Cancer Facts & Figures for African Americans 2016-2018

American Cancer Society®

Contents

Acknowledgments

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Cancer Statistics

Introduction

The US Census Bureau estimates that in 2014 there were 39.5 million Americans who identified as non-Hispanic black or African American, comprising 12% of the total US population.[1] Although racial classification is a social construct, it remains useful for describing general patterns of health because much data in the US is reported by race. In this report, when data are available by race and ethnicity, we present data for non-Hispanic blacks.

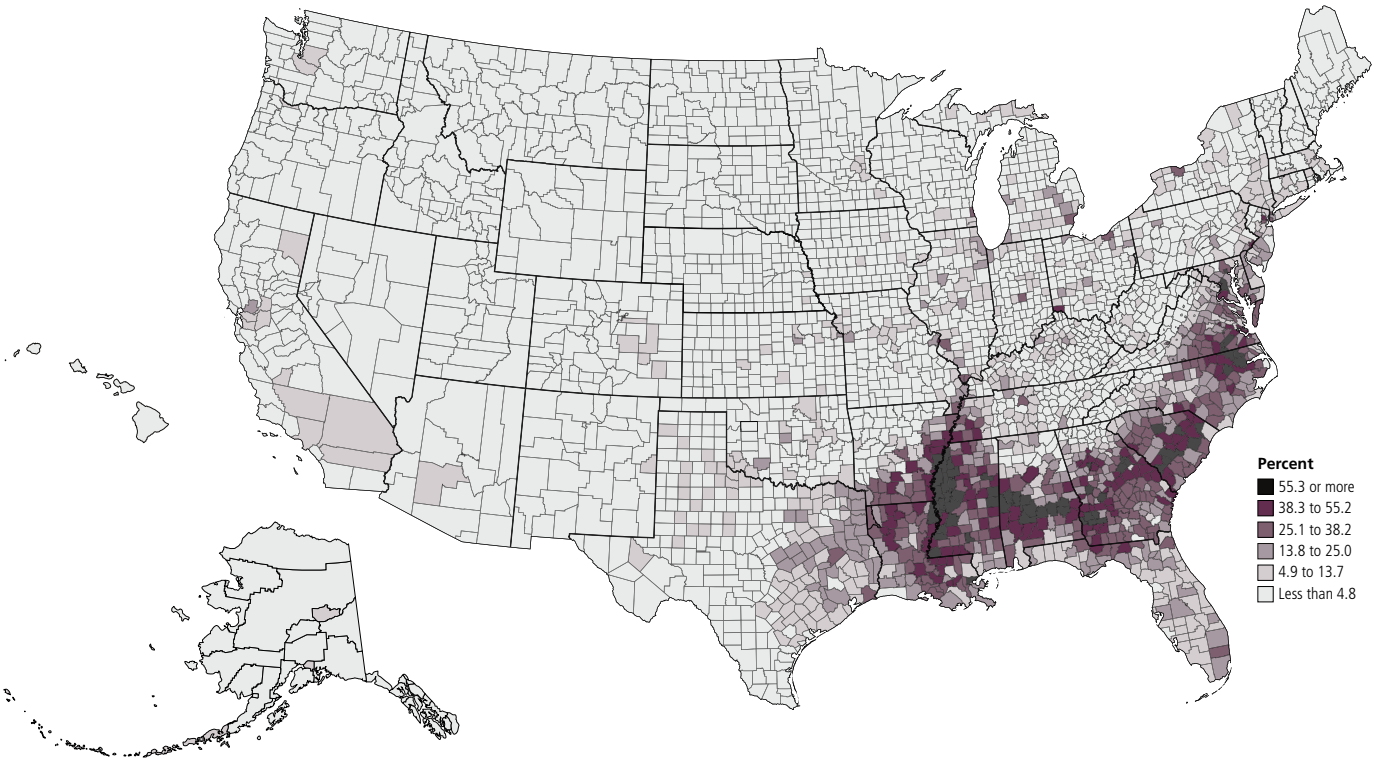
Blacks are the second largest racial/ethnic minority group in the US, following Hispanics. It is projected that by the year 2060, there will be 54 million non-Hispanic blacks, making up 13% of the total US population.[2] The black population in the US is primarily concentrated in the South (Figure 1) and includes individuals whose ancestors were brought to the US as slaves, as well as immigrants and their descendents. Of the more than 3.6 million foreign-born blacks in the US in 2014, most were born in either Latin America (58%) or Africa (40%).[3]

Blacks have the highest death rate and shortest survival of any racial/ethnic group in the US for most cancers. The causes of these inequalities are complex and reflect social and economic disparities more than biological differences. Socioeconomic disparities reflect inequitable access to opportunities and resources, such as work, wealth, income, education, housing, and overall standard of living, as well as barriers to high-quality cancer prevention, early detection, and treatment information and services.

Although the overall racial disparity in cancer death rates is decreasing, in 2012, the death rate for all cancers combined was 24% higher in black men and 14% higher in black women than in white men and women, respectively.[4] Moreover, the racial disparities for some cancers (e.g., breast) are increasing. Blacks bear a disproportionately high burden of other diseases, which also influences cancer survival. For example, the death rate for heart diseases is 26% higher in blacks than in whites (Table 1, page 2). Consequently, life expectancy is lower for blacks than whites among both men (72.3 vs. 76.7 years) and women (78.4 versus 81.4 years).[5]

This report presents updated statistics on cancer incidence, mortality, survival, and risk factors for blacks. All incidence and

Figure 1. Non-Hispanic Black Population as a Percentage of Total County Population



Source: US Census Bureau, Population Estimates, July 1, 2014. Released 2015.

Table 1. Leading Causes of Death among Non-Hispanic (NH) Blacks and Whites, 2012

All Ages

	NH Black				NH White			
Cause of Death	**Rank**	**Number**	**%**	**Death Rate***	**Rank**	**Number**	**%**	**Death Rate***
Heart diseases	1	69,139	24%	216.8	1	481,976	24%	171.2
Cancer	2	66,560	23%	199.2	2	462,493	23%	170.2
Cerebrovascular diseases	3	15,712	5%	50.7	4	100,152	5%	35.5
Diabetes	4	12,835	4%	39.8	7	50,442	3%	18.5
Accidents (unintentional injuries)	5	12,447	4%	32.5	5	99,284	5%	43.7
All causes		291,148		889.0		2,016,830		742.3

Children Ages 1-14

	NH Black				NH White			
Cause of Death	**Rank**	**Number**	**%**	**Death Rate***	**Rank**	**Number**	**%**	**Death Rate***
Accidents	1	617	29%	7.1	1	1,543	32%	5.0
Homicide	2	233	11%	2.7	4	279	6%	0.9
Cancer	3	204	10%	2.4	2	703	15%	2.3
Congenital anomalies (birth defects)	4	181	8%	2.1	3	395	8%	1.3
Chronic lower respiratory diseases	5	104	5%	1.2	11	36	1%	0.1
All causes		2,144		24.6		4,761		15.4

*Rates are per 100,000 and age adjusted to the 2000 US standard population.

Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the SEER program in the SEER*Stat database.[186]

mortality rates have been age adjusted to the US population in 2000 in order to allow comparisons between groups with different age distributions. This publication is intended to provide information to cancer control advocates, community leaders, public health and health care workers, and others interested in cancer prevention, early detection, and treatment in the black population.

What Is Cancer?

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Cancer is caused by external factors, such as tobacco, infectious organisms, and an unhealthy diet, as well as internal factors, such as inherited genetic mutations, hormones, and immune conditions. These factors may act together or in sequence to cause or promote cancer growth. Ten or more years usually pass between exposure to external factors and detectable cancer in adults. Treatments for cancer include surgery, radiation, chemotherapy, hormone therapy, immune therapy, and targeted therapy (drugs that specifically interfere with cancer cell growth).

Can Cancer Be Prevented?

A substantial proportion of cancers could be prevented with the adoption of a healthier lifestyle. For example, all cancers caused by tobacco use could be completely prevented. The estimated 20% of cancers due to excess weight, physical inactivity, excess alcohol consumption, and poor nutrition could also be prevented.[6] Many of the cancers caused by infectious agents are also preventable. For example, cervical cancers, which are caused by persistent infection with human papillomavirus (HPV), can be prevented by vaccination against cancer-causing types of HPV. In addition to avoiding risk factors, cancers of the colon, rectum, and cervix can be prevented through screening, which allows for the detection and removal of precancerous lesions. Screening also offers the opportunity to detect cancer early, before symptoms appear, which usually results in less extensive treatment and better outcomes. Screening reduces mortality for cancers of the breast, colon, rectum, cervix, and lung (among long-term and/or heavy smokers). For complete cancer screening guidelines, see page 24.

What Is the Risk of Developing or Dying of Cancer?

The risk of being diagnosed with cancer increases with age because most cancers require many years to develop. Overall, about 1 in 2 black men and 1 in 3 black women will be diagnosed with cancer in their lifetime (Table 2). The lifetime probability of dying from cancer is about 1 in 4 for black men and 1 in 5 for black women.

