       | Neoplasms               | 14.91  | 1.09  |
| 2019 | Diet low in fiber                       | Diabetes mellitus       | 17.73  | 0.22  |
| 2013 | Diet low in fruits                      | Cardiovascular diseases | 154.87 | 9.23  |
| 2013 | Diet low in fruits                      | Neoplasms               | 31.91  | 2.03  |
| 2013 | Diet low in fruits                      | Diabetes mellitus       | 28.96  | 0.37  |
| 2019 | Diet low in fruits                      | Cardiovascular diseases | 157.13 | 10.20 |
| 2019 | Diet low in fruits                      | Neoplasms               | 32.44  | 2.24  |
| 2019 | Diet low in fruits                      | Diabetes mellitus       | 34.49  | 0.40  |
| 2013 | Diet low in legumes                     | Cardiovascular diseases | 74.84  | 6.71  |
| 2019 | Diet low in legumes                     | Cardiovascular diseases | 75.09  | 7.33  |
| 2013 | Diet low in milk                        | Neoplasms               | 109.12 | 6.97  |
| 2019 | Diet low in milk                        | Neoplasms               | 114.92 | 7.95  |
| 2013 | Diet low in nuts and seeds              | Cardiovascular diseases | 87.56  | 8.00  |
| 2013 | Diet low in nuts and seeds              | Diabetes mellitus       | 11.93  | 0.17  |
| 2019 | Diet low in nuts and seeds              | Cardiovascular diseases | 91.85  | 8.97  |
| 2019 | Diet low in nuts and seeds              | Diabetes mellitus       | 14.80  | 0.19  |
| 2013 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 27.61  | 2.38  |
| 2019 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 28.64  | 2.65  |
| 2013 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 23.81  | 3.18  |
| 2019 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 39.39  | 4.72  |
| 2013 | Diet low in vegetables                  | Cardiovascular diseases | 31.75  | 2.5   |
| 2013 | Diet low in vegetables                  | Neoplasms               | 1.10   | 0.0   |
| 2019 | Diet low in vegetables                  | Cardiovascular diseases | 32.68  | 2.79  |
| 2019 | Diet low in vegetables                  | Neoplasms               | 1.11   | 0.0   |
| 2013 | Diet low in whole grains                | Cardiovascular diseases | 171.02 | 13.50 |
| 2013 | Diet low in whole grains                | Neoplasms               | 95.18  | 6.00  |
| 2013 | Diet low in whole grains                | Diabetes mellitus       | 21.28  | 0.2   |
| 2019 | Diet low in whole grains                | Cardiovascular diseases | 179.96 | 15.33 |
| 2019 | Diet low in whole grains                | Neoplasms               | 99.93  | 6.82  |
| 2019 | Diet low in whole grains                | Diabetes mellitus       | 26.32  | 0.30  |
| 2013 | Drug use                                | Neoplasms               | 55.14  | 3.19  |
| 2013 | Drug use                                | Other NCDs              | 139.84 | 2.5   |
| 2013 | Drug use                                | Injurie                 | 3.40   | 0.07  |
| 2019 | Drug use                                | Neoplasms               | 60.70  | 3.75  |
| 2019 | Drug use                                | Other NCDs              | 137.46 | 2.70  |
| 2019 | Drug use                                | Injurie                 | 2.83   | 0.0   |
| 2013 | HPV infection                           | Neoplasms               | NA     | 4.7   |
| 2019 | HPV infection                           | Neoplasms               | NA     | 5.42  |
| 2013 | HTLV-1 infection                        | Neoplasms               | NA     | 0.75  |
| 2019 | HTLV-1 infection                        | Neoplasms               | NA     | 0.66  |
| 2013 | Helicobacter pylori infection           | Neoplasms               | NA     | 24.20 |
| 2019 | Helicobacter pylori infection           | Neoplasms               | NA     | 26.70 |
| 2013 | Hepatitis B virus infection             | Neoplasms               | 24.76  | 1.43  |
| 2019 | Hepatitis B virus infection             | Neoplasms               | 24.24  | 1.47  |
| 2013 | Hepatitis C virus infection             | Neoplasms               | 183.28 | 13.22 |

| 2019 | Hepatitis C virus infection  | Neoplasms                    | 187.38  | 14.35  |
|------|------------------------------|------------------------------|---------|--------|
| 2013 | High LDL cholesterol         | Cardiovascular diseases      | 666.01  | 53.11  |
| 2019 | High LDL cholesterol         | Cardiovascular diseases      | 712.93  | 61.32  |
| 2013 | High body-mass index         | Cardiovascular diseases      | 278.18  | 13.66  |
| 2013 | High body-mass index         | Neoplasms                    | 119.65  | 7.05   |
| 2013 | High body-mass index         | Chronic kidney disease       | 81.30   | 3.89   |
| 2013 | High body-mass index         | Other NCDs                   | 285.77  | 10.17  |
| 2013 | High body-mass index         | Chronic respiratory diseases | 20.21   | 0.21   |
| 2013 | High body-mass index         | Diabetes mellitus            | 117.08  | 0.98   |
| 2019 | High body-mass index         | Cardiovascular diseases      | 294.61  | 15.58  |
| 2019 | High body-mass index         | Neoplasms                    | 126.20  | 7.89   |
| 2019 | High body-mass index         | Chronic kidney disease       | 83.43   | 4.56   |
| 2019 | High body-mass index         | Other NCDs                   | 320.85  | 12.68  |
| 2019 | High body-mass index         | Chronic respiratory diseases | 21.67   | 0.23   |
| 2019 | High body-mass index         | Diabetes mellitus            | 148.82  | 1.09   |
| 2013 | High fasting plasma glucose  | Cardiovascular diseases      | 310.50  | 23.38  |
| 2013 | High fasting plasma glucose  | Neoplasms                    | 105.73  | 6.92   |
| 2013 | High fasting plasma glucose  | Chronic kidney disease       | 221.01  | 12.72  |
| 2013 | High fasting plasma glucose  | Other NCDs                   | 102.07  | 7.97   |
| 2013 | High fasting plasma glucose  | Diabetes mellitus            | 499.22  | 6.07   |
| 2019 | High fasting plasma glucose  | Cardiovascular diseases      | 387.52  | 30.58  |
| 2019 | High fasting plasma glucose  | Neoplasms                    | 130.62  | 9.12   |
| 2019 | High fasting plasma glucose  | Chronic kidney disease       | 203.09  | 13.69  |
| 2019 | High fasting plasma glucose  | Other NCDs                   | 139.42  | 11.15  |
| 2019 | High fasting plasma glucose  | Diabetes mellitus            | 611.54  | 6.77   |
| 2013 | High systolic blood pressure | Cardiovascular diseases      | 1613.78 | 112.14 |
| 2013 | High systolic blood pressure | Chronic kidney disease       | 305.35  | 19.38  |
| 2019 | High systolic blood pressure | Cardiovascular diseases      | 1733.68 | 129.11 |
| 2019 | High systolic blood pressure | Chronic kidney disease       | 335.26  | 24.24  |
| 2013 | Intimate partner violence    | Other NCDs                   | 74.26   | 0.00   |
| 2013 | Intimate partner violence    | Injurie                      | 11.72   | 0.11   |
| 2019 | Intimate partner violence    | Other NCDs                   | 72.67   | 0.00   |
| 2019 | Intimate partner violence    | Injurie                      | 11.94   | 0.10   |
| 2013 | Kidney dysfunction           | Cardiovascular diseases      | 258.47  | 20.95  |
| 2013 | Kidney dysfunction           | Chronic kidney disease       | 538.72  | 31.55  |
| 2013 | Kidney dysfunction           | Other NCDs                   | 5.88    | 0.00   |
| 2019 | Kidney dysfunction           | Cardiovascular diseases      | 282.80  | 24.45  |
| 2019 | Kidney dysfunction           | Chronic kidney disease       | 555.92  | 36.60  |
| 2019 | Kidney dysfunction           | Other NCDs                   | 6.93    | 0.00   |
| 2013 | Low bone mineral density     | Injurie                      | 333.68  | 5.58   |
| 2019 | Low bone mineral density     | Injurie                      | 396.62  | 6.60   |
| 2013 | Low physical activity        | Cardiovascular diseases      | 127.07  | 11.78  |
| 2013 | Low physical activity        | Neoplasms                    | 52.82   | 3.75   |
| 2013 | Low physical activity        | Diabetes mellitus            | 50.80   | 0.81   |
| 2019 | Low physical activity        | Cardiovascular diseases      | 144.17  | 14.06  |
| 2019 | Low physical activity        | Neoplasms                    | 58.04   | 4.43   |

