**Supplementary Table 1. Beta coefficients and 95% confidence intervals (CIs) for the associations between early-life and adult body fatness and V measures (V75 erosion, low resolution) in the Nurses’ Health Study (NHS) and the NHSII, stratified by menopausal status and percent mammographic density (PMD) (below vs. above menopausal-specific median) at mammogram**

|  |  |  |
| --- | --- | --- |
|  | **Premenopausal women (N=1,700)** | **Postmenopausal women (N=1,947)** |
| **N** |  **Low PMD** | **N** | **High PMD** | **N** |  **Low PMD** | **N** | **High PMD** |
| **Childhood body fatness (average at ages 5-10 years)** |
| **Level 1** | 124 | 0 (Ref) | 179 |  0 (Ref) | 268 |  0 (Ref) | 264 | 0 (Ref)  |
| **Level 1.5-2** | 213 |  -0.10 (-0.26, 0.06) | 294 | 0.02 (-0.14, 0.18) | 231 | 0.03 (-0.1, 0.15) | 325 | -0.02 (-0.16, 0.12) |
| **Level 2.5-3** | 251 | -0.12 (-0.28, 0.04) | 203 |  0.10 (-0.07, 0.27) | 213 |  -0.1 (-0.23, 0.03) | 184 |  -0.11 (-0.28, 0.05) |
| **Level 3.5-4** | 182 | -0.11 (-0.28, 0.06)  | 93 | -0.09 (-0.30, 0.12) | 154 | -0.14 (-0.28, 0) | 136 | -0.07 (-0.25, 0.11) |
| **Level ≥4.5** | 115 | **-0.28 (-0.48, -0.09)** | 46 |  -0.28 (-0.55, 0) | 123 |  -0.16 (-0.31, 0) | 49 |  **-0.39 (-0.65, -0.12)** |
| **P-trend** |  | **0.01** |  | 0.18 |  | **0.01** |  | **0.01** |
| **P-interaction = 0.05** | **P-interaction <0.01** |
| **BMI at age 18 years, kg/m2** |
| **<19.0** | 116 | 0 (Ref)  | 226 | 0 (Ref)  | 148 | 0 (Ref)  | 234 |  0 (Ref) |
| **19.0-19.9**  | 125 | -0.12 (-0.30, 0.06) | 183 | -0.08 (-0.24, 0.08) | 125 | -0.10 (-0.27, 0.06) | 188 | -0.15 (-0.31, 0.02) |
| **20.0-20.9**  | 166 |  -0.06 (-0.24, 0.11) | 149 |  0.03 (-0.14, 0.21) | 177 |  -0.12 (-0.27, 0.04) | 191 |  -0.06 (-0.23, 0.10) |
| **21.0-22.9**  | 227 | -0.15 (-0.31, 0.02) | 184 | -0.12 (-0.29, 0.05) | 259 | -0.13 (-0.27, 0.01) | 219 | -0.13 (-0.29, 0.03) |
| **≥23.0**  | 251 |  **-0.31 (-0.49, -0.13)** | 73 |  -0.24 (-0.48, -0.01) | 280 |  **-0.17 (-0.32, -0.02)** | 126 |  **-0.37 (-0.56, -0.18)** |
| **P-trend** |  | **<0.01** |  | **0.04** |  | **0.04** |  | **<0.01** |
| **P-interaction** **<0.01** | **P-interaction <0.01** |
| **Current adult BMI, kg/m2** |
| **<21.0** | 52 |  0 (Ref) | 233 |  0 (Ref) | 54 |  0 (Ref) | 189 | 0 (Ref)  |
| **21.0-22.9** | 131 | 0.02 (-0.21, 0.26) | 220 | 0.20 (0.04, 0.35) | 105 | -0.12 (-0.35, 0.11) | 230 | 0.17 (0, 0.34) |
| **23.0-24.9** | 158 |  0.07 (-0.16, 0.30) | 171 |  0.26 (0.09, 0.43) | 176 |  -0.09 (-0.31, 0.12) | 214 |  0.12 (-0.05, 0.29) |
| **25.0-29.9** | 283 | -0.05 (-0.27, 0.17) | 146 | 0.06 (-0.12, 0.24) | 367 | -0.16 (-0.36, 0.04) | 234 | **0.02 (-0.15, 0.19)** |
| **≥30.0** | 261 |  **-0.30 (-0.53, -0.08)** | 45 |  0.13 (-0.14, 0.41) | 287 |  **-0.24 (-0.45, -0.03)** | 91 | 0.01 (-0.21, 0.23)  |
| **P-trend** |  | **<0.01** |  | 0.55 |  | **0.01** |  | 0.43 |
| **P-interaction** **<0.01** | **P-interaction <0.01** |

Note: These analyses were performed on full models from table 2 and 3.

**Supplementary Table 2. Beta coefficients and 95% confidence intervals (CIs) for the associations between anthropometrics and V measures (V75 erosion, HIGH resolution) in the Nurses’ Health Study (NHS) and the NHSII, stratified by menopausal status**

