Appendix
Breast Cancer in Young Women: Health State Utility Impacts by Race/Ethnicity
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Appendix Table 1. Healthy Days For All Races/Ethnicities

Health Days measure	Diagnosed at age 18 to 44			Diagnosed at age 45 or older		
	Breast cancer	No cancer	Difference	Breast cancer	No cancer	Difference
Overall healthy days[a]	21.52	23.20	**−1.68***	22.29	23.20	**−0.91***
Physically healthy days	24.19	25.80	**−1.61***	24.13	25.80	**−1.67***
Mentally healthy days	25.50	26.30	**−0.80***	26.96	26.30	**0.66***

Note: Boldface indicates statistically significant (*p*<0.05) difference between women with and without breast cancer. * indicates statistically significant (*p*<0.01) difference between women with and without breast cancer.

[a] Overall healthy days = 30 − (physically unhealthy days) − (mentally unhealthy days); values <0 are set to 0. This measure is used in the health state utility value from Jia and Lubetkin.[34]

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Appendix Table 2. Mapped HSU Regression Analysis[a]

	All races/ethnicities		White	
Variable	Diagnosed at age 18 to 44	Diagnosed at age 45 or older	Diagnosed at age 18 to 44	Diagnosed at age 45 or older
Breast cancer	-0.116* (0.018)	-0.070* (0.007)	-0.126* (0.021)	-0.072* (0.008)
Years since breast cancer diagnosis				
2 to 4 years	0.065* (0.023)	0.038* (0.008)	0.084* (0.025)	0.041* (0.009)
5 to 10 years	0.080* (0.021)	0.056* (0.008)	0.090* (0.024)	0.057* (0.009)
More than 10 years	0.091* (0.019)	0.049* (0.008)	0.101* (0.022)	0.049* (0.009)
Race/ethnicity				
White	0.007* (0.002)	0.005* (0.002)	-	-
African American, non-Hispanic	0.013* (0.002)	0.011* (0.002)	-	-
Other, non-Hispanic	0.002 (0.002)	Ref	-	-
Hispanic	Ref	-0.002 (0.002)	-	-
Age	-0.003* (0.0001)	-0.003* (0.0001)	-0.002* (0.0001)	-0.002* (0.0001)
Age squared	1.9E-5* (1.3E-6)	1.9E-5* (1.2E-6)	1.3E-5* (1.4E-6)	1.2E-5* (1.4E-6)
Household income <$35,000/year	-0.055* (0.001)	-0.055* (0.001)	-0.057* (0.001)	-0.057* (0.001)
BMI	-0.001 (0.0004)	-0.001 (0.0004)	8.7E-5 (0.0005)	0.0001 (0.001)
BMI squared	4.1E-5* (6.4E-6)	-4.1E-5* (6.4E-6)	-5.5E-5* (8.1E-6)	-5.5E-5* (8.1E-6)
Education (less than high school graduate)	-0.040* (0.002)	-0.040* (0.002)	-0.047* (0.002)	-0.046* (0.002)
Currently married	0.009* (0.001)	0.009* (0.001)	0.009* (0.001)	0.009* (0.001)
Smokes some days	-0.042* (0.002)	-0.042* (0.002)	-0.039* (0.002)	-0.039* (0.002)
Smokes every day	-0.059* (0.001)	-0.059* (0.001)	-0.059* (0.001)	-0.059* (0.001)
Asthma	-0.064* (0.001)	-0.063* (0.001)	-0.063* (0.002)	-0.062* (0.001)
Diabetes	-0.058* (0.001)	-0.058* (0.001)	-0.057* (0.002)	-0.058* (0.002)
Cardiovascular disease	-0.094* (0.002)	-0.093* (0.002)	-0.091* (0.003)	-0.090* (0.002)
Stroke	-0.074* (0.003)	-0.074* (0.003)	-0.072* (0.003)	-0.071* (0.003)
2009 BRFSS	-0.004* (0.001)	-0.004* (0.001)	-0.004* (0.001)	-0.003* (0.001)
Constant	1.051* (0.007)	1.051* (0.007)	1.025* (0.008)	1.023* (0.008)
N	194,230	198,880	150,948	155,022
R-squared	0.194	0.194	0.191	0.191