Table 2. Lifetime Probability of Developing or Dying from Invasive Cancers by Race/Ethnicity and Sex, US, 2010-2012*

		Developing		Dying	
		Black (%)	NH White (%)	Black (%)	NH White (%)
All Sites†	Male	40.8 (1 in 2)	42.4 (1 in 2)	23.4 (1 in 4)	22.8 (1 in 4)
	Female	34.3 (1 in 3)	39.0 (1 in 3)	19.4 (1 in 5)	19.5 (1 in 5)
Prostate	Male	18.2 (1 in 6)	13.3 (1 in 8)	4.4 (1 in 23)	2.4 (1 in 42)
Breast	Female	11.1 (1 in 9)	13.1 (1 in 8)	3.3 (1 in 31)	2.7 (1 in 37)
Lung & bronchus	Male	7.5 (1 in 13)	7.5 (1 in 13)	6.4 (1 in 16)	6.6 (1 in 15)
	Female	5.4 (1 in 19)	6.7 (1 in 15)	4.2 (1 in 24)	5.3 (1 in 19)
Colon & rectum	Male	4.9 (1 in 21)	4.6 (1 in 22)	2.4 (1 in 42)	1.9 (1 in 52)
	Female	4.7 (1 in 21)	4.3 (1 in 23)	2.1 (1 in 47)	1.8 (1 in 56)
Uterine corpus	Female	2.5 (1 in 39)	2.9 (1 in 35)	0.9 (1 in 108)	0.5 (1 in 184)
Kidney	Male	2.0 (1 in 51)	2.1 (1 in 48)	0.5 (1 in 204)	0.6 (1 in 158)
	Female	1.3 (1 in 79)	1.2 (1 in 83)	0.3 (1 in 328)	0.3 (1 in 288)
Urinary bladder	Male	1.9 (1 in 54)	4.4 (1 in 23)	0.5 (1 in 194)	1.0 (1 in 100)
	Female	0.8 (1 in 124)	1.3 (1 in 79)	0.4 (1 in 285)	0.4 (1 in 284)
Pancreas	Male	1.5 (1 in 67)	1.5 (1 in 65)	1.4 (1 in 74)	1.4 (1 in 72)
	Female	1.7 (1 in 58)	1.4 (1 in 69)	1.5 (1 in 66)	1.3 (1 in 76)
Non-Hodgkin lymphoma	Male	1.4 (1 in 70)	2.5 (1 in 40)	0.5 (1 in 201)	0.9 (1 in 110)
	Female	1.2 (1 in 84)	2.0 (1 in 50)	0.4 (1 in 239)	0.7 (1 in 140)
Uterine cervix	Female	0.8 (1 in 130)	0.6 (1 in 176)	0.4 (1 in 265)	0.2 (1 in 506)
Thyroid	Male	0.3 (1 in 368)	0.7 (1 in 148)	<0.1 (1 in 2,908)	0.1 (1 in 1,783)
	Female	1.0 (1 in 98)	1.9 (1 in 54)	0.1 (1 in 1,556)	0.1 (1 in 1,581)
Liver & intrahepatic bile duct	Male	1.5 (1 in 69)	1.0 (1 in 99)	1.1 (1 in 88)	0.8 (1 in 123)
	Female	0.5 (1 in 195)	0.4 (1 in 249)	0.5 (1 in 193)	0.4 (1 in 237)
Leukemia	Male	1.14 (1 in 88)	1.84 (1 in 53)	0.7 (1 in 147)	1.1 (1 in 92)
	Female	0.92 (1 in 109)	1.28 (1 in 77)	0.6 (1 in 176)	0.7 (1 in 134)

NH= non-Hispanic. *For those who have not been previously diagnosed with cancer. †All sites excludes basal cell and squamous cell skin cancers and in situ cancers except urinary bladder. Note: Percentages and "1 in" numbers may not be equivalent due to rounding.

Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.7.3.[187]

How Many Blacks Alive Today Have Ever Had Cancer?

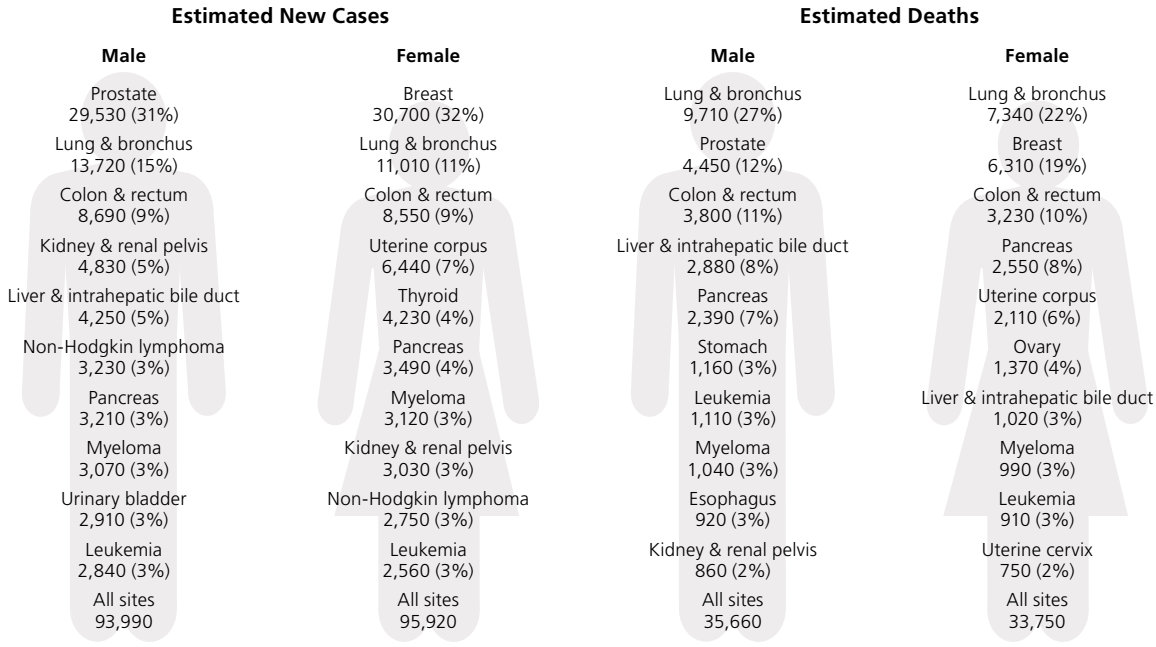
The National Cancer Institute estimates that approximately 1,211,690 blacks with a history of cancer were alive on January 1, 2012.[4] Some of these individuals were cancer-free, while others still had evidence of cancer and may have been undergoing treatment.

How Many New Cases and Deaths Are Expected to Occur among Blacks in 2016?

New cases: About 93,990 cancer cases in men and 95,920 cases in women are expected to be newly diagnosed among blacks in 2016 (Figure 2, page 4). Prostate cancer is the most commonly diagnosed cancer in black men, and breast cancer the most common in black women. Cancers of the lung and colorectum are the second- and third-most commonly diagnosed cancers in both black men and women. The four most common cancers (breast, prostate, colorectal, and lung) account for more than half of all cancer cases among blacks.

Deaths: About 35,660 black men and 33,750 black women are expected to die from cancer in 2016 (Figure 2, page 4). Lung cancer accounts for the largest number of cancer deaths among men (27%) and women (22%), followed by prostate cancer in men (12%) and breast cancer in women (19%). For both men and women, colorectal cancer is expected to be the third leading cause of cancer death.

Figure 2. Leading Sites of New Cancer Cases and Deaths among Blacks, 2016 Estimates*



*Excludes basal cell and squamous cell skin cancers and in situ carcinoma with the exception of urinary bladder.

How Do Rates Vary by State?

Incidence and death rates for non-Hispanic blacks by state for all cancers combined and selected cancer sites are shown in Tables 3 (page 5) and 4 (page 6). There is wide variation in rates by state, particularly for cancers closely tied to behavioral factors like smoking. For example, the lung cancer incidence rate in black men in Kentucky (136 per 100,000) is double that in Colorado (64 per 100,000) due to historic differences in smoking prevalence.

How Has the Occurrence of Cancer Changed over Time?

Trends in cancer incidence rates: Incidence rates for all cancers combined increased from the mid-1970s to the early 1990s in blacks; rates were higher and increased faster in males than in females. Since the early 1990s, rates have generally decreased in males, but remained stable in females. During the most recent time period (2003-2012), overall cancer incidence rates decreased faster in black males (2.0% per year) compared to white males (1.2%).[4] The declines in overall cancer incidence largely involved cancers of the lung and prostate. Overall cancer incidence rates were stable among both black and white females during 2003-2012.[4]

Trends in cancer death rates: Overall cancer death rates in blacks have decreased since the early 1990s, with larger declines in men than in women (Figure 3, page 7). The reduction in overall cancer death rates translates to the avoidance of more than 300,000 deaths in blacks. From 2003 to 2012, the death rate declined faster in blacks than whites among both males (2.5% versus 1.6% per year, respectively) and females (1.5% versus 1.3% per year, respectively).[4] As a result, the overall racial disparity has narrowed, particularly in males.

Despite these declines, death rates for all cancers combined were higher among blacks than whites during 1975-2012, with the gap much larger for men than for women (Figure 3, page 7). The higher overall cancer death rate in blacks is due largely to cancers of the breast and colorectum in women and cancers of the prostate, lung, and colorectum in men. In recent years, death rates for lung and other smoking-related cancers and for prostate cancer have decreased faster in blacks than whites, which has contributed to the recent narrowing of the racial disparity in overall cancer death rates. In fact, lung and cervical cancer death rates have converged for young blacks and whites.[7,8] In contrast, the racial disparity has widened for breast cancer in women and remained level for colorectal cancer in men – cancers that are most affected by access to screening and treatment (Figure 3, page 7).

