

Table S1: Relative risk (RR) with confidence interval (95%CI) of breast cancer by occupational, socio-professional, economical activity and skill level category, among females aged 18-85 years in western Switzerland, 2005-2014

| Occupational variables | Nb cases | Person-years (in 100'000) | Models 1* RR | Models 2** RR | Models 3*** RR | Models 4**** RR |
|--|----------|---------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Occupation^a | | | p<0.001 | p<0.001 | p<0.001 | p=0.003 |
| 1. Legislators, senior officials and managers | 259 | 1.17 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| 2. Professionals | 630 | 2.64 | 1.08 [0.93,1.24] | 1.14 [0.99,1.32] | 1.15 [0.99,1.33] | 1.14 [0.98,1.31] |
| 3. Technicians and associate professionals | 1'176 | 5.96 | 0.89 [0.77,1.02] | 0.97 [0.85,1.11] | 0.98 [0.85,1.12] | 0.98 [0.85,1.12] |
| 4. Clerks | 1'176 | 5.50 | 0.96 [0.84,1.10] | 1.05 [0.91,1.20] | 1.05 [0.92,1.20] | 1.06 [0.92,1.21] |
| 5. Service workers and shop and market sales workers | 868 | 4.69 | 0.83 [0.72,0.96] | 0.91 [0.79,1.05] | 0.91 [0.79,1.05] | 0.93 [0.81,1.07] |
| 6. Skilled agricultural and fishery workers | 47 | 0.29 | 0.73 [0.53,1.00] | 0.78 [0.57,1.06] | 0.78 [0.57,1.06] | 0.80 [0.58,1.09] |
| 7. Craft and related trades workers | 133 | 0.68 | 0.89 [0.72,1.09] | 0.97 [0.79,1.20] | 0.98 [0.79,1.21] | 1.00 [0.81,1.23] |
| 8. Plant and machine operators and assemblers | 44 | 0.24 | 0.81 [0.58,1.12] | 0.81 [0.59,1.11] | 0.81 [0.58,1.11] | 0.83 [0.60,1.14] |
| 9. Elementary occupations | 225 | 1.10 | 0.92 [0.77,1.10] | 0.89 [0.74,1.06] | 0.88 [0.74,1.06] | 0.90 [0.75,1.08] |
| Socioprofessional category | | | p<0.001 | p<0.001 | p=0.003 | p=0.014 |
| Top management and independent professions | 130 | 0.50 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| Other self-employed | 467 | 1.66 | 1.07 [0.88,1.31] | 1.04 [0.86,1.27] | 1.03 [0.85,1.26] | 1.05 [0.87,1.28] |
| Professionals and senior management | 504 | 2.21 | 0.87 [0.71,1.05] | 1.00 [0.83,1.21] | 1.01 [0.83,1.23] | 1.01 [0.83,1.23] |
| Supervisors/low level management and skilled labour | 2'608 | 13.80 | 0.72 [0.60,0.86] | 0.88 [0.74,1.05] | 0.89 [0.74,1.06] | 0.91 [0.76,1.08] |
| Unskilled employees and workers | 830 | 4.01 | 0.79 [0.65,0.95] | 0.85 [0.71,1.02] | 0.86 [0.71,1.04] | 0.90 [0.74,1.08] |
| In paid employment, not classified elsewhere | 19 | 0.09 | 0.81 [0.50,1.32] | 0.90 [0.56,1.46] | 0.90 [0.56,1.46] | 0.91 [0.56,1.48] |
| Skill level required for the occupation | | | p<0.001 | p=0.006 | p=0.007 | p=0.030 |
| Lowest skill level | 225 | 1.10 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| 2nd lowest skill level | 2'268 | 11.41 | 0.98 [0.85,1.12] | 1.10 [0.96,1.26] | 1.10 [0.96,1.26] | 1.09 [0.94,1.25] |
| 2nd highest skill level | 1'176 | 5.96 | 0.97 [0.84,1.12] | 1.10 [0.95,1.27] | 1.10 [0.95,1.27] | 1.07 [0.92,1.24] |
| Highest skill level | 889 | 3.81 | 1.15 [0.99,1.33] | 1.23 [1.07,1.43] | 1.23 [1.06,1.43] | 1.20 [1.03,1.39] |
| Economic activity branch^b | | | p<0.001 | p=0.059 | p=0.123 | p=0.150 |
| Unknown | 424 | 1.88 | 1.07 [0.95,1.21] | 1.04 [0.92,1.17] | 1.04 [0.92,1.17] | 1.04 [0.92,1.17] |
| A-B Agriculture, hunting, forestry, fishing and fish farming | 119 | 0.48 | 1.18 [0.97,1.43] | 1.11 [0.91,1.34] | 1.10 [0.90,1.33] | 1.11 [0.92,1.35] |
| C Mining and quarrying | 2 | 0.01 | 1.26 [0.31,5.18] | 1.23 [0.31,4.92] | 1.24 [0.31,4.98] | 1.25 [0.31,5.01] |
| D Manufacture of goods | 310 | 1.65 | 0.89 [0.78,1.02] | 0.96 [0.84,1.09] | 0.97 [0.85,1.10] | 0.97 [0.85,1.11] |
| E Electricity, gas and water supply | 12 | 0.07 | 0.82 [0.46,1.46] | 0.87 [0.49,1.53] | 0.87 [0.49,1.54] | 0.87 [0.49,1.53] |

