**Online supplementary material**

**Early life stress in relation with risk of overweight, depression and their comorbidity: ​findings from a British birth cohort​**

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**Online supplementary Table 1**: Description of all covariates used for analyses.



All variables were used for imputation.

**Online supplementary Table 2**: Description of all variables in study population sample (N= 7762) and in a sample of excluded individuals (N=10796).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Missing** | **Included** | **Excluded** | **P.value** |
| **Adversities** | 1421 | n= 7762 | n= 9375 | <0.01 |
| 0, n(%) |   | 5881 (75.77) | 6600 (70.4) |  |
| 1, n(%) |   | 1456 (18.76) | 1918 (20.46) |  |
| 2 or more, n(%) |   | 425 (5.48) | 857 (9.14) |  |
| **Obesity** |  |  |  |  |
| **At 23** | 6290 | n= 7762 | n= 4506 | <0.01 |
| Non-obese, n(%) |   | 7578 (97.63) | 4362 (96.8) |  |
| Obese, n(%) |   | 184 (2.37) | 144 (3.2) |  |
| **At 33** | 7460 | n= 7762 | n= 3336 | <0.01 |
| Non-obese, n(%) |   | 6964 (89.72) | 2879 (86.3) |  |
| Obese, n(%) |   | 798 (10.28) | 457 (13.7) |  |
| **At 42** | 7452 | n= 7762 | n= 3344 | 0.17 |
| Non-obese, n(%) |   | 6585 (84.84) | 2802 (83.79) |  |
| Obese, n(%) |   | 1177 (15.16) | 542 (16.21) |  |
| **Overweight** |  |  |  |  |
| **At 23** | 6290 | n= 7762 | n= 4506 | <0.01 |
| Non-overweight, n(%) |   | 6486 (83.56) | 3675 (81.56) |  |
| Overweight, n(%) |   | 1276 (16.44) | 831 (18.44) |  |
| **At 33** | 7460 | n= 7762 | n= 3336 | <0.01 |
| Non-overweight, n(%) |   | 4516 (58.18) | 1795 (53.81) |  |
| Overweight, n(%) |   | 3246 (41.82) | 1541 (46.19) |  |
| **At 42** | 7452 | n= 7762 | n= 3344 | 0.60 |
| Non-overweight, n(%) |   | 3751 (48.33) | 1597 (47.76) |  |
| Overweight, n(%) |   | 4011 (51.67) | 1747 (52.24) |  |
| **Depression** |  |  |  |  |
| **At 23** | 6257 | n= 7762 | n= 4539 | <0.01 |
| Non-depressed, n(%) |   | 7256 (93.48) | 4139 (91.19) |  |
| Depressed, n(%) |   | 506 (6.52) | 400 (8.81) |  |
| **At 33** | 7366 | n= 7762 | n= 3430 | <0.01 |
| Non-depressed, n(%) |   | 7313 (94.22) | 3114 (90.79) |  |
| Depressed, n(%) |   | 449 (5.78) | 316 (9.21) |  |
| **At 42** | 7298 | n= 7762 | n= 3498 | <0.01 |
| Non-depressed, n(%) |   | 6841 (88.13) | 2925 (83.62) |  |
| Depressed, n(%) |   | 921 (11.87) | 573 (16.38) |  |
| **Overweight-depression comorbidity and each separate condition** |  |
| **At 23 (w obesity)** | 6499 | n= 7762 | n= 4297 | <0.01 |
| No conditions, n(%) |   | 7094 (91.39) | 3813 (88.74) |  |
| Obese, n(%) |   | 162 (2.09) | 113 (2.63) |  |
| Depressed, n(%) |   | 484 (6.24) | 352 (8.19) |  |
| Both, n(%) |   | 22 (0.28) | 19 (0.44) |  |
| **At 33 (w obesity)** | 7628 | n= 7762 | n= 3168 | <0.01 |
| No conditions, n(%) |   | 6571 (84.66) | 2496 (78.79) |  |
| Obese, n(%) |   | 742 (9.56) | 376 (11.87) |  |
| Depressed, n(%) |   | 393 (5.06) | 243 (7.67) |  |
| Both, n(%) |   | 56 (0.72) | 53 (1.67) |  |
| **At 42 (w obesity)** | 7586 | n= 7762 | n= 3210 | <0.01 |
| No conditions, n(%) |   | 5852 (75.39) | 2271 (70.75) |  |
| Obese, n(%) |   | 989 (12.74) | 412 (12.83) |  |
| Depressed, n(%) |   | 733 (9.44) | 413 (12.87) |  |
| Both, n(%) |   | 188 (2.42) | 114 (3.55) |  |
| **At 23 (w overweight)** | 6499 | n= 7762 | n= 4297 | <0.01 |
| No conditions, n(%) |   | 6081 (78.34) | 3223 (75.01) |  |
| Overweight, n(%) |   | 1175 (15.14) | 703 (16.36) |  |
| Depressed, n(%) |   | 405 (5.22) | 292 (6.8) |  |
| Both, n(%) |   | 101 (1.3) | 79 (1.84) |  |
| **At 33 (w overweight)** | 9201 | n= 7762 | n= 1595 | <0.01 |
| No conditions, n(%) |   | 4226 (54.44) | 779 (48.84) |  |
| Overweight, n(%) |   | 3030 (39.04) | 679 (42.57) |  |
| Depressed, n(%) |   | 290 (3.74) | 62 (3.89) |  |
| Both, n(%) |   | 216 (2.78) | 75 (4.7) |  |
| **At 42 (w overweight)** | 7586 | n= 7762 | n= 3210 | <0.01 |
| No conditions, n(%) |   | 3337 (42.99) | 1279 (39.84) |  |
| Overweight, n(%) |   | 3504 (45.14) | 1404 (43.74) |  |
| Depressed, n(%) |   | 414 (5.33) | 247 (7.69) |  |
| Both, n(%) |   | 507 (6.53) | 280 (8.72) |  |
| **Early-life factors** |  |  |  |  |
| **Father's social class at birth** | 1387 | n= 7371 | n= 9800 | <0.01 |
| Professional/Managerial, n(%) |   | 1420 (19.26) | 1600 (16.33) |  |
| Skilled non-manual, n(%) |   | 782 (10.61) | 861 (8.79) |  |
| Skilled manual, n(%) |   | 3667 (49.75) | 5002 (51.04) |  |
| Semi-unskilled, n(%) |   | 1502 (20.38) | 2337 (23.85) |  |
| **Mother's educational level (years)** | 1267 | n= 7396 | n= 9895 | <0.01 |
| Left school> or equal 15, n(%) |   | 1975 (26.7) | 2318 (23.43) |  |
| Left school < 15, n(%) |   | 5421 (73.3) | 7577 (76.57) |  |
| **Mother's age at birth (years)** | 1157 | n= 7431 | n= 9970 | <0.01 |
| <24, n(%) |   | 1926 (25.92) | 2944 (29.53) |  |
| [24:27], n(%) |   | 2107 (28.35) | 2546 (25.54) |  |
| [28:31], n(%) |   | 1600 (21.53) | 2110 (21.16) |  |
| >31, n(%) |   | 1798 (24.2) | 2370 (23.77) |  |
| **Breastfeeding duration** | 4060 | n= 6901 | n= 7597 | <0.01 |
| > 1 month, n(%) |   | 3141 (45.52) | 3154 (41.52) |  |
| < 1 month, n(%) |   | 1711 (24.79) | 1899 (25) |  |
| none, n(%) |   | 2049 (29.69) | 2544 (33.49) |  |
| **Mother smoked during pregnancy** | 1368 | n= 7347 | n= 9843 | <0.01 |
| No, n(%) |   | 5022 (68.35) | 6385 (64.87) |  |
| Yes, n(%) |   | 2325 (31.65) | 3458 (35.13) |  |
| **Sex** | 4 | n= 7762 | n= 10792 | <0.01 |
| Men, n(%) |   | 3723 (47.96) | 5872 (54.41) |  |
| Women, n(%) |   | 4039 (52.04) | 4920 (45.59) |  |
| **Birthweight (kilograms)** | 1777 | n= 7213 | n= 9568 | <0.01 |
| Mean (SD) |   | 3.3 (0.5) | 3.3 (0.6) |  |
| **Childhood pathologies** | 1593 | n= 7742 | n= 9223 | 0.19 |
| No, n(%) |   | 5821 (75.19) | 6852 (74.29) |  |
| Yes, n(%) |   | 1921 (24.81) | 2371 (25.71) |  |
| **Covariates at 23 years** |  |  |  |  |
| **Education level** | 6041 | n= 7757 | n= 4760 | <0.01 |
| Passed a levels, n(%) |   | 1824 (23.51) | 874 (18.36) |  |
| Passed o levels, n(%) |   | 3295 (42.48) | 1644 (34.54) |  |
| No qualifications, n(%) |   | 2638 (34.01) | 2242 (47.1) |  |
| **Smoking status** | 6030 | n= 7762 | n= 4766 | <0.01 |
| Never smoker, n(%) |   | 2426 (31.25) | 1436 (30.13) |  |
| Former smoker, n(%) |   | 2350 (30.28) | 1214 (25.47) |  |
| Current smoker, n(%) |   | 2986 (38.47) | 2116 (44.4) |  |
| **Alcohol consumption** | 6034 | n= 7758 | n= 4766 | <0.01 |
| Moderate, n(%) |   | 3954 (50.97) | 2173 (45.59) |  |
| Abstainer, n(%) |   | 1869 (24.09) | 1369 (28.72) |  |
| Heavy Drinker, n(%) |   | 1935 (24.94) | 1224 (25.68) |  |
| **Physical activity** | 6040 | n= 7756 | n= 4762 | <0.01 |
| Physically active, n(%) |   | 2485 (32.04) | 1516 (31.84) |  |
| Moderately active, n(%) |   | 1323 (17.06) | 621 (13.04) |  |
| Inactive, n(%) |   | 3948 (50.9) | 2625 (55.12) |  |
| **Covariates at 33 years** |  |  |  |  |
| **Social class** | 7976 | n= 7274 | n= 3308 | <0.01 |
| Professional-managerial, n(%) |   | 2692 (37.01) | 1135 (34.31) |  |
| Skilled nonmanual, n(%) |   | 1823 (25.06) | 676 (20.44) |  |
| Skilled manual, n(%) |   | 1436 (19.74) | 709 (21.43) |  |
| Semi-unskilled, n(%) |   | 1323 (18.19) | 788 (23.82) |  |
| **Wealth** | 7451 | n= 7623 | n= 3484 | <0.01 |
| Owner (Medium / high price: Q3 / Q4), n(%) |   | 2958 (38.8) | 1070 (30.71) |  |
| Owner (Low / medium-low price: Q1 / Q2), n(%) |   | 2899 (38.03) | 1145 (32.86) |  |
| Non-owner, n(%) |   | 1766 (23.17) | 1269 (36.42) |  |
| **Marital status** | 7300 | n= 7702 | n= 3556 | <0.01 |
| Couple, n(%) |   | 6288 (81.64) | 2684 (75.48) |  |
| Single, n(%) |   | 896 (11.63) | 559 (15.72) |  |
| Divorced or widowed, n(%) |   | 518 (6.73) | 313 (8.8) |  |
| **Smoking status** | 7251 | n= 7717 | n= 3590 | <0.01 |
| Never smoker, n(%) |   | 3893 (50.45) | 1585 (44.15) |  |
| Former smoker, n(%) |   | 1453 (18.83) | 641 (17.86) |  |
| Current smoker, n(%) |   | 2371 (30.72) | 1364 (37.99) |  |
| **Alcohol consumption** | 7704 | n= 7448 | n= 3406 | <0.01 |
| Moderate, n(%) |   | 4993 (67.04) | 2100 (61.66) |  |
| Abstainer, n(%) |   | 1842 (24.73) | 967 (28.39) |  |
| Heavy Drinker, n(%) |   | 613 (8.23) | 339 (9.95) |  |
| **Physical activity** | 9709 | n= 6140 | n= 2709 | 0.46 |
| Physically active, n(%) |   | 5424 (88.34) | 2371 (87.52) |  |
| Moderately active, n(%) |   | 494 (8.05) | 227 (8.38) |  |
| Inactive, n(%) |   | 222 (3.62) | 111 (4.1) |  |
| **Fruits and vegs diet** | 7188 | n= 7762 | n= 3608 | <0.01 |
| Frequent, n(%) |   | 2843 (36.63) | 1286 (35.64) |  |
| Occasionally, n(%) |   | 2684 (34.58) | 1146 (31.76) |  |
| Hardly never, n(%) |   | 2235 (28.79) | 1176 (32.59) |  |
| **Junk food diet** | 7190 | n= 7761 | n= 3607 | <0.01 |
| Hardly never, n(%) |   | 1977 (25.47) | 1053 (29.19) |  |
| Occasionally, n(%) |   | 1867 (24.06) | 854 (23.68) |  |
| Frequent, n(%) |   | 3917 (50.47) | 1700 (47.13) |  |
| **Covariates at 42 years** |  |  |  |  |
| **Social class** | 8967 | n= 6717 | n= 2874 | <0.01 |
| Professional-managerial, n(%) |   | 2938 (43.74) | 1176 (40.92) |  |
| Skilled nonmanual, n(%) |   | 1482 (22.06) | 563 (19.59) |  |
| Skilled manual, n(%) |   | 1290 (19.21) | 649 (22.58) |  |
| Semi-unskilled, n(%) |   | 1007 (14.99) | 486 (16.91) |  |
| **Household tenure** | 7228 | n= 7742 | n= 3588 | <0.01 |
| Own, n(%) |   | 6508 (84.06) | 2666 (74.3) |  |
| Rent, n(%) |   | 1015 (13.11) | 814 (22.69) |  |
| Others, n(%) |   | 219 (2.83) | 108 (3.01) |  |
| **Marital status** | 7176 | n= 7762 | n= 3620 | <0.01 |
| Married, n(%) |   | 5656 (72.87) | 2385 (65.88) |  |
| Single, n(%) |   | 881 (11.35) | 559 (15.44) |  |
| Divorced or widowed, n(%) |   | 1225 (15.78) | 676 (18.67) |  |
| **Smoking status** | 7184 | n= 7761 | n= 3613 | <0.01 |
| Never smoker, n(%) |   | 3603 (46.42) | 1470 (40.69) |  |
| Former smoker, n(%) |   | 1984 (25.56) | 884 (24.47) |  |
| Current smoker, n(%) |   | 2174 (28.01) | 1259 (34.85) |  |
| **Alcohol consumption** | 7184 | n= 7762 | n= 3612 | <0.01 |
| Moderate, n(%) |   | 4026 (51.87) | 1662 (46.01) |  |
| Abstainer, n(%) |   | 1742 (22.44) | 1039 (28.77) |  |
| Heavy Drinker, n(%) |   | 1994 (25.69) | 911 (25.22) |  |
| **Physical activity** | 7187 | n= 7761 | n= 3610 | <0.01 |
| Physically active, n(%) |   | 5136 (66.18) | 2309 (63.96) |  |
| Moderately active, n(%) |   | 683 (8.8) | 298 (8.25) |  |
| Inactive, n(%) |   | 1942 (25.02) | 1003 (27.78) |  |
| **Fruits and vegs diet** | 7185 | n= 7762 | n= 3611 | <0.01 |
| Frequent, n(%) |   | 3576 (46.07) | 1571 (43.51) |  |
| Occasionally, n(%) |   | 2202 (28.37) | 971 (26.89) |  |
| Hardly never, n(%) |   | 1984 (25.56) | 1069 (29.6) |  |
| **Junk food diet** | 7186 | n= 7762 | n= 3610 | 0.09 |
| Hardly never, n(%) |   | 2836 (36.54) | 1397 (38.7) |  |
| Occasionally, n(%) |   | 1841 (23.72) | 828 (22.94) |  |
| Frequent, n(%) |   | 3085 (39.74) | 1385 (38.37) |  |
| **Problem with alcohol (ever)** | 0 | n= 7762 | n= 10796 | <0.01 |
| No, n(%) |   | 7676 (98.89) | 10725 (99.34) |  |
| Yes, n(%) |   | 86 (1.11) | 71 (0.66) |  |
| **Ever tried illegal drugs** | 0 | n= 7762 | n= 10796 | <0.01 |
| Never, n(%) |   | 5220 (67.25) | 9469 (87.71) |  |
| Yes, one, n(%) |   | 1557 (20.06) | 726 (6.72) |  |
| Yes, two or more, n(%) |   | 985 (12.69) | 601 (5.57) |  |