Table 3. Incidence Rates* for Selected Cancers in Non-Hispanic Black Males and Females by State, 2008-2012

	All Cancers		Lung & Bronchus		Colon & Rectum		Prostate	Breast	Uterine Cervix
	Male	Female	Male	Female	Male	Female	Male	Female	Female
Alabama	602.3	379.8	103.6	38.2	65.9	46.5	220.9	125.9	10.3
Alaska	564.8	360.8	91.6	†	†	†	201.0	141.7	†
Arizona	423.1	347.9	65.9	51.4	45.2	37.3	132.0	103.2	8.2
Arkansas‡§	597.8	357.5	115.4	49.1	62.2	48.9	205.1	101.3	11.4
California	572.3	417.5	79.7	51.7	61.3	47.3	197.2	129.1	8.2
Colorado	502.1	374.2	64.3	47.1	48.9	36.7	187.9	120.2	5.9
Connecticut	592.8	408.8	77.7	47.9	62.0	42.5	217.2	122.1	7.5
Delaware	612.3	414.9	87.5	53.4	47.9	36.8	231.5	127.5	8.9
District of Columbia	654.2	453.3	99.4	57.4	63.2	48.4	215.9	137.9	11.3
Florida	533.2	365.9	75.1	36.9	54.4	39.1	197.0	109.7	12.0
Georgia	609.0	392.0	91.7	42.4	60.3	44.5	235.3	124.1	9.2
Hawaii	473.6	360.2	†	†	39.6	†	184.2	134.0	†
Idaho	468.7	366.6	†	†	†	†	†	†	†
Illinois	622.5	437.7	102.1	65.3	71.3	50.5	211.7	126.8	12.7
Indiana	544.0	421.3	109.5	63.6	58.8	47.5	150.2	123.7	8.8
Iowa	586.9	453.6	99.8	86.4	58.5	51.2	164.6	111.6	†
Kansas	621.0	450.7	104.0	64.8	62.8	51.5	214.5	131.4	†
Kentucky	636.8	458.4	135.6	81.6	65.9	52.5	170.3	133.2	7.4
Louisiana	655.9	422.6	113.1	52.0	72.6	51.8	223.4	130.0	12.0
Maine	425.8	272.8	†	†	†	†	161.9	†	†
Maryland	547.1	402.3	76.4	49.3	50.7	39.6	203.1	130.2	8.3
Massachusetts	568.2	387.1	72.9	41.5	49.3	37.0	218.9	115.1	8.3
Michigan	636.1	429.3	104.0	63.1	59.4	44.5	223.1	122.7	8.8
Minnesota‡¶	–	–	–	–	–	–	–	–	–
Mississippi	648.8	408.5	116.2	47.7	75.8	55.8	225.3	124.0	12.5
Missouri	582.1	450.2	106.5	70.8	67.2	49.1	171.5	135.6	10.5
Montana	489.9	†	†	†	†	†	†	†	†
Nebraska	594.6	456.2	107.6	61.0	80.8	57.7	177.9	134.2	†
Nevada‡**	468.9	379.9	69.6	48.0	57.8	47.4	141.7	116.8	9.9
New Hampshire	497.5	288.9	†	†	†	†	190.9	†	†
New Jersey	606.7	415.0	80.6	50.4	59.7	44.9	234.1	124.4	11.2
New Mexico	405.6	320.6	81.8	32.7	28.5	31.5	141.4	107.2	†
New York	613.1	406.2	74.6	45.0	57.5	41.2	247.3	119.2	11.4
North Carolina	609.1	403.2	103.6	47.2	58.4	41.2	213.7	128.1	8.7
North Dakota	541.0	†	†	†	†	†	†	†	†
Ohio	572.1	405.7	102.8	64.2	56.1	38.9	190.7	121.0	7.7
Oklahoma	613.2	421.0	104.8	56.4	55.3	46.4	229.1	131.3	9.4
Oregon	531.3	392.2	87.8	59.1	63.4	39.4	174.3	121.6	†
Pennsylvania	624.6	467.1	104.3	71.8	60.9	43.6	198.7	131.1	11.3
Rhode Island	505.3	380.6	67.6	66.2	31.9	33.1	170.0	104.8	†
South Carolina	583.8	388.0	94.4	41.0	57.1	40.6	207.2	125.1	9.3
South Dakota	315.2	309.8	†	†	†	†	†	†	†
Tennessee	602.8	407.3	109.6	53.1	64.0	45.9	203.8	126.2	10.9
Texas	572.4	406.8	99.9	52.3	63.9	45.1	175.8	120.3	11.1
Utah	551.7	386.1	†	†	†	†	210.9	108.6	†
Vermont	325.9	†	†	†	†	†	†	†	†
Virginia	578.8	392.8	95.1	49.5	54.2	41.0	208.9	129.8	7.6
Washington	573.1	417.1	80.9	55.8	47.4	36.0	196.2	127.3	6.9
West Virginia	565.2	369.3	99.5	47.1	65.6	38.2	192.2	115.5	†
Wisconsin	684.9	458.7	127.8	74.1	69.4	44.1	217.8	126.0	11.3
Wyoming	264.2	236.7	†	†	†	†	†	†	†
US	592.3	408.1	93.4	51.4	60.3	44.1	208.7	124.3	10.0

*Rates are per 100,000 and age adjusted to the 2000 US standard population. †Rates are suppressed when they are based on fewer than 25 cases. ‡This state's data are not included in US combined rates because they were unavailable or did not meet high-quality standards for one or more years during 2008-2012 according to the North American Association of Central Cancer Registries (NAACCR). §Rates are based on incidence data for 2008-2009. ¶Incidence data not submitted to NAACCR. **Rates are based on incidence data for 2008-2010.

Source: North American Association of Central Cancer Registries.[183]

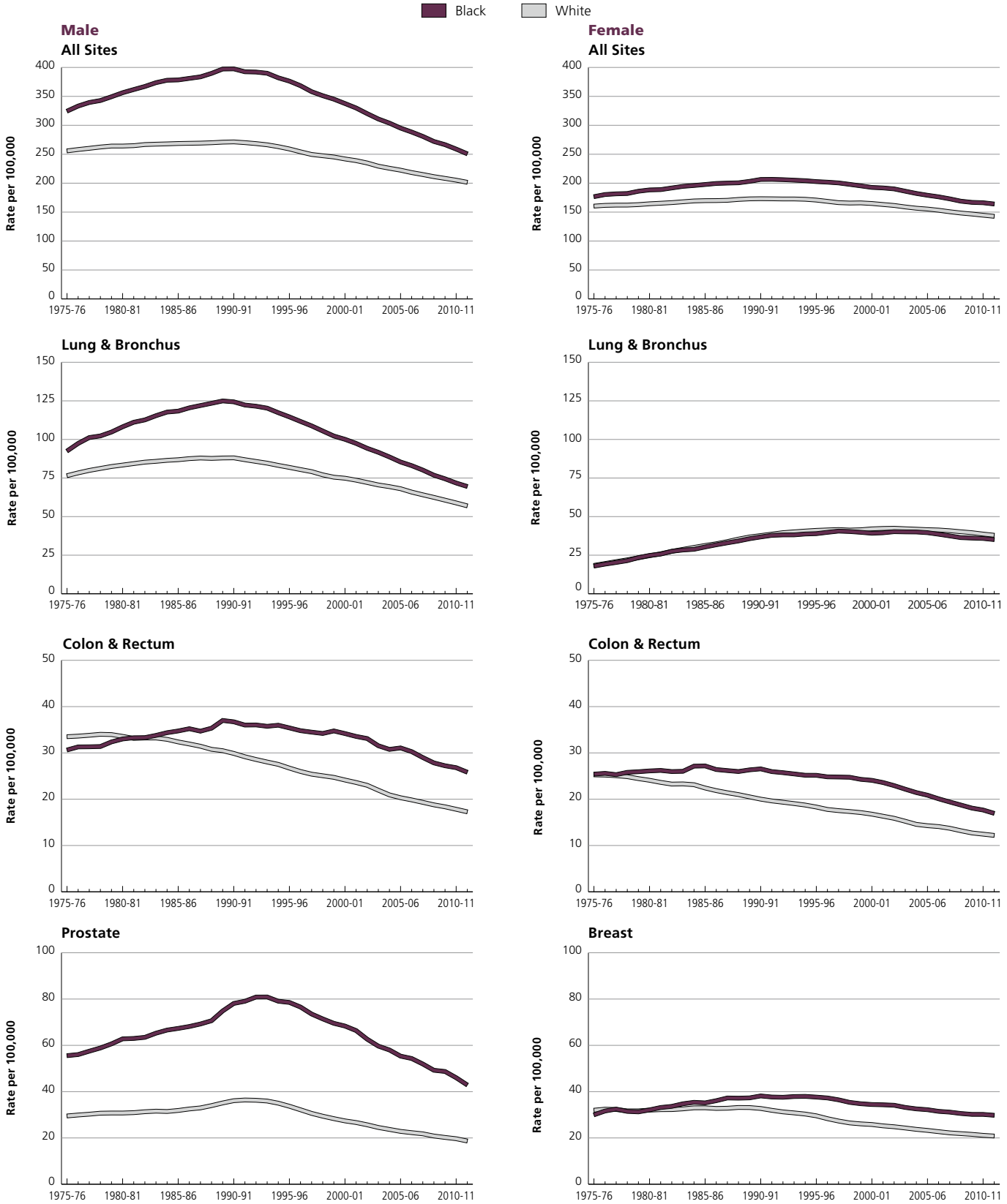
Table 4. Death Rates* for Selected Cancers in Non-Hispanic Black Males and Females by State, 2008-2012

