

Cancer Survival in New Jersey 1979-2005

Cancer Epidemiology Services
Public Health Services Branch
New Jersey Department of Health



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Kim Guadagno, Lt. Governor



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Commissioner

Cancer Survival in New Jersey, 1979-2005

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Introduction

This report is an update of a previous report that presented cancer survival rates in New Jersey, “Cancer Survival in New Jersey 1979-1997;” it includes eight additional years of data. The purpose of the report is to provide survival data to help assess the burden of cancer in New Jersey, as well as to assist with improving cancer detection and treatment. As in the previous report, data from the New Jersey State Cancer Registry (NJSCR) are used to calculate five-year relative survival rates by sex, race and ethnicity for twenty-four cancer types diagnosed from 2001-2005. The New Jersey rates were compared to U.S. five-year relative survival rates for 2001-2005 for the same twenty-four cancer types. Also included are New Jersey five-year relative survival rates by stage at diagnosis, sex, race, and ethnicity for four cancer types with screening tests - female breast, cervical, colorectal and prostate – and for lung cancer diagnosed in 2001-2005. Survival trends for cancers diagnosed in New Jersey from 1979-2005 by three-year intervals for five common cancers and five-year relative survival rates for New Jersey benign and invasive brain cancer diagnosed from 2004-2005 also are presented.

Summary

Five-Year Relative Survival by Sex, Race and Ethnicity – New Jersey and U.S., 2001-2005

New Jersey men had the highest relative five-year survival rates for prostate (nearly 100% alive five years after diagnosis), testis and thyroid cancer (higher than 90%), while the lowest survival rates were for pancreatic cancer and mesothelioma (lower than 10%) and lung, liver and esophageal cancers (lower than 20%, Figure 1). A significantly higher percentage of New Jersey men with prostate, thyroid, kidney, non-Hodgkin lymphoma, colorectal, leukemia, myeloma, and lung cancer survived for five years after diagnosis compared with U.S. men (Figure 1). Only for oral cancer did New Jersey men fare significantly worse than U.S. men.

New Jersey white, black, and Hispanic men followed the same pattern as all New Jersey men, with some exceptions. White New Jersey men did not have significantly better survival than white U.S. men from thyroid and colorectal cancers (Figure 3). In New Jersey, black men had a lower five-year relative survival rate for all cancers combined than white men (65% vs. 69%), as well as for most cancer types (Figure 5). New Jersey black men had a significantly better survival rate than U.S. black men only from testis cancer, while New Jersey Hispanic men had significantly better survival from prostate and lung cancer and worse survival from oral cancer than U.S. Hispanic men (Figures 5 and 9). Among New Jersey Asian and Pacific Islander (API) men, the highest survival also was from prostate, thyroid and testis cancers (higher than 90%), while only pancreatic cancer had a lower than 20% survival rate (Figure 7). New Jersey API men had significantly better survival than U.S. API men for non-Hodgkin lymphoma, stomach, liver and lung cancers.

New Jersey women had the highest survival from thyroid cancer (nearly 100% alive five years after diagnosis) and melanoma (higher than 90%, Figure 2). Similar to New Jersey men, New Jersey women had the lowest survival from pancreatic cancer (lower than 10%) and mesothelioma, liver, esophageal and lung cancers (lower than 20%). New Jersey women had

significantly lower survival than U. S. women from breast and uterine cancer and significantly higher survival from kidney and lung cancer and myeloma. New Jersey white women had a similar pattern except they had significantly higher stomach cancer survival than U.S. women and did not have significantly lower breast cancer survival (Figure 4).

Black women in New Jersey had a much lower survival rate overall than white women (54% vs. 66%) and a survival rate higher than 80% only for thyroid cancer (Figure 6). Compared to U.S. black women, New Jersey black women had significantly higher survival from lung and esophageal cancers and lower survival from larynx cancer. Of the cancers included in the analysis, New Jersey API women experienced the highest survival for thyroid cancer (higher than 90%) and a survival rate lower than 20% for pancreatic cancer only (Figure 8). New Jersey API women had significantly greater survival than U.S. API women from cervical cancer only. New Jersey Hispanic women had the highest survival from thyroid cancer, melanoma and Hodgkin lymphoma (higher than 90%) and the lowest survival from pancreatic and esophageal cancer (lower than 20%, Figure 10). New Jersey Hispanic women experienced significantly higher survival than U.S. Hispanic women from thyroid cancer and myeloma, but lower survival from uterine cancer.

Five-Year Relative Survival by Stage, Sex, Race and Ethnicity – New Jersey, 2001-2005

As noted above, survival from **breast cancer** was high, approaching 90% for women of each race except black women whose five-year survival rate was 76% (Table 1). Black women's survival rate from breast cancer was the lowest among all the race and ethnic groups for each stage, and a higher percentage of black women with breast cancer were diagnosed at the regional and distant stages for which survival is lower compared to cancers diagnosed at the local stage. API and Hispanic women had the highest survival from **cervical cancer**, 83% and 75%, respectively, while white and black women had the lowest survival from cervical cancer, 69% and 59%, respectively (Table 2). Among the race and ethnic groups, black women had the highest percentage of their cervical cancers diagnosed at the regional and distant stages, and had the lowest survival of any group for cervical cancer diagnosed at the local and regional stages.

Colorectal cancer survival rates were highest among API men and women – 73% and 70%, respectively, while black men and women had the lowest survival rates, 60% and 64%, respectively (Table 3). White and Hispanic men and women had comparable survival rates. Black men and women had the highest percentages of their colorectal cancers diagnosed at the distant stage and had the lowest distant stage survival rates of any group. **Lung cancer** patients diagnosed at the local stage had much better survival than those diagnosed at the distant stage (51% versus 3% for men and 61% versus 4% for women) (Table 4). About half of the lung cancer patients were diagnosed at the distant stage. The five-year relative survival rate was highest for **prostate cancer** at nearly 100% for men in each race and ethnic group (Table 5). Although men with cancers diagnosed at the distant stage had a much lower survival rate (23-38%) than men with cancers diagnosed at earlier stages, over 80% of the prostate cancers were diagnosed at the local stage which had a 100% survival rate.

Five-Year Relative Survival Trends by Sex, Race and Ethnicity - New Jersey, 1979-2005

Survival from **breast cancer** generally improved over the 27 years for women in each race and ethnic group (Figure 11). However, for black and API women survival decreased in the most recent time period. While survival from **cervical cancer** between 1979 and 2005 increased overall among white women, it decreased for black women and stayed about the same for Hispanic women (Figure 12). Cervical cancer survival rates were not calculated for API women due to very small numbers. For **colorectal cancer**, survival rates improved over the entire time period for white, black and API men, but not for Hispanic men. In the most recent time period (2003-2005) survival improved only for black men (Figure 13). Each female race and ethnic group experienced better colorectal cancer survival rates over the 27 years, but API women's survival rate decreased in the most recent time period (Figure 14).

Survival from **lung cancer** improved over the 27 years for men in each racial and ethnic group, especially for API and Hispanic men in the latest time period (Figure 15). For women, lung cancer survival improved overall for Hispanic, white and API women (Figure 16). Survival among black women was stable over the 27 years. **Prostate cancer** survival improved greatly, to nearly 100%, for men in each racial and ethnic group (Figure 17).

Five-Year Relative Survival for Benign Brain Tumors and Brain Cancer by Sex – New Jersey, 2004-2005

Survival from benign brain tumors was high compared to survival from brain cancer (malignant tumors) – 90% vs. 30% for both men and women (Table 6). The survival rate did not vary much by type of benign brain tumor, but did vary greatly by type of brain cancer, from a low of 25% for cancer of the brain to a high of 90% for cancer of the cranial nerves.

Conclusions

New Jersey five-year relative survival rates varied greatly depending on type of cancer, sex, race and stage at diagnosis. For the most common cancers, five-year relative survival rates generally improved over the twenty-seven year period. However, disparities in cancer survival continue to exist among the races and ethnicities and, to a lesser extent, between men and women.

Data and Methods

The NJSCR collects information about nearly all cancer cases diagnosed among New Jersey residents. Data for this report were derived from the NJSCR's April 2013 analytic file. Vital status for each cancer patient in the NJSCR is updated annually through linkage with state and national death certificate and social security data. In addition, state hospital discharge data, taxation data and motor vehicle registration records are linked with the NJSCR to update vital status. For the data used in this report, vital status follow-up was complete through December 31, 2010.

U.S. survival rates were obtained from the National Cancer Institute's SEER 18 Registries data from the November 2012 submission.¹ SEER data are generally used for U.S. rates and are considered to be representative of the entire U.S. population.

