Supplementary material

Socioeconomic disadvantage amplifies polygenic risk of overweight: A longitudinal population cohort study spanning childhood and mid-adulthood

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# 1. Child data: BMI models

## 1.1 SEIFA predictor

### 1.1.1 Table and figure by PRS

Estimated BMI (95% CI) across childhood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sei | prs | 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14+ |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 16.4 (15.7, 16.9) | 15.9 (15.4, 16.4) | 15.6 (15.1, 16.2) | 16.6 (15.6, 17.7) | 17.6 (16.6, 18.8) | 19.4 (18.1, 20.9) | 20.0 (18.3, 22.3) |
| 1 | 2 | 16.7 (16.2, 17.4) | 16.1 (15.5, 16.6) | 16.1 (15.5, 16.7) | 17.0 (15.8, 18.1) | 18.0 (16.2, 19.4) | 19.4 (17.6, 21.2) | 20.9 (18.7, 22.8) |
| 1 | 3 | 16.7 (16.2, 17.2) | 16.3 (15.8, 16.7) | 16.3 (15.7, 16.9) | 17.5 (16.5, 18.4) | 18.7 (17.3, 20.1) | 20.4 (18.6, 22.0) | 22.2 (20.0, 24.0) |
| 1 | 4 | 16.8 (15.9, 17.6) | 16.5 (15.8, 17.2) | 16.2 (15.5, 17.2) | 17.9 (16.8, 19.2) | 19.1 (17.2, 21.2) | 21.0 (19.6, 22.5) | 22.9 (21.0, 24.9) |
| 1 | 5 | 17.3 (16.6, 18.0) | 17.2 (16.5, 18.2) | 17.7 (16.6, 19.1) | 19.3 (18.0, 20.7) | 21.3 (19.7, 23.0) | 23.5 (21.4, 25.8) | 24.2 (21.8, 27.0) |
| 2 | 1 | 16.5 (15.9, 17.2) | 15.9 (15.4, 16.6) | 16.0 (15.3, 16.7) | 16.2 (15.5, 17.3) | 17.1 (16.5, 18.1) | 18.3 (17.2, 19.4) | 19.7 (18.3, 21.6) |
| 2 | 2 | 16.7 (16.3, 17.1) | 16.1 (15.7, 16.5) | 16.0 (15.5, 16.7) | 16.9 (16.3, 17.6) | 18.1 (17.2, 19.0) | 19.2 (18.5, 19.9) | 20.6 (19.5, 21.6) |
| 2 | 3 | 17.0 (16.2, 17.7) | 16.4 (15.8, 17.1) | 16.9 (16.3, 17.6) | 17.7 (16.9, 18.6) | 19.4 (18.3, 21.0) | 20.6 (19.5, 22.0) | 21.9 (20.2, 23.3) |
| 2 | 4 | 17.0 (16.4, 17.5) | 16.3 (15.7, 16.9) | 17.1 (16.1, 18.0) | 17.7 (16.7, 18.7) | 19.5 (18.1, 21.1) | 21.7 (20.0, 23.6) | 23.4 (21.2, 25.5) |
| 2 | 5 | 17.0 (16.3, 17.6) | 17.0 (16.1, 18.0) | 17.5 (16.5, 18.7) | 18.4 (17.4, 19.5) | 20.8 (19.4, 22.4) | 22.2 (20.6, 24.3) | 24.5 (22.2, 27.5) |
| 3 | 1 | 16.5 (16.0, 17.2) | 15.9 (15.4, 16.6) | 15.6 (15.0, 16.1) | 16.5 (15.8, 17.2) | 17.4 (16.2, 18.5) | 18.6 (17.4, 19.7) | 20.1 (18.6, 21.8) |
| 3 | 2 | 16.7 (16.1, 17.3) | 15.8 (15.4, 16.3) | 15.8 (15.4, 16.2) | 16.9 (16.3, 17.6) | 18.0 (17.3, 18.8) | 19.7 (18.7, 20.8) | 21.0 (19.8, 22.5) |
| 3 | 3 | 16.9 (16.4, 17.4) | 16.4 (16.0, 16.8) | 16.5 (15.8, 17.4) | 17.1 (16.4, 18.0) | 18.4 (17.6, 19.4) | 20.1 (18.8, 21.4) | 21.9 (20.4, 24.0) |
| 3 | 4 | 16.8 (16.1, 17.5) | 16.3 (15.4, 17.4) | 16.5 (15.9, 17.1) | 17.3 (16.6, 18.0) | 18.8 (17.6, 20.0) | 20.2 (18.7, 21.8) | 21.9 (20.7, 23.1) |
| 3 | 5 | 17.4 (16.8, 18.1) | 16.9 (16.3, 17.6) | 17.3 (16.2, 18.5) | 18.0 (16.8, 19.1) | 19.3 (17.4, 20.8) | 21.9 (20.4, 23.9) | 22.9 (20.7, 24.9) |
| 4 | 1 | 16.5 (15.9, 17.0) | 15.9 (15.5, 16.4) | 16.1 (15.3, 16.8) | 16.6 (15.8, 17.4) | 17.0 (16.1, 18.2) | 18.7 (17.7, 20.0) | 20.6 (19.2, 22.2) |
| 4 | 2 | 16.9 (16.4, 17.4) | 16.1 (15.6, 16.7) | 16.2 (15.7, 16.8) | 16.9 (16.1, 17.9) | 17.9 (16.9, 18.9) | 19.2 (18.1, 20.5) | 20.7 (19.2, 22.5) |
| 4 | 3 | 17.0 (16.4, 17.6) | 16.4 (15.9, 17.1) | 16.3 (15.8, 16.9) | 17.2 (16.3, 18.4) | 18.7 (17.3, 20.5) | 19.6 (18.7, 20.6) | 21.7 (20.0, 23.9) |
| 4 | 4 | 16.8 (16.3, 17.4) | 16.1 (15.6, 16.6) | 16.4 (15.9, 16.9) | 17.6 (16.5, 19.0) | 18.7 (17.6, 19.9) | 20.1 (18.7, 21.8) | 21.6 (20.2, 23.6) |
| 4 | 5 | 17.0 (16.5, 17.5) | 16.5 (15.9, 17.1) | 16.7 (16.1, 17.3) | 18.0 (17.1, 18.9) | 19.2 (18.3, 20.1) | 20.8 (19.4, 22.2) | 22.8 (21.3, 24.3) |
| 5 | 1 | 16.4 (16.0, 16.8) | 15.9 (15.5, 16.4) | 15.6 (15.0, 16.2) | 16.4 (15.9, 17.0) | 17.0 (16.4, 17.6) | 18.5 (17.5, 19.4) | 19.8 (18.8, 20.8) |
| 5 | 2 | 16.5 (15.9, 17.1) | 16.1 (15.5, 16.7) | 16.0 (15.2, 16.8) | 16.5 (15.8, 17.0) | 17.5 (16.8, 18.3) | 19.2 (18.4, 20.1) | 20.6 (19.6, 21.6) |
| 5 | 3 | 16.7 (15.9, 17.4) | 16.1 (15.3, 16.8) | 16.3 (15.6, 17.3) | 17.3 (16.2, 19.1) | 18.4 (17.2, 20.4) | 20.2 (18.1, 23.1) | 22.0 (19.7, 25.5) |
| 5 | 4 | 16.8 (16.2, 17.3) | 16.4 (15.8, 17.2) | 16.6 (15.9, 17.4) | 17.7 (17.0, 18.6) | 18.7 (17.7, 20.0) | 20.7 (19.3, 22.4) | 22.2 (20.5, 24.5) |
| 5 | 5 | 17.1 (16.7, 17.6) | 16.6 (16.2, 17.2) | 16.7 (16.1, 17.4) | 17.7 (16.8, 18.5) | 18.7 (17.5, 19.7) | 20.7 (19.5, 22.1) | 21.9 (20.8, 23.1) |

