

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Pisano ED, Gatsonis C, Hendrick E, et al. Diagnostic performance of digital versus film mammography for breast-cancer screening. *N Engl J Med* 2005;353:1773-83.

Supplement Table 1.

	Digital Mammography							Screen Film Mammography						
	Malignancy Score													
All Subjects	7	6	5	4	3	2	1	7	6	5	4	3	2	1
Number of Tests	11	29	69	1061	2224	6588	32588	17	29	70	942	2291	6910	32486
Number of Breast Cancers	10	18	25	80	45	14	62	13	24	25	72	30	24	66
Cumulative Tests	11	40	109	1170	3394	9982	42570*	17	46	116	1058	3349	10259	42745*
Cumulative True Positives	10	28	53	133	178	192	254**	13	37	62	134	164	188	254**
Sensitivity - All Cancers	0.039	0.110	0.209	0.524	0.701	0.756	1.000	0.051	0.146	0.244	0.528	0.646	0.740	1.000
Sensitivity - Invasive Cancers	0.051	0.141	0.249	0.509	0.667	0.729	1.000	0.062	0.170	0.277	0.537	0.650	0.757	1.000
Specificity All Cancers	1.000	1.000	0.999	0.975	0.924	0.769	0.000	1.000	1.000	0.999	0.978	0.925	0.763	0.000
Positive Predictive Value	0.909	0.700	0.486	0.114	0.052	0.019	0.006	0.765	0.804	0.535	0.127	0.049	0.018	0.006
Number of cases with biopsies	11	22	41	296	314	210	460	14	27	50	271	321	206	467
Sensitivity (positive=4,5,6,7)	0.524 (se = 0.031)							0.528 (se = 0.031)						
Specificity (negative=1,2,3)	0.975 (se = 0.001)							0.978 (se = 0.001)						
PPV	0.114 (se = 0.009)							0.127 (se = 0.010)						
Sensitivity difference (DM-SF)	-0.004 , 95% CI (-0.085 , 0.078), p = 1.00													
Specificity difference (DM-SF)	-0.003 , 95% CI (-0.005 , -0.001), p = 0.005													
Women Under Age 50														
Sensitivity (positive=4,5,6,7)	0.576 (se = 0.064)							0.424 (se = 0.064)						
Specificity (negative=1,2,3)	0.973 (se = 0.001)							0.976 (se = 0.001)						
PPV	0.081 (se = 0.013)							0.069 (se = 0.013)						
Sensitivity difference (DM-SF)	0.152 , 95% CI (-0.019 , 0.324), p = 0.09													
Specificity difference (DM-SF)	-0.003 , 95% CI (-0.007 , 0.000), p = 0.06													
Pre- and peri-menopausal women														
Sensitivity (positive=4,5,6,7)	0.531 (se = 0.055)							0.469 (se = 0.055)						
Specificity (negative=1,2,3)	0.974 (se = 0.001)							0.976 (se = 0.001)						
PPV	0.095 (se = 0.014)							0.092 (se = 0.014)						
Sensitivity difference (DM-SF)	0.062 , 95% CI (-0.093 , 0.217), p = 0.50													
Specificity difference (DM-SF)	-0.002 , 95% CI (-0.006 , 0.001), p = 0.15													
Women with extremely dense and heterogeneously dense breasts														
Sensitivity (positive=4,5,6,7)	0.480 (se = 0.045)							0.472 (se = 0.045)						
Specificity (negative=1,2,3)	0.972 (se = 0.001)							0.974 (se = 0.001)						
PPV	0.098 (se = 0.012)							0.102 (se = 0.013)						
Sensitivity difference (DM-SF)	0.008 , 95% CI (-0.114 , 0.130), p = 1.00													
Specificity difference (DM-SF)	-0.002 , 95% CI (-0.005 , 0.001), p = 0.28													

Supplement Table 1 Legend. Test Performance using the 7-point malignancy scale with reference standard information at 365 days of follow-up. (PPV = Positive Predictive Value, se = Standard Error, CI = Confidence Interval).

Footnotes Supplement Table 1.