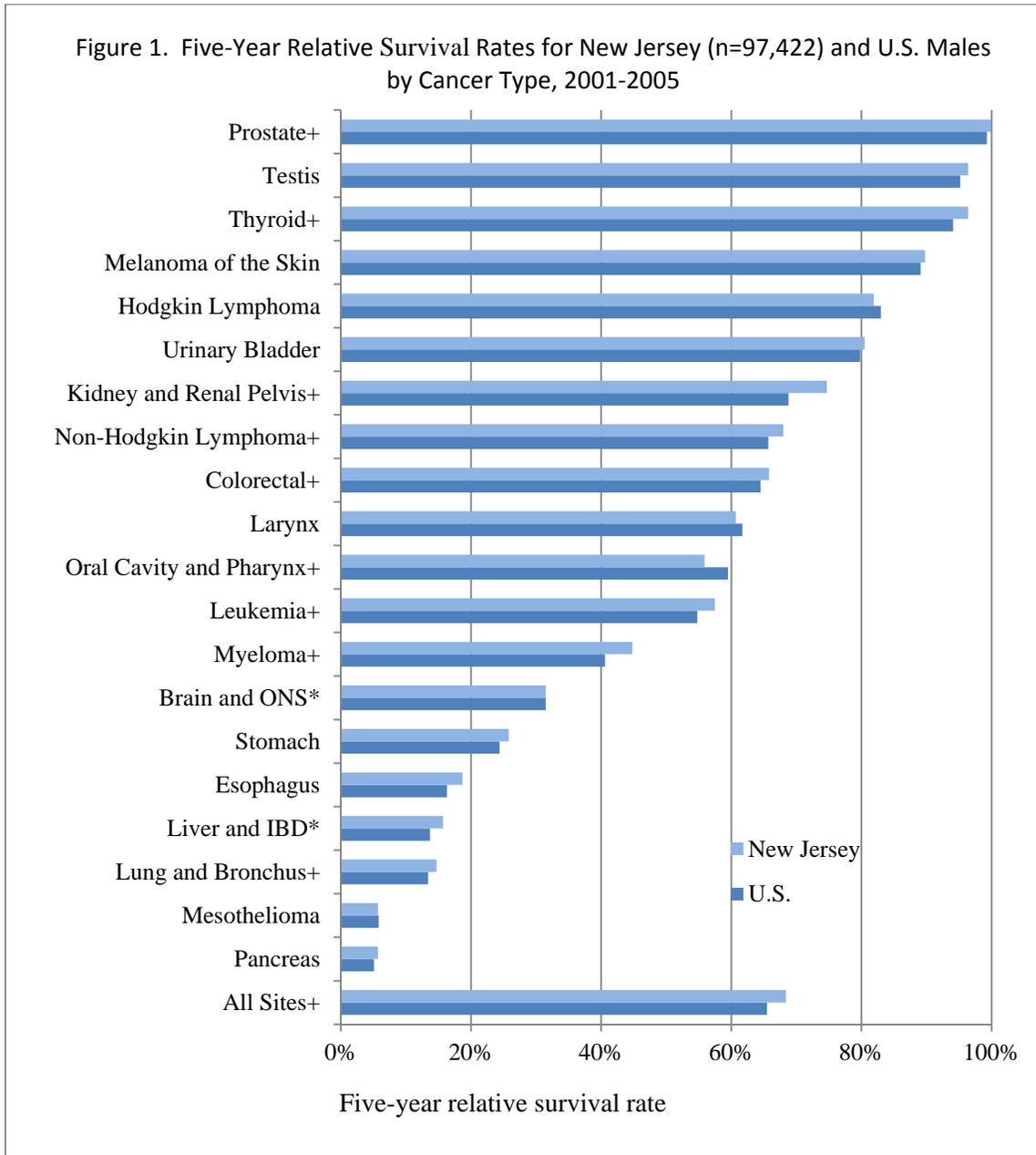
All first primary invasive cancer cases and *in situ* bladder cancer cases were included in the analysis, except cases identified only from death certificates or autopsy records. Survival time was calculated from the date of diagnosis to the date of death, the date last known to be alive if there was no date of death, or December 31, 2010, whichever occurred earliest. Missing days or months were imputed using a standard procedure.² Cases with zero survival time were excluded. Survival rates were calculated for New Jersey men and women of all races combined and for eight population groups - white men, black men, API men, Hispanic men, white women, black women, API women, and Hispanic women. Data were not presented for other racial groups due to small numbers. The Hispanic ethnicity category included Hispanics of any race. Caution should be used when comparing survival rates in Hispanics with rates in the different race groups (black, white, API) because ethnicity and race are not mutually exclusives. Stage at diagnosis is coded according to SEER summary stage – local, regional, distant and unknown.³

The survival rate is the proportion of patients who survived to a certain point in time after cancer diagnosis (e.g. five years). The relative survival rate is the ratio of the observed survival rate and the expected survival rate. The expected survival rate was calculated using U.S. life tables for the same age, sex, and race group, where feasible. The race categories in the U.S. life tables are all races, white, black, and other; other includes individuals of any race other than white or black. The U.S. life table used to calculate the expected survival rates for APIs was other and the U.S. life table used for Hispanics was all races. Therefore caution should be used in interpreting the API and Hispanic cancer survival rates.

Survival rates based on small numbers (e.g. for the less common cancers) are subject to large variations, therefore the survival rate for any group with fewer than 16 cases was suppressed to ensure statistical stability. The rates were calculated and tested using SEER*Stat software version 8.1.2 from the National Cancer Institute. The differences between U.S. and New Jersey survival rates were tested using normal approximation.⁴

More information about NJSCR data is available at <http://nj.gov/health/ces/njsr.shtml> and in the annual Cancer Incidence and Mortality Report at <http://nj.gov/health/ces/documents/report06-10.pdf>.

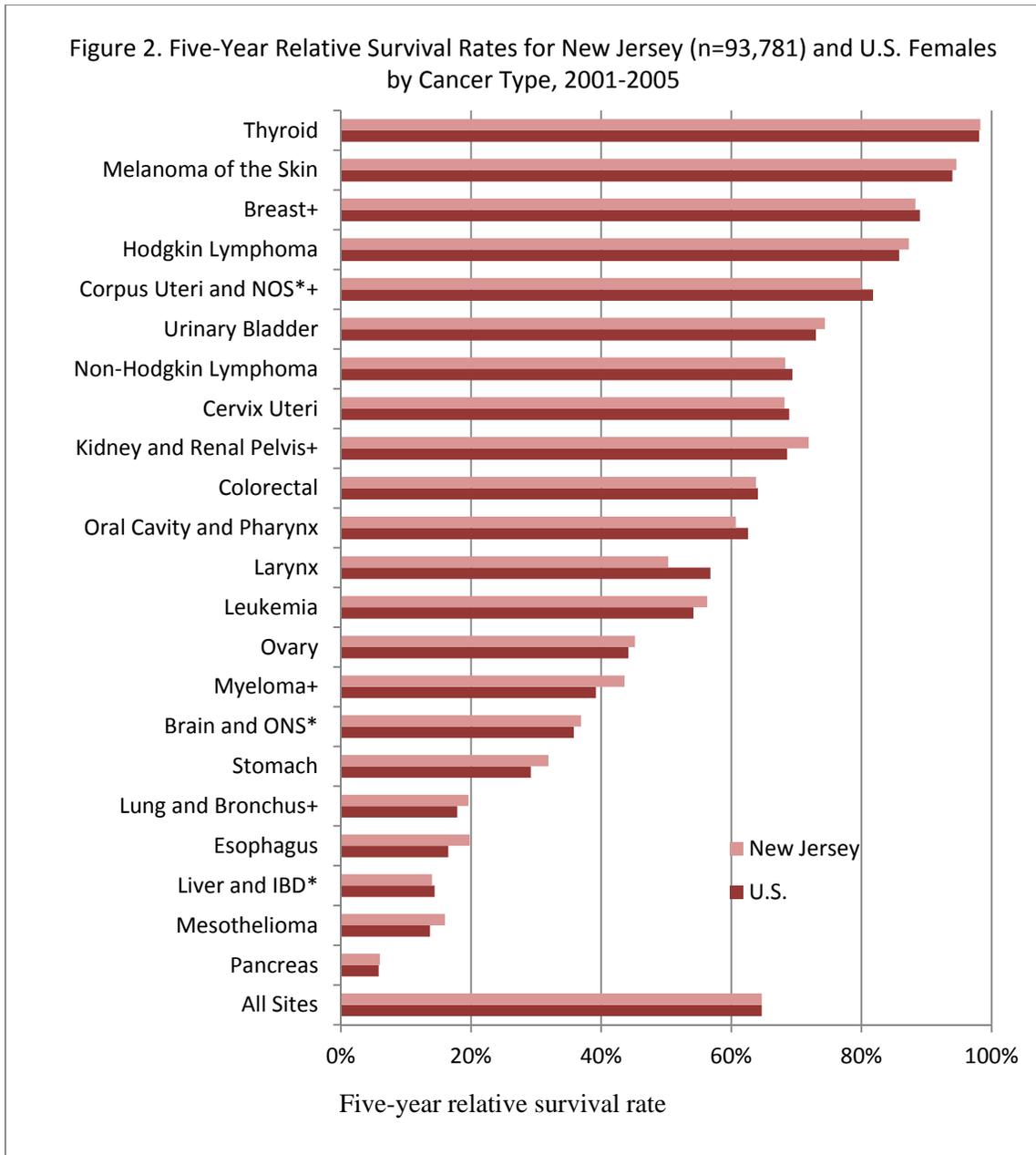
Five-Year Relative Survival Rates by Cancer Type, Sex, Race and Ethnicity, New Jersey and U.S., 2001-2005



+The survival difference between NJ and U.S. is statistically significant ($p < 0.05$).

* ONS: Other Nervous System. IBD: Intrahepatic Bile Duct.