| | | | | | | |
|--|-----|------|-------------------------|-------------------------|-------------------------|-------------------------|
| F Construction | 69 | 0.34 | 0.96 [0.75,1.23] | 0.96 [0.75,1.23] | 0.96 [0.75,1.22] | 0.96 [0.75,1.22] |
| G Trade; repair of motor vehicles and of domestic articles | 710 | 3.73 | 0.91 [0.82,1.00] | 0.95 [0.86,1.05] | 0.96 [0.86,1.06] | 0.96 [0.87,1.06] |
| H Hotels and restaurants | 233 | 1.29 | 0.86 [0.74,1.00] | 0.95 [0.82,1.09] | 0.96 [0.83,1.11] | 0.97 [0.84,1.12] |
| I Transport and communication | 161 | 0.96 | 0.80 [0.67,0.94] | 0.89 [0.75,1.05] | 0.90 [0.76,1.06] | 0.90 [0.76,1.06] |
| J Financial intermediation; insurance | 244 | 1.32 | 0.88 [0.76,1.02] | 0.98 [0.85,1.14] | 0.99 [0.86,1.15] | 0.99 [0.85,1.14] |
| K Real estate, renting, IT activities; research and development; other business services | 442 | 2.15 | 0.98 [0.87,1.10] | 1.05 [0.94,1.18] | 1.07 [0.95,1.20] | 1.06 [0.94,1.19] |
| LA Public administration | 192 | 0.72 | 1.28 [1.09,1.50] | 1.23 [1.05,1.45] | 1.22 [1.04,1.43] | 1.22 [1.04,1.42] |
| LB Defence | 47 | 0.25 | 0.90 [0.67,1.22] | 0.94 [0.70,1.27] | 0.94 [0.70,1.26] | 0.94 [0.70,1.26] |
| LC Compulsory social security | 16 | 0.07 | 1.14 [0.69,1.88] | 1.19 [0.73,1.96] | 1.20 [0.73,1.96] | 1.20 [0.73,1.96] |
| M Education | 498 | 2.10 | 1.13 [1.01,1.27] | 1.06 [0.95,1.19] | 1.06 [0.95,1.19] | 1.05 [0.94,1.18] |
| N Health and social activities | 792 | 3.76 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| O Other community, social and personal service activities | 267 | 1.38 | 0.92 [0.80,1.06] | 0.94 [0.82,1.08] | 0.95 [0.83,1.09] | 0.95 [0.82,1.09] |
| Q Extra-territorial organizations and bodies | 20 | 0.13 | 0.71 [0.45,1.11] | 0.58 [0.37,0.90] | 0.60 [0.39,0.94] | 0.58 [0.37,0.91] |

^a Occupation is coded on 1 digit using the International Classification of Occupations, version 1988 (ISCO-88).

^b Economic activity/industry is coded using the General Classification of Economic Activities (NOGA), based on ISCI third and NACE first revisions

* Univariate model

** Adjusted for age, period and canton

*** Adjusted for age, period, canton, civil status, civil status x age and nationality

**** Adjusted for age, period, canton, civil status, civil status x age, nationality and area-based measures of socio-economic position