| 2019 | Low physical activity | Diabetes mellitus            | 64.42  | 0.93  |
|------|-----------------------|------------------------------|--------|-------|
| 2013 | Tobacco smoking       | Cardiovascular diseases      | 361.60 | 15.06 |
| 2013 | Tobacco smoking       | Neoplasms                    | 521.46 | 28.75 |
| 2013 | Tobacco smoking       | Other NCDs                   | 415.49 | 7.62  |
| 2013 | Tobacco smoking       | Chronic respiratory diseases | 136.08 | 5.16  |
| 2013 | Tobacco smoking       | Diabetes mellitus            | 55.36  | 0.50  |
| 2013 | Tobacco smoking       | Injurie                      | 12.15  | 0.13  |
| 2019 | Tobacco smoking       | Cardiovascular diseases      | 340.93 | 14.94 |
| 2019 | Tobacco smoking       | Neoplasms                    | 507.94 | 29.99 |
| 2019 | Tobacco smoking       | Other NCDs                   | 377.63 | 8.29  |
| 2019 | Tobacco smoking       | Chronic respiratory diseases | 138.56 | 5.60  |
| 2019 | Tobacco smoking       | Diabetes mellitus            | 66.14  | 0.53  |
| 2019 | Tobacco smoking       | Injurie                      | 12.81  | 0.13  |
| 2013 | Unsafe sex            | Neoplasms                    | 155.05 | 6.28  |
| 2019 | Unsafe sex            | Neoplasms                    | 148.74 | 6.43  |

\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCDs: non-communicable diseases; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of the risk factors is sorted alphabetically.

| Year | Risk factors                           | Cause                   | DALYs     | Number of deaths |
|------|--|-------------------------|-----------|------------------|
| 2013 | Alcohol use                            | Cardiovascular diseases | 63700.12  | 1699.26          |
| 2013 | Alcohol use                            | Neoplasms               | 268790.69 | 12682.94         |
| 2013 | Alcohol use                            | Other NCDs              | 326908.39 | 10581.95         |
| 2013 | Alcohol use                            | Diabetes mellitus       | 3153.03   | 8.04             |
| 2013 | Alcohol use                            | Injurie                 | 271511.62 | 6061.16          |
| 2019 | Alcohol use                            | Cardiovascular diseases | 70002.31  | 2078.16          |
| 2019 | Alcohol use                            | Neoplasms               | 264253.56 | 13218.62         |
| 2019 | Alcohol use                            | Other NCDs              | 312618.75 | 10516.32         |
| 2019 | Alcohol use                            | Diabetes mellitus       | 4429.45   | 11.99            |
| 2019 | Alcohol use                            | Injurie                 | 245454.50 | 5496.29          |
| 2013 | Child and maternal malnutrition        | Other NCDs              | 214.22    | 2.41             |
| 2019 | Child and maternal malnutrition        | Other NCDs              | 169.12    | 1.90             |
| 2013 | Childhood sexual abuse and bullying    | Other NCDs              | 25335.82  | 63.75            |
| 2019 | Childhood sexual abuse and bullying    | Other NCDs              | 24758.73  | 62.59            |
| 2013 | Diet high in processed meat            | Cardiovascular diseases | 60218.16  | 2588.32          |
| 2013 | Diet high in processed meat            | Neoplasms               | 33155.99  | 1498.50          |
| 2013 | Diet high in processed meat            | Diabetes mellitus       | 58868.98  | 464.09           |
| 2019 | Diet high in processed meat            | Cardiovascular diseases | 50202.43  | 2275.12          |
| 2019 | Diet high in processed meat            | Neoplasms               | 30690.57  | 1455.28          |
| 2019 | Diet high in processed meat            | Diabetes mellitus       | 62095.56  | 439.19           |
| 2013 | Diet high in red meat                  | Cardiovascular diseases | 98928.25  | 4244.76          |
| 2013 | Diet high in red meat                  | Neoplasms               | 16301.12  | 791.27           |
| 2013 | Diet high in red meat                  | Diabetes mellitus       | 21247.59  | 178.38           |
| 2019 | Diet high in red meat                  | Cardiovascular diseases | 97173.11  | 4474.90          |
| 2019 | Diet high in red meat                  | Neoplasms               | 16766.92  | 869.39           |
| 2019 | Diet high in red meat                  | Diabetes mellitus       | 24678.21  | 190.54           |
| 2013 | Diet high in sodium                    | Cardiovascular diseases | 314531.62 | 15454.09         |
| 2013 | Diet high in sodium                    | Neoplasms               | 55781.70  | 3086.28          |
| 2013 | Diet high in sodium                    | Chronic kidney disease  | 40327.21  | 1934.57          |
| 2019 | Diet high in sodium                    | Cardiovascular diseases | 300667.66 | 16067.21         |
| 2019 | Diet high in sodium                    | Neoplasms               | 50707.55  | 3034.29          |
| 2019 | Diet high in sodium                    | Chronic kidney disease  | 39005.58  | 2107.41          |
| 2013 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 23978.15  | 1357.32          |
| 2013 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 14305.43  | 126.88           |
| 2019 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 23983.50  | 1469.04          |
| 2019 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 17302.43  | 140.72           |
| 2013 | Diet high in trans fatty acids         | Cardiovascular diseases | 60582.08  | 3271.96          |
| 2019 | Diet high in trans fatty acids         | Cardiovascular diseases | 57859.25  | 3413.19          |
| 2013 | Diet low in calcium                    | Neoplasms               | 81551.26  | 4158.46          |
| 2019 | Diet low in calcium                    | Neoplasms               | 80146.58  | 4389.01          |
| 2013 | Diet low in fiber                      | Cardiovascular diseases | 94395.79  | 4378.25          |
| 2013 | Diet low in fiber                      | Neoplasms               | 11133.99  | 559.60           |
| 2013 | Diet low in fiber                      | Diabetes mellitus       | 12536.98  | 113.25           |

