

Supplementary Table S5 Comparison of change in percent mammographic breast density after the one-year intervention between arms receiving vitamin D<sub>3</sub> with placebo - Per protocol analysis

Change in percent density <sup>a</sup>	Placebo (n=80)	Vitamin D <sub>3</sub>			Linear trend in change in percent density <sup>d</sup>	
		1,000 IU/d (n=85)	2,000 IU/d (n=89)	3,000 IU/d (n=84)	β (95% CI)	<i>P</i> -value
Percent density at baseline (mean ± SD)	40.8 ± 17.2	38.3 ± 14.5	37.2 ± 15.2	37.9 ± 15.8		
Percent density at end of intervention (mean ± SD) <sup>a</sup>	34.6 ± 15.6	32.7 ± 13.9	31.5 ± 14.2	34.0 ± 14.9		
Change in percent density <sup>b</sup> (mean ± SE)	-6.1 ± 0.6	-5.6 ± 0.6	-5.8 ± 0.6	-3.8 ± 0.6		
Difference from placebo <sup>c</sup> (95% CI) <sup>c</sup>	0.0	0.6 (-1.4, 2.5)	0.3 (-1.6, 2.3)	2.3 (0.4, 4.3)	0.67 (0.16, 1.18)	0.01
<i>P</i> -value <sup>c</sup>		1.0	1.0	0.01		

<sup>a</sup> The Pearson correlation coefficient between percent mammographic density at baseline and at the end of the one-year intervention in each of the four study arms ranges between 0.93 and 0.95.

<sup>b</sup> Mean ± SE changes between percent mammographic breast density at the end of the one-year intervention and that at baseline are estimated from ANOVA and adjusted for sites.

<sup>c</sup> Differences in the mean of change in percent mammographic breast density comparing study arms receiving vitamin D<sub>3</sub> with placebo, 95% confidence interval and *P*-values, are estimated from ANOVA and adjusted for sites; 95% confidence interval and *P*-values are adjusted for multiple comparisons (Bonferroni correction).

<sup>d</sup> β (95% confidence interval) and *P*-value for linear trend are estimated from regression models and adjusted for sites. Study arm is treated as a continuous variable, and β represents mean difference in change in percent mammographic breast density for increments of 1,000 IU/d vitamin D<sub>3</sub>.