**Online supplementary Table 3**: Bivariate associations between baseline confounders, early life SEP and intermediate variables with the overweight-depression comorbidity and each separate condition.

|  |  |
| --- | --- |
|  | **Overweight-depression comorbidity and each separate condition** |
| **At 23 years old** | **At 33 years old** | **At 42 years old** |
| **Variable** | **No conditions** | **Overweight** | **Depressed** | **Comorbid** | **p** | **No conditions** | **Overweight** | **Depressed** | **Comorbid** | **p** | **No conditions** | **Overweight** | **Depressed** | **Comorbid** | **p** |
| **Sex** | n= 6081 | n= 1175 | n= 405 | n= 101 | <0,001 | n= 4226 | n= 3030 | n= 290 | n= 216 | <0,001 | n= 3337 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Men, n(%) | 2907 (47.8) | 691 (58.81) | 96 (23.7) | 29 (28.71) |   | 1797 (42.52) | 1801 (59.44) | 56 (19.31) | 69 (31.94) |   | 1297 (38.87) | 2079 (59.33) | 118 (28.5) | 229 (45.17) |   |
| Women, n(%) | 3174 (52.2) | 484 (41.19) | 309 (76.3) | 72 (71.29) |   | 2429 (57.48) | 1229 (40.56) | 234 (80.69) | 147 (68.06) |   | 2040 (61.13) | 1425 (40.67) | 296 (71.5) | 278 (54.83) |   |
| **Parents' social class** | n= 5768 | n= 1126 | n= 380 | n= 97 | <0,001 | n= 4018 | n= 2876 | n= 272 | n= 205 | <0,001 | n= 3168 | n= 3336 | n= 388 | n= 479 | <0,001 |
| Professional/Managerial, n(%) | 1226 (21.26) | 137 (12.17) | 48 (12.63) | 9 (9.28) |   | 884 (22) | 479 (16.66) | 36 (13.24) | 21 (10.24) |   | 730 (23.04) | 571 (17.12) | 60 (15.46) | 59 (12.32) |   |
| Skilled non-manual, n(%) | 663 (11.49) | 87 (7.73) | 27 (7.11) | 5 (5.15) |   | 466 (11.6) | 284 (9.87) | 20 (7.35) | 12 (5.85) |   | 380 (11.99) | 339 (10.16) | 30 (7.73) | 33 (6.89) |   |
| Skilled manual, n(%) | 2793 (48.42) | 625 (55.51) | 200 (52.63) | 49 (50.52) |   | 1924 (47.88) | 1494 (51.95) | 143 (52.57) | 106 (51.71) |   | 1522 (48.04) | 1680 (50.36) | 207 (53.35) | 258 (53.86) |   |
| Semi-unskilled, n(%) | 1086 (18.83) | 277 (24.6) | 105 (27.63) | 34 (35.05) |   | 744 (18.52) | 619 (21.52) | 73 (26.84) | 66 (32.2) |   | 536 (16.92) | 746 (22.36) | 91 (23.45) | 129 (26.93) |   |
| **Mother's education (years)** | n= 5786 | n= 1133 | n= 380 | n= 97 | <0,001 | n= 4029 | n= 2890 | n= 273 | n= 204 | <0,001 | n= 3182 | n= 3341 | n= 390 | n= 483 | <0,001 |
| Left school> or equal 15, n(%) | 1688 (29.17) | 201 (17.74) | 73 (19.21) | 13 (13.4) |   | 1215 (30.16) | 674 (23.32) | 55 (20.15) | 31 (15.2) |   | 1023 (32.15) | 771 (23.08) | 89 (22.82) | 92 (19.05) |   |
| Left school < 15, n(%) | 4098 (70.83) | 932 (82.26) | 307 (80.79) | 84 (86.6) |   | 2814 (69.84) | 2216 (76.68) | 218 (79.85) | 173 (84.8) |   | 2159 (67.85) | 2570 (76.92) | 301 (77.18) | 391 (80.95) |   |
| **Mother's age at birth (years)** | n= 5810 | n= 1138 | n= 384 | n= 99 | 0,083 | n= 4043 | n= 2905 | n= 275 | n= 208 | 0,027 | n= 3189 | n= 3365 | n= 392 | n= 485 | 0,004 |
| <24, n(%) | 1453 (25.01) | 325 (28.56) | 119 (30.99) | 29 (29.29) |   | 988 (24.44) | 790 (27.19) | 89 (32.36) | 59 (28.37) |   | 757 (23.74) | 900 (26.75) | 110 (28.06) | 159 (32.78) |   |
| [24:27], n(%) | 1680 (28.92) | 302 (26.54) | 102 (26.56) | 23 (23.23) |   | 1194 (29.53) | 788 (27.13) | 77 (28) | 48 (23.08) |   | 935 (29.32) | 948 (28.17) | 104 (26.53) | 120 (24.74) |   |
| [28:31], n(%) | 1274 (21.93) | 230 (20.21) | 73 (19.01) | 23 (23.23) |   | 872 (21.57) | 632 (21.76) | 50 (18.18) | 46 (22.12) |   | 708 (22.2) | 721 (21.43) | 75 (19.13) | 96 (19.79) |   |
| >31, n(%) | 1403 (24.15) | 281 (24.69) | 90 (23.44) | 24 (24.24) |   | 989 (24.46) | 695 (23.92) | 59 (21.45) | 55 (26.44) |   | 789 (24.74) | 796 (23.66) | 103 (26.28) | 110 (22.68) |   |
| **Breastfeeding** | n= 5419 | n= 1048 | n= 343 | n= 91 | <0,001 | n= 3749 | n= 2718 | n= 247 | n= 187 | <0,001 | n= 2972 | n= 3128 | n= 361 | n= 440 | <0,001 |
| > 1 month, n(%) | 2549 (47.04) | 432 (41.22) | 132 (38.48) | 28 (30.77) |   | 1775 (47.35) | 1206 (44.37) | 92 (37.25) | 68 (36.36) |   | 1424 (47.91) | 1380 (44.12) | 143 (39.61) | 194 (44.09) |   |
| < 1 month, n(%) | 1320 (24.36) | 280 (26.72) | 88 (25.66) | 23 (25.27) |   | 922 (24.59) | 678 (24.94) | 64 (25.91) | 47 (25.13) |   | 727 (24.46) | 790 (25.26) | 77 (21.33) | 117 (26.59) |   |
| none, n(%) | 1550 (28.6) | 336 (32.06) | 123 (35.86) | 40 (43.96) |   | 1052 (28.06) | 834 (30.68) | 91 (36.84) | 72 (38.5) |   | 821 (27.62) | 958 (30.63) | 141 (39.06) | 129 (29.32) |   |
| **Mother smoked during pregnancy** | n= 5751 | n= 1121 | n= 378 | n= 97 | <0,001 | n= 4004 | n= 2868 | n= 271 | n= 204 | <0,001 | n= 3161 | n= 3323 | n= 385 | n= 478 | <0,001 |
| No, n(%) | 4056 (70.53) | 682 (60.84) | 229 (60.58) | 55 (56.7) |   | 2893 (72.25) | 1845 (64.33) | 173 (63.84) | 111 (54.41) |   | 2283 (72.22) | 2210 (66.51) | 255 (66.23) | 274 (57.32) |   |
| Yes, n(%) | 1695 (29.47) | 439 (39.16) | 149 (39.42) | 42 (43.3) |   | 1111 (27.75) | 1023 (35.67) | 98 (36.16) | 93 (45.59) |   | 878 (27.78) | 1113 (33.49) | 130 (33.77) | 204 (42.68) |   |
| **Birthweight (kilograms)** | n= 5636 | n= 1107 | n= 375 | n= 95 |   | n= 3915 | n= 2828 | n= 265 | n= 205 |   | n= 3088 | n= 3271 | n= 376 | n= 478 |   |
| Mean (SD) | 3.3 (0.5) | 3.4 (0.6) | 3.3 (0.5) | 3.3 (0.5) | <0,001 | 3.3 (0.5) | 3.4 (0.5) | 3.3 (0.5) | 3.3 (0.5) | <0,001 | 3.3 (0.5) | 3.4 (0.5) | 3.3 (0.5) | 3.3 (0.5) | <0,001 |
| **Childhood pathologies** | n= 6067 | n= 1170 | n= 404 | n= 101 | 0,041 | n= 4218 | n= 3019 | n= 289 | n= 216 | 0,025 | n= 3332 | n= 3492 | n= 413 | n= 505 | 0,012 |
| No, n(%) | 4589 (75.64) | 877 (74.96) | 288 (71.29) | 67 (66.34) |   | 3207 (76.03) | 2259 (74.83) | 208 (71.97) | 147 (68.06) |   | 2554 (76.65) | 2611 (74.77) | 296 (71.67) | 360 (71.29) |   |
| Yes, n(%) | 1478 (24.36) | 293 (25.04) | 116 (28.71) | 34 (33.66) |   | 1011 (23.97) | 760 (25.17) | 81 (28.03) | 69 (31.94) |   | 778 (23.35) | 881 (25.23) | 117 (28.33) | 145 (28.71) |   |
| **Education level\*** | n= 6077 | n= 1174 | n= 405 | n= 101 | <0,001 | - | - |
| Passed a levels, n(%) | 1604 (26.39) | 163 (13.88) | 53 (13.09) | 4 (3.96) |   |
| Passed o levels, n(%) | 2654 (43.67) | 475 (40.46) | 131 (32.35) | 35 (34.65) |   |
| No qualifications, n(%) | 1819 (29.93) | 536 (45.66) | 221 (54.57) | 62 (61.39) |   |