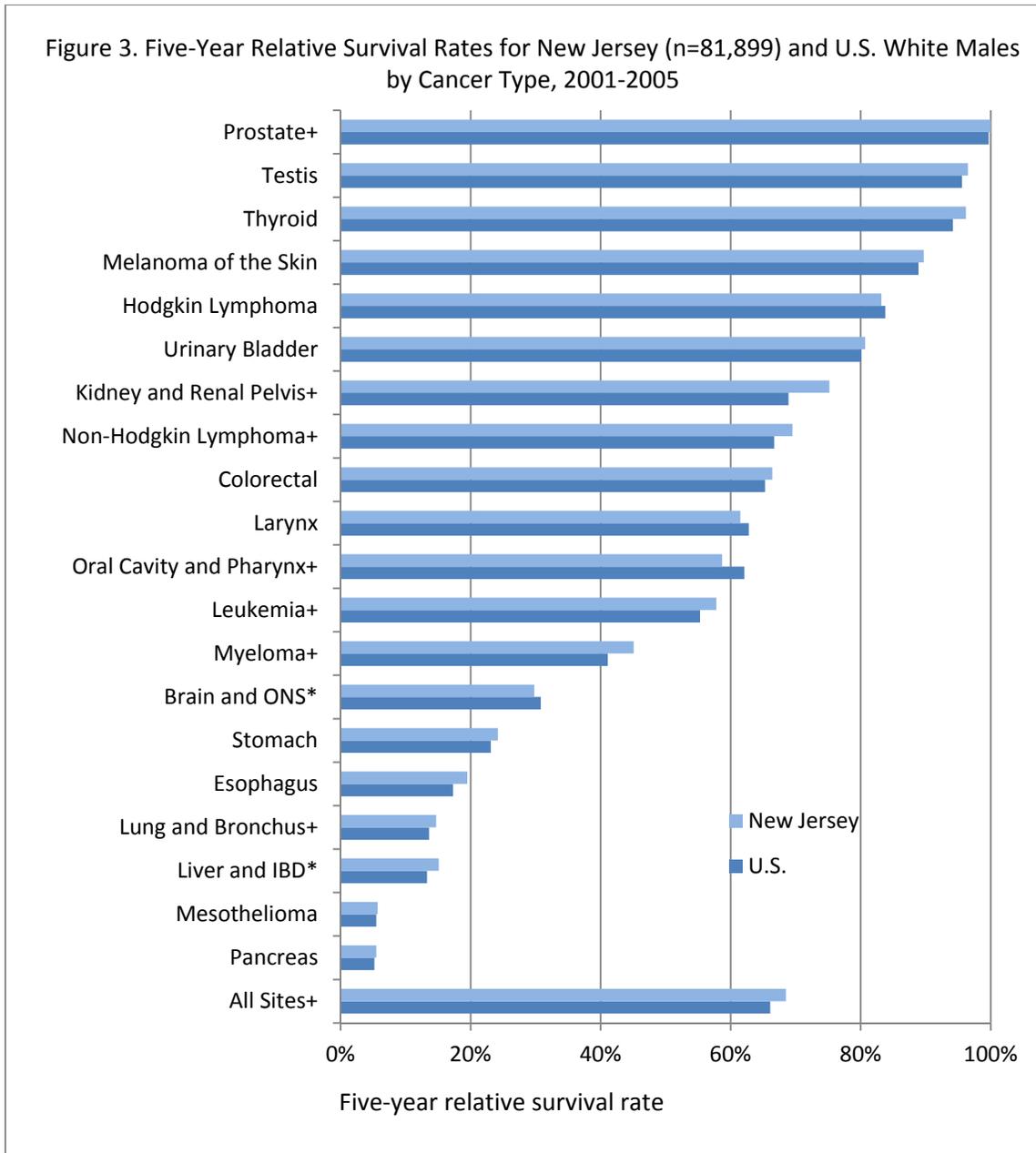
Data source: New Jersey data are from the New Jersey State Cancer Registry and U.S. data are from the NCI SEER Program. Rates are based on first primary invasive cancers and *in situ* bladder cancers diagnosed during 2001-2005 and followed through December 2010.



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* NOS: Not Otherwise Specified. ONS: Other Nervous System. IBD: Intrahepatic Bile Duct.