|  |  |  |
| --- | --- | --- |
|  | **Premenopausal women (N=1,242)** | **Postmenopausal women (N=850)** |
| **N** |  **MV-adjusted a** | **MV + Current BMI b** | **MV + Current BMI + PMD c** | **N** |  **MV-adjusted a** | **MV + Current BMI b** | **MV + Current BMI + PMD c** |
| **Childhood body fatness (average at ages 5-10 years)** |
| **Level 1** | 216 | 0 (Ref) | 0 (Ref)  | 0 (Ref) | 194 | 0 (Ref) | 0 (Ref) | 0 (Ref) |
| **Level 1.5-2** | 388 | -0.06 (-0.21, 0.10)  | -0.005 (-0.15, 0.14)  | -0.05 (-0.19, 0.09) | 285 | -0.01 (-0.18, 0.15)  | 0.01 (-0.15, 0.17)  | -0.03 (-0.18, 0.11)  |
| **Level 2.5-3** | 344 | **-0.17 (-0.33, -0.01)** | -0.07 (-0.22, 0.09) | -0.06 (-0.20, 0.09) | 175 | **-0.23 (-0.41, -0.04)** | -0.14 (-0.32, 0.04) | -0.15 (-0.31, 0.01) |
| **Level 3.5-4** | 187 | **-0.42 (-0.60, -0.23)**  | **-0.24 (-0.42, -0.06)**  | -0.16 (-0.33, 0) | 125 | **-0.38 (-0.59, -0.18)** | **-0.27 (-0.47, -0.07)**  | **-0.22 (-0.40, -0.04)**  |
| **Level ≥4.5** | 107 | **-0.78 (-0.99, -0.56)**  | **-0.51 (-0.72, -0.29)**  | **-0.41 (-0.61, -0.21)** | 71 | **-0.69 (-0.94, -0.44)**  | **-0.55 (-0.79, -0.30)**  | **-0.42 (-0.63, -0.20)**  |
| **P-trend** |   | **<0.01** | **<0.01** | **<0.01** |  | **<0.01** | **<0.01** | **<0.01** |
| **Adolescent body fatness (average at ages 10-20 years)** |
| **Level 1** | 42 | 0 (Ref) | 0 (Ref) | 0 (Ref) | 52 | 0 (Ref) | 0 (Ref) | 0 (Ref) |
| **Level 1.5-2** | 330 | 0.09 (-0.20, 0.38)  | 0.10 (-0.18, 0.39)  | 0.05 (-0.22, 0.31) | 271 | -0.06 (-0.33, 0.21)  | -0.05 (-0.31, 0.21)  | -0.08 (-0.31, 0.15)  |
| **Level 2.5-3** | 474 | -0.05 (-0.34, 0.24)  | 0.05 (-0.24, 0.33)  | 0.01 (-0.25, 0.28) | 293 | -0.16 (-0.43, 0.10)  | -0.09 (-0.35, 0.17)  | -0.09 (-0.32, 0.14)  |
| **Level 3.5-4** | 282 | **-0.31 (-0.60, -0.01)** | -0.15 (-0.44, 0.14) | -0.12 (-0.39, 0.15) | 150 | **-0.49 (-0.77, -0.20)**  | **-0.37 (-0.65, -0.09)**  | **-0.35 (-0.60, -0.10)** |
| **Level ≥4.5** | 114 | **-0.90 (-1.22, -0.57)**  | **-0.57 (-0.90, -0.25)**  | **-0.47 (-0.77, -0.16)** | 84 | **-0.77 (-1.09, -0.46)**  | **-0.55 (-0.86, -0.24)** | **-0.42 (-0.70, -0.15)** |
| **P-trend** |  | **<0.01** | **<0.01** | **<0.01** |  | **<0.01** | **<0.01** | **<0.01** |
| **BMI at age 18 years, kg/m2** |
| **<19.0** | 279 | 0 (Ref) | 0 (Ref) | 0 (Ref) | 189 | 0 (Ref) | 0 (Ref) | 0 (Ref) |
| **19.0-19.9**  | 245 | -0.09 (-0.24, 0.07)  | -0.04 (-0.19, 0.12)  | -0.04 (-0.19, 0.10) | 171 | -0.12 (-0.31, 0.07)  | -0.09 (-0.28, 0.09) | -0.14 (-0.30, 0.02)  |
| **20.0-20.9**  | 233 | -0.12 (-0.28, 0.04) | -0.02 (-0.18, 0.14) | -0.001 (-0.15, 0.15) | 152 | **-0.25 (-0.44, -0.06)**  | -0.17 (-0.36, 0.03) | **-0.20 (-0.37, -0.03)** |
| **21.0-22.9**  | 292 | **-0.33 (-0.48, -0.18)** | **-0.18 (-0.33, -0.02)** | -0.11 (-0.25, 0.04) | 195 | **-0.30 (-0.48, -0.12)**  | **-0.16 (-0.34, 0.02)** | -0.15 (-0.31, 0.01)  |
| **≥23.0**  | 193 | **-0.81 (-0.98, -0.64)** | **-0.48 (-0.67, -0.29)** | **-0.36 (-0.54, -0.18)** | 143 | **-0.75 (-0.94, -0.55)**  | **-0.52 (-0.73, -0.32)** | **-0.38 (-0.56, -0.20)**  |
| **P-trend** |  | **<0.01** | **<0.01** | **<0.01** |  | **<0.01** | **<0.01** | **<0.01** |
| **Per 1-kg/m2 increase** | **-0.12 (-0.15, -0.10)**  | **-0.07 (-0.10, -0.04)** | **-0.05 (-0.08, -0.03)** |  |  **-0.11 (-0.13, -0.08)** | **-0.07 (-0.10, -0.04)** | **-0.05 (-0.07, -0.02)** |
|  | **N** | **MV-adjusted a** | **MV + Childhood body fatness d** | **MV + Childhood body fatness + PMD e** | **N** | **MV-adjusted a** | **MV + Childhood body fatness d** | **MV + Childhood body fatness + PMD e** |
| **Current adult BMI, kg/m2** |
| **<21.0** | 240  | 0 (Ref) | 0 (Ref) | 0 (Ref) | 126 | 0 (Ref) | 0 (Ref) |  0 (Ref) |
| **21.0-22.9** |  265 | 0.02 (-0.14, 0.17)  | 0.02 (-0.14, 0.17)  | **0.16 (0.02, 0.31)** | 180 | -0.01 (-0.21, 0.20) | 0.01 (-0.19, 0.22)  | 0.13 (-0.05, 0.31)  |