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| Estimated BMI (95% CI) across childhood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 1.2 SEP predictor

### 1.2.1 Table and figure by PRS

Estimated BMI (95% CI) across childhood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sep | prs | 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14+ |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 16.6 (16.1, 17.1) | 16.1 (15.4, 16.9) | 16.1 (15.4, 17.1) | 17.2 (16.0, 19.0) | 17.8 (16.4, 19.7) | 19.5 (17.9, 21.4) | 20.2 (17.9, 23.3) |
| 1 | 2 | 16.7 (16.3, 17.1) | 16.1 (15.6, 16.7) | 16.0 (15.3, 16.9) | 16.8 (16.1, 17.6) | 17.7 (16.7, 18.6) | 19.3 (18.3, 20.3) | 21.2 (19.8, 22.4) |
| 1 | 3 | 17.3 (16.7, 17.8) | 16.7 (16.2, 17.4) | 17.1 (16.1, 18.3) | 18.3 (16.9, 20.0) | 19.9 (18.3, 21.7) | 21.4 (19.4, 23.5) | 23.4 (20.8, 25.7) |
| 1 | 4 | 16.9 (16.0, 17.9) | 16.4 (15.6, 17.5) | 16.7 (15.8, 17.8) | 18.0 (17.1, 19.0) | 19.7 (18.3, 21.2) | 21.5 (19.9, 23.1) | 23.0 (21.6, 24.4) |
| 1 | 5 | 17.1 (16.5, 17.6) | 17.0 (16.3, 17.9) | 17.6 (16.6, 18.8) | 18.6 (17.2, 19.9) | 21.3 (19.6, 23.4) | 23.1 (21.1, 25.2) | 24.7 (22.2, 27.3) |
| 2 | 1 | 16.4 (15.7, 17.1) | 16.0 (15.4, 16.4) | 15.6 (14.9, 16.1) | 16.4 (15.7, 17.2) | 17.5 (16.8, 18.3) | 18.5 (17.7, 19.5) | 20.7 (19.1, 22.9) |
| 2 | 2 | 16.7 (16.1, 17.3) | 15.9 (15.4, 16.4) | 16.0 (15.5, 16.7) | 16.8 (15.9, 17.7) | 18.0 (17.0, 18.8) | 19.3 (18.2, 20.3) | 19.9 (18.4, 21.3) |
| 2 | 3 | 16.7 (15.9, 17.6) | 16.3 (15.5, 17.3) | 16.6 (15.9, 17.4) | 17.7 (17.0, 18.7) | 19.0 (17.7, 20.4) | 20.2 (19.1, 21.3) | 22.2 (20.0, 24.6) |
| 2 | 4 | 16.8 (16.1, 17.4) | 16.1 (15.4, 17.0) | 16.7 (16.0, 17.4) | 17.6 (16.7, 18.5) | 18.8 (17.7, 20.2) | 20.2 (18.8, 21.7) | 21.7 (20.6, 23.0) |
| 2 | 5 | 17.6 (16.7, 18.5) | 17.3 (16.5, 18.0) | 17.8 (16.9, 18.7) | 18.9 (17.8, 20.2) | 20.2 (18.9, 21.4) | 22.4 (20.7, 24.9) | 24.0 (21.9, 26.1) |
| 3 | 1 | 16.3 (15.6, 17.0) | 15.7 (15.1, 16.3) | 15.6 (15.0, 16.2) | 16.2 (15.6, 16.9) | 16.9 (16.2, 17.6) | 18.8 (18.0, 19.8) | 19.9 (18.8, 21.1) |
| 3 | 2 | 16.6 (16.0, 17.3) | 16.2 (15.7, 16.6) | 15.8 (15.3, 16.2) | 16.8 (16.3, 17.3) | 17.7 (16.5, 18.9) | 19.1 (17.9, 20.3) | 20.7 (19.0, 22.2) |
| 3 | 3 | 16.8 (16.2, 17.6) | 16.4 (15.8, 17.0) | 16.4 (15.8, 17.2) | 16.8 (15.8, 17.8) | 18.6 (17.2, 20.0) | 19.7 (18.4, 20.8) | 20.8 (19.3, 22.0) |
| 3 | 4 | 16.9 (16.4, 17.3) | 16.4 (15.9, 16.9) | 16.3 (15.7, 17.2) | 17.6 (16.7, 18.8) | 18.6 (17.6, 19.9) | 20.1 (18.6, 22.1) | 22.2 (20.1, 24.8) |
| 3 | 5 | 17.0 (16.2, 17.8) | 16.7 (15.9, 17.4) | 16.9 (16.1, 17.6) | 18.4 (17.5, 19.6) | 19.7 (18.5, 21.2) | 21.9 (20.3, 24.3) | 22.7 (21.3, 24.4) |
| 4 | 1 | 16.6 (16.0, 17.2) | 16.0 (15.5, 16.5) | 15.6 (15.1, 16.0) | 16.4 (15.7, 17.1) | 16.9 (16.0, 17.7) | 18.1 (16.9, 19.2) | 19.8 (18.5, 21.5) |
| 4 | 2 | 16.8 (16.3, 17.3) | 15.9 (15.5, 16.4) | 16.2 (15.6, 17.0) | 16.6 (15.6, 17.8) | 18.0 (16.7, 19.6) | 19.4 (17.9, 21.0) | 20.6 (18.7, 22.6) |
| 4 | 3 | 16.8 (16.2, 17.4) | 16.2 (15.7, 16.8) | 16.2 (15.6, 16.8) | 17.0 (16.3, 17.8) | 18.0 (17.2, 19.0) | 19.8 (18.3, 21.4) | 22.1 (20.7, 23.5) |
| 4 | 4 | 16.9 (16.4, 17.4) | 16.5 (16.0, 17.1) | 17.0 (16.2, 17.8) | 18.0 (16.8, 19.2) | 19.2 (18.0, 20.3) | 21.6 (20.3, 23.2) | 23.0 (20.5, 26.1) |
| 4 | 5 | 17.0 (16.5, 17.5) | 16.7 (16.3, 17.3) | 16.7 (16.1, 17.4) | 17.6 (16.8, 18.8) | 19.1 (17.8, 20.3) | 20.7 (19.5, 22.1) | 22.2 (20.6, 23.7) |
| 5 | 1 | 16.4 (16.0, 16.7) | 15.9 (15.5, 16.2) | 15.8 (15.4, 16.3) | 16.3 (15.7, 17.0) | 17.2 (16.3, 18.2) | 18.8 (17.8, 19.8) | 19.8 (18.7, 20.8) |
| 5 | 2 | 16.9 (16.4, 17.3) | 16.2 (15.8, 16.5) | 16.0 (15.5, 16.5) | 16.9 (16.3, 17.5) | 17.8 (17.1, 18.5) | 19.3 (18.2, 20.2) | 20.9 (19.9, 21.9) |
| 5 | 3 | 16.6 (15.8, 17.2) | 16.0 (15.4, 16.5) | 16.0 (15.5, 16.5) | 16.7 (16.0, 17.3) | 18.1 (17.3, 18.9) | 19.4 (18.4, 20.6) | 21.0 (19.8, 22.5) |
| 5 | 4 | 16.8 (16.3, 17.3) | 16.1 (15.5, 16.7) | 16.3 (15.7, 17.2) | 17.2 (16.5, 18.2) | 18.4 (17.5, 19.6) | 20.2 (19.0, 22.0) | 21.9 (20.6, 23.1) |
| 5 | 5 | 16.9 (16.5, 17.5) | 16.4 (15.5, 17.0) | 16.6 (15.7, 17.3) | 17.6 (16.6, 18.5) | 19.0 (17.7, 20.1) | 20.5 (18.9, 21.8) | 22.4 (21.1, 24.0) |