Statistically significant estimates and p-values<0.05 are shown in bold

Table S2: Relative risk (RR) with confidence interval (95%CI) of breast cancer by occupational, socio-professional, economical activity and skill level category, among females aged 18-49 years in in Swiss cantons of Neuchâtel, Geneva, Vaud and Wallis, 1990-2014

| Occupational variables | Nb cases | Person-years (in 100'000) | Models 1* RR | Models 2 ** RR | Models 3 *** RR |
|---|----------|---------------------------|-------------------------|-------------------------|-------------------------|
| Occupation^a | | | p<0.001 | p=0.002 | p<0.001 |
| 1. Legislators, senior officials and managers | 143 | 1.61 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| 2. Professionals | 415 | 3.97 | 1.19 [0.96,1.47] | 1.18 [0.95,1.46] | 1.22 [0.99,1.52] |
| 3. Technicians and associate professionals | 757 | 9.01 | 1.06 [0.86,1.29] | 1.07 [0.88,1.31] | 1.11 [0.90,1.35] |
| 4. Clerks | 704 | 9.43 | 1.00 [0.82,1.23] | 1.03 [0.84,1.26] | 1.04 [0.85,1.28] |
| 5. Service workers and shop and market sales workers | 469 | 7.14 | 0.86 [0.69,1.05] | 0.89 [0.72,1.10] | 0.89 [0.72,1.10] |
| 6. Skilled agricultural and fishery workers | 28 | 0.43 | 0.77 [0.49,1.21] | 0.79 [0.50,1.25] | 0.78 [0.49,1.24] |
| 7. Craft and related trades workers | 93 | 1.07 | 0.98 [0.73,1.30] | 0.98 [0.73,1.31] | 1.00 [0.74,1.33] |
| 8. Plant and machine operators and assemblers | 23 | 0.36 | 0.69 [0.43,1.11] | 0.68 [0.42,1.10] | 0.68 [0.42,1.09] |
| 9. Elementary occupations | 211 | 3.68 | 0.87 [0.68,1.11] | 0.83 [0.65,1.07] | 0.80 [0.62,1.02] |
| Socioprofessional category | | | p<0.001 | p<0.001 | p<0.001 |
| Top management and independent professions | 73 | 0.53 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| Other self-employed | 195 | 1.81 | 0.83 [0.62,1.13] | 0.87 [0.64,1.18] | 0.81 [0.59,1.09] |
| Professionals and senior management | 332 | 3.16 | 0.78 [0.59,1.04] | 0.77 [0.58,1.02] | 0.80 [0.60,1.07] |
| Supervisors/low level management and skilled labour | 1732 | 23.00 | 0.64 [0.50,0.83] | 0.66 [0.51,0.86] | 0.68 [0.53,0.89] |
| Unskilled employees and workers | 477 | 7.30 | 0.58 [0.44,0.76] | 0.58 [0.44,0.76] | 0.59 [0.44,0.78] |
| In paid employment, not classified elsewhere | 34 | 0.90 | 0.49 [0.30,0.79] | 0.44 [0.27,0.72] | 0.46 [0.28,0.75] |
| Skill level required for the occupation | | | p<0.001 | p=0.002 | p<0.001 |
| Lowest skill level | 211 | 3.68 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| 2nd lowest skill level | 1317 | 18.44 | 1.07 [0.90,1.27] | 1.15 [0.96,1.37] | 1.20 [1.01,1.44] |
| 2nd highest skill level | 757 | 9.01 | 1.22 [1.01,1.46] | 1.29 [1.07,1.55] | 1.37 [1.14,1.66] |
| Highest skill level | 558 | 5.57 | 1.31 [1.08,1.58] | 1.35 [1.11,1.63] | 1.44 [1.18,1.74] |
| Economic activity branch^b | | | p=0.002 | p=0.001 | p=0.009 |
| Unknown | 169 | 1.98 | 0.94 [0.77,1.14] | 0.95 [0.78,1.15] | 0.95 [0.78,1.15] |
| A-B Agriculture,hunting, forestry, fishing and fish farming | 53 | 0.55 | 1.01 [0.73,1.39] | 1.04 [0.75,1.45] | 0.96 [0.70,1.33] |
| D Manufacture of goods | 241 | 3.29 | 0.86 [0.72,1.03] | 0.85 [0.70,1.01] | 0.85 [0.71,1.03] |