# Supplementary Table 6: All-age DALYs and number of deaths attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for men

| 2019 | Diet low in fiber                       | Cardiovascular diseases | 86320.36  | 4376.6  |
|------|---|-------------------------|-----------|---------|
| 2019 | Diet low in fiber                       | Neoplasms               | 10731.77  | 583.4   |
| 2019 | Diet low in fiber                       | Diabetes mellitus       | 13701.23  | 115.1   |
| 2013 | Diet low in fruits                      | Cardiovascular diseases | 154375.75 | 6685.4  |
| 2013 | Diet low in fruits                      | Neoplasms               | 78597.97  | 4120.13 |
| 2013 | Diet low in fruits                      | Diabetes mellitus       | 30442.35  | 255.5   |
| 2019 | Diet low in fruits                      | Cardiovascular diseases | 142203.95 | 6620.1  |
| 2019 | Diet low in fruits                      | Neoplasms               | 70198.67  | 3926.5  |
| 2019 | Diet low in fruits                      | Diabetes mellitus       | 32288.14  | 247.7   |
| 2013 | Diet low in legumes                     | Cardiovascular diseases | 77300.90  | 3986.8  |
| 2019 | Diet low in legumes                     | Cardiovascular diseases | 68823.31  | 3960.7  |
| 2013 | Diet low in milk                        | Neoplasms               | 102143.55 | 5153.2  |
| 2019 | Diet low in milk                        | Neoplasms               | 103243.38 | 5582.8  |
| 2013 | Diet low in nuts and seeds              | Cardiovascular diseases | 102149.87 | 5677.3  |
| 2013 | Diet low in nuts and seeds              | Diabetes mellitus       | 11185.93  | 108.0   |
| 2019 | Diet low in nuts and seeds              | Cardiovascular diseases | 97060.55  | 5917.1  |
| 2019 | Diet low in nuts and seeds              | Diabetes mellitus       | 12645.78  | 113.7   |
| 2013 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 31573.06  | 1665.9  |
| 2019 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 29643.79  | 1705.7  |
| 2013 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 12906.09  | 1066.9  |
| 2019 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 30048.12  | 2170.8  |
| 2013 | Diet low in vegetables                  | Cardiovascular diseases | 25327.72  | 1297.3  |
| 2013 | Diet low in vegetables                  | Neoplasms               | 3501.92   | 180.7   |
| 2019 | Diet low in vegetables                  | Cardiovascular diseases | 24075.64  | 1378.5  |
| 2019 | Diet low in vegetables                  | Neoplasms               | 3379.06   | 187.7   |
| 2013 | Diet low in whole grains                | Cardiovascular diseases | 205195.92 | 10560.9 |
| 2013 | Diet low in whole grains                | Neoplasms               | 92137.35  | 4636.5  |
| 2013 | Diet low in whole grains                | Diabetes mellitus       | 20621.01  | 187.3   |
| 2019 | Diet low in whole grains                | Cardiovascular diseases | 195550.64 | 10956.1 |
| 2019 | Diet low in whole grains                | Neoplasms               | 93036.16  | 5016.6  |
| 2019 | Diet low in whole grains                | Diabetes mellitus       | 23254.13  | 195.7   |
| 2013 | Drug use                                | Neoplasms               | 69861.87  | 3290.1  |
| 2013 | Drug use                                | Other NCDs              | 136067.03 | 2520.8  |
| 2013 | Drug use                                | Injurie                 | 6997.46   | 142.6   |
| 2019 | Drug use                                | Neoplasms               | 72121.75  | 3599.3  |
| 2019 | Drug use                                | Other NCDs              | 132297.62 | 2541.1  |
| 2019 | Drug use                                | Injurie                 | 5908.68   | 122.0   |
| 2013 | HPV infection                           | Neoplasms               | NA        | 662.6   |
| 2019 | HPV infection                           | Neoplasms               | NA        | 818.7   |
| 2013 | HTLV-1 infection                        | Neoplasms               | NA        | 528.0   |
| 2019 | HTLV-1 infection                        | Neoplasms               | NA        | 489.0   |
| 2013 | Helicobacter pylori infection           | Neoplasms               | NA        | 30191.9 |
| 2019 | Helicobacter pylori infection           | Neoplasms               | NA        | 31790.4 |
| 2013 | Hepatitis B virus infection             | Neoplasms               | 55494.00  | 2467.7  |
| 2019 | Hepatitis B virus infection             | Neoplasms               | 51654.98  | 2407.2  |
| 2013 | Hepatitis C virus infection             | Neoplasms               | 269625.97 | 15145.7 |