| **23.0-24.9** |  256 | 0.04 (-0.12, 0.20) | 0.08 (-0.08, 0.24)  | **0.32 (0.17, 0.47)** | 193 | -0.15 (-0.35, 0.05) | -0.11 (-0.31, 0.09) | 0.03 (-0.15, 0.20) |
| **25.0-29.9** |  316 | **-0.28 (-0.43, -0.13)**  | **-0.22 (-0.38, -0.07)**  | **0.17 (0.01, 0.32)** | 231 | **-0.41 (-0.60, -0.21)** | **-0.35 (-0.54, -0.15)** | -0.06 (-0.23, 0.12) |
| **≥30.0** |  165 | **-0.93 (-1.11, -0.75)** | **-0.80 (-0.99, -0.62)**  | **-0.26 (-0.45, -0.07)** | 120 | **-0.72 (-0.95, -0.50)** | **-0.61 (-0.84, -0.38)**  | -0.16 (-0.37, 0.05)  |
| **P-trend** |   | **<0.01** | **<0.01** | **<0.01** |  | **<0.01** | **<0.01** | **0.01**  |
| **Per 1-kg/m2 increase** | **-0.07 (-0.08, -0.06)**  | **-0.06 (-0.08, -0.05)**  | **-0.02 (-0.04, -0.01)** |  | **-0.06 (-0.08, -0.05)** | **-0.05 (-0.07, -0.04)**  | **-0.02 (-0.03, -0.004)**  |
| **Predicted body fat mass f, kg** |
|  **<20.0** | 211 | 0 (Ref) | 0 (Ref) | 0 (Ref) | 122 | 0 (Ref) | 0 (Ref) |  0 (Ref) |
|  **20.0-24.9** | 240 | 0.17 (-0.005, 0.34)  | **0.18 (0.01, 0.35)** | **0.33 (0.17, 0.49)** | 226 | -0.15 (-0.35, 0.05) | -0.14 (-0.34, 0.06)  | -0.03 (-0.20, 0.14)  |
|  **25.0-29.9** | 138 | -0.14 (-0.35, 0.06)  | -0.08 (-0.29, 0.12)  | **0.23 (0.03, 0.42)** | 133 | **-0.27 (-0.49, -0.04)** | **-0.27 (-0.49, -0.05)** | -0.10 (-0.30, 0.09)  |
|  **30.0-34.9** | 83 | **-0.31 (-0.55, -0.07)**  | -0.23 (-0.47, 0.01) | 0.16 (-0.08, 0.39) | 81 | **-0.55 (-0.81, -0.30)** | **-0.49 (-0.74, -0.24)**  | -0.11 (-0.34, 0.12) |
|  **≥35.0** | 89 | **-0.77 (-1.00, -0.54)** | **-0.64 (-0.88, -0.40)**  | -0.13 (-0.37, 0.11) | 70 | **-0.86 (-1.13, -0.59)** | **-0.74 (-1.01, -0.47)**  | **-0.33 (-0.57, -0.09)** |
| **P-trend** |  | **<0.01** | **<0.01** | 0.12 |  | **<0.01** | **<0.01** | **0.01**  |
| **Per 1-kg increase** | **-0.03 (-0.04, -0.02)**  | **-0.03 (-0.04, -0.02)**  | -0.01 (-0.02, 0.002) |  | **-0.04 (-0.05, -0.03)** | **-0.03 (-0.04, -0.02)** | **-0.01 (-0.02, -0.004)**  |
| **Predicted percent body fat mass f** |
|  **<35.0** | 302  | 0 (Ref) | 0 (Ref) | 0 (Ref) | 159 | 0 (Ref) | 0 (Ref) |  0 (Ref) |
|  **35.0-36.9** |  169 | 0.17 (-0.005, 0.34)  | **0.20 (0.02, 0.37)** | **0.34 (0.17, 0.50)** | 154 | 0.01 (-0.19, 0.21) | 0.02 (-0.18, 0.22)  | 0.11 (-0.06, 0.29)  |
|  **37.0-39.9** |  150 | **-0.32 (-0.51, -0.14)**  | **-0.28 (-0.46, -0.10)**  | 0.09 (-0.10, 0.27) | 165 | **-0.22 (-0.43, -0.02)** | **-0.21 (-0.42, -0.01)** | 0 (-0.18, 0.18) |
|  **40.0-42.9** |  79 | **-0.42 (-0.65, -0.19)**  | **-0.33 (-0.56, -0.10)**  | 0.04 (-0.19, 0.27) | 80 | **-0.52 (-0.77, -0.27)** | **-0.44 (-0.69, -0.19)**  | -0.06 (-0.28, 0.17)  |
|  **≥43.0** |  61 | **-0.99 (-1.25, -0.74)**  | **-0.86 (-1.12, -0.59)** | **-0.30 (-0.56, -0.03)** | 74 | **-0.78 (-1.04, -0.53)** | **-0.68 (-0.94, -0.43)**  | -0.23 (-0.46, 0.01)  |
| **P-trend** |  | **<0.01** | **<0.01** | 0.06 |  | **<0.01** | **<0.01** |  **0.02** |
| **Per 1% increase** | **-0.07 (-0.09, -0.05)** | **-0.06 (-0.08, -0.04)**  | -0.02 (-0.04, 0.0004) |  | **-0.06 (-0.08, -0.05)** | **-0.06 (-0.07, -0.04)**  | **-0.02 (-0.04, -0.003)**  |
| **Height** |
| **<63.0** |  215 | 0 (Ref) | 0 (Ref) |  | 172 | 0 (Ref) | 0 (Ref) |   |
| **63.0-64.9** |  368 | 0.08 (-0.08, 0.24) | 0.05 (-0.10, 0.21) |  | 253 |  0.03 (-0.15, 0.22) |  0.04 (-0.14, 0.21)  |   |
| **65.0-65.9** |  165 | -0.05 (-0.24, 0.14) | -0.09 (-0.28, 0.10) |  | 126 | 0.05 (-0.16, 0.26) | 0.07 (-0.14, 0.28) |  |
| **66.0-66.9** |  159 | -0.03 (-0.23, 0.17) | -0.06 (-0.25, 0.14) |  | 104 |  0.15 (-0.08, 0.37) |  0.10 (-0.12, 0.32) |   |
| **≥67.0** |  335 | -0.03 (-0.19, 0.14) | -0.06 (-0.22, 0.10) |  | 195 | 0.10 (-0.09, 0.29) | 0.10 (-0.09, 0.28) |  |
| **P-trend** |  | 0.39 | 0.23 |  |  |  0.22 |  0.25 |   |
| **Per 1-inch increase** | -0.01 (-0.04, 0.01) | -0.01 (-0.04, 0.01) |  |  | 0.02 (-0.01, 0.05) | 0.02 (-0.01, 0.05) |  |