| **Social class\*** | - | n= 3939 | n= 2879 | n= 268 | n= 188 | <0,001 | n= 2901 | n= 3158 | n= 297 | n= 361 | <0,001 |
| Professional-managerial, n(%) | 1555 (39.48) | 1030 (35.78) | 60 (22.39) | 47 (25) |   | 1347 (46.43) | 1380 (43.7) | 91 (30.64) | 120 (33.24) |   |
| Skilled nonmanual, n(%) | 1093 (27.75) | 602 (20.91) | 89 (33.21) | 39 (20.74) |   | 698 (24.06) | 596 (18.87) | 103 (34.68) | 85 (23.55) |   |
| Skilled manual, n(%) | 652 (16.55) | 711 (24.7) | 31 (11.57) | 42 (22.34) |   | 456 (15.72) | 704 (22.29) | 46 (15.49) | 84 (23.27) |   |
| Semi-unskilled, n(%) | 639 (16.22) | 536 (18.62) | 88 (32.84) | 60 (31.91) |   | 400 (13.79) | 478 (15.14) | 57 (19.19) | 72 (19.94) |   |
| **Wealth\*** | - | n= 4155 | n= 2974 | n= 281 | n= 213 | <0,001 | - |
| Owner (Medium / high price), n(%) | 1771 (42.62) | 1052 (35.37) | 88 (31.32) | 47 (22.07) |   |
| Owner (Low / medium-low price), n(%) | 1546 (37.21) | 1184 (39.81) | 96 (34.16) | 73 (34.27) |   |
| Non-owner, n(%) | 838 (20.17) | 738 (24.82) | 97 (34.52) | 93 (43.66) |   |
| **Marital status\*** | ` | n= 4192 | n= 3009 | n= 286 | n= 215 | <0,001 | n= 3337 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Couple, n(%) | 3400 (81.11) | 2513 (83.52) | 204 (71.33) | 171 (79.53) |   | 2387 (71.53) | 2668 (76.14) | 258 (62.32) | 343 (67.65) |   |
| Single, n(%) | 496 (11.83) | 332 (11.03) | 46 (16.08) | 22 (10.23) |   | 410 (12.29) | 353 (10.07) | 64 (15.46) | 54 (10.65) |   |
| Divorced or widowed, n(%) | 296 (7.06) | 164 (5.45) | 36 (12.59) | 22 (10.23) |   | 540 (16.18) | 483 (13.78) | 92 (22.22) | 110 (21.7) |   |
| **Household tenure\*** | - | - | n= 3329 | n= 3495 | n= 413 | n= 505 | <0,001 |
| Own, n(%) | 2908 (87.35) | 2944 (84.23) | 301 (72.88) | 355 (70.3) |   |
| Rent, n(%) | 329 (9.88) | 449 (12.85) | 98 (23.73) | 139 (27.52) |   |
| Others, n(%) | 92 (2.76) | 102 (2.92) | 14 (3.39) | 11 (2.18) |   |
| **Smoking status\*** | n= 6081 | n= 1175 | n= 405 | n= 101 | <0,001 | n= 4203 | n= 3014 | n= 286 | n= 214 | <0,001 | n= 3336 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Never smoker, n(%) | 1963 (32.28) | 361 (30.72) | 75 (18.52) | 27 (26.73) |   | 2221 (52.84) | 1505 (49.93) | 87 (30.42) | 80 (37.38) |   | 1636 (49.04) | 1635 (46.66) | 131 (31.64) | 201 (39.64) |   |
| Former smoker, n(%) | 1906 (31.34) | 336 (28.6) | 83 (20.49) | 25 (24.75) |   | 763 (18.15) | 612 (20.31) | 43 (15.03) | 35 (16.36) |   | 760 (22.78) | 1013 (28.91) | 93 (22.46) | 118 (23.27) |   |
| Current smoker, n(%) | 2212 (36.38) | 478 (40.68) | 247 (60.99) | 49 (48.51) |   | 1219 (29) | 897 (29.76) | 156 (54.55) | 99 (46.26) |   | 940 (28.18) | 856 (24.43) | 190 (45.89) | 188 (37.08) |   |
| **Alcohol consumption\*** | n= 6078 | n= 1175 | n= 404 | n= 101 | <0,001 | n= 4071 | n= 2907 | n= 271 | n= 199 | <0,001 | n= 3337 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Moderate, n(%) | 3185 (52.4) | 544 (46.3) | 185 (45.79) | 40 (39.6) |   | 2854 (70.11) | 1873 (64.43) | 162 (59.78) | 104 (52.26) |   | 1927 (57.75) | 1702 (48.57) | 194 (46.86) | 203 (40.04) |   |
| Abstainer, n(%) | 1394 (22.94) | 295 (25.11) | 138 (34.16) | 42 (41.58) |   | 933 (22.92) | 748 (25.73) | 83 (30.63) | 78 (39.2) |   | 644 (19.3) | 803 (22.92) | 131 (31.64) | 164 (32.35) |   |
| Heavy Drinker, n(%) | 1499 (24.66) | 336 (28.6) | 81 (20.05) | 19 (18.81) |   | 284 (6.98) | s286 (9.84) | 26 (9.59) | 17 (8.54) |   | 766 (22.95) | 999 (28.51) | 89 (21.5) | 140 (27.61) |   |
| **Physical activity\*** | n= 6076 | n= 1174 | n= 405 | n= 101 | <0,001 | n= 3422 | n= 2359 | n= 207 | n= 152 | 0,249 | n= 3336 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Physically active, n(%) | 2022 (33.28) | 378 (32.2) | 73 (18.02) | 12 (11.88) |   | 3043 (88.92) | 2062 (87.41) | 189 (91.3) | 130 (85.53) |   | 2369 (71.01) | 2265 (64.64) | 218 (52.66) | 284 (56.02) |   |
| Moderately active, n(%) | 1073 (17.66) | 182 (15.5) | 55 (13.58) | 13 (12.87) |   | 262 (7.66) | 208 (8.82) | 11 (5.31) | 13 (8.55) |   | 266 (7.97) | 336 (9.59) | 50 (12.08) | 31 (6.11) |   |
| Inactive, n(%) | 2981 (49.06) | 614 (52.3) | 277 (68.4) | 76 (75.25) |   | 117 (3.42) | 89 (3.77) | 7 (3.38) | 9 (5.92) |   | 701 (21.01) | 903 (25.77) | 146 (35.27) | 192 (37.87) |   |
| **Fruits and vegs diet\*** | - | n= 4226 | n= 3030 | n= 290 | n= 216 | <0,001 | n= 3337 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Frequent, n(%) | 1615 (38.22) | 1062 (35.05) | 103 (35.52) | 63 (29.17) |   | 1689 (50.61) | 1543 (44.04) | 153 (36.96) | 191 (37.67) |   |
| Occasionally, n(%) | 1470 (34.78) | 1052 (34.72) | 85 (29.31) | 77 (35.65) |   | 894 (26.79) | 1059 (30.22) | 112 (27.05) | 137 (27.02) |   |
| Hardly never, n(%) | 1141 (27) | 916 (30.23) | 102 (35.17) | 76 (35.19) |   | 754 (22.6) | 902 (25.74) | 149 (35.99) | 179 (35.31) |   |
| **Junk food diet\*** | - | n= 4226 | n= 3030 | n= 289 | n= 216 | 0,031 | n= 3337 | n= 3504 | n= 414 | n= 507 | 0,421 |
| Hardly never, n(%) | 1037 (24.54) | 788 (26.01) | 84 (29.07) | 68 (31.48) |   | 1201 (35.99) | 1292 (36.87) | 151 (36.47) | 192 (37.87) |   |
| Occasionally, n(%) | 1047 (24.78) | 716 (23.63) | 69 (23.88) | 35 (16.2) |   | 827 (24.78) | 819 (23.37) | 88 (21.26) | 107 (21.1) |   |
| Frequent, n(%) | 2142 (50.69) | 1526 (50.36) | 136 (47.06) | 113 (52.31) |   | 1309 (39.23) | 1393 (39.75) | 175 (42.27) | 208 (41.03) |   |
| **Problem with alcohol (ever)\*** | - | - | n= 3337 | n= 3504 | n= 414 | n= 507 | <0,001 |
| No, n(%) | 3312 (99.25) | 3486 (99.49) | 395 (95.41) | 483 (95.27) |   |
| Yes, n(%) | 25 (0.75) | 18 (0.51) | 19 (4.59) | 24 (4.73) |   |
| **Ever tried illegal drugs\*** | - | - | n= 3337 | n= 3504 | n= 414 | n= 507 | <0,001 |
| Never, n(%) | 2249 (67.4) | 2415 (68.92) | 240 (57.97) | 316 (62.33) |   |
| Yes, one, n(%) | 657 (19.69) | 693 (19.78) | 102 (24.64) | 105 (20.71) |   |
| Yes, two or more, n(%) | 431 (12.92) | 396 (11.3) | 72 (17.39) | 86 (16.96) |   |
| \*measured at the time of the outcome of interest |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Online supplementary Table 4**: Average p.value of likelihood ratio test in the 15 imputed datasets comparing fully adjusted models including and not including ACEs\*sex interaction term for risk of overweight-depression comorbidity and each separate condition at all ages.