| 2013High LDL cholesterol2019High LDL cholesterol2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2013Intimate partner violence2013Intimate partner violence2013Intimate partner violence2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction2019<   | 2019 | Hepatitis C virus infection  |
|--|------|------------------------------|
| 2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2014High body-mass index2015High body-mass index2016High body-mass index2017High body-mass index2018High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2014High fasting plasma glucose2015High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2013High systolic blood pressure2013High systolic blood pressure2013High systolic blood pressure2013High systolic blood pressure2013Intimate partner violence2013Intimate partner violence2013Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction   | 2013 | High LDL cholesterol         |
| 2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2019High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2013High systolic blood pressure2013High systolic blood pressure2013Intimate partner violence2013Intimate partner violence2013Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction <td>2019</td> <td>High LDL cholesterol</td>  | 2019 | High LDL cholesterol         |
| 2013High body-mass index2013High body-mass index2013High body-mass index2013High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016High systolic blood pressure2017Intimate partner violence2018Intimate partner violence2019Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction <td>2013</td> <td>High body-mass index</td>   | 2013 | High body-mass index         |
| 2013High body-mass index2013High body-mass index2013High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016Intimate partner violence2017Intimate partner violence2018Kidney dysfunction2019Kidney dysfunction2019Kidney dysfunction2019Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction<   | 2013 | High body-mass index         |
| 2013High body-mass index2013High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2014High fasting plasma glucose2015High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016High systolic blood pressure2017Intimate partner violence2018Intimate partner violence2019Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction2019Kidney  | 2013 | High body-mass index         |
| 2013High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2014High fasting plasma glucose2015High fasting plasma glucose2016High fasting plasma glucose2017High fasting plasma glucose2018High fasting plasma glucose2019High fasting plasma glucose2013High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016High systolic blood pressure2017Intimate partner violence2018Intimate partner violence2019Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction2019Kidney dysfunction2019Kidney dysfuncti   | 2013 | High body-mass index         |
| 2019High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2014High fasting plasma glucose2015High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016High systolic blood pressure2017High systolic blood pressure2018Intimate partner violence2019Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction2019   | 2013 | High body-mass index         |
| <ul> <li>2019 High body-mass index</li> <li>2013 High fasting plasma glucose</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2014 Kidney dysfunction</li> <li>2015 Kidney dysfunction</li> <li>2016 Kidney dysfunction</li> <li>2017 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul> | 2013 | High body-mass index         |
| 2019High body-mass index2019High body-mass index2019High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2013High fasting plasma glucose2014High fasting plasma glucose2015High fasting plasma glucose2016High fasting plasma glucose2017High fasting plasma glucose2018High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016High systolic blood pressure2017Intimate partner violence2018Intimate partner violence2019Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction2019Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney d   | 2019 | High body-mass index         |
| 2019High body-mass index2019High body-mass index2013High fasting plasma glucose2013High fasting plasma glucose2014High fasting plasma glucose2015High fasting plasma glucose2016High fasting plasma glucose2017High fasting plasma glucose2018High fasting plasma glucose2019High fasting plasma glucose2019High fasting plasma glucose2019High systolic blood pressure2013High systolic blood pressure2014High systolic blood pressure2015High systolic blood pressure2016High systolic blood pressure2017Intimate partner violence2018Intimate partner violence2019Intimate partner violence2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfunction2018Kidney dysfunction2019Kidney dysfunction2013Kidney dysfunction2014Kidney dysfunction2015Kidney dysfunction2016Kidney dysfunction2017Kidney dysfu   | 2019 | High body-mass index         |
| <ul> <li>2019 High body-mass index</li> <li>2019 High body-mass index</li> <li>2013 High fasting plasma glucose</li> <li>2019 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2019 | High body-mass index         |
| <ul> <li>2019 High body-mass index</li> <li>2013 High fasting plasma glucose</li> <li>2019 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2014 High systolic blood pressure</li> <li>2015 High systolic blood pressure</li> <li>2016 High systolic blood pressure</li> <li>2017 Intimate partner violence</li> <li>2018 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2014 Kidney dysfunction</li> <li>2015 Kidney dysfunction</li> <li>2016 Kidney dysfunction</li> <li>2017 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>   | 2019 | High body-mass index         |
| <ul> <li>2013 High fasting plasma glucose</li> <li>2019 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2014 Kidney dysfunction</li> <li>2015 Kidney dysfunction</li> <li>2016 Kidney dysfunction</li> <li>2017 Kidney dysfunction</li> <li>2018 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2019 | High body-mass index         |
| <ul> <li>2013 High fasting plasma glucose</li> <li>2013 High fasting plasma glucose</li> <li>2013 High fasting plasma glucose</li> <li>2019 High systolic blood pressure</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>   | 2019 | High body-mass index         |
| <ul> <li>2013 High fasting plasma glucose</li> <li>2013 High fasting plasma glucose</li> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2014 Kidney dysfunction</li> <li>2015 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2013 | High fasting plasma glucose  |
| <ul> <li>2013 High fasting plasma glucose</li> <li>2013 High fasting plasma glucose</li> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2013 | High fasting plasma glucose  |
| <ul> <li>2013 High fasting plasma glucose</li> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2013 | High fasting plasma glucose  |
| <ul> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>   | 2013 | High fasting plasma glucose  |
| <ul> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2013 | High fasting plasma glucose  |
| <ul> <li>2019 High fasting plasma glucose</li> <li>2019 High fasting plasma glucose</li> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 Inimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Xidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Xidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>   | 2019 | High fasting plasma glucose  |
| <ul> <li>2019 High fasting plasma glucose</li> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2019 | High fasting plasma glucose  |
| <ul> <li>2019 High fasting plasma glucose</li> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2019 | High fasting plasma glucose  |
| <ul> <li>2013 High systolic blood pressure</li> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2019 | High fasting plasma glucose  |
| <ul> <li>2013 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2019 | High fasting plasma glucose  |
| <ul> <li>2019 High systolic blood pressure</li> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2013 | High systolic blood pressure |
| <ul> <li>2019 High systolic blood pressure</li> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2013 | High systolic blood pressure |
| <ul> <li>2013 Intimate partner violence</li> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>  | 2019 | High systolic blood pressure |
| <ul> <li>2013 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>   | 2019 | High systolic blood pressure |
| <ul> <li>2019 Intimate partner violence</li> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Low bone mineral density</li> </ul>   | 2013 | Intimate partner violence    |
| <ul> <li>2019 Intimate partner violence</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2013 | Intimate partner violence    |
| <ul> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2019 | Intimate partner violence    |
| <ul> <li>2013 Kidney dysfunction</li> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>   | 2019 | Intimate partner violence    |
| <ul> <li>2013 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>  | 2013 | Kidney dysfunction           |
| <ul> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2019 Kidney dysfunction</li> <li>2013 Low bone mineral density</li> </ul>   | 2013 | Kidney dysfunction           |
| <ul><li>2019 Kidney dysfunction</li><li>2019 Kidney dysfunction</li><li>2013 Low bone mineral density</li></ul>  | 2013 | Kidney dysfunction           |
| <ul><li>2019 Kidney dysfunction</li><li>2013 Low bone mineral density</li></ul>  | 2019 | Kidney dysfunction           |
| 2013 Low bone mineral density  | 2019 | Kidney dysfunction           |
| ,  | 2019 | Kidney dysfunction           |
| 2010 Low bong minoral density  | 2013 | Low bone mineral density     |
| 2019 LOW DOTE HIMERAL DENSITY  | 2019 | Low bone mineral density     |
| 2013 Low physical activity   | 2013 | Low physical activity        |
| 2013 Low physical activity   | 2013 | Low physical activity        |
| 2013 Low physical activity   | 2013 | Low physical activity        |
| 2019 Low physical activity   | 2019 | Low physical activity        |
| 2019 Low physical activity   | 2019 | Low physical activity        |