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| Estimated BMI (95% CI) across childhood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 1.3 Marginal SEIFA and SEP Figures

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| Association of SEIFA neighbourhood disadvantage (Panel A) and SEP family disadvantage (Panel B) with BMI across childhood. In all cases quintile 1 represents the most disadvantage. |

# 2. Child data: Probability of overweight/obese models

## 2.1 SEIFA predictor

### 2.1.1 Table and figure by PRS

Estimated probability of overweight/obese (95% CI) across childhood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sei | prs | 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14+ |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 0.16 (0.06, 0.27) | 0.22 (0.10, 0.35) | 0.07 (0.01, 0.17) | 0.10 (0.01, 0.22) | 0.14 (0.04, 0.28) | 0.15 (0.05, 0.29) | 0.11 (0.00, 0.28) |
| 1 | 2 | 0.34 (0.20, 0.52) | 0.32 (0.17, 0.45) | 0.16 (0.06, 0.29) | 0.16 (0.05, 0.34) | 0.17 (0.03, 0.36) | 0.17 (0.02, 0.37) | 0.17 (0.03, 0.33) |
| 1 | 3 | 0.27 (0.15, 0.41) | 0.31 (0.18, 0.46) | 0.18 (0.06, 0.32) | 0.23 (0.10, 0.39) | 0.25 (0.10, 0.42) | 0.28 (0.09, 0.50) | 0.29 (0.11, 0.47) |
| 1 | 4 | 0.32 (0.10, 0.63) | 0.36 (0.18, 0.55) | 0.20 (0.06, 0.37) | 0.29 (0.12, 0.48) | 0.32 (0.07, 0.61) | 0.34 (0.15, 0.54) | 0.38 (0.16, 0.66) |
| 1 | 5 | 0.45 (0.29, 0.62) | 0.54 (0.38, 0.68) | 0.42 (0.25, 0.60) | 0.44 (0.28, 0.61) | 0.50 (0.34, 0.67) | 0.54 (0.35, 0.73) | 0.49 (0.29, 0.68) |
| 2 | 1 | 0.24 (0.12, 0.41) | 0.24 (0.11, 0.42) | 0.12 (0.03, 0.24) | 0.06 (0.01, 0.16) | 0.05 (0.01, 0.12) | 0.04 (0.00, 0.12) | 0.07 (0.00, 0.20) |
| 2 | 2 | 0.28 (0.15, 0.42) | 0.29 (0.15, 0.48) | 0.12 (0.03, 0.27) | 0.12 (0.03, 0.24) | 0.12 (0.02, 0.23) | 0.09 (0.02, 0.17) | 0.10 (0.02, 0.20) |
| 2 | 3 | 0.36 (0.17, 0.60) | 0.32 (0.17, 0.51) | 0.26 (0.13, 0.42) | 0.24 (0.11, 0.41) | 0.26 (0.12, 0.46) | 0.33 (0.19, 0.51) | 0.32 (0.15, 0.51) |
| 2 | 4 | 0.31 (0.17, 0.45) | 0.25 (0.13, 0.39) | 0.28 (0.13, 0.46) | 0.29 (0.13, 0.48) | 0.31 (0.11, 0.55) | 0.35 (0.18, 0.54) | 0.40 (0.17, 0.60) |
| 2 | 5 | 0.42 (0.22, 0.60) | 0.48 (0.27, 0.68) | 0.40 (0.21, 0.62) | 0.40 (0.25, 0.55) | 0.46 (0.29, 0.64) | 0.40 (0.22, 0.59) | 0.46 (0.29, 0.64) |
| 3 | 1 | 0.23 (0.09, 0.44) | 0.23 (0.11, 0.40) | 0.08 (0.01, 0.18) | 0.09 (0.02, 0.21) | 0.08 (0.01, 0.20) | 0.09 (0.01, 0.19) | 0.11 (0.01, 0.22) |
| 3 | 2 | 0.30 (0.15, 0.47) | 0.18 (0.07, 0.29) | 0.09 (0.02, 0.17) | 0.14 (0.03, 0.29) | 0.16 (0.06, 0.28) | 0.19 (0.08, 0.36) | 0.16 (0.05, 0.29) |
| 3 | 3 | 0.35 (0.21, 0.51) | 0.32 (0.18, 0.49) | 0.21 (0.08, 0.35) | 0.22 (0.10, 0.39) | 0.21 (0.10, 0.37) | 0.24 (0.10, 0.43) | 0.26 (0.07, 0.53) |
| 3 | 4 | 0.29 (0.14, 0.44) | 0.27 (0.10, 0.48) | 0.23 (0.10, 0.41) | 0.21 (0.09, 0.34) | 0.25 (0.12, 0.40) | 0.26 (0.08, 0.44) | 0.30 (0.16, 0.44) |
| 3 | 5 | 0.52 (0.37, 0.68) | 0.47 (0.32, 0.63) | 0.38 (0.19, 0.57) | 0.30 (0.12, 0.48) | 0.28 (0.08, 0.49) | 0.42 (0.26, 0.60) | 0.38 (0.20, 0.62) |
| 4 | 1 | 0.26 (0.10, 0.41) | 0.25 (0.12, 0.37) | 0.14 (0.03, 0.30) | 0.15 (0.04, 0.28) | 0.12 (0.03, 0.26) | 0.16 (0.04, 0.30) | 0.19 (0.06, 0.37) |
| 4 | 2 | 0.33 (0.15, 0.52) | 0.22 (0.09, 0.35) | 0.12 (0.04, 0.25) | 0.14 (0.04, 0.28) | 0.14 (0.02, 0.27) | 0.15 (0.04, 0.29) | 0.13 (0.00, 0.30) |
| 4 | 3 | 0.38 (0.24, 0.54) | 0.31 (0.19, 0.46) | 0.17 (0.05, 0.30) | 0.17 (0.04, 0.32) | 0.23 (0.07, 0.44) | 0.20 (0.07, 0.35) | 0.24 (0.07, 0.49) |
| 4 | 4 | 0.36 (0.21, 0.54) | 0.27 (0.15, 0.42) | 0.20 (0.08, 0.33) | 0.27 (0.10, 0.46) | 0.28 (0.13, 0.45) | 0.23 (0.10, 0.38) | 0.25 (0.08, 0.47) |
| 4 | 5 | 0.39 (0.24, 0.56) | 0.36 (0.21, 0.55) | 0.26 (0.15, 0.39) | 0.30 (0.13, 0.48) | 0.31 (0.16, 0.46) | 0.29 (0.14, 0.44) | 0.32 (0.16, 0.48) |
| 5 | 1 | 0.13 (0.05, 0.25) | 0.21 (0.09, 0.34) | 0.07 (0.01, 0.18) | 0.07 (0.01, 0.14) | 0.07 (0.00, 0.18) | 0.07 (0.01, 0.14) | 0.07 (0.00, 0.20) |
| 5 | 2 | 0.27 (0.12, 0.45) | 0.29 (0.13, 0.51) | 0.13 (0.02, 0.29) | 0.05 (0.00, 0.10) | 0.10 (0.02, 0.20) | 0.11 (0.02, 0.21) | 0.09 (0.02, 0.21) |
| 5 | 3 | 0.24 (0.09, 0.38) | 0.27 (0.12, 0.45) | 0.19 (0.08, 0.34) | 0.18 (0.06, 0.38) | 0.18 (0.06, 0.33) | 0.23 (0.08, 0.44) | 0.25 (0.09, 0.46) |
| 5 | 4 | 0.27 (0.10, 0.46) | 0.31 (0.13, 0.48) | 0.24 (0.11, 0.38) | 0.25 (0.08, 0.46) | 0.26 (0.13, 0.43) | 0.29 (0.13, 0.48) | 0.31 (0.15, 0.51) |
| 5 | 5 | 0.39 (0.22, 0.60) | 0.38 (0.19, 0.60) | 0.31 (0.15, 0.48) | 0.24 (0.10, 0.39) | 0.25 (0.10, 0.41) | 0.29 (0.07, 0.53) | 0.27 (0.06, 0.49) |