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	African American		Hispanic	
Variable	**Diagnosed at age 18 to 44**	**Diagnosed at age 45 or older**	**Diagnosed at age 18 to 44**	**Diagnosed at age 45 or older**
Breast cancer	-0.057 (0.061)	**-0.051 (0.023)**	-0.096 (0.059)	**-0.063 (0.031)**
Years since breast cancer diagnosis				
2 to 4 years	0.090 (0.067)	0.016 (0.030)	-0.125 (0.087)	0.004 (0.041)
5 to 10 years	0.025 (0.068)	0.026 (0.027)	0.123 (0.066)	0.042 (0.038)
More than 10 years	0.031 (0.065)	**0.071* (0.028)**	0.072 (0.066)	0.027 (0.041)
Age	**-0.004* (0.0005)**	**-0.004* (0.0004)**	**-0.005* (0.001)**	**-0.005* (0.001)**
Age squared	**2.7E-5* (4.5E-6)**	**2.7E-5* (4.4E-6)**	**3.2E-5* (5.2E-6)**	**3.1E-5* (5.1E-6)**
Household income <$35,000/year	**-0.050* (0.003)**	**-0.051* (0.003)**	**-0.047* (0.003)**	**-0.048* (0.003)**
BMI	-0.001 (0.001)	-0.001 (0.001)	**-0.004* (0.001)**	**-0.004* (0.001)**
BMI squared	2.5E-5 (1.5E-5)	-2.4E-5 (1.5E-5)	1.2E-5 (2.1E-5)	1.3E-5 (2.1E-5)
Education (less than high school graduate)	**-0.040* (0.004)**	**-0.040* (0.004)**	**-0.024* (0.004)**	**-0.024* (0.004)**
Currently married	**0.006 (0.003)**	**0.006 (0.003)**	**0.012* (0.003)**	**0.013* (0.003)**
Smokes some days	**-0.047* (0.006)**	**-0.048* (0.006)**	**-0.049* (0.007)**	**-0.048* (0.007)**
Smokes every day	**-0.055* (0.004)**	**-0.055* (0.004)**	**-0.060* (0.006)**	**-0.060 (0.006)**
Asthma	**-0.056* (0.004)**	**-0.056* (0.004)**	**-0.072* (0.005)**	**-0.072* (0.005)**
Diabetes	**-0.054* (0.004)**	**-0.052* (0.004)**	**-0.060* (0.005)**	**-0.059* (0.005)**
Cardiovascular disease	**-0.100* (0.007)**	**-0.097* (0.007)**	**-0.103* (0.009)**	**-0.101* (0.009)**
Stroke	**-0.074* (0.007)**	**-0.074* (0.007)**	**-0.081* (0.011)**	**-0.081* (0.011)**
2009 BRFSS	0.001 (0.004)	0.001 (0.004)	-0.002 (0.004)	-0.002 (0.004)
Constant	**1.083* (0.020)**	**1.084* (0.019)**	**1.161* (0.023)**	**1.162* (0.023)**
N	*17,997*	*18,252*	*14,188*	*14,341*
R-squared	*0.188*	*0.188*	*0.195*	*0.197*

Note: Boldface indicates statistical significance ($p<0.05$). * indicates statistical significance ($p<0.01$). SEs are robust.
HSU, health state utility.

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Appendix Table 3. Marginal Effects of Breast Cancer From Regression Analysis: Pooled Across Race/Ethnicity[a]

	Overall healthy days		Physically healthy days	
Variable	**Diagnosed at age 18 to 44**	**Diagnosed at age 45 or older**	**Diagnosed at age 18 to 44**	**Diagnosed at age 45 or older**
Breast cancer + years since diagnosis				
0 to 1 year	**−6.865* (1.125)**	**−3.495** (0.429)**	**−6.836* (1.087)**	**−3.672*(**) (0.408)**
2 to 4 years	**−2.123* (0.813)**	**−1.147* (0.295)**	**−1.753* (0.665)**	**−0.996* (0.262)**
5 to 10 years	−1.237 (0.571)	−0.498 (0.227)	−0.288 (0.423)	−0.331 (0.197)
More than 10 years	**−1.326* (0.350)**	**−1.000* (0.237)**	**−1.337* (0.313)**	**−0.905* (0.218)**
N	*194,896*	*199,575*	*196,650*	*201,383*
R-squared	*0.123*	*0.122*	*0.125*	*0.125*