| Neoplasms                    | 260854.47  | 15650.88 |
|------------------------------|------------|----------|
| Cardiovascular diseases      | 655602.19  | 33492.92 |
| Cardiovascular diseases      | 631235.06  | 35604.28 |
| Cardiovascular diseases      | 286255.34  | 10749.48 |
| Neoplasms                    | 125327.31  | 6211.20  |
| Chronic kidney disease       | 62622.12   | 2458.52  |
| Other NCDs                   | 103124.61  | 2635.19  |
| Chronic respiratory diseases | 9258.00    | 94.80    |
| Diabetes mellitus            | 116047.09  | 793.78   |
| Cardiovascular diseases      | 273850.34  | 10813.48 |
| Neoplasms                    | 124470.50  | 6569.80  |
| Chronic kidney disease       | 59969.98   | 2627.82  |
| Other NCDs                   | 111328.10  | 3374.51  |
| Chronic respiratory diseases | 9257.14    | 97.16    |
| Diabetes mellitus            | 130656.66  | 796.27   |
| Cardiovascular diseases      | 414972.56  | 23310.86 |
| Neoplasms                    | 146719.70  | 8573.69  |
| Chronic kidney disease       | 166151.47  | 7656.77  |
| Other NCDs                   | 47568.02   | 3201.72  |
| Diabetes mellitus            | 460516.78  | 4157.82  |
| Cardiovascular diseases      | 463280.16  | 27611.83 |
| Neoplasms                    | 157831.97  | 9821.23  |
| Chronic kidney disease       | 153738.03  | 7923.12  |
| Other NCDs                   | 61790.84   | 4384.66  |
| Diabetes mellitus            | 516539.47  | 4347.33  |
| Cardiovascular diseases      | 1529577.12 | 76958.17 |
| Chronic kidney disease       | 249841.53  | 12605.33 |
| Cardiovascular diseases      | 1509737.27 | 81431.28 |
| Chronic kidney disease       | 257607.06  | 14480.42 |
| Other NCDs                   | 0.00       | 0.00     |
| Injurie                      | 0.00       | 0.00     |
| Other NCDs                   | 0.00       | 0.00     |
| Injurie                      | 0.00       | 0.00     |
| Cardiovascular diseases      | 265645.00  | 15110.68 |
| Chronic kidney disease       | 408908.25  | 19376.14 |
| Other NCDs                   | 9144.09    | 0.00     |
| Cardiovascular diseases      | 276119.31  | 17071.19 |
| Chronic kidney disease       | 404564.91  | 21343.56 |
| Other NCDs                   | 10764.45   | 0.00     |
| Injurie                      | 165297.06  | 3989.82  |
| Injurie                      | 185757.64  | 4595.22  |
| Cardiovascular diseases      | 72302.50   | 4822.24  |
| Neoplasms                    | 29109.94   | 1751.81  |
| Diabetes mellitus            | 33880.21   | 380.85   |
| Cardiovascular diseases      | 74974.64   | 5406.39  |
| Neoplasms                    | 31087.91   | 1994.13  |
| 1                            |            |          |

| 2019 | Low physical activity | Diabetes mellitus            | 39369.64   | 416.69   |
|------|-----------------------|------------------------------|------------|----------|
| 2013 | Tobacco smoking       | Cardiovascular diseases      | 850292.94  | 35045.30 |
| 2013 | Tobacco smoking       | Neoplasms                    | 1689700.37 | 91627.79 |
| 2013 | Tobacco smoking       | Other NCDs                   | 507170.05  | 11812.18 |
| 2013 | Tobacco smoking       | Chronic respiratory diseases | 376513.94  | 15126.28 |
| 2013 | Tobacco smoking       | Diabetes mellitus            | 101551.32  | 782.83   |
| 2013 | Tobacco smoking       | Injurie                      | 21117.97   | 455.89   |
| 2019 | Tobacco smoking       | Cardiovascular diseases      | 726817.50  | 30861.47 |
| 2019 | Tobacco smoking       | Neoplasms                    | 1513789.52 | 87373.25 |
| 2019 | Tobacco smoking       | Other NCDs                   | 451702.54  | 12719.16 |
| 2019 | Tobacco smoking       | Chronic respiratory diseases | 372226.25  | 16161.80 |
| 2019 | Tobacco smoking       | Diabetes mellitus            | 103605.60  | 719.46   |
| 2019 | Tobacco smoking       | Injurie                      | 19852.30   | 424.75   |
| 2013 | Unsafe sex            | Neoplasms                    | 0.00       | 0.00     |
| 2019 | Unsafe sex            | Neoplasms                    | 0.00       | 0.00     |

\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCDs: non-communicable diseases; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of the risk factors is sorted alphabetically.

| Year | Risk factors                           | Cause                   | DALYs rate | Mortality rate |
|------|--|-------------------------|------------|----------------|
| 2013 | Alcohol use                            | Cardiovascular diseases | 100.78     | 2.69           |
| 2013 | Alcohol use                            | Neoplasms               | 425.27     | 20.07          |
| 2013 | Alcohol use                            | Other NCDs              | 517.22     | 16.74          |
| 2013 | Alcohol use                            | Diabetes mellitus       | 4.99       | 0.01           |
| 2013 | Alcohol use                            | Injurie                 | 429.58     | 9.59           |
| 2019 | Alcohol use                            | Cardiovascular diseases | 112.42     | 3.34           |
| 2019 | Alcohol use                            | Neoplasms               | 424.36     | 21.23          |
| 2019 | Alcohol use                            | Other NCDs              | 502.03     | 16.89          |
| 2019 | Alcohol use                            | Diabetes mellitus       | 7.11       | 0.02           |
| 2019 | Alcohol use                            | Injurie                 | 394.17     | 8.83           |
| 2013 | Child and maternal malnutrition        | Other NCDs              | 0.34       | 0.00           |
| 2019 | Child and maternal malnutrition        | Other NCDs              | 0.27       | 0.00           |
| 2013 | Childhood sexual abuse and bullying    | Other NCDs              | 40.09      | 0.10           |
| 2019 | Childhood sexual abuse and bullying    | Other NCDs              | 39.76      | 0.10           |
| 2013 | Diet high in processed meat            | Cardiovascular diseases | 95.27      | 4.10           |
| 2013 | Diet high in processed meat            | Neoplasms               | 52.46      | 2.37           |
| 2013 | Diet high in processed meat            | Diabetes mellitus       | 93.14      | 0.73           |
| 2019 | Diet high in processed meat            | Cardiovascular diseases | 80.62      | 3.65           |
| 2019 | Diet high in processed meat            | Neoplasms               | 49.29      | 2.34           |
| 2019 | Diet high in processed meat            | Diabetes mellitus       | 99.72      | 0.71           |
| 2013 | Diet high in red meat                  | Cardiovascular diseases | 156.52     | 6.72           |
| 2013 | Diet high in red meat                  | Neoplasms               | 25.79      | 1.25           |
| 2013 | Diet high in red meat                  | Diabetes mellitus       | 33.62      | 0.28           |
| 2019 | Diet high in red meat                  | Cardiovascular diseases | 156.05     | 7.19           |
| 2019 | Diet high in red meat                  | Neoplasms               | 26.93      | 1.40           |
| 2019 | Diet high in red meat                  | Diabetes mellitus       | 39.63      | 0.31           |
| 2013 | Diet high in sodium                    | Cardiovascular diseases | 497.64     | 24.45          |
| 2013 | Diet high in sodium                    | Neoplasms               | 88.26      | 4.88           |
| 2013 | Diet high in sodium                    | Chronic kidney disease  | 63.80      | 3.06           |
| 2019 | Diet high in sodium                    | Cardiovascular diseases | 482.84     | 25.80          |
| 2019 | Diet high in sodium                    | Neoplasms               | 81.43      | 4.87           |
| 2019 | Diet high in sodium                    | Chronic kidney disease  | 62.64      | 3.38           |
| 2013 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 37.94      | 2.15           |
| 2013 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 22.63      | 0.20           |
| 2019 | Diet high in sugar-sweetened beverages | Cardiovascular diseases | 38.52      | 2.36           |
| 2019 | Diet high in sugar-sweetened beverages | Diabetes mellitus       | 27.79      | 0.23           |
| 2013 | Diet high in trans fatty acids         | Cardiovascular diseases | 95.85      | 5.18           |
| 2019 | Diet high in trans fatty acids         | Cardiovascular diseases | 92.92      | 5.48           |
| 2013 | Diet low in calcium                    | Neoplasms               | 129.03     | 6.58           |
| 2019 | Diet low in calcium                    | Neoplasms               | 128.71     | 7.05           |
| 2013 | Diet low in fiber                      | Cardiovascular diseases | 149.35     | 6.93           |
| 2013 | Diet low in fiber                      | Neoplasms               | 17.62      | 0.89           |
| 2013 | Diet low in fiber                      | Diabetes mellitus       | 19.84      | 0.18           |