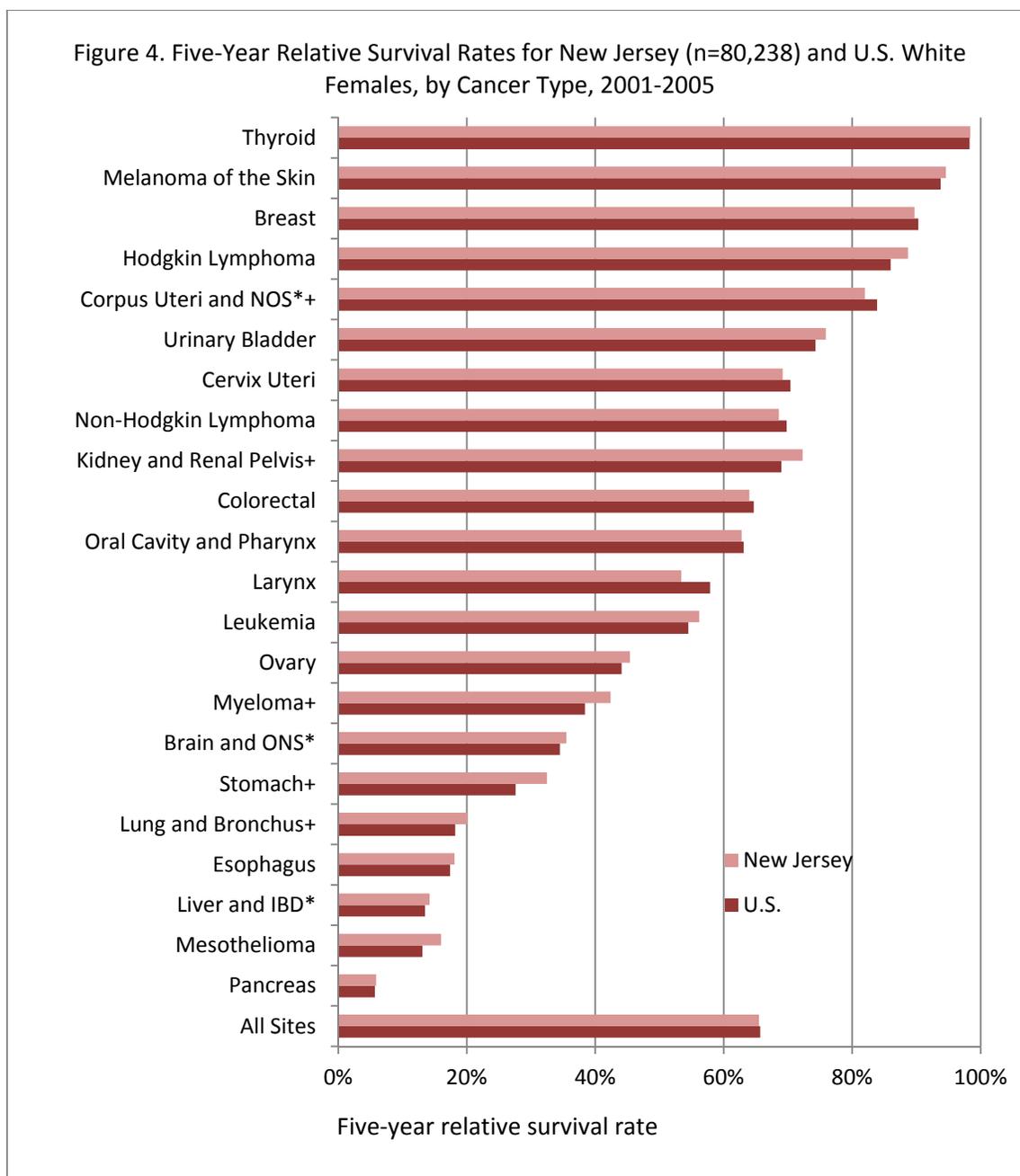
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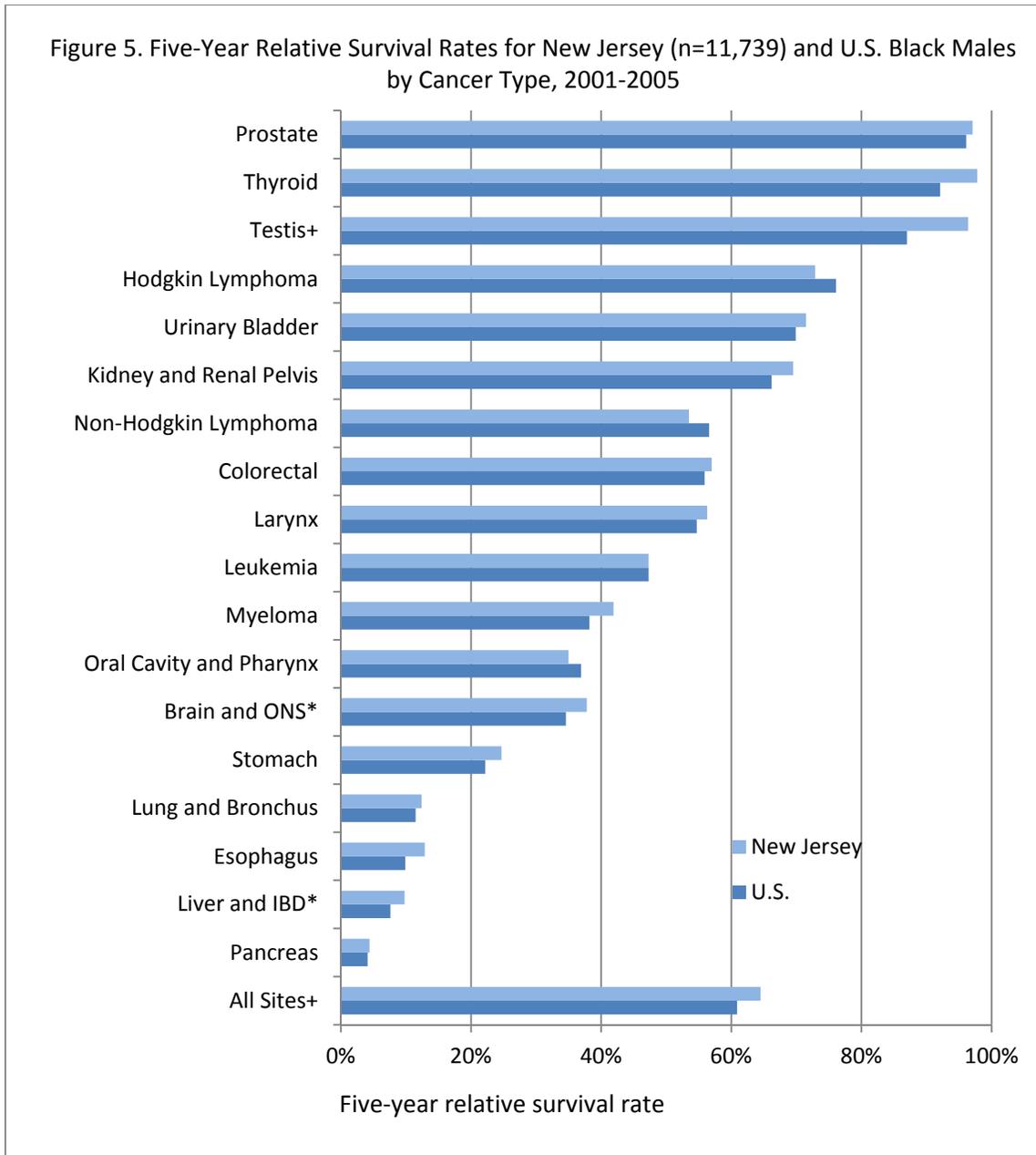
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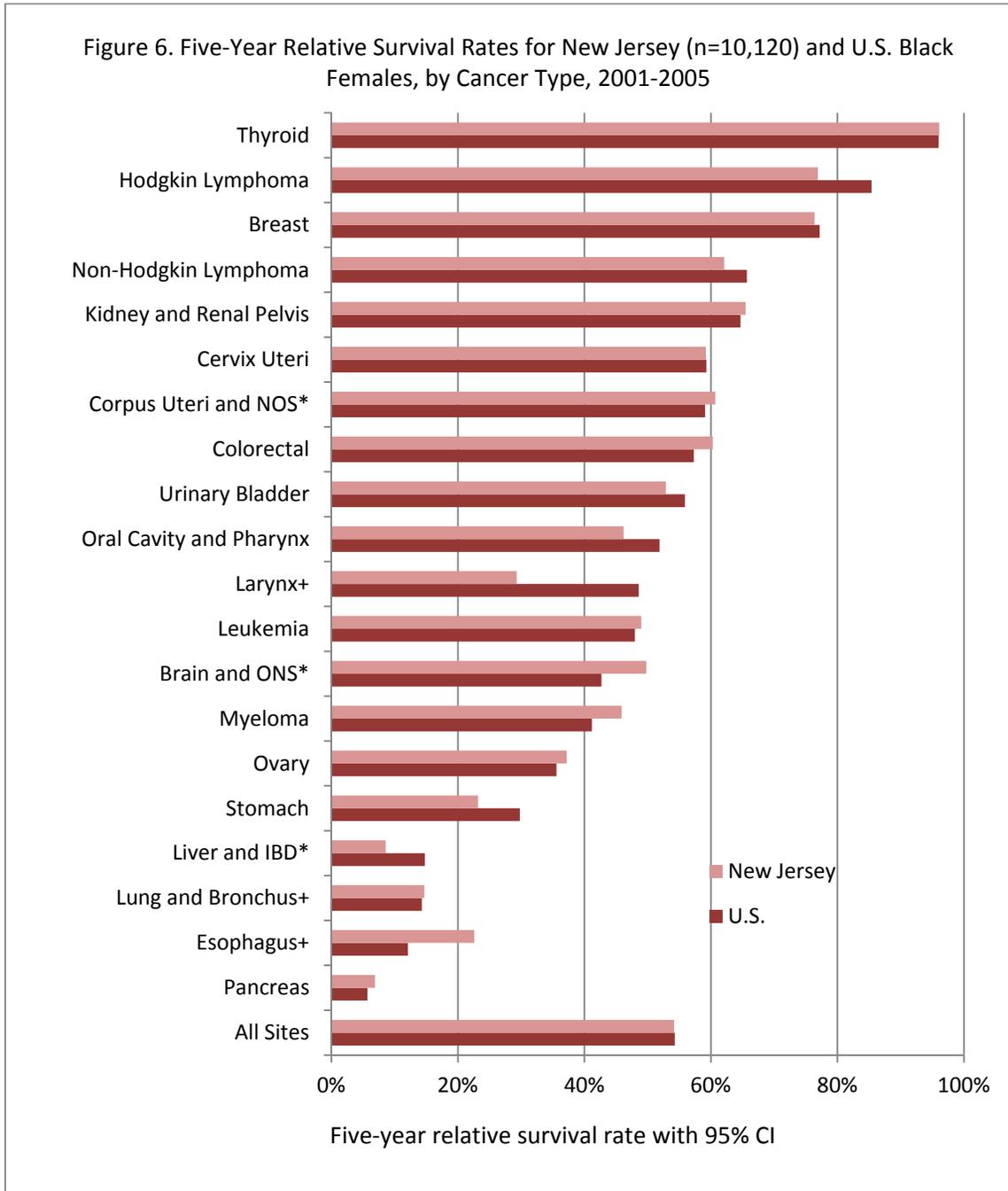
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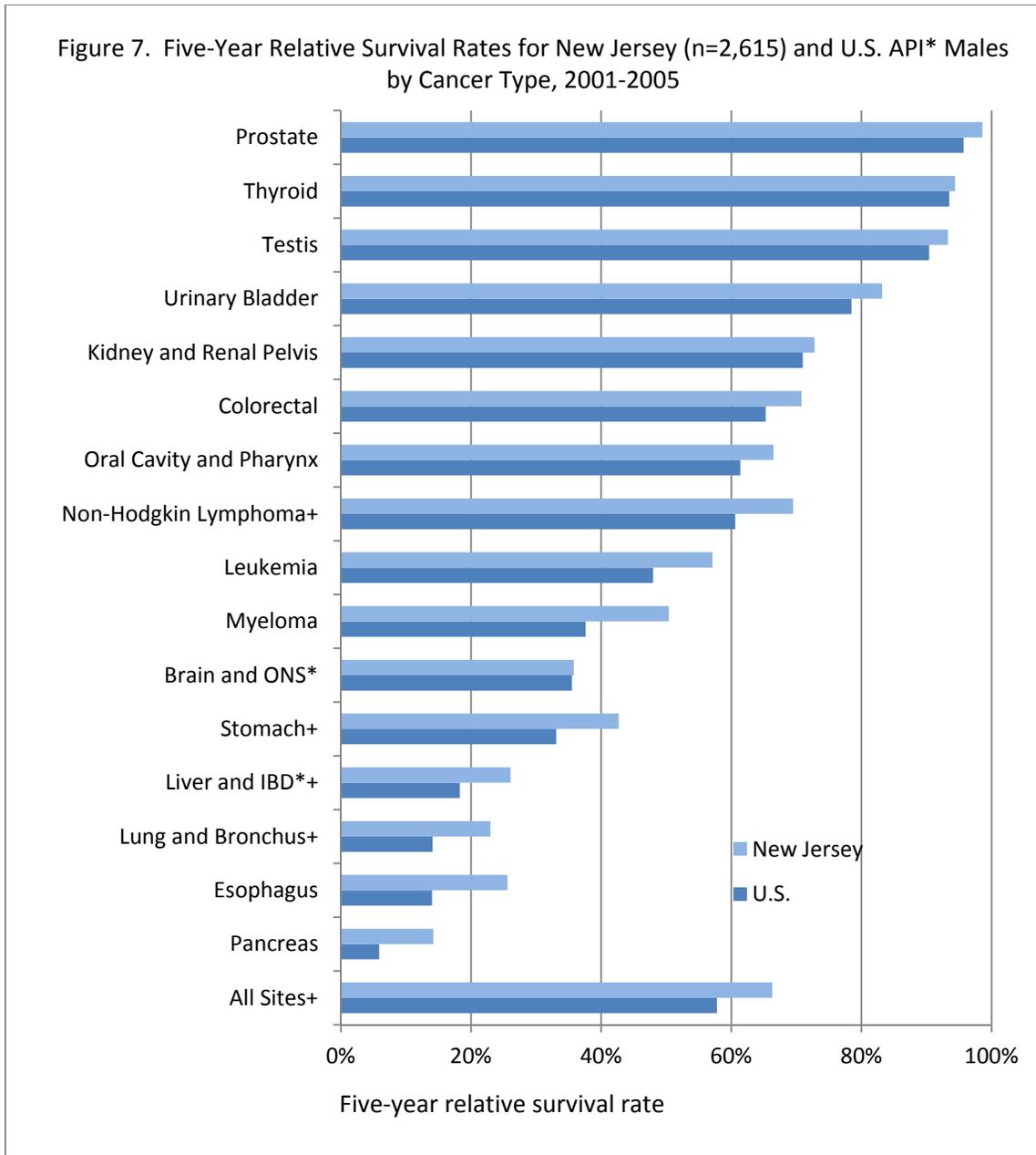
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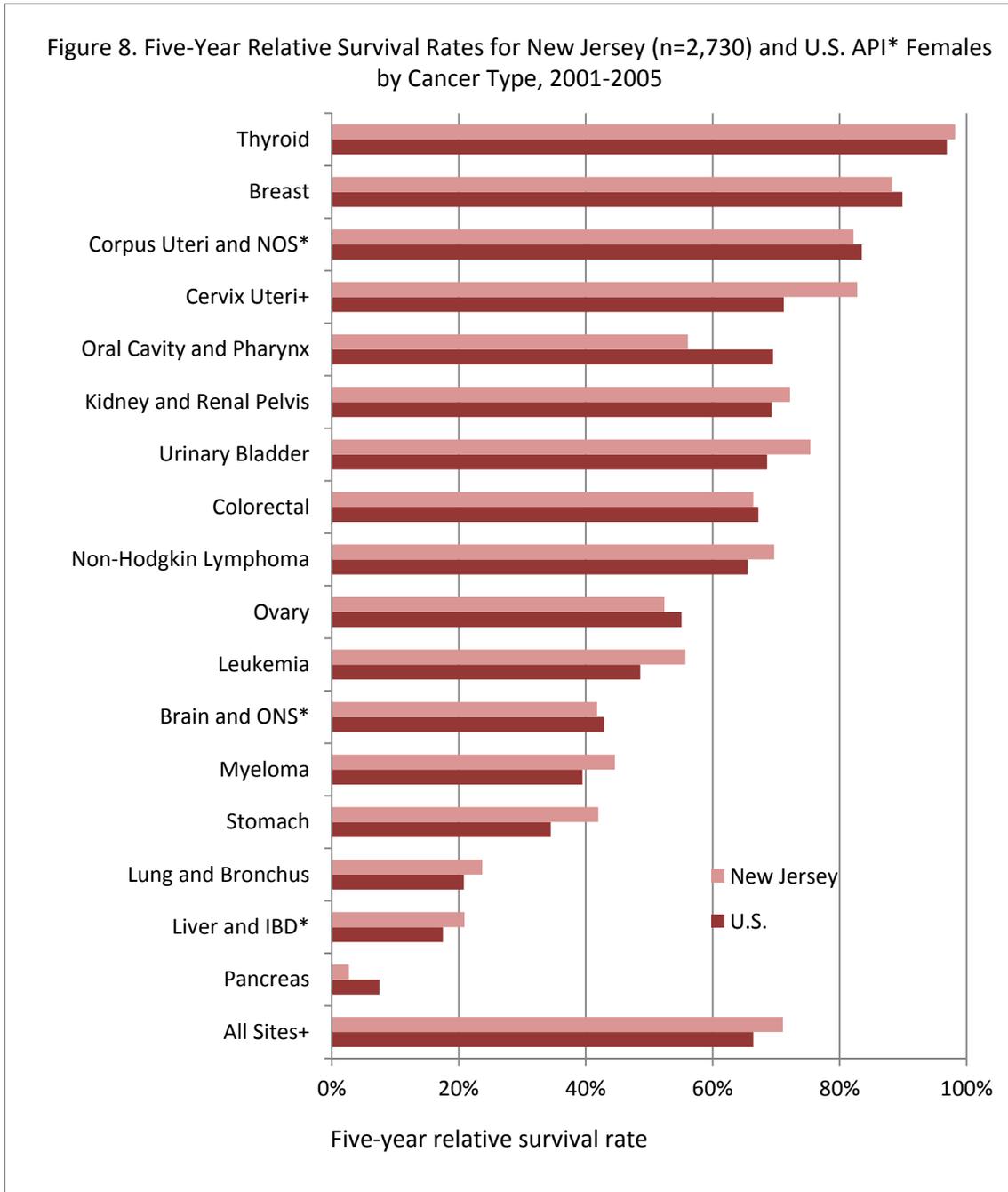
Data source: New Jersey data are from the New Jersey State Cancer Registry and U.S. data are from the NCI SEER Program. Rates are based on first primary invasive cancers and *in situ* bladder cancers diagnosed during 2001-2005 and followed through December 2010.