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| --- |
| Estimated probability of overweight/obese (95% CI) across childhood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 2.2 SEP predictor

### 2.2.1 Table and figure by PRS

Estimated probability of overweight/obese (95% CI) across childhood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sep | prs | 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14+ |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 0.26 (0.10, 0.41) | 0.29 (0.13, 0.47) | 0.15 (0.05, 0.32) | 0.19 (0.04, 0.44) | 0.16 (0.03, 0.37) | 0.21 (0.06, 0.42) | 0.12 (0.00, 0.32) |
| 1 | 2 | 0.27 (0.15, 0.42) | 0.27 (0.15, 0.42) | 0.12 (0.03, 0.24) | 0.12 (0.02, 0.25) | 0.13 (0.02, 0.27) | 0.16 (0.03, 0.32) | 0.20 (0.08, 0.32) |
| 1 | 3 | 0.42 (0.27, 0.58) | 0.41 (0.26, 0.56) | 0.28 (0.09, 0.52) | 0.33 (0.13, 0.58) | 0.36 (0.15, 0.60) | 0.36 (0.15, 0.57) | 0.37 (0.16, 0.56) |
| 1 | 4 | 0.33 (0.13, 0.58) | 0.34 (0.15, 0.56) | 0.22 (0.06, 0.41) | 0.31 (0.15, 0.48) | 0.39 (0.21, 0.60) | 0.38 (0.21, 0.56) | 0.40 (0.25, 0.58) |
| 1 | 5 | 0.45 (0.24, 0.67) | 0.48 (0.30, 0.66) | 0.39 (0.22, 0.58) | 0.37 (0.17, 0.55) | 0.49 (0.32, 0.66) | 0.53 (0.35, 0.72) | 0.50 (0.34, 0.69) |
| 2 | 1 | 0.19 (0.07, 0.34) | 0.23 (0.12, 0.37) | 0.06 (0.01, 0.14) | 0.05 (0.01, 0.12) | 0.10 (0.01, 0.20) | 0.04 (0.00, 0.13) | 0.17 (0.05, 0.38) |
| 2 | 2 | 0.32 (0.19, 0.49) | 0.23 (0.09, 0.36) | 0.13 (0.05, 0.25) | 0.13 (0.03, 0.24) | 0.15 (0.06, 0.25) | 0.13 (0.02, 0.26) | 0.06 (0.00, 0.15) |
| 2 | 3 | 0.33 (0.12, 0.56) | 0.30 (0.10, 0.58) | 0.21 (0.08, 0.37) | 0.26 (0.12, 0.46) | 0.22 (0.09, 0.37) | 0.26 (0.12, 0.42) | 0.32 (0.10, 0.55) |
| 2 | 4 | 0.31 (0.13, 0.56) | 0.27 (0.09, 0.48) | 0.29 (0.14, 0.46) | 0.29 (0.16, 0.45) | 0.27 (0.12, 0.45) | 0.25 (0.09, 0.41) | 0.30 (0.14, 0.48) |
| 2 | 5 | 0.54 (0.31, 0.74) | 0.52 (0.37, 0.67) | 0.46 (0.30, 0.63) | 0.46 (0.29, 0.65) | 0.43 (0.26, 0.60) | 0.48 (0.30, 0.67) | 0.49 (0.26, 0.73) |
| 3 | 1 | 0.18 (0.05, 0.36) | 0.14 (0.05, 0.30) | 0.08 (0.01, 0.22) | 0.07 (0.01, 0.18) | 0.05 (0.00, 0.12) | 0.10 (0.02, 0.21) | 0.08 (0.00, 0.22) |
| 3 | 2 | 0.29 (0.15, 0.48) | 0.23 (0.12, 0.37) | 0.09 (0.02, 0.22) | 0.11 (0.04, 0.24) | 0.11 (0.01, 0.22) | 0.13 (0.00, 0.27) | 0.12 (0.00, 0.26) |
| 3 | 3 | 0.33 (0.19, 0.49) | 0.26 (0.10, 0.44) | 0.20 (0.07, 0.39) | 0.19 (0.06, 0.35) | 0.24 (0.08, 0.48) | 0.24 (0.08, 0.43) | 0.19 (0.07, 0.33) |
| 3 | 4 | 0.32 (0.17, 0.47) | 0.27 (0.14, 0.40) | 0.18 (0.08, 0.33) | 0.24 (0.14, 0.38) | 0.24 (0.11, 0.40) | 0.23 (0.11, 0.38) | 0.32 (0.09, 0.62) |
| 3 | 5 | 0.40 (0.23, 0.60) | 0.39 (0.16, 0.64) | 0.33 (0.16, 0.52) | 0.33 (0.17, 0.50) | 0.32 (0.16, 0.47) | 0.38 (0.21, 0.58) | 0.33 (0.12, 0.58) |
| 4 | 1 | 0.21 (0.09, 0.33) | 0.24 (0.11, 0.38) | 0.07 (0.01, 0.16) | 0.11 (0.03, 0.23) | 0.09 (0.01, 0.25) | 0.05 (0.00, 0.14) | 0.09 (0.00, 0.25) |
| 4 | 2 | 0.34 (0.13, 0.63) | 0.25 (0.12, 0.39) | 0.17 (0.04, 0.39) | 0.10 (0.00, 0.28) | 0.13 (0.00, 0.37) | 0.15 (0.01, 0.36) | 0.13 (0.00, 0.31) |
| 4 | 3 | 0.32 (0.17, 0.49) | 0.33 (0.20, 0.51) | 0.21 (0.09, 0.35) | 0.17 (0.05, 0.32) | 0.16 (0.05, 0.31) | 0.24 (0.07, 0.43) | 0.30 (0.14, 0.49) |
| 4 | 4 | 0.34 (0.20, 0.50) | 0.34 (0.20, 0.50) | 0.31 (0.16, 0.47) | 0.29 (0.12, 0.45) | 0.32 (0.18, 0.48) | 0.38 (0.21, 0.58) | 0.40 (0.15, 0.66) |
| 4 | 5 | 0.40 (0.25, 0.60) | 0.43 (0.29, 0.61) | 0.25 (0.10, 0.40) | 0.22 (0.08, 0.38) | 0.22 (0.11, 0.36) | 0.22 (0.07, 0.42) | 0.29 (0.15, 0.43) |
| 5 | 1 | 0.16 (0.07, 0.27) | 0.25 (0.14, 0.36) | 0.10 (0.03, 0.19) | 0.06 (0.01, 0.13) | 0.09 (0.02, 0.18) | 0.12 (0.02, 0.28) | 0.10 (0.02, 0.23) |
| 5 | 2 | 0.31 (0.18, 0.44) | 0.32 (0.19, 0.45) | 0.11 (0.04, 0.20) | 0.09 (0.02, 0.19) | 0.10 (0.03, 0.20) | 0.10 (0.02, 0.22) | 0.13 (0.04, 0.25) |
| 5 | 3 | 0.21 (0.10, 0.35) | 0.23 (0.11, 0.37) | 0.12 (0.04, 0.22) | 0.08 (0.01, 0.17) | 0.16 (0.05, 0.28) | 0.14 (0.03, 0.26) | 0.14 (0.03, 0.29) |
| 5 | 4 | 0.25 (0.11, 0.43) | 0.23 (0.10, 0.38) | 0.18 (0.07, 0.31) | 0.17 (0.06, 0.30) | 0.21 (0.08, 0.34) | 0.22 (0.09, 0.36) | 0.23 (0.09, 0.39) |
| 5 | 5 | 0.33 (0.13, 0.52) | 0.39 (0.11, 0.67) | 0.29 (0.13, 0.46) | 0.27 (0.13, 0.45) | 0.34 (0.17, 0.52) | 0.29 (0.11, 0.51) | 0.30 (0.09, 0.51) |

|  |
| --- |
| Estimated probability of overweight/obese (95% CI) across childhood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 2.3 Marginal SEIFA and SEP Figures

|  |
| --- |
| Association of SEIFA neighbourhood disadvantage (Panel A) and SEP family disadvantage (Panel B) with probability of overweight/obese across childhood. In all cases quintile 1 represents the most disadvantage. |