|  |  |  |  |
| --- | --- | --- | --- |
|  Comorbidity and each separate condition | **at 23y** | **at 33y**  | **at 42y** |
| **p-values** | 0.327 | 0.271 | 0.089\* |
| \* pvalue <0.10 |   |   |   |

**Online supplementary Table 5**: Multiple regression analyses for ACEs and (A) overweight and (B) depression at 23, 33 and 42 years old after accounting for baseline confounders and early life SEP from imputed data on the NCDS58 (N = 7762).

|  |  |
| --- | --- |
|  | **A. OVERWEIGHT (N=7762)** |
|   | **at 23y** | **at 33y** | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - crude | 1.07 (0.92; 1.25) | 1.46 (1.14; 1.85) | 1.08 (0.96; 1.21) | 1.36 (1.12; 1.66) | 0.99 (0.88; 1.11) | 1.33 (1.09; 1.62) |
| Model 1 (sex) | 1.06 (0.91; 1.24) | 1.43 (1.13; 1.83) | 1.06 (0.95; 1.20) | 1.33 (1.09; 1.63) | 0.98 (0.87; 1.10) | 1.30 (1.06; 1.59) |
| Model 1 + birthweight | 1.07 (0.91; 1.25) | 1.45 (1.14; 1.85) | 1.07 (0.95; 1.20) | 1.35 (1.11; 1.65) | 0.98 (0.87; 1.10) | 1.31 (1.06; 1.60) |
| Model 1 + Mother's age at birth | 1.05 (0.90; 1.23) | 1.41 (1.11; 1.80) | 1.06 (0.94; 1.19) | 1.32 (1.08; 1.61) | 0.97 (0.86; 1.09) | 1.28 (1.04; 1.57) |
| Model 1 + Breastfeed | 1.04 (0.89; 1.22) | 1.40 (1.10; 1.78) | 1.06 (0.94; 1.19) | 1.32 (1.08; 1.61) | 0.97 (0.86; 1.09) | 1.28 (1.04; 1.57) |
| Model 1 + Mother's education | 1.03 (0.88; 1.20) | 1.34 (1.05; 1.71) | 1.04 (0.93; 1.18) | 1.28 (1.05; 1.57) | 0.95 (0.84; 1.07) | 1.23 (1.00; 1.51) |
| Model 1 + Parent's social class | 0.99 (0.85; 1.16) | 1.25 (0.98; 1.60) | 1.02 (0.91; 1.15) | 1.23 (1.01; 1.51) | 0.93 (0.82; 1.04) | 1.16 (0.95; 1.43) |
| Model 1 + Childhood pathologies | 1.06 (0.91; 1.24) | 1.43 (1.12; 1.82) | 1.06 (0.95; 1.20) | 1.33 (1.09; 1.63) | 0.97 (0.87; 1.09) | 1.29 (1.05; 1.58) |
| Model 1 + Mother smokes during pregnancy | 1.04 (0.89; 1.21) | 1.33 (1.04; 1.70) | 1.04 (0.93; 1.17) | 1.25 (1.02; 1.53) | 0.96 (0.85; 1.08) | 1.23 (1.00; 1.51) |
| Model 2 (sex + all baseline characteristics) | 0.96 (0.82; 1.12) | 1.16 (0.91; 1.49) | 1.00 (0.89; 1.13) | 1.17 (0.95; 1.43) | 0.91 (0.81; 1.02) | 1.10 (0.90; 1.36) |
|  | **B. DEPRESSION (N=7762)** |
|  | **at 23y** | **at 33y** | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - crude | 1.72 (1.39; 2.12) | 2.58 (1.90; 3.50) | 2.15 (1.74; 2.66) | 2.21 (1.57; 3.12) | 1.52 (1.29; 1.79) | 1.74 (1.34; 2.27) |
| Model 1 (sex) | 1.77 (1.43; 2.19) | 2.76 (2.03; 3.77) | 2.20 (1.77; 2.73) | 2.31 (1.63; 3.27) | 1.54 (1.30; 1.82) | 1.79 (1.37; 2.33) |
| Model 1 + birthweight | 1.77 (1.43; 2.19) | 2.76 (2.02; 3.76) | 2.19 (1.77; 2.72) | 2.29 (1.62; 3.24) | 1.54 (1.30; 1.81) | 1.78 (1.36; 2.32) |
| Model 1 + Mother's age at birth | 1.75 (1.42; 2.17) | 2.72 (1.99; 3.71) | 2.19 (1.76; 2.71) | 2.29 (1.62; 3.24) | 1.52 (1.28; 1.79) | 1.76 (1.35; 2.30) |
| Model 1 + Breastfeed | 1.72 (1.38; 2.13) | 2.66 (1.94; 3.62) | 2.15 (1.73; 2.67) | 2.25 (1.59; 3.18) | 1.52 (1.28; 1.79) | 1.76 (1.35; 2.30) |
| Model 1 + Mother's education | 1.73 (1.40; 2.14) | 2.64 (1.93; 3.60) | 2.15 (1.73; 2.66) | 2.19 (1.55; 3.10) | 1.51 (1.28; 1.79) | 1.73 (1.32; 2.26) |
| Model 1 + Parent's social class | 1.68 (1.35; 2.08) | 2.43 (1.77; 3.32) | 2.08 (1.68; 2.59) | 2.02 (1.42; 2.87) | 1.47 (1.25; 1.74) | 1.62 (1.24; 2.12) |
| Model 1 + Childhood pathologies | 1.74 (1.40; 2.16) | 2.67 (1.96; 3.65) | 2.14 (1.73; 2.66) | 2.18 (1.54; 3.09) | 1.52 (1.29; 1.80) | 1.74 (1.33; 2.28) |
| Model 1 + Mother smokes during pregnancy | 1.74 (1.40; 2.15) | 2.60 (1.91; 3.56) | 2.15 (1.73; 2.67) | 2.14 (1.51; 3.04) | 1.51 (1.28; 1.79) | 1.69 (1.29; 2.21) |
| Model 2 (sex + all baseline characteristics) | 1.58 (1.27; 1.97) | 2.18 (1.59; 3.00) | 1.96 (1.57; 2.43) | 1.77 (1.24; 2.53) | 1.41 (1.19; 1.66) | 1.48 (1.13; 1.95) |

Same tendencies were observed than those in the main analyses, with a higher risk of being overweight for those with 2 or more ACEs at each time point but associations were no longer significant after controlling for baseline characteristics. Participants who experienced ACEs were also more likely to be depressed even when baseline confounders were considered.