	Mentally healthy Days			
Variable	**Diagnosed at age 18 to 44**	**Diagnosed at age 45 or Older**		
Breast cancer + years since diagnosis				
0 to 1 year	**−1.929 (0.861)**	**−0.806* (0.292)**		
2 to 4 years	−0.990 (0.670)	**−0.420 (0.212)**		
5 to 10 years	−0.925 (0.488)	-0.209 (0.159)		
More than 10 years	**−0.729* (0.271)**	**-0.301 (0.145)**		
N	*197,265*	*202,058*		
R-squared	*0.081*	*0.080*		

Note: Boldface indicates statistical significance ($p<0.05$). *$p<0.01$. **Chow test indicates statistically significant differences ($p<0.05$) between women diagnosed at age 18 to 44 and women diagnosed at age 45 or older. No Chow test was significant at the $p<0.01$ level.
[a] Other covariates included in the regression were: race/ethnicity (pooled analysis), age, age squared, household income <$35,000/year, BMI, BMI squared, education (less than high school graduate), currently married, smokes some days, smokes every day, asthma, diabetes, cardiovascular disease, stroke, and an indicator for 2009 BRFSS. Full regression results are available in the Appendix. SEs are robust.

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Appendix Table 4. Marginal Effects of Breast Cancer on Mapped HSU From Regression Analysis Using Matched Samples[a]

Variable	All races/ethnicities		White	
	Diagnosed at age 15 to 44	Diagnosed at age 45 or older	Diagnosed at age 15 to 44	Diagnosed at age 45 or older
Breast cancer + years since diagnosis				
0 to 1 year	**−0.103 (0.019)**	**−0.076 (0.007)**	**−0.112 (0.022)**	**−0.079 (0.008)**
2 to 4 years	−0.023 (0.015)	**−0.039 (0.005)**	−0.013 (0.016)	**−0.037 (0.005)**
5 to 10 years	−0.017 (0.011)	**−0.018 (0.004)**	−0.018 (0.012)	**−0.018 (0.004)**
More than 10 years	**−0.046 (0.006)**	**−0.018** (0.004)	**−0.042 (0.007)**	**−0.018** (0.004)
N (unweighted)	*8,442*	*36,300*	*6,798*	*31,218*
R-squared	*0.012*	*0.056*	*0.011*	*0.031*
	African American		Hispanic	
Variable	Diagnosed at age 15 to 44	Diagnosed at age 45 or older	Diagnosed at age 15 to 44	Diagnosed at age 45 or older
Breast cancer + years since diagnosis				
0 to 1 year	−0.052 (0.084)	-0.039 (0.024)	−0.052 (0.060)	−0.051 (0.034)
2 to 4 years	**0.068 (0.026)**	**−0.043** (0.021)	**−0.184 (0.068)**	**−0.079 (0.030)**
5 to 10 years	-0.015 (0.034)	-0.019 (0.015)	0.068 (0.037)	**−0.037** (0.024)
More than 10 years	**−0.054 (0.023)**	**0.002** (0.016)	−0.060 (0.037)	−0.034 (0.030)
N (unweighted)	*738*	*2,250*	*384*	*1,302*
R-squared	*0.170*	*0.004*	*0.031*	*0.010*

Note: Boldface indicates statistical significance ($p<0.05$). **Chow test indicates statistically significant differences ($p<0.05$) between women diagnosed at age 15 to 44 and women diagnosed at age 45 or older.
HSU, health state utility.
[a] Other covariates included in the regressions to correct for covariate imbalance were: race/ethnicity, age, age squared, household income <$35,000/year, currently married, asthma, and an indicator for 2009 BRFSS (all races/ethnicities age 15-44); race/ethnicity, household income <$35,000/year, education (less than high school graduate), currently married, smokes some days, smokes every day, cardiovascular disease, and an indicator for 2009 BRFSS (all races/ethnicities age 45 or older); age, age squared, household income <$35,000/year, currently married, asthma, and an indicator for 2009 BRFSS (white age 15-44); household income <$35,000/year, currently married, cardiovascular disease, and an indicator for 2009 BRFSS (white age 45 or older); an indicator for 2009 BRFSS (African American age 45 or older); household income <$35,000/year, currently married, smokes some days, smokes every day, and an indicator for 2009 BRFSS (Hispanic age 15-44); and currently married, diabetes, and an indicator for 2009 BRFSS (Hispanic age 45 or older). Full regression results are available in the Appendix. SEs are robust but do not account for uncertainty in propensity score matching.