# 3. Adult data: BMI models

## 3.1 SEIFA predictor

### 3.1.1 Table and figure by PRS

Estimated BMI (95% CI) across adulthood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sei | prs | <30 | 30-35 | 35-40 | 40-45 | 45-50 | 50+ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 24.4 (22.4, 27.3) | 25.3 (23.6, 27.2) | 25.5 (24.2, 26.8) | 26.1 (24.6, 27.8) | 25.7 (23.6, 28.4) | 25.8 (22.2, 28.5) |
| 1 | 2 | 27.4 (23.2, 32.9) | 26.5 (24.2, 30.5) | 25.8 (23.9, 28.0) | 26.1 (23.9, 28.6) | 26.4 (24.6, 28.7) | 26.7 (23.1, 30.2) |
| 1 | 3 | 26.9 (23.6, 30.8) | 28.3 (26.3, 31.5) | 28.0 (26.3, 29.8) | 29.1 (27.0, 31.8) | 27.8 (25.8, 30.3) | 28.0 (25.2, 31.3) |
| 1 | 4 | 27.1 (23.2, 32.3) | 29.4 (26.7, 32.3) | 28.7 (26.7, 31.3) | 29.5 (27.6, 31.5) | 29.1 (26.5, 32.4) | 32.6 (25.6, 39.9) |
| 1 | 5 | 28.0 (26.3, 30.5) | 29.3 (27.2, 31.6) | 30.2 (28.5, 32.0) | 30.4 (28.1, 32.1) | 31.0 (28.0, 33.9) | 30.7 (26.5, 37.1) |
| 2 | 1 | 24.3 (20.6, 34.3) | 24.7 (23.2, 26.6) | 25.1 (24.0, 26.2) | 25.7 (24.4, 26.9) | 25.7 (23.7, 27.4) | 28.5 (25.5, 31.9) |
| 2 | 2 | 26.2 (23.6, 29.2) | 26.6 (24.3, 28.5) | 26.4 (24.7, 28.6) | 26.5 (25.3, 27.9) | 26.7 (25.0, 28.6) | 28.4 (24.9, 33.2) |
| 2 | 3 | 27.4 (24.9, 31.4) | 26.6 (24.3, 29.5) | 26.6 (25.2, 28.0) | 26.8 (25.2, 28.5) | 26.7 (25.0, 28.9) | 27.8 (24.4, 33.2) |
| 2 | 4 | 27.5 (24.7, 30.3) | 29.9 (27.7, 32.5) | 29.2 (27.7, 30.7) | 29.0 (27.3, 31.2) | 29.5 (27.3, 31.9) | 30.1 (25.7, 36.1) |
| 2 | 5 | 27.7 (26.1, 30.1) | 27.9 (25.9, 30.0) | 29.2 (26.5, 33.3) | 30.3 (27.8, 33.3) | 30.3 (26.7, 33.5) | 30.9 (26.5, 35.8) |
| 3 | 1 | 25.3 (21.2, 29.0) | 25.0 (23.2, 27.0) | 24.9 (23.2, 26.6) | 25.8 (24.0, 27.6) | 25.6 (23.3, 28.4) | 25.9 (22.1, 30.4) |
| 3 | 2 | 24.7 (22.7, 32.0) | 26.1 (24.0, 28.7) | 26.2 (23.9, 28.3) | 26.2 (24.7, 28.4) | 26.1 (23.9, 28.8) | 25.3 (23.1, 27.6) |
| 3 | 3 | 24.7 (22.4, 27.2) | 25.9 (23.3, 30.0) | 26.9 (24.7, 29.5) | 26.8 (25.2, 28.4) | 26.7 (24.7, 28.8) | 27.4 (24.5, 30.4) |
| 3 | 4 | 28.8 (25.0, 33.0) | 28.3 (26.6, 30.1) | 28.3 (26.7, 30.1) | 29.3 (27.4, 31.0) | 28.6 (27.0, 31.2) | 27.9 (23.6, 31.8) |
| 3 | 5 | 27.3 (25.7, 29.7) | 28.4 (26.0, 30.9) | 28.7 (27.2, 30.2) | 28.4 (26.4, 30.2) | 29.6 (27.4, 31.6) | 29.5 (24.8, 34.4) |
| 4 | 1 | 25.0 (21.3, 30.2) | 24.3 (22.5, 26.6) | 24.1 (22.9, 25.6) | 24.7 (23.1, 26.3) | 25.1 (23.3, 27.3) | 25.7 (23.6, 28.2) |
| 4 | 2 | 26.1 (21.1, 31.0) | 26.0 (23.7, 28.7) | 26.3 (24.5, 28.3) | 26.0 (23.5, 28.5) | 25.7 (23.4, 28.3) | 25.5 (22.6, 29.6) |
| 4 | 3 | 25.8 (22.9, 29.2) | 26.3 (24.4, 28.7) | 26.8 (25.1, 28.6) | 26.6 (24.9, 28.5) | 27.0 (25.3, 28.6) | 27.2 (24.1, 29.5) |
| 4 | 4 | 27.6 (25.1, 31.5) | 27.4 (25.0, 30.3) | 27.6 (26.2, 29.3) | 28.3 (26.7, 30.0) | 27.6 (24.7, 30.1) | 27.6 (24.1, 29.9) |
| 4 | 5 | 26.2 (22.6, 32.7) | 28.0 (25.8, 30.5) | 27.3 (25.6, 28.7) | 27.0 (24.9, 28.9) | 28.0 (25.7, 30.2) | 27.9 (25.4, 31.2) |
| 5 | 1 | 28.5 (22.2, 33.9) | 24.9 (22.9, 27.7) | 24.5 (23.3, 26.0) | 24.7 (23.4, 25.9) | 24.1 (22.4, 25.7) | 24.6 (21.6, 27.8) |
| 5 | 2 | 24.8 (21.3, 27.9) | 25.8 (22.9, 28.9) | 25.3 (23.1, 27.6) | 25.8 (23.5, 28.1) | 25.8 (23.6, 27.7) | 25.9 (23.5, 27.9) |
| 5 | 3 | 25.3 (20.2, 30.6) | 26.3 (24.3, 28.3) | 26.3 (24.3, 28.8) | 26.6 (24.9, 28.5) | 26.9 (24.9, 29.4) | 25.7 (22.8, 28.8) |
| 5 | 4 | 27.8 (21.8, 35.3) | 26.5 (24.8, 28.7) | 26.4 (24.5, 28.3) | 26.9 (25.2, 28.6) | 26.8 (24.5, 28.6) | 27.1 (24.7, 30.2) |
| 5 | 5 | 28.8 (24.5, 35.6) | 27.1 (24.7, 29.5) | 27.5 (25.3, 29.9) | 27.8 (25.8, 30.0) | 27.5 (25.1, 30.2) | 28.5 (24.5, 33.2) |

|  |
| --- |
| Estimated BMI (95% CI) across adulthood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 3.2 SEP predictor