	All Cancers		Lung & Bronchus		Colon & Rectum		Prostate	Breast	Uterine Cervix
	Male	Female	Male	Female	Male	Female	Male	Female	Female
Alabama	298.3	167.5	87.3	29.8	31.2	19.7	56.7	30.7	4.7
Alaska	247.4	128.8	†	†	†	†	†	†	†
Arizona	204.9	152.8	47.7	32.5	24.3	17.8	32.1	29.7	†
Arkansas	304.6	183.2	99.3	38.7	32.3	21.7	53.0	31.4	6.4
California	250.3	181.4	63.4	38.8	26.3	19.9	48.4	33.1	3.6
Colorado	219.9	154.5	54.6	35.5	22.8	15.0	51.2	26.0	†
Connecticut	224.6	148.2	55.7	31.0	19.1	13.5	39.7	24.6	†
Delaware	248.5	168.6	68.9	37.4	16.5	15.3	39.8	26.5	†
District of Columbia	291.7	190.3	74.2	41.0	26.2	20.3	48.0	34.0	4.0
Florida	232.0	147.2	59.8	25.1	23.5	16.4	46.2	28.5	4.9
Georgia	264.7	155.6	71.0	29.5	27.1	17.6	52.6	29.5	3.9
Hawaii	194.6	125.3	†	†	†	†	†	†	†
Idaho	†	†	†	†	†	†	†	†	†
Illinois	284.6	188.4	80.8	45.6	30.8	20.5	48.8	32.8	5.5
Indiana	282.1	190.9	90.6	48.1	26.8	19.1	43.9	31.0	3.5
Iowa	291.9	190.2	71.6	52.6	26.4	25.7	48.7	25.6	†
Kansas	270.5	197.9	80.1	54.9	27.1	22.1	44.3	29.4	†
Kentucky	292.9	191.4	102.1	56.8	26.2	20.7	40.4	32.7	3.2
Louisiana	303.5	182.0	94.0	40.0	31.3	19.6	45.2	34.8	4.5
Maine	†	†	†	†	†	†	†	†	†
Maryland	250.5	166.0	66.2	36.7	26.6	17.4	43.4	30.6	3.3
Massachusetts	223.4	146.9	51.1	26.9	19.7	14.0	42.5	23.7	2.5
Michigan	271.7	183.1	82.0	45.1	28.0	17.4	38.8	33.1	3.8
Minnesota	226.2	151.0	53.0	30.4	15.4	9.3	33.6	21.7	†
Mississippi	323.1	175.7	98.4	35.1	33.8	22.2	59.6	33.3	5.6
Missouri	272.8	188.2	79.6	47.1	28.8	18.6	41.4	33.7	4.5
Montana	†	†	†	†	†	†	†	†	†
Nebraska	287.6	186.8	86.2	48.5	40.4	19.2	38.7	29.0	†
Nevada	218.6	154.4	59.2	39.5	23.6	19.6	37.4	29.3	†
New Hampshire	146.1	†	†	†	†	†	†	†	†
New Jersey	263.2	170.9	65.7	34.9	30.2	18.8	49.4	32.5	4.1
New Mexico	218.6	157.2	73.6	†	†	†	†	30.2	†
New York	226.7	154.4	54.6	30.0	23.8	15.6	44.8	28.4	4.4
North Carolina	282.7	160.3	83.2	32.7	27.2	17.2	52.3	28.8	3.3
North Dakota	†	†	†	†	†	†	†	†	†
Ohio	278.4	181.8	86.8	47.8	28.0	16.5	44.6	30.9	3.6
Oklahoma	287.4	188.5	84.5	40.6	33.2	22.5	55.9	35.4	4.8
Oregon	261.3	170.4	69.5	48.7	27.3	†	47.9	28.5	†
Pennsylvania	288.4	193.3	80.9	49.1	29.7	18.1	52.6	33.1	4.1
Rhode Island	203.2	127.3	47.5	36.9	†	†	†	28.1	†
South Carolina	286.2	162.6	75.6	30.0	28.0	17.5	52.8	29.2	4.1
South Dakota	†	†	†	†	†	†	†	†	†
Tennessee	321.3	186.3	97.3	41.0	34.8	21.4	53.0	33.9	5.2
Texas	274.6	177.4	81.4	38.5	30.5	19.9	39.5	33.7	4.2
Utah	162.6	148.8	†	†	†	†	†	†	†
Vermont	†	†	†	†	†	†	†	†	†
Virginia	271.1	165.3	76.1	35.9	26.9	17.1	47.3	31.7	2.9
Washington	241.2	157.8	61.0	36.8	20.6	13.3	48.4	25.0	†
West Virginia	282.7	173.2	89.8	40.2	35.2	17.5	56.0	26.6	†
Wisconsin	307.8	195.0	102.7	50.1	28.0	18.2	42.6	32.1	3.8
Wyoming	†	†	†	†	†	†	†	†	†
US	267.7	170.4	74.9	36.7	27.6	18.2	47.2	31.0	4.1

*Rates are per 100,000 and age adjusted to the 2000 US standard population. †Rates are suppressed when they are based on fewer than 25 deaths.

Source: Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the SEER program in the SEER*Stat database.[186]

Figure 3. Trends in Death Rates* for Selected Cancer Sites among Blacks and Whites, US, 1975-2012



*Rates are per 100,000 and age adjusted to the US standard population and are 2-year moving averages.

Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the SEER program in the SEER*Stat database.[186]

Major Differences in the Cancer Burden between Blacks and Whites

Incidence and Death Rates

Tables 5 and 6 show differences in cancer incidence and death rates between blacks and whites in the US using whites as the reference group. Rate ratios greater than 1 indicate cancers for which the rate is higher in blacks compared to whites, and ratios less than 1 indicate cancers for which the rate is lower in blacks. Among males, incidence and death rates are higher (12% and 27%, respectively) among blacks than whites for all cancers combined and are also higher for the most common cancers, including prostate, lung, colorectal, kidney, and pancreas. In contrast, black women have a 6% lower risk of a cancer diagnosis than white women, but a 14% higher risk of cancer death. Notably, despite lower incidence rates for breast and uterine cancers, black women have death rates for these cancers that are 42% and 92% higher, respectively, than white women.

Incidence rates for Kaposi sarcoma (KS), myeloma, and stomach cancer are about 2-4 times higher in blacks than whites (Table 5). Although KS is now a relatively rare cancer, incidence rates are 3.6 times higher in black men and 4 times higher in black women compared to whites. In the US, KS primarily occurs among people infected with human immunodeficiency virus (HIV), which is also more common among blacks than whites (see page 22 for more information on HIV infection). Multiple myeloma usually arises in the bone marrow in a type of white blood cell called a plasma cell. The reasons for higher rates of myeloma among blacks are not known.[9] Higher rates of stomach cancer in blacks are limited to non-cardia gastric cancers (cancers that occur in all areas of the stomach other than the uppermost portion, where the stomach meets the esophagus). This disparity may reflect higher rates of *Helicobacter pylori* infection among blacks, which is the most important risk factor for stomach cancer. High consumption of salt and grilled meat also increases risk for this type of stomach cancer.[10]

Stage at Diagnosis and Survival

Stage of disease describes the extent or spread of cancer at the time of diagnosis. Local stage describes a malignant cancer that is confined to the organ of origin. A cancer that is diagnosed at a

Table 5. Comparison of Cancer Incidence Rates between Non-Hispanic (NH) Blacks and Whites, US, 2008-2012

Male					Female				
Cancer	NH Black Rate*	NH White Rate*	Absolute Difference†	Rate Ratio‡	Cancer	NH Black Rate*	NH White Rate*	Absolute Difference†	Rate Ratio‡
Kaposi sarcoma	1.7	0.5	1.2	3.57	Kaposi sarcoma	0.2	<0.1	0.1	3.96
Myeloma	14.8	7.0	7.8	2.11	Myeloma	11.1	4.3	6.8	2.58
Stomach	15.1	7.8	7.3	1.93	Stomach	8.0	3.5	4.5	2.30
Liver & intrahepatic bile duct	16.5	9.3	7.2	1.77	Liver & intrahepatic bile duct	4.8	3.2	1.6	1.52
Prostate	208.7	123.0	85.7	1.70	Uterine cervix	10.0	7.1	2.9	1.41
Larynx	9.3	6.3	3.0	1.48	Pancreas	14.4	10.6	3.8	1.36
Breast	2.0	1.4	0.6	1.45	Esophagus	2.5	1.8	0.7	1.34
Colon & rectum	60.3	47.4	12.9	1.27	Colon & rectum	44.1	36.2	7.9	1.22
Pancreas	17.2	14.0	3.2	1.23	Kidney & renal pelvis	13.0	11.3	1.7	1.15
Lung & bronchus	93.4	79.3	14.1	1.18	Breast	124.3	128.1	-3.8	0.97
Kidney & renal pelvis	24.2	21.8	2.4	1.11	Uterine corpus	23.0	25.5	-2.5	0.90
Hodgkin lymphoma	3.2	3.4	-0.2	0.95	Hodgkin lymphoma	2.4	2.7	-0.3	0.88
Esophagus	8.0	8.8	-0.8	0.90	Lung & bronchus	51.4	58.7	-7.3	0.87
Leukemia	13.2	17.7	-4.5	0.75	Leukemia	8.6	10.7	-2.1	0.80
Oral cavity & pharynx	15.3	18.1	-2.8	0.84	Oral cavity & pharynx	5.2	6.7	-1.5	0.78
Non-Hodgkin lymphoma	17.2	24.1	-6.9	0.71	Ovary	9.6	12.4	-2.8	0.77
Brain & other nervous system	4.9	8.8	-3.9	0.56	Non-Hodgkin lymphoma	12.0	16.6	-4.6	0.72
Urinary bladder	19.8	40.2	-20.4	0.49	Urinary bladder	6.7	9.9	-3.2	0.68
Thyroid	3.7	7.7	-4.0	0.48	Thyroid	12.9	21.9	-9.0	0.59
Testis	1.4	6.8	-5.4	0.21	Brain & other nervous system	3.6	6.3	-2.7	0.58
Melanoma of the skin	1.1	31.3	-30.2	0.04	Melanoma of the skin	1.0	20.6	-19.6	0.05
All sites	**592.3**	**528.9**	**63.4**	**1.12**	**All sites**	**408.1**	**436.2**	**-28.1**	**0.94**

Note: Sites listed in descending order by rate ratio. *Rates are per 100,000 and age adjusted to the 2000 US standard population. †Absolute difference is the rate in blacks minus the rate in whites. ‡Rate ratio is the unrounded rate in blacks divided by the unrounded rate in whites.