a MV-adjusted model includes age (years, continuous), race (white/nonwhite), personal history of benign breast disease (yes/no), family history of breast cancer (yes/no), parity/age at first birth (nulliparous, 1-2 births/<25 years, 1-2 births/25-29 years, 1-2 births/≥30 years, >3 births/<25 years, >3 births/≥25 years, parous/missing age at first birth), alcohol use (0, 0.1-4.9, 5-14.9, ≥15 g/d, missing), smoking (never, former, current), breastfeeding (<1, 1-6, 7-12, ≥13 months), and, in postmenopausal women, age at menopause (<44, 45-49, 50-54, ≥55 years, missing) and postmenopausal hormone use (never, former, current).

b Additionally includes current BMI (kg/m2, continuous) in the MV-adjusted model.

c Additionally includes current BMI (kg/m2, continuous) and percent mammographic density (square root transformed, continuous) in the MV-adjusted model.

d Additionally includes childhood body fatness (level 1-4.5+, continuous) in the MV-adjusted model.

e Additionally includes childhood body fatness (level 1-4.5+, continuous) and percent mammographic density (square root transformed, continuous) in the MV-adjusted model.

f Predicted body fat mass and percent body fat mass at mammogram were calculated using the formula developed in the NHANES on the basis of age, race, height, weight, and waist circumference. Because 481 premenopausal and 218 postmenopausal women were missing information on waist circumference, 761 premenopausal and 632 postmenopausal women were included in these analyses.

Abbreviations: BMI=body mass index, CI=confidence interval

**Supplementary Table 3. Beta coefficients and 95% confidence intervals (CIs) for the associations between anthropometrics and mammographic density measures among 1,700 PREMENOPAUSAL women in the Nurses’ Health Study (NHS) and the NHSII**