### 3.2.1 Table and figure by PRS

Estimated BMI (95% CI) across adulthood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sep | prs | <30 | 30-35 | 35-40 | 40-45 | 45-50 | 50+ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 25.5 (22.4, 31.8) | 26.0 (23.8, 29.6) | 26.2 (24.8, 27.7) | 26.7 (24.5, 29.1) | 25.5 (23.7, 27.8) | 27.2 (24.4, 31.1) |
| 1 | 2 | 27.3 (24.7, 29.9) | 26.8 (24.7, 29.7) | 27.0 (24.5, 30.0) | 27.5 (25.5, 29.9) | 26.4 (24.3, 28.2) | 26.5 (24.5, 28.7) |
| 1 | 3 | 27.5 (24.3, 31.6) | 28.2 (25.9, 31.3) | 28.5 (26.5, 30.7) | 28.5 (26.4, 31.5) | 28.7 (26.3, 31.6) | 26.9 (20.5, 32.6) |
| 1 | 4 | 28.5 (24.5, 33.2) | 30.0 (26.5, 34.2) | 30.4 (27.9, 33.7) | 30.9 (28.4, 33.9) | 30.4 (27.6, 33.9) | 32.6 (26.2, 40.3) |
| 1 | 5 | 27.7 (26.2, 29.8) | 29.7 (27.9, 31.9) | 30.7 (29.0, 33.0) | 31.3 (29.0, 33.8) | 32.2 (29.1, 35.1) | 30.9 (25.5, 36.4) |
| 2 | 1 | 24.8 (21.8, 27.8) | 25.8 (24.3, 27.5) | 25.6 (24.3, 26.9) | 26.4 (24.4, 28.3) | 25.8 (23.4, 27.8) | 24.9 (20.8, 28.4) |
| 2 | 2 | 26.5 (22.3, 32.8) | 27.2 (24.6, 30.4) | 26.2 (24.8, 27.9) | 26.6 (24.7, 28.9) | 26.7 (24.2, 29.3) | 25.5 (22.5, 29.5) |
| 2 | 3 | 25.9 (23.7, 28.8) | 27.3 (25.4, 29.7) | 27.4 (25.2, 29.9) | 27.9 (26.1, 29.8) | 26.7 (24.9, 28.4) | 26.3 (22.9, 30.8) |
| 2 | 4 | 27.5 (25.4, 30.8) | 29.3 (26.6, 31.8) | 29.4 (27.5, 32.2) | 29.8 (28.0, 31.9) | 28.9 (26.9, 31.2) | 30.1 (27.8, 33.9) |
| 2 | 5 | 28.0 (26.2, 31.4) | 28.7 (26.8, 30.8) | 29.2 (27.7, 30.6) | 29.6 (27.2, 31.8) | 29.9 (27.8, 31.8) | 29.6 (25.7, 33.7) |
| 3 | 1 | 24.9 (22.4, 28.2) | 24.3 (23.1, 25.4) | 24.6 (23.4, 25.6) | 25.0 (23.4, 26.7) | 25.4 (23.2, 27.7) | 26.1 (23.7, 28.9) |
| 3 | 2 | 23.5 (21.1, 26.6) | 26.3 (24.2, 28.6) | 26.4 (24.4, 28.4) | 26.4 (24.4, 28.4) | 26.1 (23.6, 28.8) | 26.4 (23.9, 29.3) |
| 3 | 3 | 26.2 (22.0, 30.5) | 26.5 (24.0, 30.5) | 27.1 (25.0, 29.4) | 27.1 (25.3, 29.4) | 27.1 (24.8, 29.6) | 27.8 (25.4, 30.3) |
| 3 | 4 | 27.8 (24.5, 32.3) | 28.8 (26.4, 32.0) | 27.6 (26.3, 29.0) | 28.1 (26.7, 29.6) | 27.8 (25.3, 29.9) | 30.2 (25.6, 33.8) |
| 3 | 5 | 28.1 (23.8, 32.4) | 29.1 (26.8, 32.1) | 28.9 (26.7, 31.7) | 28.8 (27.0, 30.8) | 28.3 (25.5, 30.7) | 29.0 (26.1, 31.8) |
| 4 | 1 | 23.5 (20.1, 29.0) | 23.9 (22.2, 26.3) | 24.6 (23.1, 26.4) | 25.2 (23.6, 26.8) | 24.7 (23.1, 26.2) | 25.1 (22.1, 28.3) |
| 4 | 2 | 24.4 (21.8, 27.9) | 25.7 (23.2, 28.8) | 25.6 (23.3, 28.2) | 26.1 (23.9, 28.5) | 25.9 (23.6, 28.0) | 26.8 (23.2, 29.9) |
| 4 | 3 | 24.6 (22.3, 26.5) | 25.9 (23.9, 27.6) | 26.7 (25.1, 28.0) | 27.1 (25.6, 28.7) | 26.6 (24.8, 28.5) | 26.8 (24.5, 29.1) |
| 4 | 4 | 26.7 (21.6, 35.5) | 26.8 (24.9, 30.1) | 27.2 (25.0, 29.7) | 28.0 (26.7, 29.2) | 28.1 (25.9, 29.8) | 28.0 (25.3, 30.3) |
| 4 | 5 | 26.8 (25.2, 28.8) | 27.4 (25.4, 29.9) | 27.5 (25.2, 30.5) | 27.1 (25.1, 29.4) | 27.4 (25.7, 29.7) | 25.6 (21.5, 33.1) |
| 5 | 1 | 22.3 (18.1, 26.7) | 24.2 (21.8, 26.7) | 23.6 (22.3, 24.8) | 24.2 (22.9, 25.1) | 24.6 (22.9, 26.5) | 26.1 (23.2, 30.2) |
| 5 | 2 | 26.4 (21.4, 32.9) | 25.1 (21.9, 28.8) | 25.0 (22.7, 27.6) | 24.9 (22.8, 27.1) | 25.2 (23.1, 27.4) | 25.2 (23.4, 27.5) |
| 5 | 3 | NA | 24.4 (22.8, 26.1) | 25.1 (23.7, 26.6) | 25.5 (24.3, 26.9) | 26.6 (25.3, 27.9) | 26.2 (23.3, 29.0) |
| 5 | 4 | 25.4 (22.4, 27.4) | 26.1 (24.0, 28.2) | 26.2 (24.4, 28.2) | 26.8 (24.9, 28.9) | 26.4 (24.9, 27.8) | 26.2 (23.4, 30.1) |
| 5 | 5 | 24.6 (20.8, 28.0) | 25.4 (23.6, 27.0) | 26.5 (24.4, 28.4) | 27.1 (25.0, 29.1) | 27.0 (24.7, 29.5) | 27.2 (24.5, 31.2) |

|  |
| --- |
| Estimated BMI (95% CI) across adulthood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 3.3 Marginal SEIFA and SEP Figures

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| --- |
| Association of SEIFA neighbourhood disadvantage (Panel A) and SEP family disadvantage (Panel B) with BMI across adulthood. In all cases quintile 1 represents the most disadvantage. |