Source: North American Association of Central Cancer Registries.[183]

Table 6. Comparison of Cancer Death Rates between Non-Hispanic (NH) Blacks and Whites, US, 2008-2012

Male					Female				
Cancer	NH Black Rate*	NH White Rate*	Absolute Difference†	Rate Ratio‡	Cancer	NH Black Rate*	NH White Rate*	Absolute Difference†	Rate Ratio‡
Stomach	9.4	3.6	5.8	2.58	Stomach	4.5	1.8	2.7	2.48
Prostate	47.2	19.9	27.3	2.38	Myeloma	5.4	2.4	3.0	2.22
Larynx	3.7	1.8	1.9	2.02	Uterine cervix	4.1	2.0	2.1	2.00
Myeloma	7.8	4.0	3.8	1.95	Uterine corpus	7.8	4.1	3.7	1.92
Liver & intrahepatic bile duct	12.8	7.6	5.2	1.69	Liver & intrahepatic bile duct	4.4	3.1	1.3	1.43
Colon & rectum	27.6	18.2	9.4	1.52	Breast	31.0	21.9	9.1	1.42
Oral cavity & pharynx	5.2	3.8	1.4	1.36	Colon & rectum	18.2	12.9	5.3	1.41
Lung & bronchus	74.9	62.2	12.7	1.20	Pancreas	12.6	9.5	3.1	1.32
Pancreas	15.4	12.7	2.7	1.21	Esophagus	2.0	1.6	0.4	1.28
Kidney & renal pelvis	5.7	5.9	-0.2	0.97	Urinary bladder	2.6	2.3	0.3	1.12
Hodgkin lymphoma	0.4	0.5	-0.1	0.94	Kidney & renal pelvis	2.6	2.6	0.0	1.02
Esophagus	7.1	8.0	-0.9	0.89	Lung & bronchus	36.7	41.1	-4.4	0.89
Leukemia	8.1	9.9	-1.8	0.82	Leukemia	4.8	5.4	-0.6	0.89
Non-Hodgkin lymphoma	5.9	8.3	-2.4	0.71	Hodgkin lymphoma	0.3	0.3	0.0	0.89
Urinary bladder	5.4	8.4	-3.0	0.65	Ovary	6.8	8.2	-1.4	0.83
Brain & other nervous system	3.2	6.0	-2.8	0.53	Non-Hodgkin lymphoma	3.6	5.0	-1.4	0.71
Melanoma of the skin	0.5	5.0	-4.5	0.09	Brain & other nervous system	2.2	3.9	-1.7	0.55
					Melanoma of the skin	0.4	2.1	-1.7	0.18
All sites	**267.7**	**210.6**	**57.1**	**1.27**	**All sites**	**170.4**	**149.2**	**21.2**	**1.14**

Note: Sites listed in descending order by rate ratio. *Rates are per 100,000 and age adjusted to the 2000 US standard population. †Absolute difference is the rate in blacks minus the rate in whites. ‡Rate ratio is the unrounded rate in blacks divided by the unrounded rate in whites.

Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the SEER program in the SEER*Stat database.[186]

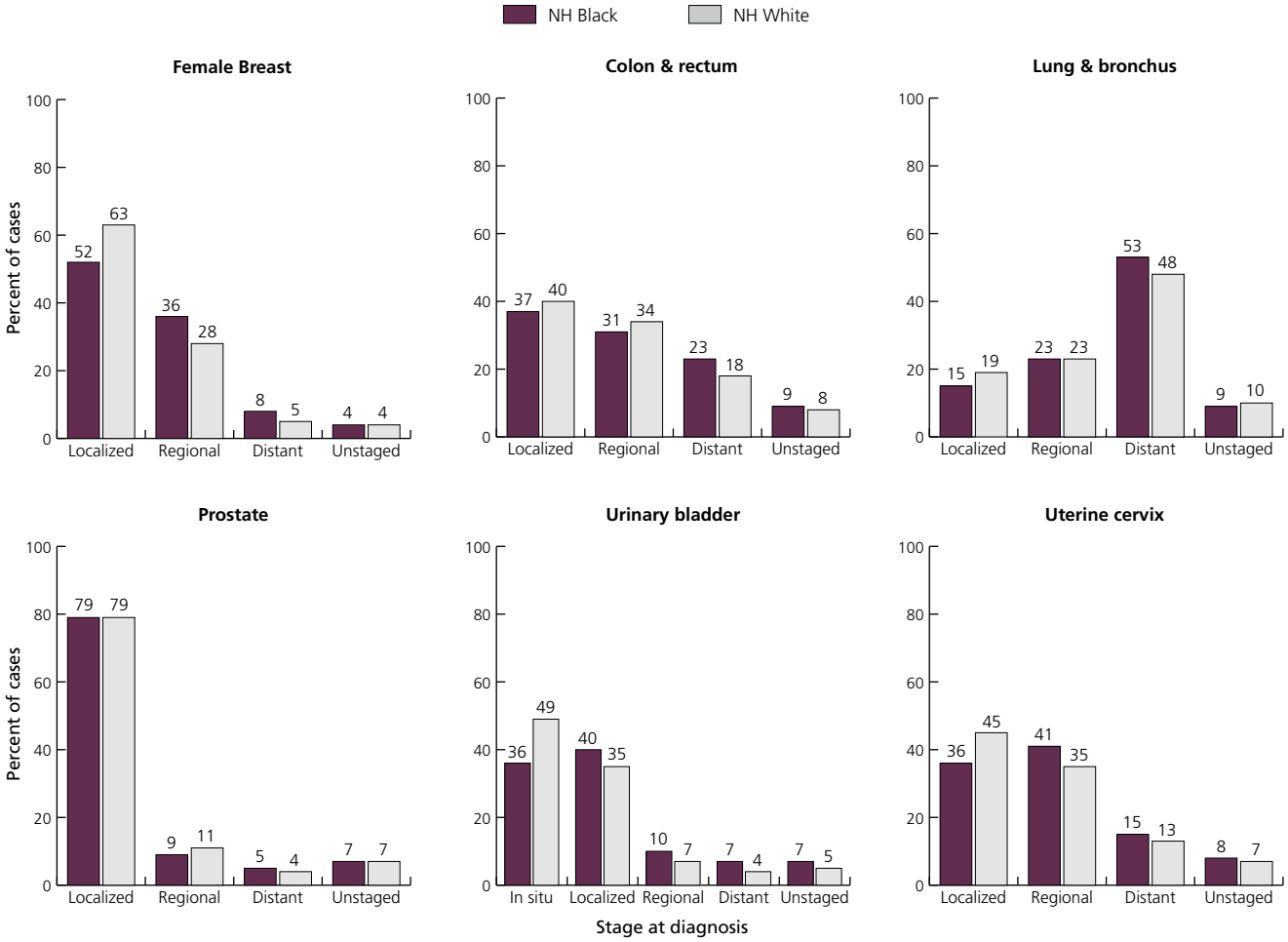
regional stage has spread from its original site into surrounding organs, tissues, or nearby lymph nodes. Distant-stage cancer has spread to distant organs and/or distant lymph nodes. In general, treatment is less likely to be effective the further a cancer has spread. Blacks are more likely than whites to be diagnosed with cancer at regional or distant stages for most cancers (Figure 4, page 10).

The most commonly used survival measure for the general population is relative survival, which is the percentage of cancer patients alive after a specified period of time following diagnosis (typically 5 years), divided by the percentage expected to be alive in the absence of cancer based on normal life expectancy. Although 5-year relative survival rates for all cancers combined are useful in monitoring trends over time and for comparing survival differences between groups, they do not predict individual prognosis because many important factors that influence individual survival, such as tumor characteristics and other patient illnesses, are not accounted for. Five-year relative survival rates for specific cancers and factors that influence survival are discussed in the next section.

The overall 5-year relative survival rate among blacks has improved from approximately 27% during 1960-1963 to 62% during 2005-2011.[4] However, blacks continue to have lower 5-year survival than whites overall (62% versus 70%) and for each stage of diagnosis for most cancer sites (Figure 5, page 11). Much of the difference in survival is believed to be due to barriers that limit access to timely, appropriate, and high-quality medical care.[11-15]

These issues are recognized to largely reflect socioeconomic disparities associated with race. Some studies suggest that blacks who receive cancer treatment and medical care similar to that of whites experience similar outcomes.[13, 16] However, other studies report that racial disparities persist even after accounting for socioeconomic factors and access to care.[17-21] A higher prevalence of health conditions in addition to cancer among black patients can affect delivery of optimal treatment and are also thought to contribute to survival differences.[22, 23] Although there is limited evidence that differing responses to cancer therapy contribute to racial disparities in survival, blacks and other racial/ethnic minorities are underrepresented in clinical trials, which makes it more difficult to assess the efficacy of cancer therapies among these groups.[24, 25]

Figure 4. Stage Distribution for Selected Cancers in Non-Hispanic (NH) Blacks and Whites, US, 2005-2011



Percentages may not total 100% due to rounding.