**Online supplementary figure 1**: Multiple regression analyses for a combined variable of ACEs and sex in association with overweight (blue square) and depression (yellow circle) at 23, 33 and 42 years after accounting for all baseline confounders and early life SEP and intermediate variables (fully adjusted models) measured at the same time as the studied outcome from imputed data on the NCDS58 (N = 7762).



In relation to overweight at 23, men having experienced ACEs did not show a statistically different risk of being overweight compared to men with no record of ACEs. However, women having experienced no ACE or only 1 ACE had a statistically significant lower associated risk. Interestingly, women having experienced 2 or more ACEs did not have a reduced overweight risk, such as their counterparts, compared to men who had not experienced any ACEs.

In relation to depression at 33 and 42 years, compared to men who had not experienced ACEs, those who were exposed to ACEs exhibited an increased risk of depression as well as women who experienced no ACE or only 1 ACE. Interestingly, this associated risk for women who experienced 2 or more ACEs was lower than the risk observed for women having experienced no ACE or only 1.

**Online supplementary Table 6** : Multiple regression analyses for ACEs and (A) overweight and (B) depression at 23, 33 and 42 years old after accounting for baseline confounders and early life SEP from complete cases data on the NCDS58 (N = 3901).

|  |  |
| --- | --- |
|   | **A. OVERWEIGHT (N=3901)** |
|   | **at 23y** | **at 33y**  | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.03 (0.82; 1.29) | 1.51 (1.03; 2.17) | 0.92 (0.78; 1.09) | 1.64 (1.21; 2.23) | 0.86 (0.73; 1.02) | 1.39 (1.02; 1.90) |
| Model 1 (Sex) | 1.04 (0.82; 1.30) | 1.47 (1.00; 2.11) | 0.93 (0.78; 1.10) | 1.59 (1.17; 2.16) | 0.86 (0.73; 1.02) | 1.33 (0.97; 1.82) |
| Model 1 + Birthweight | 1.04 (0.83; 1.30) | 1.47 (1.00; 2.12) | 0.93 (0.79; 1.11) | 1.60 (1.17; 2.18) | 0.87 (0.73; 1.03) | 1.33 (0.98; 1.83) |
| Model 1 + Mother's age at birth | 1.03 (0.82; 1.29) | 1.46 (0.99; 2.10) | 0.92 (0.77; 1.09) | 1.57 (1.15; 2.14) | 0.85 (0.72; 1.01) | 1.31 (0.95; 1.79) |
| Model 1 + Breastfeed | 1.02 (0.81; 1.28) | 1.44 (0.98; 2.07) | 0.92 (0.78; 1.09) | 1.57 (1.15; 2.14) | 0.86 (0.72; 1.01) | 1.31 (0.96; 1.80) |
| Model 1 + Mother's education | 1.02 (0.81; 1.27) | 1.37 (0.93; 1.98) | 0.92 (0.77; 1.09) | 1.53 (1.12; 2.09) | 0.85 (0.72; 1.01) | 1.27 (0.92; 1.74) |
| Model 1 + Parent's social class | 0.97 (0.77; 1.21) | 1.28 (0.87; 1.85) | 0.90 (0.76; 1.07) | 1.49 (1.09; 2.04) | 0.82 (0.70; 0.98) | 1.20 (0.88; 1.66) |
| Model 1 + Childhood pathologies | 1.04 (0.83; 1.30) | 1.49 (1.01; 2.14) | 0.93 (0.78; 1.10) | 1.59 (1.17; 2.16) | 0.86 (0.73; 1.02) | 1.32 (0.97; 1.82) |
| Model 1 + Mother smokes during pregnancy | 1.02 (0.81; 1.28) | 1.36 (0.92; 1.96) | 0.92 (0.77; 1.09) | 1.50 (1.10; 2.05) | 0.86 (0.72; 1.01) | 1.28 (0.93; 1.76) |
| Model 2 (Sex + all baseline characteristics) | 0.96 (0.76; 1.21) | 1.21 (0.81; 1.75) | 0.89 (0.75; 1.06) | 1.41 (1.03; 1.93) | 0.81 (0.68; 0.96) | 1.14 (0.83; 1.57) |
|   | **B. DEPRESSION (N=3901)** |
|  | **at 23y**  | **at 33y** | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 2.07 (1.46; 2.90) | 3.54 (2.11; 5.69) | 2.11 (1.46; 3.01) | 1.60 (0.74; 3.06) | 1.62 (1.23; 2.12) | 1.44 (0.84; 2.33) |
| Model 1 (Sex) | 2.07 (1.46; 2.91) | 3.98 (2.35; 6.46) | 2.11 (1.45; 3.01) | 1.71 (0.79; 3.27) | 1.62 (1.23; 2.11) | 1.48 (0.86; 2.39) |
| Model 1 + Birthweight | 2.06 (1.45; 2.90) | 3.98 (2.35; 6.48) | 2.10 (1.45; 3.00) | 1.71 (0.79; 3.27) | 1.61 (1.22; 2.11) | 1.48 (0.86; 2.39) |
| Model 1 + Mother's age at birth | 2.05 (1.44; 2.88) | 3.88 (2.29; 6.31) | 2.08 (1.43; 2.97) | 1.68 (0.77; 3.22) | 1.60 (1.21; 2.09) | 1.45 (0.85; 2.35) |
| Model 1 + Breastfeed | 2.04 (1.43; 2.87) | 3.88 (2.28; 6.32) | 2.12 (1.46; 3.03) | 1.72 (0.79; 3.31) | 1.63 (1.23; 2.13) | 1.49 (0.87; 2.41) |
| Model 1 + Mother's education | 2.05 (1.44; 2.88) | 3.87 (2.28; 6.30) | 2.07 (1.43; 2.96) | 1.64 (0.76; 3.14) | 1.61 (1.22; 2.10) | 1.45 (0.84; 2.34) |
| Model 1 + Parent's social class | 2.04 (1.43; 2.87) | 3.85 (2.26; 6.30) | 2.07 (1.42; 2.96) | 1.64 (0.75; 3.16) | 1.57 (1.19; 2.05) | 1.39 (0.81; 2.26) |
| Model 1 + Childhood pathologies | 2.07 (1.46; 2.91) | 3.97 (2.34; 6.46) | 2.10 (1.45; 3.00) | 1.68 (0.77; 3.22) | 1.61 (1.22; 2.11) | 1.46 (0.85; 2.37) |
| Model 1 + Mother smokes during pregnancy | 2.05 (1.44; 2.88) | 3.77 (2.22; 6.15) | 2.08 (1.43; 2.97) | 1.60 (0.73; 3.07) | 1.60 (1.21; 2.09) | 1.40 (0.81; 2.26) |
| Model 2 (Sex + all baseline characteristics) | 1.97 (1.38; 2.78) | 3.57 (2.08; 5.89) | 2.03 (1.39; 2.91) | 1.51 (0.69; 2.94) | 1.55 (1.17; 2.03) | 1.31 (0.76; 2.13) |

In a sample of complete cases for all study variables, associations between ACEs and overweight and depression examined individually, showed similar results for overweight at all ages and depression at 23 years. Depression risk at 33 and 42 years tended also to be higher for those who experienced ACEs in complete cases but no gradient was observed regarding the number of ACEs.

**Online supplementary Table 7** : Multiple regression analyses for ACEs and obesity at 23, 33 and 42 years old after accounting for baseline confounders and early life SEP from imputed data on the NCDS58 (N = 7762).

|  |  |
| --- | --- |
|   | **OBESITY (N=7762)** |
|   | **at 23y**  | **at 33y** | **at 42y**  |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.09 (0.75; 1.58) | 1.46 (0.83; 2.56) | 0.86 (0.71; 1.05) | 1.31 (0.98; 1.76) | 0.96 (0.82; 1.13) | 1.25 (0.96; 1.61) |
| Model 1 (Sex) | 1.09 (0.75; 1.59) | 1.49 (0.85; 2.60) | 0.86 (0.71; 1.05) | 1.31 (0.98; 1.76) | 0.96 (0.82; 1.13) | 1.24 (0.96; 1.61) |
| Model 1 + Birthweight | 1.10 (0.76; 1.59) | 1.50 (0.86; 2.62) | 0.87 (0.71; 1.05) | 1.33 (0.99; 1.78) | 0.97 (0.82; 1.14) | 1.27 (0.98; 1.64) |
| Model 1 + Mother's age at birth | 1.07 (0.74; 1.55) | 1.44 (0.82; 2.52) | 0.85 (0.70; 1.04) | 1.30 (0.97; 1.74) | 0.95 (0.81; 1.12) | 1.22 (0.94; 1.58) |
| Model 1 + Breastfeed | 1.06 (0.73; 1.54) | 1.43 (0.82; 2.51) | 0.84 (0.69; 1.02) | 1.28 (0.95; 1.71) | 0.95 (0.80; 1.11) | 1.22 (0.94; 1.58) |
| Model 1 + Mother's education | 1.06 (0.73; 1.54) | 1.40 (0.80; 2.45) | 0.84 (0.69; 1.02) | 1.25 (0.93; 1.67) | 0.94 (0.80; 1.11) | 1.19 (0.92; 1.54) |
| Model 1 + Parent's social class | 1.01 (0.70; 1.47) | 1.27 (0.72; 2.23) | 0.81 (0.66; 0.99) | 1.16 (0.86; 1.56) | 0.92 (0.78; 1.08) | 1.13 (0.87; 1.46) |
| Model 1 + Childhood pathologies | 1.08 (0.74; 1.57) | 1.45 (0.82; 2.54) | 0.86 (0.70; 1.05) | 1.30 (0.97; 1.75) | 0.96 (0.82; 1.13) | 1.23 (0.95; 1.59) |
| Model 1 + Mother smokes during pregnancy | 1.06 (0.73; 1.53) | 1.33 (0.75; 2.33) | 0.84 (0.69; 1.03) | 1.22 (0.91; 1.64) | 0.95 (0.81; 1.12) | 1.18 (0.91; 1.53) |
| Model 2 (Sex + all baseline characteristics) | 0.94 (0.64; 1.37) | 1.10 (0.62; 1.95) | 0.77 (0.63; 0.95) | 1.07 (0.79; 1.45) | 0.88 (0.75; 1.04) | 1.07 (0.82; 1.39) |

Measures of association between ACEs and obesity were weakened compared to the associations between ACEs and overweight given the small number of obese participants by ACEs categories at each age. However, a similar pattern emerged where participants exposed to 2 or more ACEs were more at risk to be obese at all ages and were mostly explained by parent’s social class.