*API: Asian and Pacific Islanders. ONS: Other Nervous System. IBD: Intrahepatic Bile Duct.

+The survival difference between NJ and U.S. is statistically significant (p<0.05).

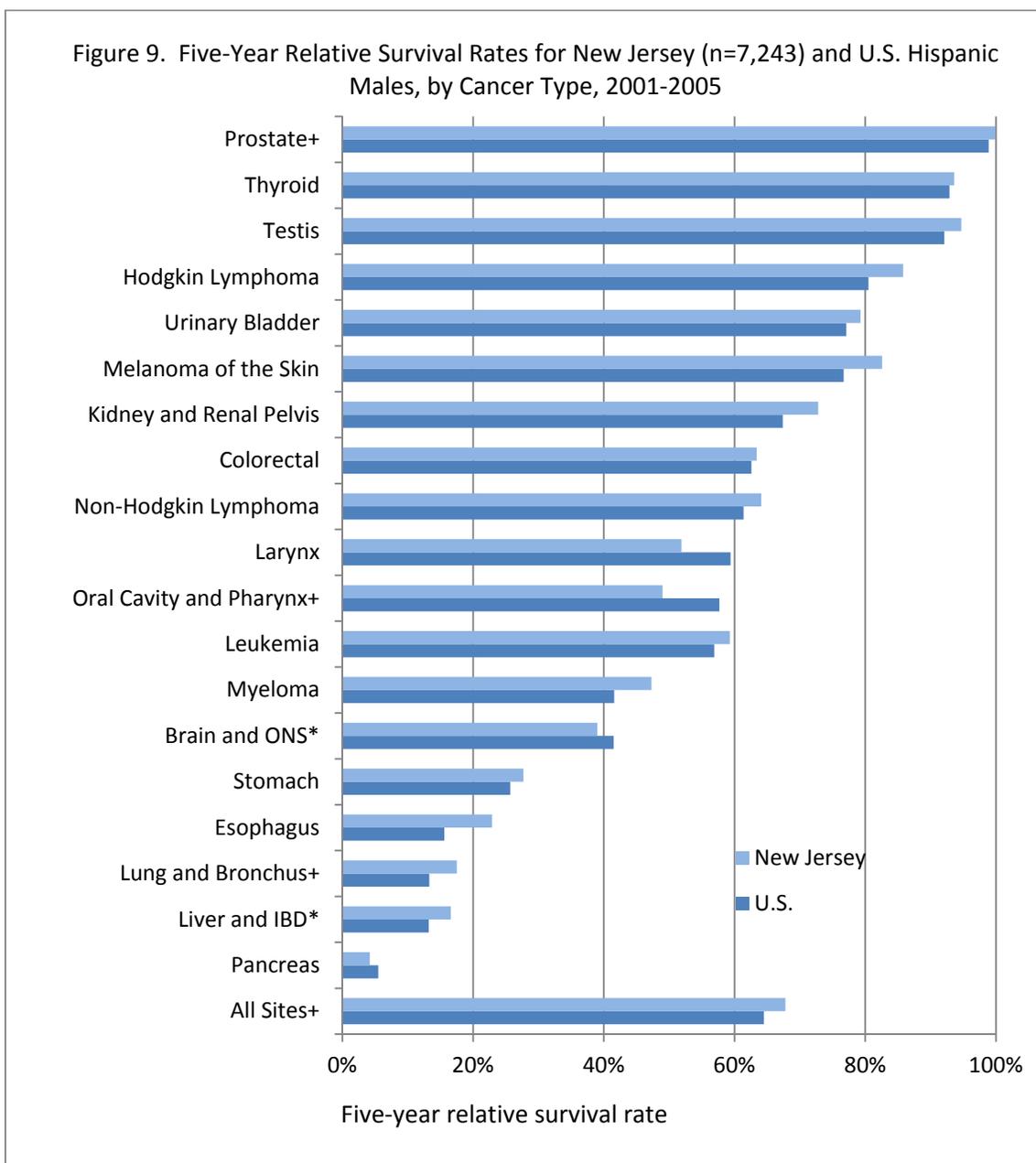
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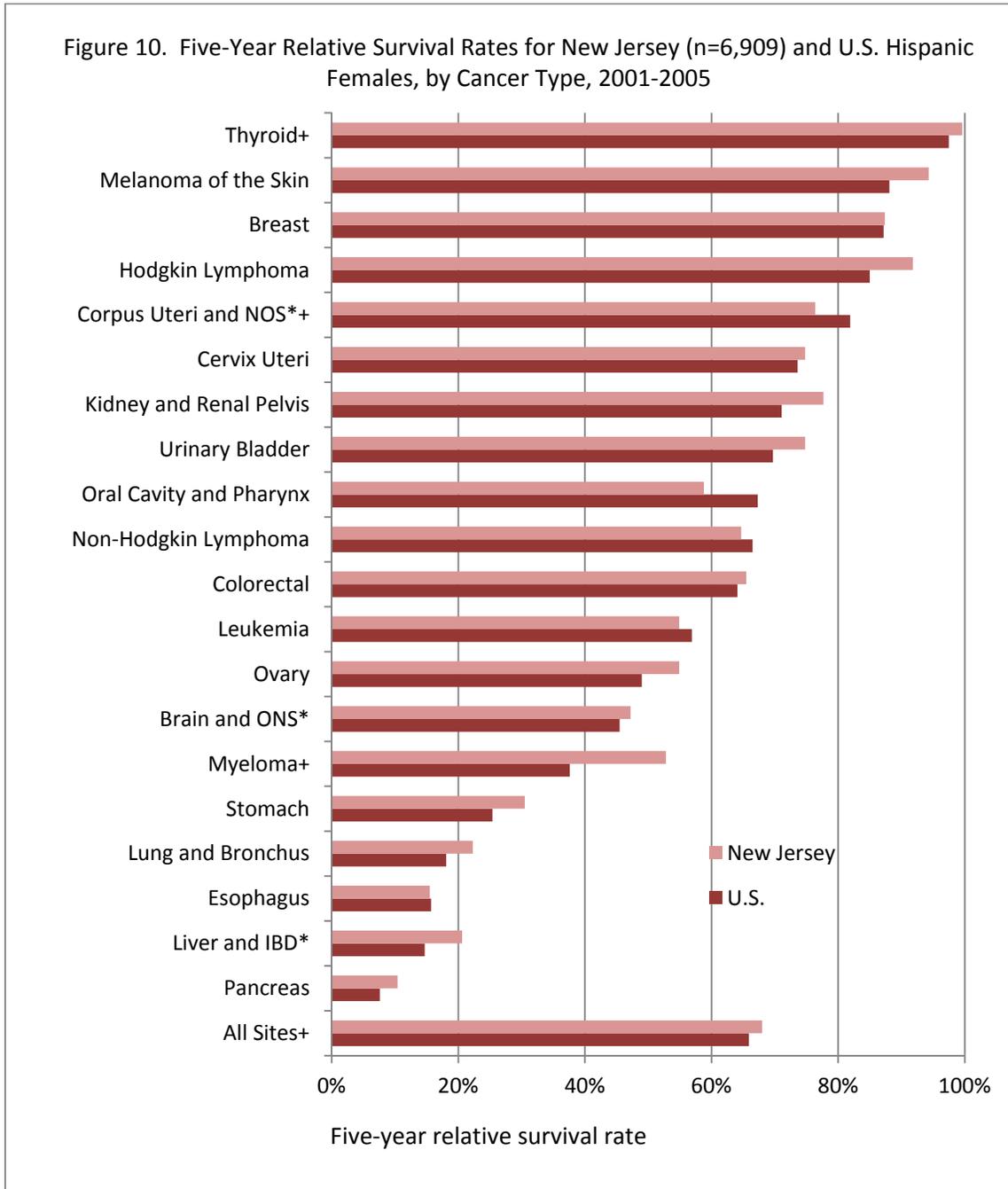
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Data source: New Jersey data are from the New Jersey State Cancer Registry and U.S. data are from the NCI SEER Program. Rates are based on first primary invasive cancers and *in situ* bladder cancers diagnosed during 2001-2005 and followed through December 2010. Hispanic ethnicity includes Hispanics of all races.