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcome** | **Models** | **Beta coefficient (95% CI)** |  |
| **Childhood body size (average body fatness at ages 5-10 years)** |
| **Level 1** | **Level 1.5-2** | **Level 2.5-3** | **Level 3.5-4** | **Level ≥4.5** | **Per 1-level increase** | **P-trend** |
|  | **N** |  303 | 507 | 454 | 275 | 161 |   |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | -0.11 (-0.33, 0.12) | **-0.47** **(-0.70, -0.24)** | **-1.01** **(-1.26, -0.75)** | **-1.32** **(-1.62, -1.02)** | **-0.36** **(-0.42, -0.29)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.05 (-0.15, 0.24) | **-0.12****(-0.32, 0.09)** | **-0.41****(-0.65, -0.18)** | **-0.55****(-0.83, -0.28)** | **-0.16** **(-0.21, -0.10)** | **<0.01** |
| **MV + Current BMI + Va** | 0 (Ref) | 0.06(-0.12, 0.24) | -0.08(-0.27, 0.11) | **-0.27****(-0.49, -0.06)** | **-0.28****(-0.53, -0.02)** | **-0.09****(-0.15, -0.04)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | -0.03 (-0.30, 0.24) | -0.18 (-0.46, 0.10) | **-0.47** **(-0.78, -0.16)** | **-0.83** **(-1.19, -0.46)** | **-0.20** **(-0.27, -0.12)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | -0.01(-0.29, 0.26) | -0.15 (-0.43, 0.13) | **-0.42** **(-0.74, -0.10)** | **-0.76****(-1.14, -0.39)** | **-0.18****(-0.26, -0.10)** | **<0.01** |
| **MV + Current BMI + Va** | 0 (Ref) | 0.01 (-0.24, 0.26) | -0.10 (-0.36, 0.16) | -0.23 (-0.53, 0.07) | **-0.40** **(-0.75, -0.05)** | **-0.10** **(-0.17, -0.03)** | **0.01** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | 0.26 (-0.11, 0.63) | **0.86** **(0.48, 1.24)** | **1.80** **(1.38, 2.22)** | **2.24** **(1.75, 2.73)** | **0.61** **(0.51, 0.71)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | -0.09(-0.37, 0.20) | 0.06(-0.23, 0.36) | **0.44** **(0.10, 0.77)** | **0.45** **(0.05, 0.84)** | **0.15** **(0.06, 0.23)** | **<0.01** |
| **MV + Current BMI + Va** | 0 (Ref) | -0.10(-0.38, 0.17) | 0.04 (-0.25, 0.32) | **0.33** **(0.01, 0.66)** | 0.22 (-0.17, 0.61) | **0.10** **(0.02, 0.18)** | **0.02** |
|  |  | **Adolescent body size (average at ages 10-20 years)** |
| **Level 1** | **Level 1.5-2** | **Level 2.5-3** | **Level 3.5-4** | **Level ≥4.5** | **Per 1-level increase** | **P-trend** |
|  | **N** |  72 | 427 | 608 | 405 | 188 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | 0.01 (-0.38, 0.39) | -0.38 (-0.76, 0) | **-0.98** **(-1.36, -0.59)** | **-1.73** **(-2.15, -1.32)** | **-0.51** **(-0.58, -0.44)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.10 (-0.25, 0.45) | -0.05 (-0.40, 0.29) | -0.36(-0.71, 0) | **-0.66****(-1.06, -0.27)** | **-0.22****(-0.29, -0.15)** | **<0.01** |
| **MV + Current BMI + Va** | 0 (Ref) | 0.10(-0.22, 0.42) | -0.02(-0.33, 0.30) | -0.20(-0.52, 0.13) | -0.32(-0.68, 0.05) | **-0.12****(-0.19, -0.06)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.10 (-0.37, 0.58) | 0.09 (-0.38, 0.56) | -0.23(-0.71, 0.25) | **-0.67** **(-1.18, -0.15)** | **-0.20** **(-0.29, -0.12)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.11(-0.37, 0.58) | 0.11(-0.36, 0.58) | -0.19 (-0.68, 0.29) | **-0.60** **(-1.14, -0.07)** | **-0.18****(-0.28, -0.08)** | **<0.01** |
| **MV + Current BMI + Va** | 0 (Ref) | 0.12(-0.32, 0.57) | 0.17(-0.27, 0.61) | 0.03(-0.42, 0.48) | -0.14(-0.65, 0.36) | -0.06(-0.15, 0.03) | 0.21 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | 0.23 (-0.39, 0.85) | **1.04** **(0.43, 1.65)** | **2.05** **(1.42, 2.67)** | **3.50** **(2.82, 4.17)** | **0.96** **(0.85, 1.08)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.05(-0.44, 0.55) | 0.30(-0.19, 0.78) | **0.62** **(0.11, 1.12)** | **1.00****(0.44, 1.56)** | **0.28** **(0.18, 0.38)** | **<0.01** |
| **MV + Current BMI + Va** | 0 (Ref) | 0.05(-0.43, 0.53) | 0.26(-0.22, 0.74) | 0.50(0, 0.99) | **0.74****(0.19, 1.29)** | **0.21****(0.11, 0.31)** | **<0.01** |
|  |  | **BMI at age 18 years, kg/m2** |
| **<19** | **19-19.9** | **20.0-20.9** | **21.0-22.9** | **≥23.0** | **Per 1-kg/m2 increase** | **P-trend** |
|  | **N** | 342 | 308 | 315 | 411 | 324 |   |   |
| **PMD** | **MV-adjusted** | 0 (Ref) | -0.19 (-0.42, 0.04) | **-0.43** **(-0.66, -0.20)** | **-0.79** **(-1.00, -0.57)** | **-1.73** **(-1.96, -1.50)** | **-0.26** **(-0.30, -0.23)** | **<0.01** |
| **MV + Current BMI** | 0(Ref) | -0.03 (-0.25, 0.18) | -0.11 (-0.33, 0.11) | **-0.27****(-0.48, -0.06)** | **-0.66** **(-0.90, -0.41)** | **-0.10****(-0.14, -0.07)** | **<0.01** |
| **MV + Current BMI + Va** | 0(Ref) | 0.03(-0.17, 0.23) | -0.09 (-0.29, 0.11) | -0.15 (-0.34, 0.04) | **-0.36** **(-0.59, -0.13**) | **-0.06** **(-0.09, -0.03)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.17 (-0.13, 0.46) | 0.21 (-0.08, 0.50) | 0 (-0.28, 0.27) | -**0.43** **(-0.72, -0.13)** | **-0.08** **(-0.12, -0.04)** | **<0.01** |
| **MV + Current BMI** | 0(Ref) | 0.18 (-0.11, 0.47) | 0.24 (-0.06, 0.54) | 0.04 (-0.24, 0.32) | -0.33 (-0.67, 0) | **-0.06** **(-0.11, -0.01)** | **0.01** |
| **MV + Current BMI + Va** | 0(Ref) | 0.26 (-0.01, 0.53) | 0.26 (-0.01, 0.54) | 0.20 (-0.07, 0.46) | 0.05 (-0.26, 0.37) | 0 (-0.05, 0.04) | 0.88 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **0.56** **(0.19, 0.93)** | **1.13** **(0.77, 1.50)** | **1.72** **(1.38, 2.07)** | **3.58** **(3.21, 3.95)** | **0.53** **(0.48, 0.58)** | **<0.01** |
| **MV + Current BMI** | 0(Ref) | 0.19 (-0.12, 0.49) | **0.37** **(0.07, 0.68)** | **0.52** **(0.22, 0.81)** | **1.04** **(0.69, 1.39)** | **0.15** **(0.10, 0.20)** | **<0.01** |
| **MV + Current BMI + Va** | 0(Ref) | 0.14 (-0.15, 0.44) | **0.36** **(0.06, 0.66)** | **0.43** **(0.14, 0.72)** | **0.82** **(0.48, 1.17)** | **0.12** **(0.07, 0.17)** | **<0.01** |
|  |  | **Current BMI, kg/m2**  |
| **<20.9** | **21.0-22.9** | **23.0-24.9** | **25.0-29.9** | **≥30.0** | **Per 1-kg/m2 increase** | **P-trend** |
|  | **N** | 285 | 351 | 329 | 429 | 306 |   |   |