**Online supplementary Table 8** : Multiple regression analyses for ACEs and overweight-depression comorbidity and each separate condition based on obesity instead of overweight at 23, 33 and 42 years old after accounting for baseline confounders, early life SEP and intermediate variables from imputed data on the NCDS58 (N = 7762).

|  |  |
| --- | --- |
|   | **OBESE ONLY (N= 7762)**  |
|   | **at 23y**  | **at 33y**  | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.10 (0.73; 1.63) | 1.53 (0.84; 2.80) | 0.87 (0.70; 1.07) | 1.38 (1.02; 1.87) | 0.95 (0.79; 1.13) | 1.32 (1.00; 1.75) |
| Model 1 (Sex) | 1.11 (0.74; 1.65) | 1.57 (0.86; 2.87) | 0.87 (0.70; 1.07) | 1.38 (1.02; 1.87) | 0.94 (0.79; 1.13) | 1.32 (0.99; 1.75) |
| Model 1 + Birthweight | 1.11 (0.74; 1.66) | 1.58 (0.86; 2.89) | 0.87 (0.71; 1.07) | 1.40 (1.03; 1.90) | 0.95 (0.79; 1.14) | 1.35 (1.02; 1.79) |
| Model 1 + Mother's age at birth | 1.08 (0.72; 1.61) | 1.52 (0.83; 2.78) | 0.86 (0.70; 1.06) | 1.37 (1.01; 1.86) | 0.93 (0.78; 1.12) | 1.30 (0.98; 1.72) |
| Model 1 + Breastfeed | 1.08 (0.72; 1.62) | 1.53 (0.83; 2.79) | 0.84 (0.69; 1.04) | 1.35 (0.99; 1.83) | 0.92 (0.77; 1.11) | 1.29 (0.97; 1.71) |
| Model 1 + Mother's education | 1.08 (0.72; 1.61) | 1.48 (0.81; 2.71) | 0.85 (0.69; 1.04) | 1.31 (0.97; 1.78) | 0.93 (0.78; 1.11) | 1.28 (0.96; 1.69) |
| Model 1 + Parent's social class | 1.02 (0.68; 1.52) | 1.32 (0.72; 2.42) | 0.82 (0.66; 1.01) | 1.22 (0.90; 1.66) | 0.90 (0.75; 1.08) | 1.20 (0.90; 1.59) |
| Model 1 + Childhood pathologies | 1.10 (0.73; 1.64) | 1.54 (0.84; 2.82) | 0.87 (0.70; 1.07) | 1.38 (1.02; 1.87) | 0.94 (0.78; 1.12) | 1.30 (0.98; 1.73) |
| Model 1 + Mother smokes during pregnancy | 1.07 (0.72; 1.60) | 1.42 (0.77; 2.61) | 0.85 (0.69; 1.04) | 1.28 (0.95; 1.75) | 0.93 (0.78; 1.11) | 1.26 (0.95; 1.67) |
| Model 2 (Sex + all baseline characteristics) | 0.96 (0.64; 1.43) | 1.18 (0.64; 2.18) | 0.78 (0.63; 0.97) | 1.14 (0.83; 1.55) | 0.87 (0.72; 1.04) | 1.14 (0.86; 1.52) |
| Model 2 + Education | 0.87 (0.58; 1.31) | 1.03 (0.55; 1.90) | - | - | - | - |
| Model 2 + Social class | - | - | 0.76 (0.61; 0.94) | 1.08 (0.79; 1.48) | 0.86 (0.71; 1.03) | 1.12 (0.84; 1.49) |
| Model 2 + Wealth | - | - | 0.75 (0.61; 0.93) | 1.02 (0.74; 1.40) | - | - |
| Model 2 + Marital status | - | - | 0.79 (0.64; 0.97) | 1.14 (0.84; 1.56) | 0.87 (0.72; 1.04) | 1.16 (0.87; 1.55) |
| Model 2 + Household tenure | - | - | - | - | 0.85 (0.71; 1.02) | 1.08 (0.81; 1.45) |
| Model 2 + Social characteristics | 0.87 (0.58; 1.31) | 1.03 (0.55; 1.90) | 0.74 (0.60; 0.92) | 1.01 (0.74; 1.39) | 0.84 (0.70; 1.01) | 1.08 (0.80; 1.44) |
| Model 2 + Smoking | 0.95 (0.63; 1.43) | 1.17 (0.63; 2.16) | 0.79 (0.64; 0.97) | 1.14 (0.84; 1.56) | 0.88 (0.73; 1.06) | 1.16 (0.87; 1.55) |
| Model 2 + Alcohol | 0.96 (0.64; 1.43) | 1.13 (0.61; 2.10) | 0.78 (0.63; 0.96) | 1.09 (0.80; 1.50) | 0.86 (0.71; 1.03) | 1.09 (0.81; 1.45) |
| Model 2 + Physical activity | 0.94 (0.63; 1.41) | 1.16 (0.63; 2.14) | 0.78 (0.63; 0.96) | 1.14 (0.83; 1.55) | 0.86 (0.71; 1.03) | 1.12 (0.84; 1.49) |
| Model 2 + Fruit and vegetables | - | - | 0.78 (0.63; 0.97) | 1.14 (0.83; 1.55) | 0.85 (0.71; 1.02) | 1.12 (0.84; 1.50) |
| Model 2 + Junkfood | - | - | 0.78 (0.63; 0.96) | 1.12 (0.82; 1.53) | 0.87 (0.72; 1.04) | 1.13 (0.85; 1.51) |
| Model 2 + Health behaviours | 0.94 (0.63; 1.42) | 1.11 (0.60; 2.06) | 0.78 (0.63; 0.96) | 1.09 (0.80; 1.49) | 0.85 (0.70; 1.02) | 1.06 (0.80; 1.43) |
| Model 3 (Fully adjusted) | 0.89 (0.59; 1.33) | 1.02 (0.55; 1.89) | 0.75 (0.61; 0.93) | 1.01 (0.73; 1.38) | 0.83 (0.69; 1.00) | 1.03 (0.77; 1.38) |
|   | **DEPRESSED ONLY (N= 7762)** |
|   | **at 23y**  | **at 33y**  | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.74 (1.40; 2.16) | 2.64 (1.94; 3.60) | 2.21 (1.76; 2.78) | 2.41 (1.67; 3.47) | 1.53 (1.28; 1.84) | 1.90 (1.42; 2.54) |
| Model 1 (Sex) | 1.79 (1.44; 2.23) | 2.83 (2.06; 3.88) | 2.26 (1.80; 2.85) | 2.52 (1.74; 3.63) | 1.55 (1.29; 1.86) | 1.94 (1.45; 2.61) |
| Model 1 + Birthweight | 1.79 (1.44; 2.22) | 2.82 (2.06; 3.87) | 2.26 (1.80; 2.84) | 2.50 (1.73; 3.61) | 1.55 (1.29; 1.86) | 1.94 (1.45; 2.61) |
| Model 1 + Mother's age at birth | 1.77 (1.42; 2.21) | 2.78 (2.03; 3.82) | 2.25 (1.79; 2.83) | 2.50 (1.73; 3.62) | 1.53 (1.27; 1.84) | 1.91 (1.42; 2.56) |
| Model 1 + Breastfeed | 1.74 (1.40; 2.17) | 2.73 (1.99; 3.75) | 2.21 (1.76; 2.79) | 2.46 (1.70; 3.55) | 1.52 (1.26; 1.83) | 1.90 (1.42; 2.56) |
| Model 1 + Mother's education | 1.75 (1.41; 2.18) | 2.70 (1.97; 3.71) | 2.21 (1.76; 2.78) | 2.39 (1.65; 3.45) | 1.53 (1.27; 1.84) | 1.90 (1.41; 2.55) |
| Model 1 + Parent's social class | 1.69 (1.36; 2.11) | 2.47 (1.79; 3.41) | 2.14 (1.70; 2.69) | 2.20 (1.51; 3.18) | 1.48 (1.23; 1.78) | 1.77 (1.31; 2.38) |
| Model 1 + Childhood pathologies | 1.76 (1.42; 2.19) | 2.75 (2.00; 3.77) | 2.21 (1.76; 2.78) | 2.39 (1.66; 3.46) | 1.53 (1.27; 1.84) | 1.90 (1.41; 2.55) |
| Model 1 + Mother smokes during pregnancy | 1.76 (1.41; 2.19) | 2.68 (1.95; 3.68) | 2.21 (1.76; 2.78) | 2.34 (1.61; 3.38) | 1.53 (1.27; 1.83) | 1.85 (1.37; 2.48) |