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| E Electricity, gas and water supply | 6 | 0.10 | 0.54 [0.23,1.28] | 0.53 [0.22,1.26] | 0.54 [0.23,1.28] |
| F Construction | 44 | 0.53 | 0.89 [0.63,1.27] | 0.88 [0.61,1.26] | 0.84 [0.59,1.21] |
| G Trade; repair of motor vehicles and of domestic articles | 441 | 6.39 | 0.81 [0.70,0.94] | 0.80 [0.69,0.93] | 0.81 [0.69,0.94] |
| H Hotels and restaurants | 155 | 2.38 | 0.79 [0.64,0.97] | 0.79 [0.64,0.97] | 0.81 [0.66,1.00] |
| I Transport and communication | 96 | 1.71 | 0.63 [0.49,0.80] | 0.60 [0.47,0.77] | 0.62 [0.48,0.79] |
| J Financial intermediation; insurance | 183 | 2.66 | 0.91 [0.75,1.10] | 0.86 [0.70,1.04] | 0.89 [0.73,1.08] |
| K Real estate, renting, IT activities; research and development; other business services | 297 | 3.76 | 0.89 [0.75,1.05] | 0.85 [0.72,1.01] | 0.88 [0.74,1.03] |
| LA Public administration | 115 | 1.20 | 1.06 [0.83,1.34] | 1.01 [0.79,1.28] | 0.98 [0.77,1.25] |
| LB Defence | 18 | 0.20 | 0.87 [0.53,1.42] | 0.90 [0.55,1.49] | 0.90 [0.55,1.48] |
| LC Compulsory social security | 5 | 0.06 | 0.79 [0.31,1.99] | 0.79 [0.31,2.00] | 0.80 [0.32,2.02] |
| M Education | 320 | 3.23 | 1.17 [0.99,1.38] | 1.12 [0.95,1.33] | 1.12 [0.94,1.32] |
| N Health and social activities | 484 | 5.91 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| O Other community, social and personal service activities | 182 | 2.20 | 0.90 [0.74,1.09] | 0.87 [0.72,1.06] | 0.89 [0.73,1.08] |
| P Domestic services | 13 | 0.23 | 0.76 [0.38,1.49] | 0.61 [0.31,1.23] | 0.64 [0.32,1.26] |
| Q Extra-territorial organizations and bodies | 20 | 0.30 | 0.83 [0.50,1.37] | 0.68 [0.40,1.14] | 0.75 [0.45,1.26] |

^a Occupation is coded using the International Classification of Occupations, version 1988 (ISCO-88), coded on 1 digit.

^b Economic activity/industry is coded using the General Classification of Economic Activities (NOGA), based on ISCI third and NACE first revisions

* Univariate model

** Adjusted for age, time period and canton

*** Adjusted for age, time period, canton, civil status, civil status x age and nationality

**** Adjusted for age, time period, canton, civil status, civil status x age, nationality and area-based measures of socio-economic position

Statistically significant estimates and p-values<0.05 are shown in bold

Table S3: Relative risk (RR) with confidence interval (95%CI) of breast cancer by occupational, socio-professional, economical activity and skill level category, among females aged 50-85 years in in Swiss cantons of Neuchâtel, Geneva, Vaud and Wallis, 1990-2014

| Occupational variables | Nb cases | Person-years (in 100'000) | Models 1* RR | Models 2 ** RR | Models 3 *** RR |
|--|----------|---------------------------|-------------------------|-------------------------|-------------------------|
| Occupation^a | | | p<0.001 | p=0.002 | p<0.001 |
| 3. Technicians and associate professionals | 1367 | 4.36 | 0.96 [0.85,1.09] | 0.98 [0.86,1.11] | 0.97 [0.86,1.10] |
| 4. Clerks | 1579 | 4.75 | 1.07 [0.95,1.21] | 1.09 [0.96,1.23] | 1.09 [0.96,1.23] |
| 5. Service workers and shop and market sales workers | 1060 | 3.69 | 0.91 [0.80,1.03] | 0.95 [0.83,1.07] | 0.96 [0.84,1.09] |
| 6. Skilled agricultural and fishery workers | 73 | 0.29 | 0.81 [0.61,1.07] | 0.84 [0.63,1.12] | 0.84 [0.63,1.12] |
| 7. Craft and related trades workers | 182 | 0.638 | 0.87 [0.72,1.05] | 0.87 [0.71,1.05] | 0.88 [0.72,1.06] |
| 8. Plant and machine operators and assemblers | 70 | 0.24 | 0.88 [0.67,1.15] | 0.88 [0.67,1.16] | 0.90 [0.68,1.18] |
| 9. Elementary occupations | 496 | 2.12 | 0.78 [0.68,0.91] | 0.76 [0.66,0.89] | 0.78 [0.67,0.91] |
| Socioprofessional category | | | p<0.001 | p<0.001 | p<0.001 |
| Top management and independent professions | 159 | 0.45 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| Other self-employed | 628 | 1.87 | 0.99 [0.82,1.19] | 1.03 [0.85,1.24] | 1.03 [0.86,1.25] |
| Professionals and senior management | 594 | 1.67 | 1.04 [0.86,1.25] | 1.04 [0.86,1.25] | 1.04 [0.86,1.25] |
| Supervisors/low level management and skilled labour | 3271 | 10.31 | 0.95 [0.80,1.13] | 0.99 [0.83,1.17] | 0.99 [0.84,1.18] |
| Unskilled employees and workers | 1234 | 4.73 | 0.81 [0.68,0.96] | 0.83 [0.70,0.99] | 0.86 [0.71,1.02] |
| In paid employment, not classified elsewhere | 89 | 0.35 | 0.91 [0.67,1.22] | 0.86 [0.64,1.17] | 0.87 [0.65,1.18] |
| Skill level required for the occupation | | | p<0.001 | p<0.001 | p<0.001 |
| Lowest skill level | 496 | 2.12 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| 2nd lowest skill level | 2964 | 9.60 | 1.25 [1.12,1.39] | 1.31 [1.17,1.46] | 1.28 [1.15,1.43] |
| 2nd highest skill level | 1367 | 4.36 | 1.23 [1.09,1.38] | 1.27 [1.13,1.43] | 1.23 [1.09,1.39] |
| Highest skill level | 1148 | 3.30 | 1.37 [1.22,1.54] | 1.39 [1.23,1.57] | 1.34 [1.19,1.52] |
| Economic activity branch^b | | | p=0.022 | p=0.050 | p=0.067 |
| Unknown | 467 | 1.37 | 1.10 [0.98,1.24] | 1.09 [0.97,1.23] | 1.10 [0.98,1.24] |
| A-B Agriculture, hunting, forestry, fishing and fish farming | 132 | 0.48 | 0.91 [0.74,1.11] | 0.93 [0.76,1.15] | 0.93 [0.76,1.15] |
| D Manufacture of goods | 491 | 1.70 | 0.99 [0.88,1.12] | 0.98 [0.87,1.11] | 0.99 [0.87,1.12] |
| E Electricity, gas and water supply | 17 | 0.06 | 0.96 [0.58,1.58] | 0.98 [0.59,1.63] | 0.96 [0.58,1.60] |
| F Construction | 80 | 0.31 | 0.77 [0.60,0.99] | 0.76 [0.59,0.98] | 0.76 [0.59,0.98] |