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Five-Year Relative Survival Rates by Stage, Sex, Race and Ethnicity, New Jersey, 2001-2005

Table 1. Female Breast Cancer Five-Year Relative Survival Rates by Stage, Race, and Ethnicity, New Jersey, 2001-2005

	All Races	White	Black	API*	Hispanic*
Number of Cases	27,151	23,108	2,899	976	2,012
Stage Distribution (Percent)					
Local	57.6%	58.6%	49.5%	57.0%	54.1%
Regional	33.0%	32.4%	36.7%	35.7%	36.7%
Distant	6.0%	5.7%	9.2%	4.4%	4.3%
Unstaged	3.5%	3.3%	4.7%	3.0%	4.9%
Five-Year Relative Survival Rate					
Local	99.0%	99.8%	92.6%	96.5%	97.1%
Regional	84.2%	85.8%	72.7%	83.4%	79.5%
Distant	22.9%	24.3%	15.1%	30.9%	33.7%
Unstaged	60.3%	59.9%	52.5%	77.9%	84.8%
All Invasive Stages	88.3%	89.7%	76.4%	88.3%	87.4%
<i>In Situ</i>					
Number of Cases	6,907	5,854	674	291	473
Survival Rate	100%	100%	100%	100%	100%

*API=Asian and Pacific Islanders. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.

Table 2. Cervical Cancer Five-Year Relative Survival Rates by Stage, Race and Ethnicity, New Jersey 2001-2005

	All Races	White	Black	API*	Hispanic*
Number of Cases	2,050	1,536	399	83	392
Stage Distribution (Percent)					
Local	45.4%	46.4%	36.3%	62.7%	46.9%
Regional	36.9%	36.8%	40.4%	28.9%	36.5%
Distant	10.5%	10.7%	11.5%	~	7.4%
Unstaged	7.2%	6.1%	11.8%	~	9.2%
Five-Year Relative Survival Rate					
Local	90.7%	91.6%	83.8%	93.2%	92.5%
Regional	57.0%	58.3%	48.9%	75.3%	63.4%
Distant	15.1%	15.0%	15.6%	~	20.5%
Unstaged	60.4%	58.7%	60.6%	~	72.6%
All Stages	68.2%	69.2%	59.2%	82.8%	74.8%

*API=Asian and Pacific Islanders. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

~ Data not presented due to fewer than 16 cases.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.

Table 3. Colorectal Cancer Five-Year Relative Survival Rates by Stage, Sex, Race and Ethnicity, New Jersey 2001-2005

Males					
	All Races	White	Black	API*	Hispanic*
Number of Cases	10,212	8,699	1,098	331	758
Stage Distribution (Percent)					
Percent	100.0%	100.0%	100.0%	100.0%	100.0%
Local	36.9%	37.3%	34.0%	34.7%	32.5%
Regional	38.7%	39.0%	36.6%	42.6%	40.2%
Distant	18.5%	18.2%	22.1%	16.0%	18.9%
Unstaged	5.9%	5.6%	7.3%	6.7%	8.4%
Five-Year Relative Survival Rate					
Local	90.5%	91.2%	82.1%	89.2%	89.1%
Regional	71.3%	71.4%	68.1%	75.3%	69.6%
Distant	10.2%	11.0%	4.4%	13.6%	8.1%
Unstaged	50.7%	48.1%	49.0%	72.4%	58.4%
All Stages	68.7%	69.2%	60.0%	73.4%	67.2%
Females					
	All Races	White	Black	API*	Hispanic*
Number of Cases	10,799	9,147	1,319	258	709
Stage Distribution (Percent)					
Local	35.2%	35.3%	34.7%	30.2%	37.4%
Regional	39.1%	39.5%	36.8%	43.0%	39.5%
Distant	18.6%	18.4%	20.9%	18.2%	15.8%
Unstaged	7.0%	6.7%	7.7%	8.5%	7.3%
Five-Year Relative Survival Rate					
Local	89.6%	89.8%	88.4%	83.8%	89.3%
Regional	69.1%	69.5%	65.4%	71.5%	65.1%
Distant	11.7%	11.7%	9.1%	24.4%	10.6%
Unstaged	44.6%	40.4%	49.4%	74.8%	63.9%
All Stages	66.6%	66.6%	63.5%	69.7%	67.7%

*API=Asian and Pacific Islanders. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.

Table 4. Lung Cancer Five-Year Relative Survival Rates by Stage, Sex, Race and Ethnicity, New Jersey, 2001-2005

	Male				
	All Races	White	Black	API*	Hispanic*
Number of Cases	11,808	10,037	1,468	279	653
Stage Distribution (Percent)					
Percent	100.0%	100.0%	100.0%	100.0%	100.0%
Local	14.5%	15.0%	10.3%	15.1%	13.3%
Regional	25.3%	25.3%	26.0%	21.9%	24.5%
Distant	51.6%	51.1%	54.7%	53.8%	53.9%
Unstaged	8.6%	8.6%	9.0%	9.3%	8.3%
Five-Year Relative Survival Rate					
Local	51.4%	51.5%	48.0%	53.4%	52.1%
Regional	19.7%	19.3%	19.4%	31.5%	20.9%
Distant	2.8%	2.6%	2.7%	8.2%	3.9%
Unstaged	9.6%	8.6%	10.4%	28.8%	36.9%
All Stages	14.7%	14.7%	12.4%	23.0%	17.5%
	Female				
	All Races	White	Black	API*	Hispanic*
Number of Cases	11,326	9,892	1,240	165	457
Stage Distribution (Percent)					
Local	16.7%	17.1%	13.5%	13.9%	15.5%
Regional	23.3%	23.2%	25.0%	18.2%	22.8%
Distant	50.2%	49.8%	52.7%	61.8%	53.0%
Unstaged	9.8%	9.9%	8.9%	~	8.8%
Five-Year Relative Survival Rate					
Local	61.0%	61.8%	47.5%	90.1%	62.1%
Regional	25.4%	25.9%	19.8%	32.2%	25.9%
Distant	4.1%	4.1%	4.2%	2.8%	7.3%
Unstaged	14.3%	14.4%	11.7%	~	34.1%
All Stages	19.6%	20.1%	14.7%	23.7%	22.3%

*API=Asian and Pacific Islanders. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

~ Data not presented due to fewer than 16 cases.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.