## Supplementary Table 7: All-age DALYs rate (per 100,000) and mortality rate (per 100,000) attributable to preventable behavioral and metabolic risk factors in 2013 and 2019 for men

| 2019 | Diet low in fiber                       | Cardiovascular diseases | 138.62 | 7.03  |
|------|---|-------------------------|--------|-------|
| 2019 | Diet low in fiber                       | Neoplasms               | 17.23  | 0.94  |
| 2019 | Diet low in fiber                       | Diabetes mellitus       | 22.00  | 0.18  |
| 2013 | Diet low in fruits                      | Cardiovascular diseases | 244.25 | 10.58 |
| 2013 | Diet low in fruits                      | Neoplasms               | 124.35 | 6.52  |
| 2013 | Diet low in fruits                      | Diabetes mellitus       | 48.16  | 0.40  |
| 2019 | Diet low in fruits                      | Cardiovascular diseases | 228.36 | 10.63 |
| 2019 | Diet low in fruits                      | Neoplasms               | 112.73 | 6.31  |
| 2019 | Diet low in fruits                      | Diabetes mellitus       | 51.85  | 0.40  |
| 2013 | Diet low in legumes                     | Cardiovascular diseases | 122.30 | 6.31  |
| 2019 | Diet low in legumes                     | Cardiovascular diseases | 110.52 | 6.36  |
| 2013 | Diet low in milk                        | Neoplasms               | 161.61 | 8.15  |
| 2019 | Diet low in milk                        | Neoplasms               | 165.80 | 8.97  |
| 2013 | Diet low in nuts and seeds              | Cardiovascular diseases | 161.62 | 8.98  |
| 2013 | Diet low in nuts and seeds              | Diabetes mellitus       | 17.70  | 0.17  |
| 2019 | Diet low in nuts and seeds              | Cardiovascular diseases | 155.87 | 9.50  |
| 2019 | Diet low in nuts and seeds              | Diabetes mellitus       | 20.31  | 0.18  |
| 2013 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 49.95  | 2.64  |
| 2019 | Diet low in polyunsaturated fatty acids | Cardiovascular diseases | 47.60  | 2.74  |
| 2013 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 20.42  | 1.69  |
| 2019 | Diet low in seafood omega-3 fatty acids | Cardiovascular diseases | 48.25  | 3.49  |
| 2013 | Diet low in vegetables                  | Cardiovascular diseases | 40.07  | 2.05  |
| 2013 | Diet low in vegetables                  | Neoplasms               | 5.54   | 0.29  |
| 2019 | Diet low in vegetables                  | Cardiovascular diseases | 38.66  | 2.21  |
| 2019 | Diet low in vegetables                  | Neoplasms               | 5.43   | 0.30  |
| 2013 | Diet low in whole grains                | Cardiovascular diseases | 324.65 | 16.71 |
| 2013 | Diet low in whole grains                | Neoplasms               | 145.78 | 7.34  |
| 2013 | Diet low in whole grains                | Diabetes mellitus       | 32.63  | 0.30  |
| 2019 | Diet low in whole grains                | Cardiovascular diseases | 314.03 | 17.59 |
| 2019 | Diet low in whole grains                | Neoplasms               | 149.41 | 8.06  |
| 2019 | Diet low in whole grains                | Diabetes mellitus       | 37.34  | 0.31  |
| 2013 | Drug use                                | Neoplasms               | 110.53 | 5.21  |
| 2013 | Drug use                                | Other NCDs              | 215.28 | 3.99  |
| 2013 | Drug use                                | Injurie                 | 11.07  | 0.23  |
| 2019 | Drug use                                | Neoplasms               | 115.82 | 5.78  |
| 2019 | Drug use                                | Other NCDs              | 212.46 | 4.08  |
| 2019 | Drug use                                | Injurie                 | 9.49   | 0.20  |
| 2013 | HPV infection                           | Neoplasms               | NA     | 1.05  |
| 2019 | HPV infection                           | Neoplasms               | NA     | 1.31  |
| 2013 | HTLV-1 infection                        | Neoplasms               | NA     | 0.84  |
| 2019 | HTLV-1 infection                        | Neoplasms               | NA     | 0.79  |
| 2013 | Helicobacter pylori infection           | Neoplasms               | NA     | 47.77 |
| 2019 | Helicobacter pylori infection           | Neoplasms               | NA     | 51.05 |
| 2013 | Hepatitis B virus infection             | Neoplasms               | 87.80  | 3.90  |
| 2019 | Hepatitis B virus infection             | Neoplasms               | 82.95  | 3.87  |
| 2013 | Hepatitis C virus infection             | Neoplasms               | 426.59 | 23.96 |