# 4. Adult data: Probability of overweight/obese models

## 4.1 SEIFA predictor

### 4.1.1 Table and figure by PRS

Estimated probability of overweight/obese (95% CI) across adulthood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sei | prs | <30 | 30-35 | 35-40 | 40-45 | 45-50 | 50+ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 0.36 (0.05, 0.66) | 0.46 (0.29, 0.69) | 0.47 (0.31, 0.68) | 0.47 (0.30, 0.68) | 0.52 (0.30, 0.80) | 0.62 (0.16, 0.92) |
| 1 | 2 | 0.48 (0.13, 0.89) | 0.48 (0.27, 0.74) | 0.45 (0.28, 0.65) | 0.52 (0.32, 0.77) | 0.61 (0.40, 0.83) | 0.71 (0.29, 0.99) |
| 1 | 3 | 0.50 (0.11, 0.89) | 0.64 (0.44, 0.89) | 0.65 (0.50, 0.85) | 0.75 (0.57, 0.93) | 0.70 (0.43, 0.93) | 0.85 (0.50, 1.00) |
| 1 | 4 | 0.57 (0.09, 0.95) | 0.75 (0.56, 0.98) | 0.70 (0.54, 0.88) | 0.76 (0.61, 0.91) | 0.77 (0.53, 0.97) | 0.91 (0.56, 1.00) |
| 1 | 5 | 0.85 (0.58, 1.00) | 0.76 (0.61, 0.92) | 0.83 (0.64, 0.98) | 0.83 (0.61, 0.98) | 0.79 (0.59, 0.96) | 0.82 (0.52, 1.00) |
| 2 | 1 | 0.23 (0.00, 0.64) | 0.40 (0.23, 0.59) | 0.46 (0.27, 0.68) | 0.50 (0.34, 0.69) | 0.56 (0.31, 0.81) | 0.70 (0.40, 1.00) |
| 2 | 2 | 0.54 (0.18, 0.97) | 0.65 (0.33, 0.98) | 0.60 (0.40, 0.83) | 0.59 (0.45, 0.75) | 0.55 (0.35, 0.72) | 0.63 (0.28, 0.98) |
| 2 | 3 | 0.70 (0.30, 0.99) | 0.53 (0.31, 0.77) | 0.57 (0.39, 0.78) | 0.55 (0.39, 0.73) | 0.57 (0.34, 0.77) | 0.64 (0.27, 0.96) |
| 2 | 4 | 0.68 (0.41, 0.97) | 0.78 (0.55, 1.00) | 0.74 (0.57, 0.90) | 0.71 (0.58, 0.88) | 0.68 (0.48, 0.88) | 0.69 (0.41, 0.96) |
| 2 | 5 | 0.82 (0.51, 1.00) | 0.70 (0.44, 0.96) | 0.72 (0.51, 0.93) | 0.78 (0.56, 0.97) | 0.78 (0.50, 0.98) | 0.87 (0.49, 1.00) |
| 3 | 1 | 0.54 (0.07, 0.99) | 0.45 (0.21, 0.71) | 0.44 (0.21, 0.71) | 0.54 (0.29, 0.80) | 0.50 (0.23, 0.79) | 0.54 (0.11, 0.87) |
| 3 | 2 | 0.37 (0.01, 0.99) | 0.57 (0.32, 0.88) | 0.61 (0.32, 0.93) | 0.53 (0.39, 0.76) | 0.50 (0.28, 0.77) | 0.46 (0.22, 0.74) |
| 3 | 3 | 0.46 (0.04, 0.98) | 0.55 (0.29, 0.89) | 0.63 (0.38, 0.88) | 0.65 (0.44, 0.87) | 0.61 (0.39, 0.83) | 0.61 (0.30, 0.90) |
| 3 | 4 | 0.79 (0.40, 0.99) | 0.76 (0.58, 0.94) | 0.73 (0.53, 0.92) | 0.78 (0.52, 0.97) | 0.74 (0.47, 0.97) | 0.70 (0.32, 0.99) |
| 3 | 5 | 0.76 (0.48, 0.98) | 0.72 (0.41, 0.96) | 0.75 (0.52, 0.96) | 0.73 (0.50, 0.93) | 0.79 (0.56, 0.98) | 0.68 (0.26, 0.99) |
| 4 | 1 | 0.45 (0.01, 0.94) | 0.35 (0.14, 0.69) | 0.35 (0.19, 0.56) | 0.39 (0.21, 0.63) | 0.39 (0.19, 0.64) | 0.49 (0.14, 0.92) |
| 4 | 2 | 0.64 (0.01, 0.99) | 0.57 (0.25, 0.97) | 0.61 (0.34, 0.91) | 0.55 (0.24, 0.89) | 0.51 (0.24, 0.78) | 0.47 (0.17, 0.82) |
| 4 | 3 | 0.56 (0.15, 1.00) | 0.55 (0.28, 0.89) | 0.59 (0.42, 0.79) | 0.62 (0.43, 0.84) | 0.67 (0.50, 0.88) | 0.79 (0.41, 1.00) |
| 4 | 4 | 0.76 (0.27, 1.00) | 0.66 (0.45, 0.91) | 0.74 (0.51, 0.95) | 0.73 (0.50, 0.94) | 0.62 (0.30, 0.91) | 0.78 (0.45, 0.97) |
| 4 | 5 | 0.68 (0.17, 1.00) | 0.63 (0.43, 0.88) | 0.67 (0.43, 0.91) | 0.67 (0.41, 0.91) | 0.70 (0.46, 0.93) | 0.70 (0.43, 0.91) |
| 5 | 1 | 0.73 (0.02, 0.99) | 0.44 (0.21, 0.77) | 0.39 (0.24, 0.58) | 0.34 (0.20, 0.52) | 0.35 (0.16, 0.59) | 0.40 (0.07, 0.78) |
| 5 | 2 | 0.59 (0.04, 0.99) | 0.56 (0.14, 0.95) | 0.52 (0.19, 0.90) | 0.53 (0.21, 0.88) | 0.55 (0.23, 0.86) | 0.57 (0.23, 0.86) |
| 5 | 3 | 0.38 (0.00, 0.87) | 0.60 (0.39, 0.82) | 0.57 (0.34, 0.82) | 0.60 (0.41, 0.80) | 0.66 (0.42, 0.92) | 0.58 (0.19, 1.00) |
| 5 | 4 | 0.63 (0.01, 0.99) | 0.55 (0.32, 0.84) | 0.58 (0.31, 0.90) | 0.61 (0.35, 0.88) | 0.63 (0.33, 0.90) | 0.72 (0.39, 0.98) |
| 5 | 5 | 0.77 (0.36, 0.99) | 0.68 (0.40, 0.97) | 0.65 (0.40, 0.93) | 0.65 (0.47, 0.86) | 0.56 (0.35, 0.84) | 0.48 (0.19, 0.81) |

|  |
| --- |
| Estimated probability of overweight/obese (95% CI) across adulthood by neighbourhood disadvantage (SEIFA) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 4.2 SEP predictor

### 4.2.1 Table and figure by PRS

Estimated probability of overweight/obese (95% CI) across adulthood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk)