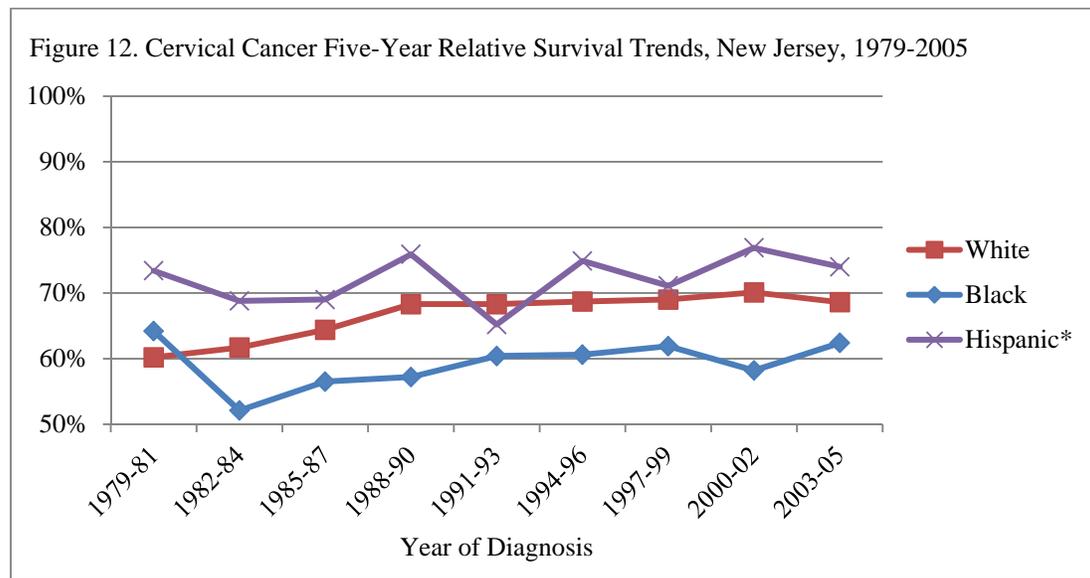
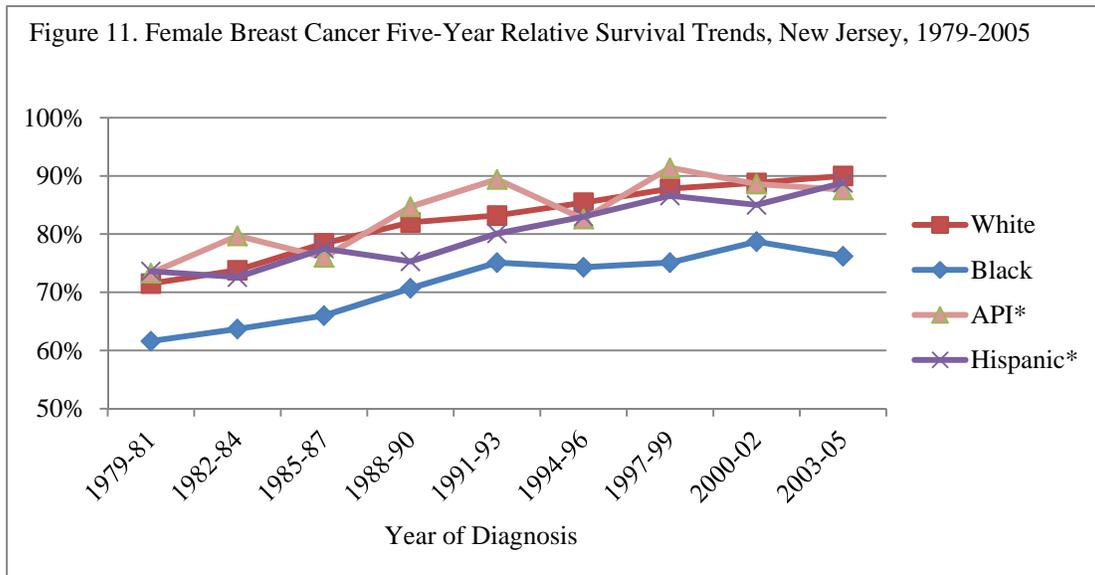
Table 5. Prostate Cancer Five-Year Relative Survival Rates by Stage, Race and Ethnicity, New Jersey, 2001-2005

	All Races	White	Black	API*	Hispanic*
Number of Cases	32,759	26,190	5,216	707	2,479
Stage Distribution (Percent)					
Local	84.5%	84.9%	83.0%	84.3%	83.1%
Regional	6.6%	6.6%	6.9%	7.4%	6.6%
Distant	3.3%	3.0%	5.1%	2.8%	3.9%
Unstaged	5.6%	5.5%	5.0%	5.5%	6.4%
Five-Year Relative Survival Rate					
Local	100.0%	100.0%	100.0%	100.0%	100.0%
Regional	97.0%	96.9%	96.2%	95.8%	99.3%
Distant	27.0%	27.4%	23.4%	38.0%	27.3%
Unstaged	86.7%	87.7%	67.9%	76.9%	96.0%
All Stages	99.9%	100.0%	97.1%	98.6%	99.9%

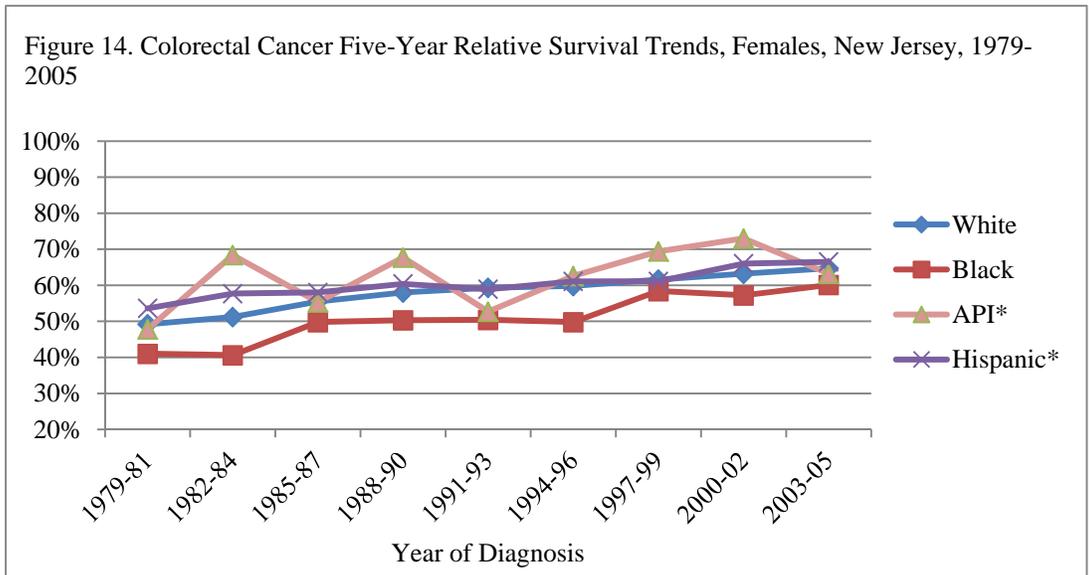
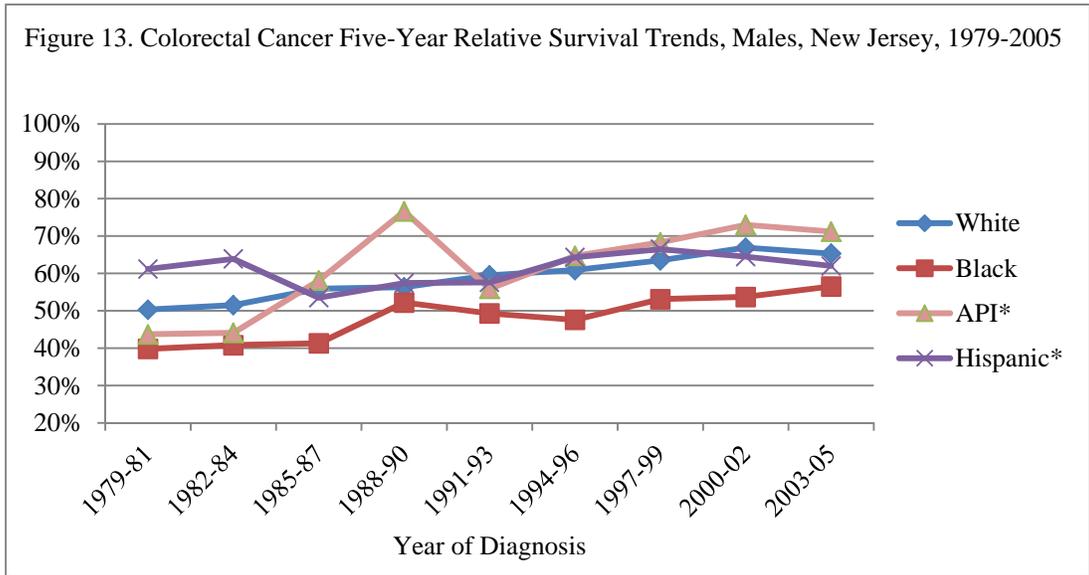
*API=Asian and Pacific Islanders. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.