| Model 2 (Sex + all baseline characteristics) | 1.60 (1.29; 2.00) | 2.24 (1.62; 3.10) | 2.01 (1.59; 2.54) | 1.94 (1.33; 2.83) | 1.42 (1.18; 1.71) | 1.63 (1.21; 2.20) |
| Model 2 + Education | 1.45 (1.16; 1.82) | 1.88 (1.35; 2.61) | - | - | - | - |
| Model 2 + Social class | - | - | 1.92 (1.52; 2.43) | 1.78 (1.22; 2.59) | 1.40 (1.16; 1.68) | 1.58 (1.16; 2.14) |
| Model 2 + Wealth | - | - | 1.90 (1.51; 2.41) | 1.67 (1.14; 2.44) | - | - |
| Model 2 + Marital status | - | - | 1.99 (1.58; 2.52) | 1.84 (1.26; 2.68) | 1.41 (1.17; 1.70) | 1.57 (1.16; 2.12) |
| Model 2 + Household tenure | - | - | - | - | 1.36 (1.13; 1.64) | 1.43 (1.06; 1.95) |
| Model 2 + Social characteristics | 1.45 (1.16; 1.82) | 1.88 (1.35; 2.61) | 1.85 (1.46; 2.34) | 1.53 (1.04; 2.25) | 1.35 (1.11; 1.63) | 1.39 (1.02; 1.90) |
| Model 2 + Smoking | 1.47 (1.18; 1.84) | 1.97 (1.42; 2.74) | 1.82 (1.44; 2.30) | 1.70 (1.16; 2.49) | 1.31 (1.08; 1.58) | 1.45 (1.07; 1.97) |
| Model 2 + Alcohol | 1.60 (1.28; 2.00) | 2.21 (1.60; 3.06) | 1.99 (1.58; 2.52) | 1.89 (1.30; 2.76) | 1.39 (1.16; 1.68) | 1.57 (1.16; 2.12) |
| Model 2 + Physical activity | 1.57 (1.26; 1.96) | 2.20 (1.59; 3.04) | 2.01 (1.59; 2.53) | 1.94 (1.33; 2.83) | 1.39 (1.15; 1.68) | 1.57 (1.16; 2.13) |
| Model 2 + Fruit and vegetables | - | - | 1.97 (1.56; 2.49) | 1.89 (1.30; 2.76) | 1.35 (1.12; 1.63) | 1.55 (1.15; 2.10) |
| Model 2 + Junkfood | - | - | 2.01 (1.59; 2.53) | 1.92 (1.32; 2.80) | 1.42 (1.17; 1.71) | 1.63 (1.21; 2.21) |
| Model 2 + Health behaviours | 1.45 (1.16; 1.81) | 1.92 (1.38; 2.66) | 1.78 (1.41; 2.26) | 1.64 (1.12; 2.40) | 1.25 (1.03; 1.51) | 1.36 (1.00; 1.85) |
| Model 3 (Fully adjusted) | 1.36 (1.09; 1.71) | 1.72 (1.23; 2.40) | 1.70 (1.34; 2.17) | 1.40 (0.95; 2.06) | 1.24 (1.02; 1.50) | 1.27 (0.93; 1.73) |
|   | **OVERWEIGHT AND DEPRESSION COMORBIDITY (N= 7762)**  |
|   | **at 23y** | **at 33y** | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.40 (0.51; 3.86) | 2.02 (0.46; 8.90) | 1.55 (0.84; 2.86) | 1.60 (0.57; 4.50) | 1.42 (1.00; 2.01) | 1.55 (0.87; 2.78) |
| Model 1 (Sex) | 1.45 (0.52; 3.99) | 2.18 (0.50; 9.60) | 1.58 (0.85; 2.93) | 1.67 (0.59; 4.72) | 1.44 (1.02; 2.04) | 1.60 (0.89; 2.86) |
| Model 1 + Birthweight | 1.45 (0.53; 4.00) | 2.21 (0.50; 9.71) | 1.58 (0.85; 2.93) | 1.67 (0.59; 4.71) | 1.44 (1.01; 2.04) | 1.59 (0.89; 2.85) |
| Model 1 + Mother's age at birth | 1.42 (0.52; 3.93) | 2.12 (0.48; 9.35) | 1.56 (0.84; 2.89) | 1.62 (0.57; 4.57) | 1.41 (0.99; 1.99) | 1.54 (0.86; 2.75) |
| Model 1 + Breastfeed | 1.30 (0.47; 3.61) | 1.93 (0.44; 8.54) | 1.52 (0.82; 2.83) | 1.57 (0.55; 4.44) | 1.42 (1.00; 2.01) | 1.56 (0.87; 2.81) |
| Model 1 + Mother's education | 1.38 (0.50; 3.81) | 1.98 (0.45; 8.72) | 1.52 (0.82; 2.81) | 1.53 (0.54; 4.32) | 1.37 (0.96; 1.94) | 1.43 (0.80; 2.58) |
| Model 1 + Parent's social class | 1.39 (0.50; 3.86) | 1.99 (0.45; 8.87) | 1.44 (0.77; 2.67) | 1.35 (0.48; 3.84) | 1.33 (0.93; 1.88) | 1.34 (0.75; 2.42) |
| Model 1 + Childhood pathologies | 1.38 (0.50; 3.80) | 1.97 (0.44; 8.70) | 1.50 (0.81; 2.78) | 1.49 (0.53; 4.23) | 1.41 (1.00; 2.01) | 1.54 (0.86; 2.76) |
| Model 1 + Mother smokes during pregnancy | 1.35 (0.49; 3.73) | 1.76 (0.40; 7.80) | 1.52 (0.82; 2.82) | 1.47 (0.52; 4.18) | 1.39 (0.98; 1.97) | 1.43 (0.79; 2.57) |
| Model 2 (Sex + all baseline characteristics) | 1.13 (0.40; 3.17) | 1.43 (0.32; 6.50) | 1.28 (0.69; 2.40) | 1.05 (0.36; 3.01) | 1.24 (0.87; 1.76) | 1.15 (0.63; 2.08) |
| Model 2 + Education | 0.98 (0.35; 2.76) | 1.07 (0.23; 4.87) | - | - | - | - |
| Model 2 + Social class | - | - | 1.20 (0.64; 2.25) | 0.93 (0.32; 2.68) | 1.20 (0.84; 1.71) | 1.08 (0.59; 1.97) |
| Model 2 + Wealth | - | - | 1.20 (0.64; 2.25) | 0.88 (0.30; 2.54) | - | - |
| Model 2 + Marital status | - | - | 1.28 (0.68; 2.40) | 1.03 (0.36; 2.95) | 1.24 (0.87; 1.76) | 1.15 (0.63; 2.09) |
| Model 2 + Household tenure | - | - | - | - | 1.16 (0.81; 1.66) | 0.95 (0.52; 1.74) |
| Model 2 + Social characteristics | 0.98 (0.35; 2.76) | 1.07 (0.23; 4.87) | 1.14 (0.60; 2.14) | 0.81 (0.28; 2.34) | 1.13 (0.79; 1.62) | 0.93 (0.51; 1.71) |
| Model 2 + Smoking | 1.06 (0.38; 2.98) | 1.30 (0.29; 5.94) | 1.24 (0.66; 2.33) | 1.03 (0.36; 2.97) | 1.23 (0.86; 1.75) | 1.13 (0.62; 2.06) |
| Model 2 + Alcohol | 1.10 (0.39; 3.08) | 1.34 (0.29; 6.11) | 1.28 (0.68; 2.40) | 0.96 (0.33; 2.77) | 1.21 (0.85; 1.72) | 1.05 (0.58; 1.91) |
| Model 2 + Physical activity | 1.07 (0.38; 3.00) | 1.38 (0.30; 6.26) | 1.26 (0.67; 2.36) | 1.03 (0.36; 2.98) | 1.21 (0.85; 1.72) | 1.07 (0.59; 1.95) |
| Model 2 + Fruit and vegetables | - | - | 1.25 (0.67; 2.34) | 1.01 (0.35; 2.91) | 1.18 (0.83; 1.69) | 1.09 (0.60; 1.98) |
| Model 2 + Junkfood | - | - | 1.27 (0.68; 2.37) | 1.01 (0.35; 2.91) | 1.23 (0.87; 1.76) | 1.14 (0.63; 2.07) |
| Model 2 + Health behaviours | 0.99 (0.35; 2.82) | 1.20 (0.26; 5.50) | 1.20 (0.63; 2.27) | 0.87 (0.30; 2.54) | 1.16 (0.81; 1.66) | 0.98 (0.53; 1.79) |
| Model 3 (Fully adjusted) | 0.92 (0.32; 2.63) | 1.00 (0.22; 4.58) | 1.11 (0.58; 2.13) | 0.74 (0.25; 2.18) | 1.11 (0.77; 1.60) | 0.86 (0.47; 1.60) |