| **PMD** | **MV-adjusted** | 0 (Ref) | **-0.51** **(-0.73, -0.29)** | **-0.98** **(-1.20, -0.76)** | **-1.57** **(-1.78, -1.36)** | **-2.54** **(-2.77, -2.31)** | **-0.19** **(-0.20, -0.1**7) | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **-0.50** **(-0.72, -0.29)** | **-0.93** **(-1.15, -0.71)** | **-1.49** **(-1.70, -1.28)** | **-2.36** **(-2.60, -2.13)** | **-0.18** **(-0.19, -0.16)** | **<0.01** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | **-0.55** **(-0.75, -0.35)** | **-0.96** **(-1.16, -0.76)** | **-1.33** **(-1.52, -1.14)** | **-1.89** **(-2.11, -1.67)** | **-0.14** **(-0.15, -0.12)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | -0.14 (-0.44, 0.16) | -0.17 (-0.48, 0.13) | -0.20 (-0.49, 0.09) | **-0.53** **(-0.85, -0.22)** | **-0.04** **(-0.06, -0.02)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | -0.13 (-0.43, 0.16) | -0.12 (-0.42, 0.18) | -0.12 (-0.41, 0.17) | **-0.34** **(-0.66, -0.02)** | -0.02 (-0.04, 0) | 0.06 |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | -0.20 (-0.47, 0.08) | -0.17 (-0.45, 0.11) | 0.09 (-0.18, 0.36) | 0.26 (-0.05, 0.57) | **0.03** **(0.01, 0.05)** | **0.01** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **0.79** **(0.47, 1.10)** | **1.63** **(1.31, 1.94)** | **3.05** **(2.74, 3.35)** | **5.33** **(5.01, 5.66)** | **0.41** **(0.39, 0.43)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **0.78** **(0.47, 1.09)** | **1.57** **(1.25, 1.89)** | **2.96** **(2.66, 3.27)** | **5.14** **(4.80, 5.48)** | **0.39** **(0.37, 0.42)** | **<0.01** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | **0.82** **(0.52, 1.13)** | **1.60** **(1.29, 1.91)** | **2.84** **(2.54, 3.14)** | **4.78** **(4.44, 5.12)** | **0.36** **(0.34, 0.39)** | **<0.01** |
|  |  | **Predicted body fat mass at mammogram, kg** |
| **<20.0** | **20.0-24.9** | **25.0-29.9** | **30.0-34.9** | **≥35.0** | **Per 1-kg increase** | **P-trend** |
|  | **N** |  272 | 331 | 201 | 115 | 159 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | **-0.61** **(-0.85, -0.38)** | **-1.27** **(-1.54, -1.00)** | **-1.60** **(-1.92, -1.28)** | **-2.37** **(-2.66, -2.08)** | **-0.09** **(-0.10, -0.08)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **-0.58** **(-0.81, -0.34)** | **-1.17** **(-1.44, -0.90)** | **-1.48** **(-1.80, -1.16)** | **-2.18** **(-2.48, -1.88)** | **-0.09** **(-0.10, -0.07)** | **<0.01** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | **-0.69** **(-0.90, -0.48)** | **-1.08** **(-1.32, -0.83)** | **-1.25** **(-1.54, -0.96)** | **-1.73** **(-2.01, -1.46)** | **-0.07** **(-0.08, -0.06)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | -0.05 (-0.37, 0.27) | -0.11 (-0.47, 0.26) | -0.19 (-0.62, 0.25) | -0.35 (-0.75, 0.04) | -0.01 (-0.03, 0) | 0.06 |
|  | **MV + Childhood body fatness** | 0 (Ref) | -0.01 (-0.33, 0.31) | 0 (-0.37, 0.37) | -0.06 (-0.50, 0.38) | -0.14 (-0.55, 0.26) | -0.01 (-0.02, 0.01) | 0.46 |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | -0.15 (-0.44, 0.14) | 0.11 (-0.23, 0.45) | 0.23 (-0.18, 0.64) | **0.42** **(0.04, 0.80)** | **0.02** **(0.01, 0.03)** | **0.01** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **1.12** **(0.79, 1.45)** | **2.49** **(2.11, 2.87)** | **3.27** **(2.82, 3.72)** | **5.18** **(4.78, 5.59)** | **0.21** **(0.19, 0.22)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **1.08** **(0.75, 1.41)** | **2.38** **(2.00, 2.77)** | **3.15** **(2.69, 3.60)** | **4.98** **(4.56, 5.40)** | **0.20** **(0.18, 0.21)** | **<0.01** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | **1.17** **(0.85, 1.49)** | **2.30** **(1.93, 2.67)** | **2.97** **(2.53, 3.42)** | **4.63** **(4.22, 5.05)** | **0.18** **(0.17, 0.20)** | **<0.01** |
|  |  | **Predicted percent body fat mass at mammogram** |
| **<35.0** | **35.0-36.9** | **37.0-39.9** | **40.0-42.9** | **≥43.0** | **Per 1% increase** | **P-trend** |
|  | **N** |  397 | 234 | 207 | 117 | 123 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | **-0.59** **(-0.82, -0.36)** | **-1.51** **(-1.75, -1.27)** | **-1.57** **(-1.86, -1.27)** | **-2.52** **(-2.81, -2.23)** | **-0.19** **(-0.21, -0.17)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0(Ref) | **-0.55** **(-0.78, -0.32)** | **-1.45** **(-1.69, -1.21)** | **-1.44** **(-1.74, -1.15)** | **-2.32** **(-2.62, -2.03)** | **-0.18** **(-0.20, -0.16)** | **<0.01** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | **-0.64** **(-0.85, -0.43)** | **-1.22** **(-1.44, -1.00)** | **-1.19** **(-1.46, -0.92)** | **-1.80** **(-2.09, -1.52)** | **-0.14** **(-0.16, -0.12)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.18 (-0.14, 0.50) | **-0.45** **(-0.79, -0.12)** | 0.11 (-0.30, 0.52) | **-0.46** **(-0.87, -0.05)** | **-0.03** **(-0.06, 0)** | **0.02** |
|  | **MV + Childhood body fatness** | 0(Ref) | 0.23 (-0.09, 0.55) | **-0.38** **(-0.72, -0.05)** | 0.24 (-0.17, 0.65) | -0.25 (-0.67, 0.17) | -0.02 (-0.05, 0.01) | 0.24 |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | 0.10 (-0.19, 0.40) | -0.09 (-0.41, 0.22) | **0.57** **(0.19, 0.96)** | **0.44** **(0.04, 0.84)** | **0.04** **(0.01, 0.06)** | **0.01** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **1.28** **(0.96, 1.60)** | **2.68** **(2.35, 3.02)** | **3.52** **(3.11, 3.93)** | **5.59** **(5.19, 5.99)** | **0.41** **(0.39, 0.44)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0(Ref) | **1.24** **(0.93, 1.56)** | **2.62** **(2.28, 2.95)** | **3.40** **(2.99, 3.81)** | **5.40** **(4.99, 5.82)** | **0.40** **(0.37, 0.43)** | **<0.01** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | **1.31** **(1.00, 1.62)** | **2.45** **(2.12, 2.78)** | **3.22** **(2.82, 3.63)** | **5.03** **(4.61, 5.45)** | **0.37** **(0.34, 0.40)** | **<0.01** |
|  |  | **Height, inches** |
| **<63.0** | **63.0-64.9** | **65.0-65.9** | **66.0-67.9** |  **≥68.0** | **Per 1-inch increase** | **P-trend** |
|  | **N** | 294 | 518 | 232 | 220 | 436 |   |   |
| **PMD** | **MV-adjusted** | 0 (Ref) | 0.04 (-0.19, 0.27) | 0.18 (-0.09, 0.46) | 0.43 (0.15, 0.72) | 0.22 (-0.02, 0.47) | **0.05** **(0.01, 0.08)** |  **0.01** |
|  | **MV + Childhood body fatness** | 0(Ref) | 0.04 (-0.18, 0.26) | 0.16 (-0.10, 0.43) | **0.40** **(0.13, 0.67)** | 0.20 (-0.03, 0.43) | **0.04** **(0.01, 0.08)** | **0.02** |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | 0.03 (-0.17, 0.23) | 0.20 (-0.04, 0.43) | **0.39** **(0.15, 0.63)** | **0.22** **(0.02, 0.42)** | **0.05** **(0.01, 0.08)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.06 (-0.21, 0.33) | 0.09 (-0.23, 0.42) | 0.27 (-0.07, 0.60) | 0.22 (-0.07, 0.50) | 0.04 (0, 0.08) |  0.07 |
|  | **MV + Childhood body fatness** | 0(Ref) | 0.06 (-0.21, 0.33) | 0.08 (-0.24, 0.41) | 0.25 (-0.08, 0.58) | 0.20 (-0.08, 0.48) | 0.04 (-0.01, 0.08) | 0.09 |
|  | **MV + Childhood body fatness + Va** | 0 (Ref) | 0.06 (-0.19, 0.31) | 0.12 (-0.18, 0.43) | 0.25 (-0.06, 0.56) | 0.23 (-0.03, 0.49) | 0.04 (0, 0.08) |  **0.04** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | 0.05 (-0.34, 0.43) | -0.29 (-0.75, 0.17) | **-0.56** **(-1.03, -0.09)** | -0.20 (-0.60, 0.20) | -0.05 (-0.11, 0.01) |  0.09 |
|  | **MV + Childhood body fatness** | 0(Ref) | 0.06 (-0.31, 0.42) | -0.25 (-0.69, 0.20) | **-0.49** **(-0.94, -0.04)** | -0.15 (-0.54, 0.23) | -0.04 (-0.10, 0.02) | 0.15 |
|  | **MV + Childhood body fatness + Va** | 0(Ref) | 0.07 (-0.28, 0.41) | -0.29 (-0.70, 0.13) | **-0.47** **(-0.89, -0.04)** | -0.17 (-0.53, 0.19) | -0.05 (-0.10, 0.01) |  0.10 |