Source: North American Association of Central Cancer Registries.[183]

Selected Cancers

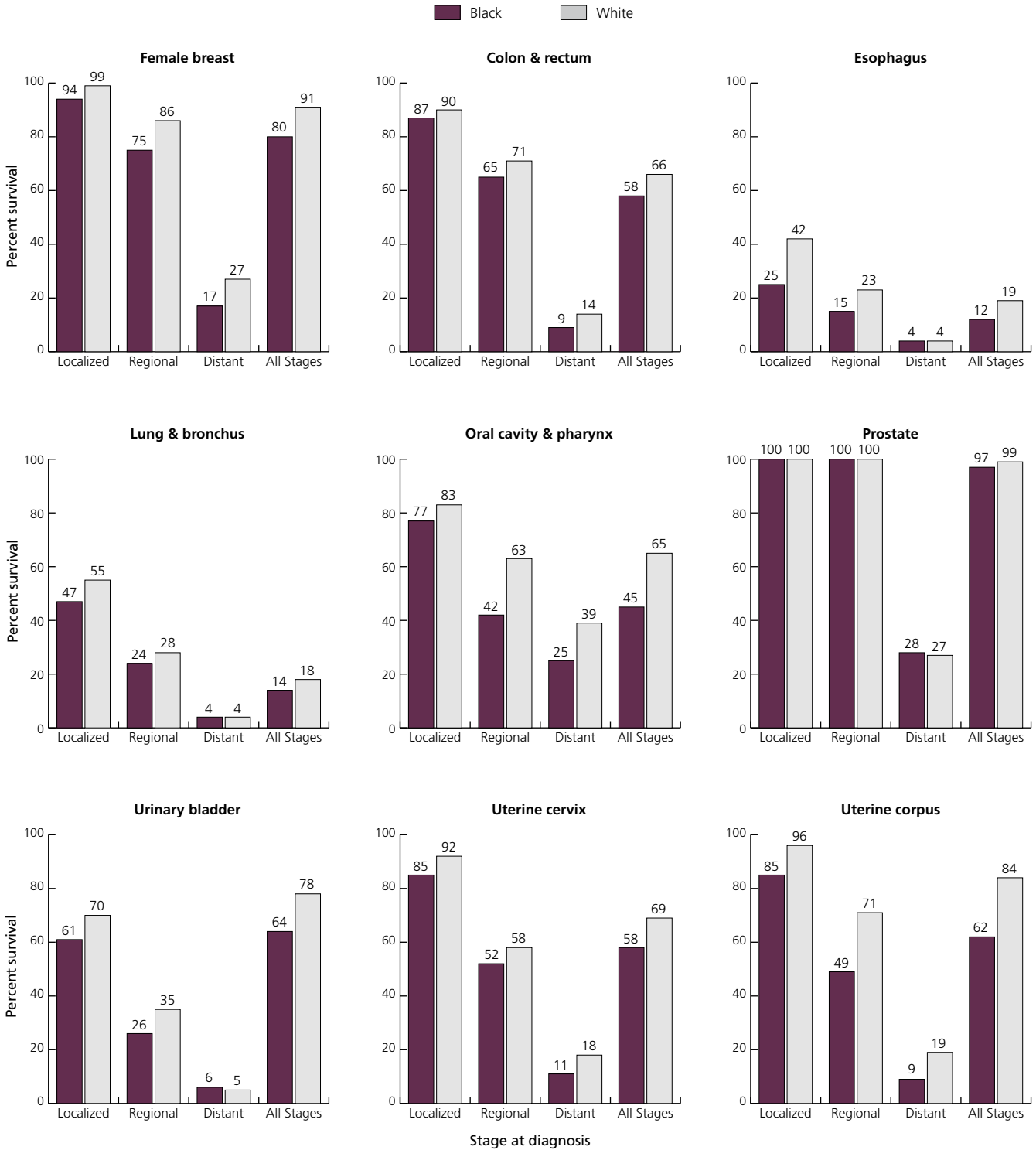
Female Breast

New Cases

Breast cancer is the most commonly diagnosed cancer among black women, and an estimated 30,700 new cases are expected to be diagnosed in 2016. Similar to the pattern among white women, breast cancer incidence rates among black women increased rapidly during much of the 1980s (Figure 6a, page 13), largely due to increased detection by mammography screening. However, while rates thereafter generally stabilized in white women they continued to increase, albeit more slowly, in black women (0.5% per year from 1986 to 2012).[4] As a result, incidence rates in black and white women converged in 2012. The continued increase in incidence rates in black women may in part reflect the rising prevalence of obesity in this group (Figure 9, page 18).

During 2008-2012, the overall breast cancer incidence rate in black women was 124.3 cases per 100,000 women, 3% lower than in white women (128.1). However, rates were higher in black than in white women in seven US states (Alabama, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, and Tennessee), and were not significantly different in 24 states.[26] Breast cancer incidence rates are also higher among blacks than whites for women under age 45. The median age of diagnosis is 58 for black women, compared to 62 for white women.[4]

Figure 5. Five-year Relative Survival* for Selected Cancers by Race and Stage, US, 2005-2011



*Survival rates are based on patients diagnosed between 2005 and 2011 and followed through 2012. **Local:** an invasive cancer confined entirely to the organ of origin. **Regional:** a malignant cancer that 1) has extended beyond the limits of the organ of origin directly into surrounding organs or tissues; 2) involves regional lymph nodes; or 3) has both regional extension and involvement of regional lymph nodes. **Distant:** a malignant cancer that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis to distant organs, tissues, or via the lymphatic system to distant lymph nodes.

Source: Howlader et al, 2015.[4]

Prevention

All women can help reduce their risk of breast cancer by avoiding weight gain and obesity (for postmenopausal breast cancer), engaging in regular physical activity, and minimizing alcohol intake. Women should consider the increased risk of breast cancer associated with combined estrogen and progestin hormone therapy use when evaluating treatment options for menopausal symptoms. In addition, recent research indicates that long-term, heavy smoking may also increase breast cancer risk, particularly among women who start smoking before their first pregnancy.[27-31]

Deaths

Breast cancer is the second most common cause of cancer death among black women, surpassed only by lung cancer. An estimated 6,310 deaths from breast cancer are expected to occur among black women in 2016. Breast cancer death rates among black women increased from 1975 to 1991, but declined thereafter as a result of improvements in both early detection and treatment. Prior to the mid-1980s, breast cancer death rates for white and black women were similar. However, a larger increase in black women from the mid-1970s to the early 1990s, followed by a slower decline, has resulted in a widening disparity. Since 1990, breast cancer death rates dropped 23% in black women compared to a 37% drop in white women (Figure 3, page 7). As a result, breast cancer death rates in the most recent time period (2008-2012) are 42% higher in black women compared to white women, despite similar incidence rates. Higher death rates among black women likely reflects a combination of factors, including differences in stage at diagnosis, obesity and comorbidities, and tumor characteristics, as well as access, adherence, and response to high-quality cancer treatment.[32-38]

Survival and Stage Distribution

The overall 5-year relative survival rate for breast cancer diagnosed in 2005-2011 was 80% for black women compared to 91% for white women (Figure 5, page 11). This difference can be attributed to both later stage at detection and poorer stage-specific survival among black women. Only about half (52%) of breast cancers in black women are diagnosed at a local stage, compared to 63% in white women (Figure 4, page 10).

Later stage at diagnosis among black women has been largely attributed to lower frequency of and longer intervals between mammograms, and lack of timely follow-up of abnormal results.[39-41] Lower stage-specific survival has been explained in part by unequal access to and receipt of prompt, high-quality treatment among black women compared to white women.[34, 42-45] There is also evidence that aggressive tumor characteristics are more common in breast cancers diagnosed in black women than other racial/ethnic groups.[26, 46-48] For example, 22% of breast cancers in black women are referred to as triple negative (ER-, PR-, and HER2-) compared to 10-12% of those among women of other races/ethnicities in the US.[26] These proportions are even higher among premenopausal black breast cancer patients.[49] Triple negative breast cancers are more aggressive and have poorer prognosis, in part because there are currently no targeted therapies for these tumors.[50, 51] Some studies suggest black women are more likely to be diagnosed with triple negative breast cancer as a result of African ancestry, while others find the cause to be related more to certain behavioral risk factors, such as reproductive patterns that are relatively more common in black women (including giving birth to more than one child, early age at first pregnancy, and lower rates of breastfeeding).[46, 52-57]

Visit **cancer.org** for additional information about breast cancer in the latest edition of *Breast Cancer Facts & Figures*.

Cervix

New Cases

An estimated 2,290 cases of invasive cervical cancer are expected to be newly diagnosed among black women in 2016. The incidence rate of cervical cancer is 41% higher in black women than white women (Table 5, page 8). However, a recent study suggests the racial disparity may be even wider after adjusting incidence rates to account for women who have had a hysterectomy and are thus not at risk for cervical cancer.[58] Nevertheless, the racial disparity has narrowed substantially as rates have dropped faster among black women than white women in recent years. Notably, among women under age 50, incidence rates of cervical cancer converged between blacks and whites in the mid-2000s.[7]

