

Supplementary Table 4. Estimated parameters of the mixed effects models fitted separately on each of the four mammographic density measures yielded by Cumulus (left MLO) and the ImageJ-based method (left-right MLO mean); control women only

		Percent density		Dense Area (cm ²)		Non Dense area on a log scale (cm ²)		Breast Area on a log scale (cm ²)	
Fixed affect parameters		Cumulus Coefficient (95% CI)	ImageJ-based Coefficient (95% CI)	Cumulus Coefficient (95% CI)	ImageJ-based Coefficient (95% CI)	Cumulus Coefficient (95% CI)	ImageJ-based Coefficient (95% CI)	Cumulus Coefficient (95% CI)	ImageJ-based Coefficient (95% CI)
Intercept		30.33 (27.42,33.23)	36.86 (35.33,38.40)	35.86 (31.80,39.91)	42.32 (40.37,44.27)	4.43 (4.34,4.52)	4.36 (4.31,4.40)	4.86 (4.81,4.92)	4.83 (4.80,4.86)
Age centred at age 45 yrs	Linear term	-0.5 (-0.81,-0.18)	-0.54 (-0.72,-0.36)	-0.65 (-0.92,-0.38)	-0.57 (-0.81,-0.33)	0.03 (0.03,0.04)	0.01 (0.00,0.2)	0.02 (0.01,0.02)	0.01 (0.00,0.01)
	Quadratic term	0.08 (0.03,0.12)							
BMI (kg/m ²)	16-21	4.04 (1.81,6.28)	5.00 (3.01,6.99)	0.10 (-2.97,3.18)	0.67 (-1.96,3.30)	-0.14 (-0.20,-0.09)	-0.20 (-0.25,-0.14)	-0.07 (-0.10,-0.04)	-0.08 (-0.11,-0.05)
	22-24	referent	referent	referent	referent	referent		referent	referent
	25-29	-4.75 (-6.43,-3.08)	-6.04 (-7.56,-4.52)	-1.67 (-3.97,0.63)	-3.46 (-5.47,-1.44)	0.14 (0.10,0.18)	0.18 (0.13,0.22)	0.05 (0.03,0.07)	0.07 (0.05,0.09)
	30-40	-6.88 (-9.72,-4.04)	-11.33 (-13.84,-8.82)	0.42 (-3.51,4.35)	-6.24 (-9.49,-2.99)	0.23 (0.16,0.30)	0.36 (0.28,0.43)	0.10 (0.07,0.14)	0.18 (0.14,0.22)
Menopause	Pre	referent	referent	referent	referent	referent	referent		
	Post	-2.10 (-3.92,-0.27)	-0.16 (-1.84,1.52)	-2.72 (-5.25,-0.19)	-0.92 (-3.14,1.30)	0.02 (-0.01,0.07)	0.00 (-0.04,0.04)		
Reader	1	referent		referent		referent		referent	
	2	4.53 (0.73,8.33)		8.74 (3.41,14.07)		-0.02 (-0.13,0.09)		0.00 (-0.06,0.08)	
	3	5.07 (0.94,9.20)		6.28 (0.49,12.07)		-0.10 (-0.22,0.02)		-0.03 (-0.11,0.04)	
Variables influencing the rate of change									
BMI (kg/m ²)	16-21							-0.00 (-0.01,0.00)	
	22-24							referent	
	25-29							0.00 (-0.00,0.00)	
	30-40							-0.00 (-0.01,0.00)	
Menopause	Pre-	referent	referent	referent	referent	referent	referent		
	Post-	-0.60 (-1.01,-0.18)	-0.46 (-0.82,-0.10)	-0.85 (-1.39,-0.32)	-0.54 (-1.04,-0.05)	0.01 (0.00,0.02)	0.01 (0.00,0.02)		
Reader	1	referent							
	2	-0.54 (-1.01,-0.08)							
	3	-0.53 (-0.95,-0.10)							
	SD slope	1.28 (1.12,1.48)	1.04 (0.89,1.23)	1.65 (1.43,1.92)	1.48 (1.28,1.71)	0.04 (0.03,0.04)	0.02 (0.02,0.03)	0.02 (0.02,0.02)	0.01 (0.01,0.02)
	SD intercept	16.7 (15.52,17.97)	12.05 (11.15,13.02)	23.53 (21.93,25.25)	14.82 (13.75,15.97)	0.51 (0.48,0.55)	0.41 (0.38,0.44)	0.34 (0.32,0.37)	0.27 (0.25,0.29)
	Correlation	-0.29 (-0.42,-0.15)	0.09 (-0.06,0.24)	-0.27 (-0.41,-0.12)	-0.06 (-0.2,0.09)	-0.24 (-0.37,-0.11)	0.16 (-0.01,0.32)	-0.07 (-0.22,0.08)	0.26 (0.11,0.4)
Residuals		6.25 (6.04,6.46)	6.55 (6.34,6.76)	8.71 (8.43,9.01)	8.77 (8.5,9.04)	0.14 (0.14,0.15)	0.19 (0.18,0.19)	0.07 (0.07,0.08)	0.09 (0.09,0.10)

BMI: expressed in kg/m²; CI: confidence intervals; MLO: medio-lateral oblique view; SD: standard deviation

BMI and reader indicators were included as a priori confounders, other predictors were identified by backward selection if p value <0.05.