All mammographic density (PMD, dense area, non-dense area) were square-root transformed.

MV-adjusted model includes age (years, continuous), race (white/nonwhite), personal history of benign breast disease (yes/no), family history of breast cancer (yes/no), parity/age at first birth (nulliparous, 1-2 births/<25 years, 1-2 births/25-29 years, 1-2 births/≥30 years, >3 births/<25 years, >3 births/≥25 years, parous/missing age at first birth), alcohol use (0, 0.1-4.9, 5-14.9, ≥15 g/d, missing), smoking (never, former, current), breastfeeding (<1, 1-6, 7-12, ≥13 months), and, in postmenopausal women, age at menopause (<44, 45-49, 50-54, ≥55 years, missing) and postmenopausal hormone use (never, former, current).

**a** V=V measures with 25% erosion (V75) and low resolution

Abbreviations: PMD=percent mammographic density

**Supplementary Table 4. Beta coefficients and 95% confidence intervals (CIs) for the associations between anthropometrics and mammographic density measures among 1,947 POSTMENOPAUSAL women in the Nurses’ Health Study (NHS) and the NHSII**

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcome** | **Models** | **Beta coefficient (95% CI)** |  |
| **Childhood body size (average body fatness at ages 5-10 years)** |
| **Level 1** | **Level 1.5-2** | **Level 2.5-3** | **Level 3.5-4** | **Level ≥4.5** | **Per 1-level increase** | **P-trend** |
|  | **N** |  532 | 556 | 397 | 290 | 172 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | 0.10 (-0.10, 0.31) | **-0.42** **(-0.64, -0.19)** | **-0.57** **(-0.82, -0.33)** | **-1.08** **(-1.38, -0.79)** | **-0.26** **(-0.32, -0.20)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.14 (-0.04, 0.33) | -0.20 (-0.41, 0) | -0.20(-0.42, 0.03) | **-0.65****(-0.92, -0.37)** | **-0.14****(-0.20, -0.08)** | **<0.01** |
| **MV + Current BMI + V** | 0 (Ref) | 0.11 (-0.05, 0.27) | -0.06 (-0.23, 0.12) | -0.04 (-0.24, 0.15) | **-0.27** **(-0.51, -0.04)** | **-0.06** **(-0.10, -0.01)** | **0.03** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.03 (-0.22, 0.29) | **-0.39** **(-0.66, -0.11)** | **-0.44** **(-0.75, -0.14)** | **-0.99** **(-1.36, -0.63)** | **-0.22** **(-0.30, -0.15)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.04(-0.21, 0.30) | **-0.33** **(-0.61, -0.06)** | **-0.35****(-0.66, -0.04)** | **-0.89****(-1.26, -0.51)** | **-0.19****(-0.27, -0.12)** | **<0.01** |
| **MV + Current BMI + V** | 0 (Ref) | 0 (-0.23, 0.23) | -0.16 (-0.41, 0.09) | -0.17 (-0.45, 0.11) | **-0.45** **(-0.79, -0.11)** | **-0.09** **(-0.16, -0.03)** | **0.01** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | -0.14 (-0.49, 0.22) | **0.74** **(0.35, 1.13)** | **1.14** **(0.71, 1.57)** | **1.60** **(1.08, 2.12)** | **0.43** **(0.33, 0.54)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | -0.25 (-0.53, 0.02) | 0.15 (-0.16, 0.45) | 0.07(-0.27, 0.41) | 0.37(-0.04, 0.78) | **0.09****(0.01, 0.17)** | **0.03** |
| **MV + Current BMI + V** | 0 (Ref) | -0.22 (-0.48, 0.04) | -0.01 (-0.29, 0.28) | -0.09 (-0.41, 0.23) | -0.01 (-0.40, 0.37) | 0 (-0.08, 0.08) | 0.94 |
|  |  | **Adolescent body size (average at ages 10-20 years)** |
| **Level 1** | **Level 1.5-2** | **Level 2.5-3** | **Level 3.5-4** | **Level ≥4.5** | **Per 1-level increase** | **P-trend** |
|  | **N** |  173 | 585 | 614 | 358 | 217 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | 0.03 (-0.26, 0.32) | -0.20 (-0.48, 0.09) | -0.53 (-0.84, -0.23) | **-1.37** **(-1.71, -1.03)** | **-0.34** **(-0.41, -0.27)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.11 (-0.15, 0.38) | 0.05 (-0.22, 0.32) | -0.15(-0.44, 0.13) | **-0.64****(-0.96, -0.31)** | **-0.16** **(-0.22, -0.09)** | **<0.01** |
| **MV + Current BMI + V** | 0 (Ref) | 0.16 (-0.07, 0.39) | 0.15 (-0.08, 0.37) | 0.10 (-0.14, 0.35) | -0.17(-0.45, 0.11) | -0.05 (-0.10, 0.01) | 0.12 |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.06 (-0.30, 0.42) | 0.02 (-0.34, 0.38) | -0.23 (-0.61, 0.16) | **-1.01** **(-1.43, -0.58)** | **-0.23** **(-0.31, -0.14)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.07(-0.28, 0.43) | 0.07 (-0.29, 0.43) | -0.14 (-0.53, 0.25) | **-0.84****(-1.28, -0.41)** | **-0.18****(-0.27, -0.10)** | **<0.01** |
| **MV + Current BMI + V** | 0 (Ref) | 0.13 (-0.19, 0.46) | 0.18 (-0.14, 0.51) | 0.16 (-0.19, 0.51) | -0.30 (-0.70, 0.10) | -0.05(-0.13, 0.03) | 0.20 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | 0.13 (-0.37, 0.63) | **0.77** **(0.27, 1.27)** | **1.39** **(0.86, 1.93)** | **2.61** **(2.02, 3.20)** | **0.67** **(0.55, 0.79)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | -0.10 (-0.50, 0.29) | 0.07(-0.32, 0.47) | 0.31 (-0.12, 0.73) | **0.53** **(0.04, 1.01)** | **0.16** **(0.07, 0.26)** | **<0.01** |
| **MV + Current BMI + V** | 0 (Ref) | -0.15 (-0.52, 0.22) | -0.02 (-0.39, 0.35) | 0.04 (-0.36, 0.44) | 0.05 (-0.41, 0.50) | 0.05 (-0.05, 0.14) | 0.32 |
|  |  | **BMI at age 18 years, kg/m2** |
| **<19** | **19-19.9** | **20.0-20.9** | **21.0-22.9** | **≥23.0** | **Per 1-kg/m2 increase** | **P-trend** |
|  | **N** | 382 | 313 | 368 | 478 | 406 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | 0.08 (-0.17, 0.33) | -0.20 (-0.44, 0.04) | **-0.49** **(-0.72, -0.27)** | **-1.36** **(-1.59, -1.13)** | **-0.21** **(-0.25, -0.18)** | **<0.01** |
| **MV + Current BMI** | 0 (Ref) | 0.19(-0.04, 0.43) | 0.03(-0.19, 0.26) | -0.03(-0.25, 0.19) | **-0.57** **(-0.81, -0.33)** | **-0.09** **(-0.13, -0.06)** | **<0.01** |
| **MV + Current BMI + V** | 0 (Ref) | **0.27** **(0.07, 0.47)** | 0.11 (-0.08, 0.30) | 0.10 (-0.09, 0.28) | -0.20 (-0.41, 0.01) | **-0.04** **(-0.07, -0.01)** | **0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.26 (-0.06, 0.57) | 0.24 (-0.06, 0.55) | 0.07 (-0.22, 0.35) | **-0.63** **(-0.93, -0.33)** | **-0.10** **(-0.15, -0.06)** | **<0.01** |
| **MV + Current BMI** | 0(Ref) | 0.28 (-0.03, 0.60) | 0.30 (-0.01, 0.60) | 0.17 (-0.12, 0.47) | **-0.45** **(-0.77, -0.13)** | **-0.08** **(-0.12, -0.03)** | **<0.01** |
| **MV + Current BMI + V** | 0(Ref) | 0.37 (0.08, 0.65) | **0.39** **(0.11, 0.66)** | **0.32** **(0.06, 0.59)** | -0.02 (-0.31, 0.28) | -0.01 (-0.05, 0.03) | 0.51 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | 0.25 (-0.17, 0.68) | **0.89** **(0.49, 1.30)** | **1.60** **(1.22, 1.98)** | **3.16** **(2.77, 3.56)** | **0.48** **(0.43, 0.54)** | **<0.01** |
| **MV + Current BMI** | 0(Ref) | -0.06 (-0.40, 0.29) | 0.24 (-0.09, 0.58) | 0.30 (-0.02, 0.62) | **0.94** **(0.59, 1.29)** | **0.14** **(0.09, 0.19)** | **<0.01** |
| **MV + Current BMI + V** | 0(Ref) | -0.13 (-0.46, 0.19) | 0.16 (-0.15, 0.48) | 0.18 (-0.13, 0.48) | **0.56** **(0.23, 0.90)** | **0.09** **(0.04, 0.14)** | **<0.01** |
|  |  | **Current BMI, kg/m2** |
| **<20.9** | **21.0-22.9** | **23.0-24.9** | **25.0-29.9** | **≥30.0** | **Per 1-kg/m2 increase** | **P-trend** |
|  | **N** | 243 | 335 | 390 | 601 | 378 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | **-0.55** **(-0.81, -0.29)** | **-0.90** **(-1.15, -0.65)** | **-1.52** **(-1.75, -1.29)** | **-2.39** **(-2.64, -2.14)** | **-0.18** **(-0.19, -0.16)** | **<0.01** |
