

Supplementary Information

WHO-recommended levels of physical activity in relation to mammographic breast density, mammographic tumor appearance, and mode of detection of breast cancer

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Supplementary Table S1. Density classification concordance across categories of MBD and BI-RADS density in the subset of women with available BI-RADS data in the MDCS cohort

	MBD		
	Fat involuted	Moderately dense	Dense
BI-RADS			
A, almost entirely fatty	79 (93)	9 (5)	0 (0)
B, scattered areas of fibroglandular density	6 (7)	124 (74)	7 (6)
C, heterogeneously dense	0 (0)	34 (20)	87 (70)
D, extremely dense	0 (0)	0 (0)	30 (24)

Frequency distribution with total number of women and valid column percentages in parenthesis, n (%).

Supplementary Table S2. Associations between physical activity and mammographic breast density by menopausal status

	Premenopausal			Postmenopausal		
	<i>n</i> (%)	OR _{cru} (95% CI) ^a	OR _{adj} (95% CI) ^b	<i>n</i> (%)	OR _{cru} (95% CI) ^a	OR _{adj} (95% CI) ^b
PHYSICAL ACTIVITY						
MET-hours/week						
Low (<28.5)	160 (51)	1.00 (REF)	1.00 (REF)	392 (55)	1.00 (REF)	1.00 (REF)
High (≥28.5)	152 (49)	1.25 (0.80–1.96)	1.03 (0.63–1.69)	318 (45)	1.12 (0.81–1.54)	1.04 (0.73–1.48)
Continuous	312 (100)	1.00 (0.99–1.01)	1.00 (0.99–1.01)	710 (100)	1.00 (1.00*–1.01)	1.00 (1.00*–1.01)
WHO guidelines						
Subceed	37 (12)	1.00 (REF)	1.00 (REF)	79 (11)	1.00 (REF)	1.00 (REF)
Adhere	56 (18)	1.88 (0.77–4.63)	1.93 (0.73–5.13)	168 (24)	0.72 (0.39–1.30)	0.70 (0.36–1.35)
Exceed	219 (70)	2.27 (1.05–4.91)	1.82 (0.79–4.21)	463 (65)	1.10 (0.67–1.84)	1.01 (0.57–1.78)
<i>p</i> -trend		0.042	0.267		0.222	0.458
Moderate intensity						
<150 min	59 (19)	1.00 (REF)	1.00 (REF)	130 (19)	1.00 (REF)	1.00 (REF)
150–300 min	92 (30)	1.48 (0.75–2.94)	1.57 (0.75–3.31)	215 (31)	0.97 (0.60–1.58)	1.05 (0.62–1.78)
≥300 min	158 (51)	1.90 (1.01–3.57)	1.63 (0.83–3.20)	355 (51)	1.20 (0.78–1.87)	1.24 (0.76–2.00)
<i>p</i> -trend		0.043	0.204		0.291	0.325
Vigorous intensity						
<75 min	169 (68)	1.00 (REF)	1.00 (REF)	341 (67)	1.00 (REF)	1.00 (REF)
75–150 min	47 (19)	1.69 (0.88–3.23)	1.56 (0.76–3.18)	126 (25)	1.04 (0.67–1.63)	0.98 (0.60–1.60)
≥150 min	34 (14)	1.32 (0.63–2.77)	1.43 (0.65–3.19)	44 (9)	1.38 (0.71–2.66)	1.17 (0.55–2.49)
<i>p</i> -trend		0.227	0.230		0.411	0.791

Odds ratios (OR) with 95% confidence intervals (CI) predicting the odds of having a high MBD in relation to increasing levels of physical activity and menopausal status. ^aCrude model. ^bMultivariable model adjusted for (premenopausal women): age at diagnosis, BMI at baseline, parity, ever oral contraceptive use, and socioeconomic index; and for (postmenopausal women): age at diagnosis, BMI at baseline, parity, ever oral contraceptive use, current hormone replacement therapy, and socioeconomic index.

*Lower 95% CI ≤0.997. Values in bold indicate *p*<0.05.