| 2019 | Hepatitis C virus infection  | Neoplasms                    | 418.91  | 25.13  |
|------|------------------------------|------------------------------|---------|--------|
| 2013 | High LDL cholesterol         | Cardiovascular diseases      | 1037.27 | 52.99  |
| 2019 | High LDL cholesterol         | Cardiovascular diseases      | 1013.70 | 57.18  |
| 2013 | High body-mass index         | Cardiovascular diseases      | 452.90  | 17.01  |
| 2013 | High body-mass index         | Neoplasms                    | 198.29  | 9.83   |
| 2013 | High body-mass index         | Chronic kidney disease       | 99.08   | 3.89   |
| 2013 | High body-mass index         | Other NCDs                   | 163.16  | 4.17   |
| 2013 | High body-mass index         | Chronic respiratory diseases | 14.65   | 0.15   |
| 2013 | High body-mass index         | Diabetes mellitus            | 183.61  | 1.26   |
| 2019 | High body-mass index         | Cardiovascular diseases      | 439.78  | 17.37  |
| 2019 | High body-mass index         | Neoplasms                    | 199.89  | 10.55  |
| 2019 | High body-mass index         | Chronic kidney disease       | 96.31   | 4.22   |
| 2019 | High body-mass index         | Other NCDs                   | 178.78  | 5.42   |
| 2019 | High body-mass index         | Chronic respiratory diseases | 14.87   | 0.16   |
| 2019 | High body-mass index         | Diabetes mellitus            | 209.82  | 1.28   |
| 2013 | High fasting plasma glucose  | Cardiovascular diseases      | 656.55  | 36.88  |
| 2013 | High fasting plasma glucose  | Neoplasms                    | 232.13  | 13.56  |
| 2013 | High fasting plasma glucose  | Chronic kidney disease       | 262.88  | 12.11  |
| 2013 | High fasting plasma glucose  | Other NCDs                   | 75.26   | 5.07   |
| 2013 | High fasting plasma glucose  | Diabetes mellitus            | 728.61  | 6.58   |
| 2019 | High fasting plasma glucose  | Cardiovascular diseases      | 743.98  | 44.34  |
| 2019 | High fasting plasma glucose  | Neoplasms                    | 253.46  | 15.77  |
| 2019 | High fasting plasma glucose  | Chronic kidney disease       | 246.89  | 12.72  |
| 2019 | High fasting plasma glucose  | Other NCDs                   | 99.23   | 7.04   |
| 2019 | High fasting plasma glucose  | Diabetes mellitus            | 829.51  | 6.98   |
| 2013 | High systolic blood pressure | Cardiovascular diseases      | 2420.04 | 121.76 |
| 2013 | High systolic blood pressure | Chronic kidney disease       | 395.29  | 19.94  |
| 2019 | High systolic blood pressure | Cardiovascular diseases      | 2424.48 | 130.77 |
| 2019 | High systolic blood pressure | Chronic kidney disease       | 413.69  | 23.25  |
| 2013 | Intimate partner violence    | Other NCDs                   | 0.00    | 0.00   |
| 2013 | Intimate partner violence    | Injurie                      | 0.00    | 0.00   |
| 2019 | Intimate partner violence    | Other NCDs                   | 0.00    | 0.00   |
| 2019 | Intimate partner violence    | Injurie                      | 0.00    | 0.00   |
| 2013 | Kidney dysfunction           | Cardiovascular diseases      | 420.29  | 23.91  |
| 2013 | Kidney dysfunction           | Chronic kidney disease       | 646.96  | 30.66  |
| 2013 | Kidney dysfunction           | Other NCDs                   | 14.47   | 0.00   |
| 2019 | Kidney dysfunction           | Cardiovascular diseases      | 443.42  | 27.41  |
| 2019 | Kidney dysfunction           | Chronic kidney disease       | 649.69  | 34.28  |
| 2019 | Kidney dysfunction           | Other NCDs                   | 17.29   | 0.00   |
| 2013 | Low bone mineral density     | Injurie                      | 261.53  | 6.31   |
| 2019 | Low bone mineral density     | Injurie                      | 298.31  | 7.38   |
| 2013 | Low physical activity        | Cardiovascular diseases      | 114.39  | 7.63   |
| 2013 | Low physical activity        | Neoplasms                    | 46.06   | 2.77   |
| 2013 | Low physical activity        | Diabetes mellitus            | 53.60   | 0.60   |
| 2019 | Low physical activity        | Cardiovascular diseases      | 120.40  | 8.68   |
| 2019 | Low physical activity        | Neoplasms                    | 49.92   | 3.20   |

| 2019 | Low physical activity | Diabetes mellitus            | 63.22   | 0.67   |
|------|-----------------------|------------------------------|---------|--------|
| 2013 | Tobacco smoking       | Cardiovascular diseases      | 1345.30 | 55.45  |
| 2013 | Tobacco smoking       | Neoplasms                    | 2673.38 | 144.97 |
| 2013 | Tobacco smoking       | Other NCDs                   | 802.43  | 18.69  |
| 2013 | Tobacco smoking       | Chronic respiratory diseases | 595.71  | 23.93  |
| 2013 | Tobacco smoking       | Diabetes mellitus            | 160.67  | 1.24   |
| 2013 | Tobacco smoking       | Injurie                      | 33.41   | 0.72   |
| 2019 | Tobacco smoking       | Cardiovascular diseases      | 1167.19 | 49.56  |
| 2019 | Tobacco smoking       | Neoplasms                    | 2430.99 | 140.31 |
| 2019 | Tobacco smoking       | Other NCDs                   | 725.39  | 20.43  |
| 2019 | Tobacco smoking       | Chronic respiratory diseases | 597.76  | 25.95  |
| 2019 | Tobacco smoking       | Diabetes mellitus            | 166.38  | 1.16   |
| 2019 | Tobacco smoking       | Injurie                      | 31.88   | 0.68   |
| 2013 | Unsafe sex            | Neoplasms                    | 0.00    | 0.00   |
| 2019 | Unsafe sex            | Neoplasms                    | 0.00    | 0.00   |

\* Data, except for hepatitis B and C virus infections, *Helicobacter pylori* infection, HPV infection, and HTLV-1 infection, were obtained from the GBD results tool: <u>http://ghdx.healthdata.org/gbd-results-tool</u>. DALYs: disability-adjusted life years; NCDs: non-communicable diseases; LDL: low-density lipoprotein; HPV: human papillomavirus; HTLV-1: human T-cell leukemia virus type 1. The order of the risk factors is sorted alphabetically.

#### Supplementary Table 8: Goals of Health Japan 21 (the second term) for prevention of onset and

#### progression of non-communicable diseases

| Target    |  | Goal   | Interim<br>evaluation in<br>2018 |
|-----------|--|--|----------------------------------|
| Cancer    |  |  |                                  |
| •         | Reduction in age-adjusted mortality rate of cancer under age 75 (per 100,000)  | 73.9   | A*                               |
| •         | Increase in rate of participation in cancer screenings   | 50% (40% for gastric, lung, and colorectal cancer)   | A*                               |
| Cardiovas | cular disease  |  |                                  |
| •         | Reduction in age-adjusted mortality rate of cerebrovascular disease (CVD) and ischemic heart disease (IHD) (per 100,000) | CVD: Male 41.6, Female<br>24.7; IHD: Male 31.8,<br>Female 13.7   | A                                |
| •         | Improvement of hypertension (reduction in average systolic blood pressure)   | Male 134 mmHg, Female<br>129 mmHg  | A                                |
| •         | Reduction in percentage of adults with dyslipidemia  | Those with total<br>cholesterol over 240mg/dl:<br>Male 10%, Female 17%;<br>Those with LDL cholesterol<br>over 160 mg/dl: Male<br>6.2%, Female 8.8% | В                                |
| •         | Reduction in number of definite and at-risk people with metabolic syndrome   | 25% less than 2008   | В                                |
| •         | Increase in participation rates of specified health check-ups and specified health guidance                              | Specified health check-ups:<br>70%, Specified health<br>guidance: 45%  | A*                               |
| Diabetes  |  |  |                                  |
| •         | Reduction in complications (number of patients newly introduced to dialysis due to diabetic nephropathy)                 | 15,000   | В                                |
| •         | Increase in percentage of patients who continue treatment  | 75%  | В                                |
| •         | Decrease in percentage of individuals with elevated  | 1.0%   | А                                |
|           | blood glucose levels (HbA1c (NGSP)≧8.4%)   |  |                                  |
| •         | Prevent increase in number of diabetic persons   | 10,000,000   | В                                |
| •         | Reduction in number of definite and at-risk people with metabolic syndrome   | 25 less than 2008  | В                                |
| •         | Increase in participation rates of specified health check-ups and health guidance  | Specified health check-ups:<br>70%, Specified health<br>guidance: 45%  | A*                               |
| COPD      |  |  |                                  |
| •         | Increase recognition of COPD   | 80%  | В                                |