|  | **MV + Childhood body fatness** |  | **-0.51** **(-0.77, -0.26)** | **-0.85** **(-1.10, -0.60)** | **-1.45** **(-1.69, -1.22)** | **-2.26** **(-2.52, -2.00)** | **-0.17** **(-0.18, -0.15)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | **-0.48** **(-0.70, -0.26)** | **-0.70** **(-0.91, -0.48)** | **-1.06** **(-1.27, -0.86)** | **-1.61** **(-1.83, -1.38)** | **-0.11** **(-0.13, -0.10)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.01 (-0.34, 0.37) | 0.06 (-0.28, 0.41) | -0.16 (-0.48, 0.16) | **-0.62** **(-0.97, -0.28)** | **-0.05** **(-0.07, -0.03)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | 0.06 (-0.29, 0.41) | 0.13 (-0.21, 0.47) | -0.06 (-0.38, 0.26) | **-0.44** **(-0.79, -0.09)** | **-0.04** **(-0.06, -0.02)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | 0.09 (-0.22, 0.41) | 0.31 (0, 0.61) | **0.38** **(0.09, 0.67)** | 0.32(-0.01, 0.64) | 0.02 (0, 0.04) | **0.04** |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **1.24** **(0.86, 1.63)** | **2.24** **(1.87, 2.62)** | **3.67** **(3.33, 4.02)** | **6.20** **(5.82, 6.57)** | **0.46** **(0.43, 0.48)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **1.22** **(0.84, 1.61)** | **2.21** **(1.84, 2.59)** | **3.63** **(3.28, 3.98)** | **6.12** **(5.73, 6.50)** | **0.45** **(0.43, 0.48)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | **1.19** **(0.83, 1.55)** | **2.05** **(1.70, 2.40)** | **3.23** **(2.89, 3.56)** | **5.43** **(5.06, 5.80)** | **0.39** **(0.37, 0.42)** | **<0.01** |
|  |  | **Predicted body fat mass at mammogram, kg** |
| **<20.0** | **20.0-24.9** | **25.0-29.9** | **30.0-34.9** | **≥35.0** | **Per 1-kg increase** | **P-trend** |
|  | **N** | 250  | 427 | 342 | 197 | 248 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | **-0.53** **(-0.78, -0.28)** | **-1.02** **(-1.29, -0.76)** | **-1.41** **(-1.71, -1.11)** | **-2.22** **(-2.51, -1.94)** | **-0.09** **(-0.10, -0.08)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **-0.51** **(-0.76, -0.26)** | **-0.99** **(-1.25, -0.73)** | **-1.34** **(-1.64, -1.03)** | **-2.10** **(-2.39, -1.81)** | **-0.08** **(-0.09, -0.07)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | **-0.42** **(-0.63, -0.20)** | **-0.72** **(-0.94, -0.49)** | **-0.85** **(-1.11, -0.59)** | **-1.41** **(-1.66, -1.16)** | **-0.05** **(-0.06, -0.04)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.16 (-0.18, 0.49) | 0.12 (-0.23, 0.47) | -0.04 (-0.44, 0.36) | **-0.56** **(-0.94, -0.19)** | **-0.03** **(-0.04, -0.01)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | 0.18 (-0.15, 0.52) | 0.16 (-0.19, 0.50) | 0.04 (-0.36, 0.44) | **-0.42** **(-0.80, -0.04)** | **-0.02** **(-0.03, -0.01)** | **0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | 0.28 (-0.01, 0.58) | **0.46** **(0.15, 0.78)** | **0.59** **(0.23, 0.95)** | 0.36 (0, 0.71) | 0.01 (0, 0.03) | 0.05 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **1.42** **(1.04, 1.79)** | **2.78** **(2.39, 3.17)** | **3.71** **(3.26, 4.15)** | **5.93** **(5.50, 6.35)** | **0.23** **(0.22, 0.25)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **1.39** **(1.02, 1.76)** | **2.75** **(2.35, 3.14)** | **3.63** **(3.18, 4.08)** | **5.80** **(5.37, 6.23)** | **0.23** **(0.21, 0.25)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | **1.29** **(0.95, 1.64)** | **2.45** **(2.09, 2.81)** | **3.10** **(2.68, 3.52)** | **5.05** **(4.64, 5.45)** | **0.20** **(0.18, 0.21)** | **<0.01** |
|  |  | **Predicted percent body fat mass at mammogram** |
| **<35.0** | **35.0-36.9** | **37.0-39.9** | **40.0-42.9** | **≥43.0** | **Per 1% increase** | **P-trend** |
|  | **N** |  299 | 317 | 363 | 233 | 252 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | **-0.57** **(-0.82, -0.32)** | **-1.02** **(-1.27, -0.77)** | **-1.59** **(-1.87, -1.31)** | **-2.29** **(-2.57, -2.02)** | **-0.17** **(-0.19, -0.15)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **-0.55** **(-0.80, -0.30)** | **-0.98** **(-1.22, -0.73)** | **-1.51** **(-1.79, -1.24)** | **-2.18** **(-2.46, -1.90)** | **-0.16** **(-0.18, -0.14)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | **-0.52** **(-0.74, -0.31)** | **-0.78** **(-0.99, -0.56)** | **-1.04** **(-1.28, -0.80)** | **-1.49** **(-1.74, -1.25)** | **-0.11** **(-0.12, -0.09)** | **<0.01** |
| **Dense area** | **MV-adjusted** | 0 (Ref) | -0.04 (-0.38, 0.30) | 0 (-0.33, 0.33) | -0.29 (-0.66, 0.08) | **-0.71** **(-1.07, -0.34)** | **-0.06** **(-0.08, -0.03)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | -0.01 (-0.34, 0.33) | 0.06 (-0.28, 0.39) | -0.20 (-0.57, 0.18) | **-0.57** **(-0.94, -0.19)** | **-0.04** **(-0.07, -0.02)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | 0.02 (-0.28, 0.32) | 0.28 (-0.02, 0.58) | 0.34 (0, 0.68) | 0.21 (-0.14, 0.56) | 0.02 (-0.01, 0.04) | 0.12 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | **1.26** **(0.89, 1.63)** | **2.50** **(2.14, 2.87)** | **3.89** **(3.48, 4.30)** | **5.91** **(5.50, 6.31)** | **0.45** **(0.42, 0.47)** | **<0.01** |
|  | **MV + Childhood body fatness** | 0 (Ref) | **1.23** **(0.86, 1.61)** | **2.46** **(2.09, 2.83)** | **3.81** **(3.40, 4.23)** | **5.79** **(5.38, 6.21)** | **0.44** **(0.41, 0.47)** | **<0.01** |
|  | **MV + Childhood body fatness + V** | 0(Ref) | **1.21** **(0.87, 1.55)** | **2.24** **(1.90, 2.59)** | **3.30** **(2.91, 3.69)** | **5.06** **(4.67, 5.45)** | **0.38** **(0.35, 0.40)** | **<0.01** |
|  |  | **Height, inches** |
| **<63.0** | **63.0-64.9** | **65.0-65.9** | **66.0-67.9** |  **≥68.0** | **Per 1-inch increase** | **P-trend** |
|  | **N** | 377 | 601 | 278 | 258 | 433 |  |  |
| **PMD** | **MV-adjusted** | 0 (Ref) | 0.22 (-0.01, 0.44) | 0.18 (-0.09, 0.44) | 0.16 (-0.11, 0.44) | 0.09 (-0.15, 0.33) | 0.01 (-0.03, 0.04) | 0.71 |
| **Dense area** | **MV-adjusted** | 0 (Ref) | 0.17 (-0.10, 0.45) | 0.12 (-0.21, 0.45) | 0.25 (-0.09, 0.59) | 0.10 (-0.19, 0.40) | 0.01 (-0.03, 0.06) |  0.55 |
| **Non-dense area** | **MV-adjusted** | 0 (Ref) | -0.46 (-0.85, -0.06) | -0.36 (-0.83, 0.11) | -0.11 (-0.60, 0.37) | -0.06 (-0.48, 0.36) | 0.02 (-0.05, 0.08) |  0.64 |

All mammographic density measures (PMD, dense area, non-dense area) were square-root transformed.

MV-adjusted model includes age (years, continuous), race (white/nonwhite), personal history of benign breast disease (yes/no), family history of breast cancer (yes/no), parity/age at first birth (nulliparous, 1-2 births/<25 years, 1-2 births/25-29 years, 1-2 births/≥30 years, >3 births/<25 years, >3 births/≥25 years, parous/missing age at first birth), alcohol use (0, 0.1-4.9, 5-14.9, ≥15 g/d, missing), smoking (never, former, current), breastfeeding (<1, 1-6, 7-12, ≥13 months), and, in postmenopausal women, age at menopause (<44, 45-49, 50-54, ≥55 years, missing) and postmenopausal hormone use (never, former, current).

V=25% erosion, low resolution