Analyses of association between ACEs and overweight and depression comorbidity using an obesity variable remained positive though weaker compared to analyses between ACEs and the comorbidity’s status used for main analyses. Given the small number of participants suffering from depression and obesity, the association was not significant.

**Online supplementary Table 9** : Multiple regression analyses for ACEs and overweight-depression comorbidity and each separate condition at 33 and 42 years old after accounting for baseline confounders and early life SEP and intermediate variables measured at the previous waves of the studied outcome from imputed data on the NCDS58 (N = 7762).

|  |  |
| --- | --- |
|   | **OVERWEIGHT ONLY (N= 7762)** |
|   | **at 33y**  | **at 42y**  |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.08 (0.96; 1.22) | 1.38 (1.12; 1.70) | 0.98 (0.87; 1.11) | 1.31 (1.05; 1.63) |
| Model 1 (Sex) | 1.06 (0.94; 1.20) | 1.33 (1.07; 1.64) | 0.96 (0.85; 1.09) | 1.27 (1.02; 1.58) |
| Model 1 + Birthweight | 1.07 (0.94; 1.20) | 1.35 (1.09; 1.67) | 0.96 (0.85; 1.09) | 1.28 (1.02; 1.60) |
| Model 1 + Mother's age at birth | 1.05 (0.93; 1.19) | 1.31 (1.06; 1.63) | 0.96 (0.84; 1.08) | 1.25 (1.00; 1.56) |
| Model 1 + Breastfeed | 1.05 (0.93; 1.19) | 1.31 (1.06; 1.63) | 0.95 (0.84; 1.08) | 1.25 (1.00; 1.56) |
| Model 1 + Mother's education | 1.04 (0.92; 1.18) | 1.28 (1.03; 1.58) | 0.94 (0.83; 1.06) | 1.20 (0.96; 1.50) |
| Model 1 + Parent's social class | 1.02 (0.90; 1.16) | 1.23 (0.99; 1.53) | 0.91 (0.80; 1.04) | 1.13 (0.91; 1.42) |
| Model 1 + Childhood pathologies | 1.06 (0.94; 1.20) | 1.33 (1.07; 1.64) | 0.96 (0.85; 1.09) | 1.26 (1.01; 1.58) |
| Model 1 + Mother smokes during pregnancy | 1.04 (0.92; 1.18) | 1.25 (1.01; 1.55) | 0.95 (0.84; 1.08) | 1.21 (0.97; 1.51) |
| Model 2 (Sex + all baseline characteristics) | 1.00 (0.88; 1.13) | 1.16 (0.94; 1.45) | 0.89 (0.78; 1.01) | 1.07 (0.86; 1.35) |
| Model 2 + Social characteristics at 23y | 0.96 (0.85; 1.09) | 1.09 (0.88; 1.36) | 0.86 (0.75; 0.97) | 1.00 (0.79; 1.26) |
| Model 2 + social characteristics at 33y | 0.97 (0.85; 1.10) | 1.1 (0.88; 1.37) | 0.87 (0.76; 0.99) | 1.01 (0.81; 1.27) |
| Model 2 + Social characteristics at 42y | - | - | 0.88 (0.77; 1.00) | 1.05 (0.83; 1.31) |
| Model 2 + Health behaviors at 23y | 0.99 (0.87; 1.12) | 1.14 (0.91; 1.42) | 0.89 (0.78; 1.01) | 1.06 (0.84; 1.33) |
| Model 2 + Health behaviors at 33y | 0.99 (0.88; 1.13) | 1.13 (0.90; 1.40) | 0.89 (0.78; 1.01) | 1.05 (0.84; 1.33) |
| Model 2 + Health behaviors at 42 y | - | - | 0.89 (0.78; 1.02) | 1.06 (0.84; 1.34) |
| Model 2 + Full adjustment at 23y | 0.96 (0.85; 1.09) | 1.09 (0.87; 1.35) | 0.86 (0.76; 0.98) | 1.00 (0.80; 1.26) |
| Model 2 + Full adjustment at 33 y | 0.97 (0.85; 1.10) | 1.08 (0.86; 1.35) | 0.87 (0.76; 0.99) | 1.01 (0.80; 1.27) |
| Model 2 + Full adjustment at 42 y | - | - | 0.88 (0.78; 1.01) | 1.04 (0.82; 1.31) |
|   | **DEPRESSED ONLY (N= 7762)** |
|   | **at 33y**  | **at 42y** |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.75 (1.32; 2.31) | 2.70 (1.78; 4.11) | 1.52 (1.19; 1.94) | 1.71 (1.12; 2.60) |
| Model 1 (Sex) | 1.79 (1.35; 2.37) | 2.85 (1.87; 4.34) | 1.54 (1.20; 1.96) | 1.74 (1.14; 2.65) |
| Model 1 + Birthweight | 1.79 (1.35; 2.37) | 2.84 (1.86; 4.33) | 1.54 (1.21; 1.96) | 1.74 (1.14; 2.66) |
| Model 1 + Mother's age at birth | 1.77 (1.34; 2.35) | 2.77 (1.82; 4.23) | 1.51 (1.19; 1.93) | 1.71 (1.12; 2.60) |
| Model 1 + Breastfeed | 1.73 (1.31; 2.30) | 2.73 (1.79; 4.17) | 1.48 (1.16; 1.89) | 1.66 (1.09; 2.54) |
| Model 1 + Mother's education | 1.75 (1.32; 2.32) | 2.71 (1.78; 4.14) | 1.50 (1.17; 1.91) | 1.65 (1.08; 2.52) |
| Model 1 + Parent's social class | 1.69 (1.28; 2.25) | 2.50 (1.63; 3.83) | 1.45 (1.14; 1.85) | 1.53 (1.00; 2.35) |
| Model 1 + Childhood pathologies | 1.77 (1.34; 2.34) | 2.78 (1.82; 4.24) | 1.51 (1.19; 1.93) | 1.68 (1.10; 2.57) |
| Model 1 + Mother smokes during pregnancy | 1.76 (1.33; 2.33) | 2.70 (1.77; 4.13) | 1.52 (1.19; 1.93) | 1.67 (1.09; 2.55) |
| Model 2 (Sex + all baseline characteristics) | 1.61 (1.21; 2.13) | 2.25 (1.46; 3.46) | 1.36 (1.06; 1.75) | 1.39 (0.91; 2.14) |
| Model 2 + Social characteristics at 23y | 1.48 (1.11; 1.97) | 1.92 (1.24; 2.98) | 1.25 (0.98; 1.61) | 1.19 (0.77; 1.84) |
| Model 2 + Social characteristics at 33y | 1.52 (1.14; 2.02) | 1.88 (1.21; 2.93) | 1.31 (1.02; 1.68) | 1.24 (0.80; 1.92) |
| Model 2 + Social characteristics at 42y | - | - | 1.31 (1.02; 1.68) | 1.21 (0.78; 1.88) |
| Model 2 + Health behaviors at 23y | 1.42 (1.07; 1.90) | 1.88 (1.22; 2.92) | 1.25 (0.98; 1.61) | 1.21 (0.78; 1.86) |
| Model 2 + Health behaviors at 33y | 1.40 (1.04; 1.87) | 1.87 (1.21; 2.90) | 1.22 (0.95; 1.57) | 1.18 (0.76; 1.82) |
| Model 2 + Health behaviors at 42 y | - | - | 1.19 (0.93; 1.54) | 1.14 (0.74; 1.77) |
| Model 2 + Full adjustment at 23y | 1.36 (1.02; 1.82) | 1.73 (1.12; 2.69) | 1.19 (0.93; 1.53) | 1.10 (0.71; 1.70) |
| Model 2 + Full adjustment at 33 y | 1.36 (1.01; 1.82) | 1.70 (1.09; 2.66) | 1.21 (0.94; 1.56) | 1.12 (0.72; 1.73) |
| Model 2 + Full adjustment at 42 y | - | - | 1.19 (0.92; 1.53) | 1.08 (0.69; 1.69) |
|   | **OVERWEIGHT AND DEPRESSION COMORBIDITY (N= 7762)** |
|   | **at 33y**  | **at 42y**  |
| **Model** | **1 ACE** | **2 or more ACEs** | **1 ACE** | **2 or more ACEs** |
| Model 0 - Crude | 1.81 (1.31; 2.50) | 3.37 (2.16; 5.25) | 1.50 (1.20; 1.88) | 2.28 (1.61; 3.25) |
| Model 1 (Sex) | 1.83 (1.33; 2.53) | 3.45 (2.21; 5.39) | 1.49 (1.19; 1.87) | 2.26 (1.59; 3.22) |
| Model 1 + Birthweight | 1.84 (1.33; 2.54) | 3.49 (2.23; 5.45) | 1.49 (1.19; 1.86) | 2.25 (1.58; 3.20) |
| Model 1 + Mother's age at birth | 1.81 (1.31; 2.50) | 3.41 (2.18; 5.34) | 1.46 (1.17; 1.83) | 2.19 (1.54; 3.11) |
| Model 1 + Breastfeed | 1.77 (1.28; 2.44) | 3.30 (2.11; 5.16) | 1.48 (1.18; 1.85) | 2.23 (1.57; 3.18) |
| Model 1 + Mother's education | 1.77 (1.28; 2.44) | 3.20 (2.04; 5.00) | 1.44 (1.15; 1.81) | 2.11 (1.48; 3.00) |
| Model 1 + Parent's occupation | 1.68 (1.22; 2.32) | 2.84 (1.81; 4.46) | 1.37 (1.09; 1.72) | 1.89 (1.33; 2.71) |
| Model 1 + Childhood pathologies | 1.79 (1.30; 2.48) | 3.30 (2.11; 5.17) | 1.47 (1.17; 1.84) | 2.20 (1.55; 3.14) |
| Model 1 + Mother smokes during pregnancy | 1.76 (1.28; 2.44) | 3.06 (1.95; 4.79) | 1.44 (1.15; 1.80) | 2.02 (1.42; 2.89) |
| Model 2 (Sex + all baseline characteristics) | 1.55 (1.12; 2.15) | 2.44 (1.54; 3.85) | 1.30 (1.03; 1.64) | 1.65 (1.15; 2.37) |
| Model 2 + Social characteristics at 23y | 1.33 (0.95; 1.84) | 1.87 (1.17; 2.97) | 1.16 (0.92; 1.47) | 1.36 (0.95; 1.96) |
| Model 2 + Social characteristics at 33y | 1.37 (0.98; 1.91) | 1.88 (1.18; 3.00) | 1.20 (0.95; 1.51) | 1.36 (0.94; 1.96) |
| Model 2 + Social characteristics at 42y | - | - | 1.21 (0.96; 1.52) | 1.36 (0.93; 1.97) |
| Model 2 + Health behaviors at 23y | 1.43 (1.02; 1.98) | 2.08 (1.31; 3.31) | 1.25 (0.99; 1.58) | 1.51 (1.05; 2.17) |
| Model 2 + Health behaviors at 33y | 1.40 (1.00; 1.95) | 2.01 (1.26; 3.19) | 1.22 (0.97; 1.54) | 1.47 (1.02; 2.12) |
| Model 2 + Health behaviors at 42 y | - | - | 1.19 (0.94; 1.51) | 1.43 (0.99; 2.07) |
| Model 2 + Full adjustment at 23y | 1.28 (0.92; 1.78) | 1.74 (1.09; 2.78) | 1.15 (0.91; 1.46) | 1.32 (0.91; 1.91) |
| Model 2 + Full adjustment at 33 y | 1.29 (0.92; 1.81) | 1.68 (1.05; 2.70) | 1.16 (0.91; 1.46) | 1.29 (0.89; 1.86) |
| Model 2 + Full adjustment at 42 y | - | - | 1.16 (0.92; 1.47) | 1.27 (0.87; 1.86) |

Analysis on ACEs and overweight-depression comorbidity relationship with adjustment for adulthood confounders from a prior period to the outcome studied did not explain further the association compared to equivalent confounder adjustment co-occurring with the outcome.