| sep | prs | <30 | 30-35 | 35-40 | 40-45 | 45-50 | 50+ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 0.43 (0.14, 0.92) | 0.49 (0.30, 0.79) | 0.55 (0.39, 0.80) | 0.56 (0.32, 0.72) | 0.44 (0.21, 0.66) | 0.62 (0.19, 0.94) |
| 1 | 2 | 0.69 (0.35, 0.98) | 0.66 (0.39, 0.97) | 0.63 (0.35, 0.98) | 0.69 (0.43, 0.95) | 0.54 (0.29, 0.75) | 0.57 (0.30, 0.81) |
| 1 | 3 | 0.63 (0.29, 0.98) | 0.63 (0.42, 0.89) | 0.65 (0.49, 0.83) | 0.71 (0.50, 0.95) | 0.71 (0.49, 0.99) | 0.53 (0.11, 1.00) |
| 1 | 4 | 0.69 (0.38, 0.98) | 0.80 (0.59, 0.93) | 0.81 (0.67, 0.94) | 0.85 (0.68, 0.98) | 0.78 (0.54, 0.97) | 0.80 (0.40, 1.00) |
| 1 | 5 | 0.85 (0.57, 1.00) | 0.82 (0.61, 0.99) | 0.87 (0.69, 0.99) | 0.88 (0.68, 1.00) | 0.83 (0.61, 1.00) | 0.70 (0.20, 1.00) |
| 2 | 1 | 0.42 (0.14, 0.69) | 0.53 (0.33, 0.78) | 0.49 (0.32, 0.71) | 0.55 (0.30, 0.81) | 0.51 (0.26, 0.76) | 0.44 (0.02, 0.84) |
| 2 | 2 | 0.51 (0.10, 0.98) | 0.71 (0.42, 0.99) | 0.59 (0.40, 0.82) | 0.63 (0.41, 0.87) | 0.61 (0.37, 0.86) | 0.50 (0.24, 0.79) |
| 2 | 3 | 0.47 (0.19, 0.94) | 0.69 (0.40, 0.94) | 0.66 (0.41, 0.92) | 0.69 (0.48, 0.89) | 0.62 (0.37, 0.87) | 0.60 (0.21, 1.00) |
| 2 | 4 | 0.71 (0.29, 0.99) | 0.77 (0.52, 0.99) | 0.73 (0.59, 0.88) | 0.74 (0.57, 0.91) | 0.73 (0.47, 0.94) | 0.93 (0.75, 1.00) |
| 2 | 5 | 0.80 (0.53, 1.00) | 0.74 (0.49, 0.96) | 0.78 (0.57, 0.96) | 0.77 (0.56, 0.97) | 0.82 (0.61, 0.99) | 0.73 (0.39, 0.97) |
| 3 | 1 | 0.44 (0.11, 0.81) | 0.40 (0.21, 0.65) | 0.42 (0.24, 0.63) | 0.43 (0.23, 0.67) | 0.52 (0.21, 0.85) | 0.56 (0.20, 0.89) |
| 3 | 2 | 0.20 (0.00, 0.58) | 0.56 (0.32, 0.83) | 0.60 (0.34, 0.89) | 0.54 (0.30, 0.84) | 0.60 (0.27, 0.92) | 0.65 (0.27, 0.94) |
| 3 | 3 | 0.65 (0.16, 0.99) | 0.53 (0.27, 0.80) | 0.63 (0.41, 0.88) | 0.62 (0.40, 0.85) | 0.63 (0.40, 0.86) | 0.82 (0.52, 1.00) |
| 3 | 4 | 0.74 (0.38, 0.99) | 0.79 (0.56, 0.99) | 0.71 (0.50, 0.94) | 0.72 (0.52, 0.92) | 0.69 (0.34, 0.98) | 0.81 (0.35, 1.00) |
| 3 | 5 | 0.73 (0.28, 1.00) | 0.77 (0.55, 0.97) | 0.76 (0.51, 0.97) | 0.71 (0.52, 0.89) | 0.68 (0.40, 0.93) | 0.72 (0.42, 0.94) |
| 4 | 1 | 0.40 (0.01, 1.00) | 0.34 (0.13, 0.61) | 0.39 (0.18, 0.65) | 0.48 (0.26, 0.73) | 0.43 (0.25, 0.66) | 0.45 (0.10, 0.78) |
| 4 | 2 | 0.46 (0.01, 0.99) | 0.52 (0.17, 0.93) | 0.51 (0.22, 0.84) | 0.56 (0.29, 0.84) | 0.49 (0.23, 0.75) | 0.63 (0.30, 0.88) |
| 4 | 3 | 0.40 (0.08, 0.78) | 0.52 (0.31, 0.75) | 0.60 (0.41, 0.80) | 0.66 (0.51, 0.84) | 0.62 (0.42, 0.85) | 0.67 (0.27, 0.97) |
| 4 | 4 | 0.50 (0.01, 1.00) | 0.56 (0.33, 0.84) | 0.68 (0.36, 0.97) | 0.75 (0.52, 0.96) | 0.70 (0.42, 0.95) | 0.81 (0.55, 0.99) |
| 4 | 5 | 0.76 (0.44, 1.00) | 0.64 (0.39, 0.92) | 0.62 (0.38, 0.89) | 0.70 (0.44, 0.93) | 0.65 (0.43, 0.92) | 0.50 (0.04, 0.94) |
| 5 | 1 | 0.24 (0.00, 0.97) | 0.33 (0.10, 0.64) | 0.30 (0.14, 0.53) | 0.29 (0.16, 0.44) | 0.35 (0.18, 0.61) | 0.50 (0.22, 0.83) |
| 5 | 2 | 0.41 (0.00, 0.98) | 0.38 (0.12, 0.75) | 0.48 (0.17, 0.82) | 0.42 (0.20, 0.67) | 0.46 (0.22, 0.68) | 0.42 (0.14, 0.80) |
| 5 | 3 | NA | 0.39 (0.13, 0.65) | 0.47 (0.30, 0.67) | 0.52 (0.36, 0.71) | 0.66 (0.49, 0.85) | 0.66 (0.32, 0.94) |
| 5 | 4 | 0.40 (0.04, 0.90) | 0.55 (0.30, 0.86) | 0.57 (0.36, 0.80) | 0.57 (0.34, 0.81) | 0.52 (0.33, 0.76) | 0.55 (0.20, 0.91) |
| 5 | 5 | 0.50 (0.00, 0.99) | 0.45 (0.23, 0.70) | 0.60 (0.35, 0.87) | 0.60 (0.37, 0.85) | 0.57 (0.30, 0.87) | 0.64 (0.19, 0.99) |

|  |
| --- |
| Estimated probability of overweight/obese (95% CI) across adulthood by family disadvantage (SEP) quintile (1=most, 5=least disadvantage), stratified by PRS quintile (1=lowest, 5=highest risk) |

## 4.3 Marginal SEIFA and SEP Figures

|  |
| --- |
| Association of SEIFA neighbourhood disadvantage (Panel A) and SEP family disadvantage (Panel B) with probability of overweight/obese across adulthood. In all cases quintile 1 represents the most disadvantage. |

# 5. Session info

format(Sys.time(), '%d-%b-%Y')

[1] "07-Jun-2023"

sessionInfo()

R version 4.2.2 (2022-10-31 ucrt)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows 10 x64 (build 19044)  
  
Matrix products: default  
  
locale:  
[1] LC\_COLLATE=English\_Australia.utf8 LC\_CTYPE=English\_Australia.utf8   
[3] LC\_MONETARY=English\_Australia.utf8 LC\_NUMERIC=C   
[5] LC\_TIME=English\_Australia.utf8   
  
attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] arrow\_11.0.0.2 stringi\_1.7.12 knitr\_1.42 tidyr\_1.3.0 ggpubr\_0.6.0   
[6] ggplot2\_3.4.1 forcats\_1.0.0 dplyr\_1.1.0   
  
loaded via a namespace (and not attached):  
 [1] tidyselect\_1.2.0 xfun\_0.37 purrr\_1.0.1 carData\_3.0-5   
 [5] colorspace\_2.1-0 vctrs\_0.5.2 generics\_0.1.3 htmltools\_0.5.4   
 [9] yaml\_2.3.7 utf8\_1.2.3 rlang\_1.0.6 pillar\_1.8.1   
[13] glue\_1.6.2 withr\_2.5.0 bit64\_4.0.5 lifecycle\_1.0.3   
[17] munsell\_0.5.0 ggsignif\_0.6.4 gtable\_0.3.1 ragg\_1.2.5   
[21] evaluate\_0.20 labeling\_0.4.2 tzdb\_0.3.0 fastmap\_1.1.0   
[25] fansi\_1.0.4 broom\_1.0.3 scales\_1.2.1 backports\_1.4.1   
[29] jsonlite\_1.8.4 abind\_1.4-5 farver\_2.1.1 systemfonts\_1.0.4  
[33] bit\_4.0.5 textshaping\_0.3.6 digest\_0.6.31 rstatix\_0.7.2   
[37] grid\_4.2.2 cowplot\_1.1.1 cli\_3.6.0 tools\_4.2.2   
[41] magrittr\_2.0.3 tibble\_3.1.8 car\_3.1-1 pkgconfig\_2.0.3   
[45] assertthat\_0.2.1 rmarkdown\_2.20 rstudioapi\_0.14 R6\_2.5.1   
[49] compiler\_4.2.2