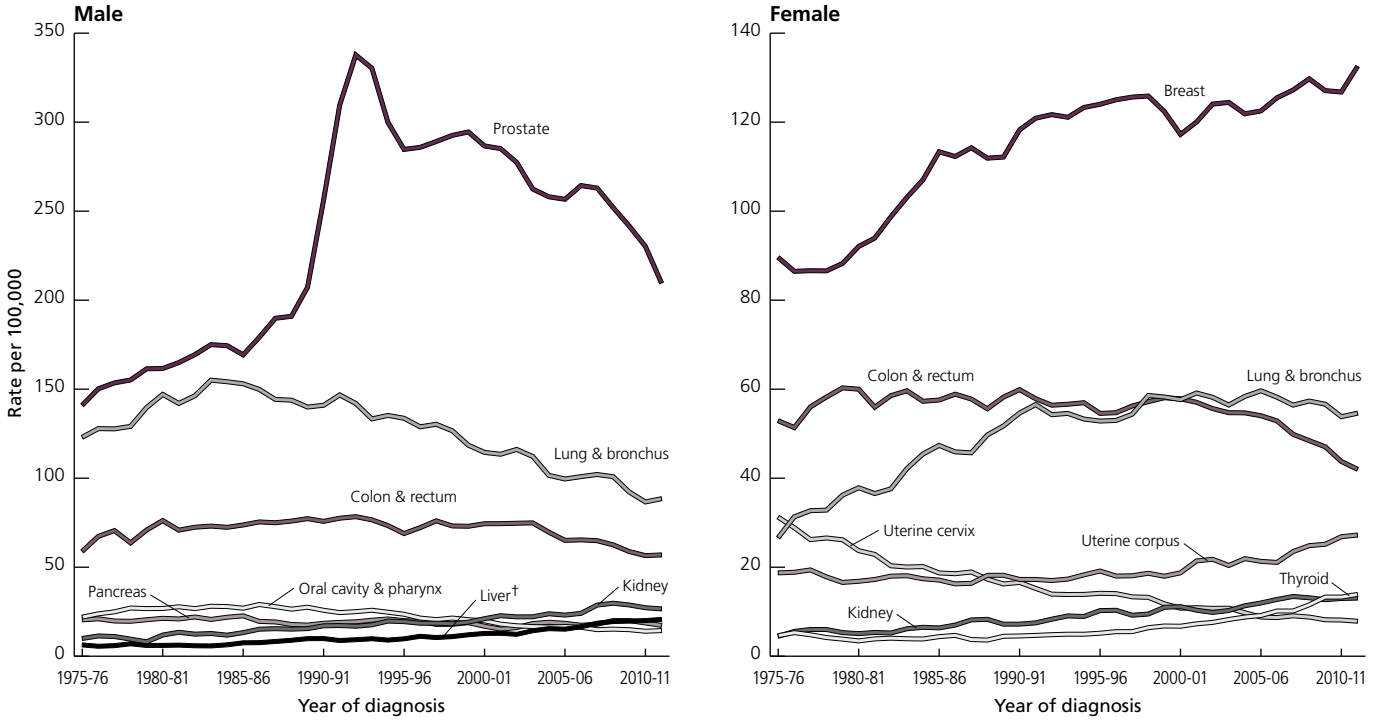
Prevention

Cervical cancer is highly preventable. It is one of only two cancers (colorectal is the other) that can be prevented through screening. As Pap testing has become more common, most cervical abnormalities are detected as pre-invasive lesions rather than invasive cancer. For more information on cervical cancer screening, see page 23. Cervical cancer is caused by persistent infection with certain types of human papillomavirus (HPV). Vaccines are available that protect against the most common cancer-causing HPV infections. See page 22 for more information on HPV vaccination.

Deaths

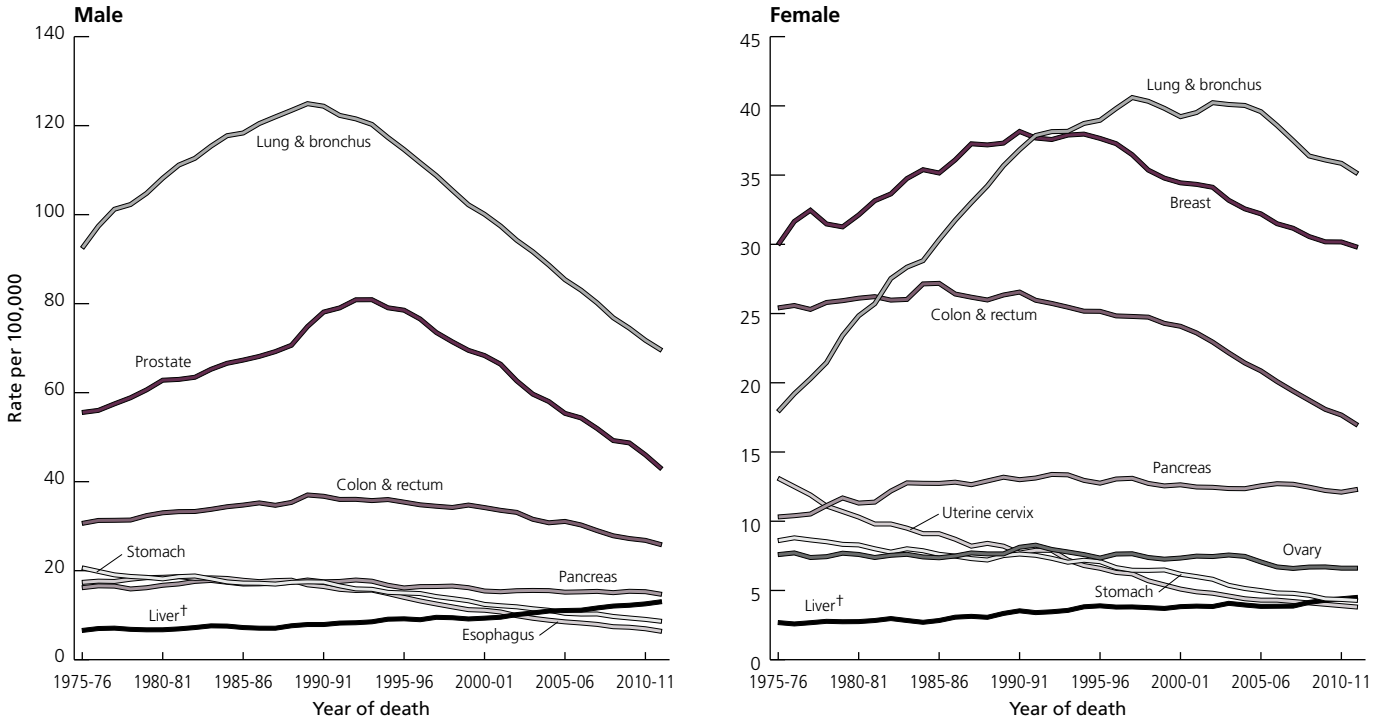
An estimated 750 deaths from cervical cancer are expected among black women in 2016. Cervical cancer death rates have declined steadily over the past several decades due to the prevention and early detection of cervical cancer as a result of screening. During 2003 to 2012, rates decreased faster in black women than white women (2.6% per year versus 0.9% per year, respectively), partly due to higher baseline rates in blacks.[4] Despite this progress, black women remain twice as likely to die from cervical cancer as white women (Table 6, page 9), largely due to socioeconomic disparities and a lack of access to care.[59]

Figure 6a. Age-adjusted Incidence Rates* for Blacks by Site and Sex, US, 1975-2012



*Rates are delay adjusted and age adjusted to the 2000 US standard population and are 2-year moving averages.
Source: Surveillance, Epidemiology, and End Results (SEER) Program, 9 SEER Registries, Division of Cancer Control and Population Sciences, National Cancer Institute.[182]

Figure 6b. Age-adjusted Mortality Rates* for Blacks by Site and Sex, US, 1975-2012



*Rates are age adjusted to the 2000 US standard population and are 2-year moving averages. †Includes intrahepatic bile duct.
Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the SEER program in the SEER*Stat database.[186]

Survival and Stage Distribution

The overall 5-year relative survival rate for cervical cancer among black women is 58%, compared to 69% among white women, partly because black women are more likely than white women to be diagnosed with regional- or distant-stage disease (Figure 4, page 10) despite similar screening rates (Table 8, page 22). Racial differences in stage at diagnosis may be due to differences in the quality of screening and follow-up after abnormal results.[60, 61] Lower socioeconomic status is also associated with lower screening rates, increased risk of late-stage diagnosis, and poorer survival.[62-64]

Colon and Rectum

New Cases

An estimated 17,240 cases of colorectal cancer are expected to occur among blacks in 2016. Colorectal cancer is the third most common cancer in both black men and women. Incidence rates are higher in black males and females compared to whites (27% and 22%, respectively) (Table 5, page 8). From 2003 to 2012, incidence rates for colorectal cancer decreased by 3.0% per year among black men and by 3.1% per year among black women, compared to 3.3% and 2.9% per year among white men and women, respectively.[4]

Prior to 1989, incidence rates were predominantly higher in white men than in black men and were similar for women of both races. Since 1989, however, incidence rates have been higher for blacks than whites in both men and women. This crossover may reflect racial differences in the trends of risk factors for colorectal cancer and/or greater access to and utilization by whites of recommended screening tests that detect and remove precancerous polyps.[65]

Prevention

Major modifiable factors that increase risk for colorectal cancer include obesity, physical inactivity, long-term smoking, high consumption of red or processed meats, low calcium intake, moderate to heavy alcohol consumption, and very low intake of fruits and vegetables. Consumption of whole-grain fiber reduces risk. Hereditary and medical factors that increase risk include a personal or family history of colorectal cancer and/or polyps, certain inherited genetic conditions (e.g., Lynch syndrome, also known as hereditary nonpolyposis colorectal cancer [HNPCC] or familial adenomatous polyposis [FAP]), a personal history of chronic inflammatory bowel disease (e.g., ulcerative colitis or Crohn disease), and type II diabetes.

Screening tests that detect and remove adenomatous polyps are the most reliable method of preventing colorectal cancer. Colorectal cancer screening rates are slightly lower among blacks compared to whites, 59% versus 61%, respectively (Table 8, page 22). The American Cancer Society has identified increasing colorectal screening as a priority for cancer prevention and control. For more information on colorectal cancer screening, see page 25.