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|--|------|------|-------------------------|------------------|------------------|
| G Trade; repair of motor vehicles and of domestic articles | 1064 | 3.45 | 1.03 [0.93,1.14] | 1.02 [0.92,1.13] | 1.03 [0.93,1.14] |
| H Hotels and restaurants | 269 | 0.99 | 0.87 [0.75,1.01] | 0.86 [0.74,1.00] | 0.88 [0.76,1.02] |
| I Transport and communication | 182 | 0.68 | 0.86 [0.73,1.02] | 0.84 [0.71,1.00] | 0.84 [0.70,1.00] |
| J Financial intermediation; insurance | 335 | 1.03 | 1.10 [0.96,1.27] | 1.05 [0.91,1.21] | 1.04 [0.90,1.20] |
| K Real estate, renting, IT activities; research and development; other business services | 532 | 1.63 | 1.06 [0.94,1.19] | 1.02 [0.90,1.15] | 1.02 [0.91,1.15] |
| LA Public administration | 277 | 0.75 | 1.20 [1.03,1.39] | 1.15 [0.99,1.34] | 1.14 [0.98,1.32] |
| LB Defence | 40 | 0.12 | 1.00 [0.72,1.39] | 1.03 [0.74,1.43] | 1.01 [0.73,1.41] |
| LC Compulsory social security | 12 | 0.04 | 1.02 [0.56,1.85] | 1.01 [0.56,1.84] | 1.00 [0.55,1.81] |
| M Education | 642 | 2.02 | 1.03 [0.93,1.15] | 1.00 [0.90,1.12] | 1.00 [0.89,1.11] |
| N Health and social activities | 970 | 3.16 | 1.00 Ref. | 1.00 Ref. | 1.00 Ref. |
| O Other community, social and personal service activities | 352 | 1.19 | 0.94 [0.82,1.07] | 0.90 [0.79,1.03] | 0.90 [0.79,1.03] |
| P Domestic services | 28 | 0.14 | 0.80 [0.51,1.23] | 0.70 [0.45,1.10] | 0.73 [0.47,1.13] |
| Q Extra-territorial organizations and bodies | 84 | 0.27 | 1.12 [0.88,1.43] | 0.95 [0.74,1.22] | 0.99 [0.77,1.27] |

^a Occupation is coded using the International Classification of Occupations, version 1988 (ISCO-88), coded on 1 digit.

^b Economic activity/industry is coded using the General Classification of Economic Activities (NOGA), based on ISCI third and NACE first revisions

* Univariate model

** Adjusted for age, time period and canton

*** Adjusted for age, time period, canton, civil status, civil status x age and nationality

**** Adjusted for age, time period, canton, civil status, civil status x age, nationality and area-based measures of socio-economic position

Statistically significant estimates and p-values<0.05 are shown in bold