*Numbers of patients with full follow-up information differs from the 42760 women with full reference standard information because there were 190 women who did not receive digital mammograms and 15 women who did not receive film mammograms.

**Note that only 254 cancers were diagnosed in the 365 day follow-up interval.

	Digital Mammography						Screen Film Mammography					
	BIRADS Score											
All Subjects	5	4	0	3	2	1	5	4	0	3	2	1
No. of Tests	9	23	3623	68	8564	30283	8	23	3648	53	8113	30900
No. of Breast Cancers	7	8	171	0	45	103	7	6	161	0	42	119
Cum. No. of Tests	9	32	3655	3723	12287	42570*	8	31	3679	3732	11845	42745*
Cum. No. True Positives	7	15	186	186	231	334**	7	13	174	174	216	335
Sensitivity: All Cancers	0.021	0.045	0.557	0.557	0.692	1.000	0.021	0.039	0.519	0.519	0.645	1.000
Sensitivity: Invasive Cancers	0.028	0.057	0.667	0.667	0.774	1.000	0.034	0.057	0.655	0.655	0.768	1.000
Specificity: All Cancers	1.000	1.000	0.918	0.916	0.715	0.000	1.000	1.000	0.917	0.916	0.726	0.000
PPV	0.778	0.469	0.051	0.050	0.019	0.008	0.875	0.419	0.047	0.047	0.018	0.008
No. of cases with biopsies	8	18	655	4	127	235	8	19	658	3	105	256
Sensitivity (positive=0,4,5)	0.557 (se = 0.027)						0.519 (se = 0.027)					
Specificity (negative=1,2,3)	0.918 (se = 0.001)						0.917 (se = 0.001)					
PPV	0.051 (se = 0.004)						0.047 (se = 0.004)					
Sensitivity difference (DM-SF)	0.038 , 95% CI (-0.029 , 0.100) , p=0.29											
Specificity difference (DM-SF)	0.001 , 95% CI (-0.003 , 0.004) , p=0.72											
Women under age 50												
Sensitivity (positive=0,4,5)	0.681 (se = 0.055)						0.444 (se = 0.059)					
Specificity (negative=1,2,3)	0.901 (se = 0.003)						0.901 (se = 0.003)					
PPV	0.034 (se = 0.005)						0.022 (se = 0.004)					
Sensitivity difference (DM-SF)	0.237 , 95% CI (0.092 , 0.381) , p = 0.002											
Specificity difference (DM-SF)	0.000 , 95% CI (-0.005 , 0.007) , p = 0.87											
Pre- and peri-menopausal women												
Sensitivity (positive=0,4,5)	0.650 (se = 0.048)						0.430 (se = 0.050)					
Specificity (negative=1,2,3)	0.904 (se = 0.002)						0.902 (se = 0.002)					
PPV	0.042 (se = 0.005)						0.027 (se = 0.004)					
Sensitivity difference (DM-SF)	0.220 , 95% CI (0.091 , 0.350) , p = <0.001											
Specificity difference (DM-SF)	0.002 , 95% CI (-0.003 , 0.009) , p = 0.32											
Women with extremely dense and heterogeneously dense breasts												
Sensitivity (positive=0,4,5)	0.567 (se = 0.039)						0.436 (se = 0.039)					
Specificity (negative=1,2,3)	0.906 (se = 0.002)						0.902 (se = 0.002)					
PPV	0.048 (se = 0.005)						0.036 (se = 0.004)					
Sensitivity difference (DM-SF)	0.131 , 95% CI (0.034 , 0.222) , p = 0.008											
Specificity difference (DM-SF)	0.004 , 95% CI (-0.001 , 0.010) , p = 0.08											

Supplement Table 2.

Supplement Table 2 Legend. Test Performance using the BIRADS® scale with reference standard information at 455 days of follow-up. (PPV = Positive Predictive Value, se = Standard Error, CI = Confidence Interval).

Footnotes

*Numbers of patients with full follow-up information differs from the 42760 women with full reference standard information because there were 190 women who did not receive digital mammograms and 15 women who did not receive film mammograms.

**Note that one patient diagnosed with cancer did not undergo digital mammography.