A: Improving; A\*: Improving, but if the current trend continues, it is unlikely that the goal will be reached by the final evaluation; B: No change. Data were adapted from the interim evaluation report of the Health Japan 21 progress in 2018 (Ministry of Health, Labour and Welfare. Report on the interim evaluation of Health Japan 21 (2nd term) [Japanese]. 2018.

https://www.mhlw.go.jp/content/000378318.pdf (accessed December 14, 2021)).

| Target                       | entary rable 9. Goals of Health Japan 21 (the sec   | Goal  | Interim<br>evaluation<br>in 2018 |  |  |
|------------------------------|---|---|----------------------------------|--|--|
| Nutrition and dietary habits |   |   |                                  |  |  |
| •                            | Increase in percentage of individuals maintaining<br>ideal body weight (Reduction in percentage of<br>obese individuals [BMI 25 and more] and<br>underweight individuals [BMI less than 18.5])  | Obese males in their 20s to<br>60s: 28%; Obese females in<br>their 40s to 60s: 19%;<br>Underweight females in their<br>20s: 20% | В                                |  |  |
| •                            | <ul> <li>Increase in percentage of individuals who<br/>consume appropriate quality and quantity of food</li> <li>Increase in percentage of individuals who eat a<br/>balanced diet with staple food, main dish and<br/>side dish more than twice a day</li> <li>Decrease in mean salt intake</li> </ul> | 80%<br>8g   | В                                |  |  |
|                              | <ul> <li>Increase in consumption of vegetables and<br/>fruits</li> </ul>  | Mean daily intake of vegetable<br>Individuals who consume fruit<br>100g per day: 30%  |                                  |  |  |
| •                            | Increase in dining with family regularly (decrease in percentage of children who eat alone)   | To decrease   | В                                |  |  |
| •                            | Increase in number of corporations in food<br>industry that supply food product low in salt and<br>fat  | Registered corporations:<br>100; Registered restaurants<br>30,000 locations   | A                                |  |  |
| •                            | Increase in percentage of specific foodservice<br>facilities that plan, cook, and evaluate and improve<br>nutritional content of menu based on the needs of<br>clients  | 80%   | A*                               |  |  |
| Physical a                   | activity and exercise   |   |                                  |  |  |
| •                            | Increase in daily number of steps   | 20–64 years old Male 9,000<br>steps, Female 8,500 steps;<br>Over 65 years old Male 7,000<br>steps, Female 6,000 steps           | В                                |  |  |
| •                            | Increase in percentage of individuals who regularly exercise  | 20-64 years old Male 36%,<br>Female 33%; Over 65 years<br>old Male 58% Female 48%   | В                                |  |  |
| •                            | Increase in number of local governments that offer<br>community development and environment to<br>promote physical activity   | 47 prefectures  | A                                |  |  |
| Rest                         |   |   |                                  |  |  |
| •                            | Reduction in percentage of individuals who do not take rest through sufficient sleep  | 15%   | В                                |  |  |
| •                            | Reduction in percentage of employees who work<br>60 hours or more per week  | 5.0%  | A*                               |  |  |
| Alcohol d                    | rinking   |   |                                  |  |  |
| •                            | Reduction in percentage of individuals who<br>consume alcohol over recommended limits (male<br>> 40 g, female > 20 g per day)   | Male 13%, Female 6.4%   | В                                |  |  |
| ٠                            | Eradication of underage drinking  | 0%  | А                                |  |  |
| •                            | Eradication of alcohol consumption among<br>pregnant women  | 0%  | A*                               |  |  |
| Tobacco                      | smoking   |   |                                  |  |  |
| •                            | Reduction in percentage of adult smoking rate   | 12%   | A*                               |  |  |

### Supplementary Table 9: Goals of Health Japan 21 (the second term) for improvement of lifestyle

| •         | Eradication of underage smoking   | 0%   | A  |
|-----------|---|--|----|
| •         | Eradication of smoking during pregnancy   | 0%   | A* |
| •         | Reduction in percentage of individuals who are<br>exposed to passive smoking at home, workplace,<br>restaurants, governmental institutions, and<br>medical institutions | Governmental institutions<br>0%; Medical institutions 0%;<br>Workplace 0%; Home 3%;<br>Restaurants 15% | A* |
| Dental ar | id oral health  |  |    |
| •         | Maintenance and improvement of oral function<br>(increase in percentage of individuals in their 60s<br>with good mastication)   | 80%  | В  |
| •         | Prevention of tooth loss  |  | А  |
|           | <ul> <li>Increase in percentage of 80-year-old<br/>individuals with over 20 teeth remaining</li> </ul>  | 50%  |    |
|           | <ul> <li>Increase in percentage of 60-year-old<br/>individuals with over 24 teeth remaining</li> </ul>  | 70%  |    |
|           | <ul> <li>Increase in percentage of 40-year-old<br/>individuals with all teeth remaining</li> </ul>  | 75%  |    |
| •         | Decrease in percentage of individuals with<br>periodontal disease   |  | C  |
|           | <ul> <li>Decrease in percentage of individuals in 20s<br/>with gingivitis</li> </ul>  | 25%  |    |
|           | <ul> <li>Decrease in percentage of individuals in 40s<br/>with progressive periodontitis</li> </ul>   | 25%  |    |
|           | <ul> <li>Decrease in percentage of individuals in 60s<br/>with progressive periodontitis</li> </ul>   | 45%  |    |
| •         | Increase in number of children without dental   |  | А  |
|           | caries  |  |    |
|           | <ul> <li>Increase in number of prefectures where over<br/>80% of 3-year-old children have no dental<br/>caries</li> </ul>   | 23 prefectures   |    |
|           | <ul> <li>Increase in number of prefectures where 12-<br/>year-old children have less than 1 mean<br/>decayed, missing, and filled teeth (dmft)</li> </ul>               | 28 prefectures   |    |
| ٠         | Increase in percentage of individuals who participated in dental check-up   | 28 prefectures   | A  |

A: Improving; A\*: Improving, but if the current trend continues, it is unlikely that the goal will be reached by the final evaluation; B: No change. Data were adapted from the interim evaluation report of the Health Japan 21 progress in 2018 (Ministry of Health, Labour and Welfare. Report on the interim evaluation of Health Japan 21 (2nd term) [Japanese]. 2018. <u>https://www.mhlw.go.jp/content/000378318.pdf</u> (accessed December 14, 2021)).