Five-Year Relative Survival Trends by Sex, Race and Ethnicity, New Jersey, 1979-2005

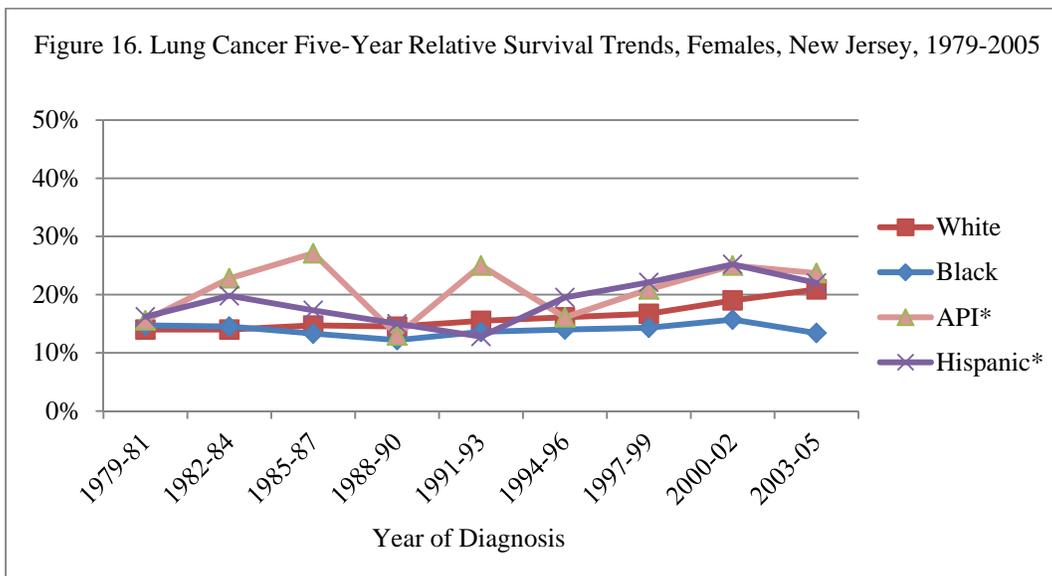
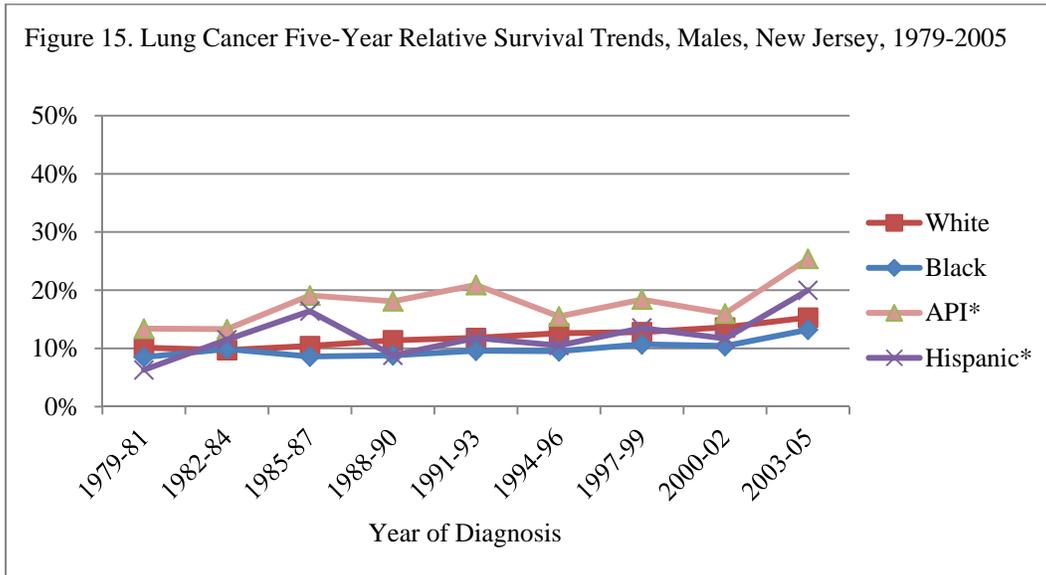


*API=Asian and Pacific Islander. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive. Trend for API cervical cancer is not presented due to numbers fewer than 16 in some years. Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.



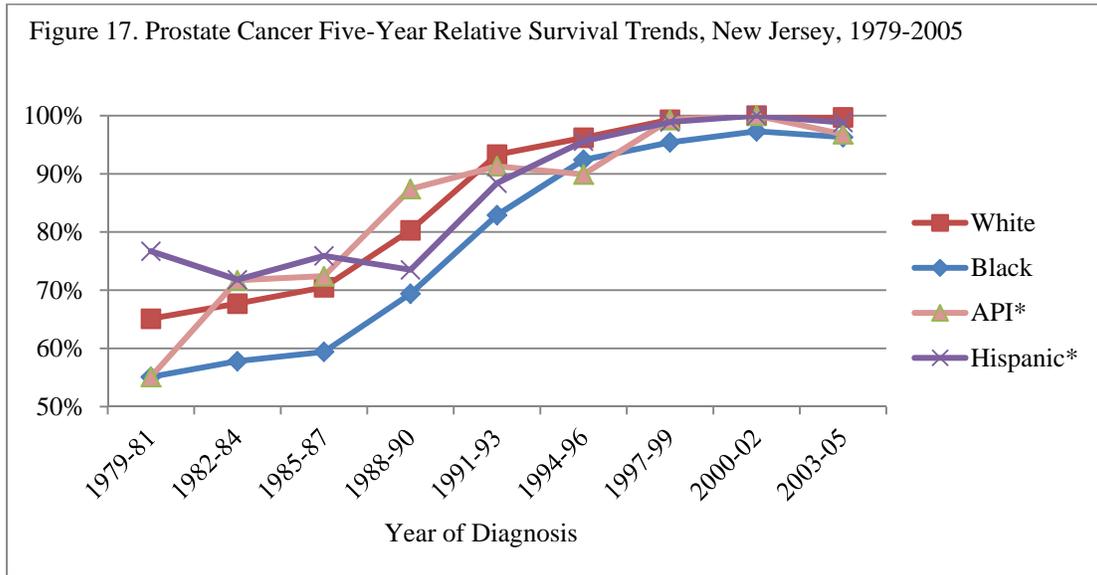
*API=Asian and Pacific Islander. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.



*API=Asian and Pacific Islander. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.



*API=Asian and Pacific Islander. Hispanic includes all races, thus the race and ethnic groups are not mutually exclusive.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers diagnosed during 2001-2005 and followed through December 2010.

Five-Year Relative Survival for Benign Brain Tumors and Brain Cancer, New Jersey, 2004-2005

Table 6. Benign/Borderline Brain Tumors and Brain Cancer Five-Year Relative Survival Rates by Sex, New Jersey, 2004-2005

Anatomic Site*	Benign/Borderline Brain Tumor				Brain Cancer			
	Cases	Rate	95% CI		Cases	Rate	95% CI	
			Lower	Upper			Lower	Upper
Male and Female								
Brain	156	83.9%	76.2%	89.3%	1,152	25.4%	22.8%	28.1%
Intracranial Meninges	1,033	85.8%	82.4%	88.7%	46	75.0%	56.1%	86.7%
Cranial Nerves and Other CNS	259	100.0%	0.0%	100.0%	17	89.0%	59.7%	97.4%
Tumors of the Sellar Region	425	93.2%	88.6%	96.0%	~	~	~	~
Spinal Cord	93	97.5%	86.9%	99.5%	34	74.6%	55.0%	86.6%
Spinal Meninges	80	91.3%	77.4%	96.8%	~	~	~	~
Total	2,046	90.0%	87.9%	91.8%	1,263	29.9%	27.2%	32.6%
Male								
Brain	78	89.5%	77.3%	95.3%	621	24.0%	20.5%	27.6%
Intracranial Meninges	289	84.4%	77.0%	89.6%	~	~	~	~
Cranial Nerves and Other CNS	115	97.4%	81.4%	99.7%	~	~	~	~
Tumors of the Sellar Region	197	91.5%	84.8%	95.3%	~	~	~	~
Spinal Cord	43	92.8%	75.5%	98.0%	17	70.6%	41.3%	87.2%
Spinal Meninges	21	81.0%	47.4%	94.2%	~	~	~	~
Total	743	89.8%	86.1%	92.6%	667	27.5%	23.9%	31.1%
Female								
Brain	78	77.5%	65.6%	85.7%	531	27.0%	23.1%	31.0%
Intracranial Meninges	744	86.4%	82.3%	89.6%	31	75.6%	51.3%	88.9%
Cranial Nerves and Other CNS	144	100.0%	0.0%	100.0%	~	~	~	~
Tumors of the Sellar Region	228	94.4%	87.9%	97.5%				
Spinal Cord	50	100.0%	0.0%	100.0%	17	77.7%	48.4%	91.6%
Spinal Meninges	59	93.2%	74.3%	98.4%	~	~	~	~
Total	1,303	90.2%	87.5%	92.3%	596	32.5%	28.6%	36.5%

~Data not presented due to fewer than 16 cases. CI= confidence interval from actuarial method and Ederer II in SEER*Stat.

*Anatomic site groupings:

Brain: ICD-O-3 site C710-C719 and histology codes excluding meningioma, lymphoma, myeloma, leukemia, mesothelioma, and Kaposi sarcoma.

Intracranial Meninges: Site C710-719 and histology codes 9530-9539, site C700, C709 and histology codes excluding lymphoma, myeloma, leukemia, mesothelioma, and Kaposi sarcoma.

Cranial Nerves and Other CNS: Site codes C722-C729 and histology codes excluding lymphoma, myeloma, leukemia, mesothelioma, and Kaposi sarcoma.

Tumors of the Sellar Region: Site codes C751-C753 and histology codes excluding meningioma, lymphoma, myeloma, leukemia, mesothelioma, and Kaposi sarcoma.

Spinal Cord: Site codes C720, C721 and histology codes excluding lymphoma, myeloma, leukemia, mesothelioma, and Kaposi sarcoma.

Spinal Meninges: Site code C701 and histology codes excluding lymphoma, myeloma, leukemia, mesothelioma, and Kaposi sarcoma.

Data source: New Jersey State Cancer Registry. Rates are based on first primary invasive cancers and benign/borderline brain tumors diagnosed during 2004-2005 and followed through December 2010.

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