Deaths

An estimated 7,030 deaths from colorectal cancer are expected to occur among blacks in 2016. Colorectal cancer is the third leading cause of cancer death in both black men and women. Colorectal cancer death rates are 52% higher in black men and 41% higher in black women compared to white men and women (Table 6, page 9). One study estimated that 19% of the racial disparity in colorectal cancer mortality rates can be attributed to lower screening rates and 36% to lower stage-specific survival among blacks.[65] Similar to incidence rates, colorectal cancer mortality rates were historically higher in whites compared to blacks, with the crossover occurring around 1979 for women and 1984 for men (Figure 3, page 7). Although mortality rates in blacks remain substantially higher than those in whites, the gap has begun to shrink in recent years among women. From 2008-2012, annual declines in mortality rates were similar among black and white men (2.7% versus 2.6%), respectively and slightly larger among black women than white women (3.3% versus 2.9%, respectively).[4] Differences in the magnitude of the declines in mortality rates for distant-stage disease (5% in blacks vs 33% in whites from 1985 to 2008) appear to be driving the survival differential.[66]

Survival and Stage Distribution

The 5-year relative survival rate for colorectal cancer among blacks improved from 45% in 1975-1977 to 59% in 2005-2011, smaller than that for whites (50% to 67% over the same period).[4] Some of the disparity in survival is due to a later stage at diagnosis among blacks although this gap is narrowing; 37% of colorectal cancers in blacks are diagnosed at a localized stage compared to 40% in whites (Figure 4, page 10). However, blacks also have lower 5-year relative survival rates within each stage at diagnosis (Figure 5, page 11). Disparities in colorectal cancer mortality between blacks and whites largely reflect differences in treatment, socioeconomic status, and comorbidities.[17, 67-69] Numerous studies have documented that blacks with colorectal cancer are less likely than white patients to receive recommended surgical treatment and adjuvant chemotherapy.[70, 71] Notably, a recent study reported that when black and white stage III colorectal patients ages 50 and older received the same treatments through a clinical trial, they had similar outcomes.[72]

Visit **cancer.org** for more information on colorectal cancer in the latest edition of *Colorectal Cancer Facts & Figures*.

Lung and Bronchus

New Cases

An estimated 24,730 cases of lung cancer are expected to be newly diagnosed among blacks in 2016, accounting for about 13% of the cancer diagnoses in this group. Lung cancer is the second most common cancer in both black men and women. Black men have higher lung cancer rates than white men, but the reverse is true for women, reflecting racial differences in historic smoking patterns (Figure 7, page 16). During 2008-2012, the average incidence rate for cancers of the lung and bronchus was 18% higher in black men than in white men, but 13% lower in black women than white women (Table 5, page 8).

Lung cancer trends are similar in blacks and whites. In black men, incidence rates increased rapidly until the mid-1980s, but have since been steadily declining. In contrast, in black women, rates increased until the early 2000s and have since decreased slightly (Figure 6a, page 13).

Prevention

The vast majority of lung cancers could be prevented by not smoking. Eighty-three percent of lung cancer deaths in men and 76% of lung cancer deaths in women are caused by cigarette smoking, with additional disease and death caused by exposure to secondhand smoke.[73]

Deaths

Lung cancer is the leading cause of cancer death in blacks. An estimated 17,050 deaths from lung cancer are expected to occur among blacks in 2016. After increasing for decades, lung cancer death rates in men began to decline in 1990, with acceleration in the decline beginning in 1994 (Figure 3, page 7). During 2003-2012, lung cancer death rates declined faster in black men and women (3.3% per year and 1.6% per year, respectively) compared to white men and women (2.5% per year and 1.2% per year, respectively).[4] The declines in lung cancer death rates are the result of decreases in smoking prevalence over the previous 40 years.

A faster decline in the lung cancer death rate in black men compared to white men has led to a substantial reduction in the racial disparity (from an excess of 40% in 1990-1992 to 20% in 2008-2012) (Figure 3, page 7). In fact, in young adults (under age 40), the disparity has been eliminated. The convergence of lung cancer death rates between young blacks and whites likely reflects the greater decrease in smoking initiation among black adolescents since the late 1970s.[6] Smoking prevalence has also decreased more rapidly in blacks than in whites among ages 25 to 34.[74] If black youth continue to have lower smoking prevalence as they age, racial differences in lung cancer mortality in men should be eliminated in the next 40 to 50 years. See page 16 for more information on smoking trends.

Survival and Stage Distribution

The overall 5-year relative survival rate for lung cancer is lower in blacks than in whites: 14% versus 18%, respectively (Figure 5, page 11). When lung cancer is detected at a localized stage, the 5-year relative survival rate among blacks is 47%; however, only 15% of lung cancer cases are detected at this early stage because symptoms generally do not appear until the disease is advanced. Studies have shown that even when lung cancer is diagnosed early, blacks are less likely than whites to receive surgery, the treatment with the best chance for cure, even after accounting for socioeconomic factors.[75-77] Other studies have found that among lung cancer patients treated at Veterans Affairs or US Military Health System facilities, racial disparities in lung cancer outcomes diminished, although differences in receipt of treatment remained.[78-80]

Prostate

New Cases

An estimated 29,530 cases of prostate cancer are expected to be newly diagnosed among black men in 2016, accounting for 31% of all cancers diagnosed in this group. It is estimated that 1 in 6 black men will be diagnosed with prostate cancer in his lifetime, compared to 1 in 8 white men. During 2008-2012, the average annual prostate cancer incidence rate was 208.7 cases per 100,000 black men, 70% higher than the rate in white men (Table 5, page 8). Similar to whites, incidence rates in black men increased sharply between 1989 and 1992, but have since been generally declining (Figure 6a, page 13). The dramatic changes in prostate cancer incidence rates reflect the use of the prostate-specific antigen (PSA) blood test for the detection of prostate cancer. During 2003 to 2012, prostate cancer incidence rates dropped by 3.4% per year in black men and 4.2% per year in whites.[4]

Prevention

The only well-established risk factors for prostate cancer are age, race, and family history of the disease. Men with a father or brother with prostate cancer are 2 to 3 times more likely to be diagnosed than men without a family history.[81] Black men and Jamaican men of African descent have the highest prostate cancer incidence rates worldwide, which may reflect differences in inherited genetic susceptibility.[82-85]

Deaths

Prostate cancer is the second leading cause of cancer death in black men, with an estimated 4,450 deaths expected in 2016. Black men have the highest death rate for prostate cancer of any racial or ethnic group in the US, 2.4 times higher than in white men (Table 6, page 9). This difference reflects higher incidence rates among black men, as well as variations in treatment patterns by race. Black men are less likely to receive surgical treatment than white men with similar disease characteristics.[86-88]

After a long period of increase, prostate cancer death rates in black men peaked in 1993 and declined steadily thereafter (Figure 6b, page 13). Between 2003 and 2012, the death rate for prostate cancer decreased faster in black men than in white men (3.6% per year versus 3.4% per year, respectively) (Figure 3, page 7).[4] Factors that may have contributed to the decrease include improved surgical and radiologic treatment, the use of hormonal therapy for advanced-stage disease, and early detection by PSA.[89-92] However, the contribution of PSA testing is not clear. Results from a US-based randomized trial indicated no reduction in prostate cancer deaths as a result of PSA testing, while two European trials showed a modest benefit.[93-95]

Survival and Stage Distribution

The overall 5-year relative survival rate for prostate cancer is 97% in blacks and nearly 99% in whites (Figure 5, page 11). Eighty-eight percent of all prostate cancers among blacks are diagnosed at a local or regional stage, for which the 5-year relative survival rate approaches 100%. The 5-year survival rate drops to 28% when the cancer is diagnosed at a distant stage.

Risk Factors for Cancer

Avoiding the use of tobacco products and exposure to secondhand smoke, maintaining a healthy weight, staying physically active throughout life, and consuming a healthy diet can substantially reduce a person's lifetime risk of developing or dying from cancer.[96-98] These modifiable risk factors, as well as infectious agents that increase cancer risk, are discussed in this section. For more information on these topics, visit **cancer.org** to review the most recent edition of *Cancer Prevention & Early Detection Facts & Figures*.

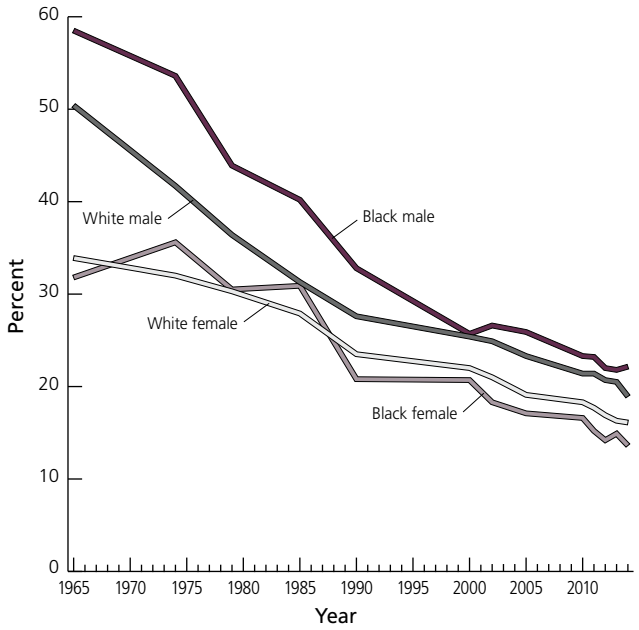
Tobacco Use

Smoking remains the world's most preventable cause of death. Cigarette smoking increases the risk of cancers of the oral cavity and pharynx, larynx, lung, esophagus, pancreas, uterine cervix, kidney, bladder, stomach, colorectum, and liver, as well as acute myeloid leukemia.[99] In addition, the International Agency for Research on Cancer (IARC) recently concluded that there is some evidence that tobacco smoking causes female breast cancer, and the Surgeon General concluded that smoking increases the risk of advanced-stage prostate cancer.[99, 100] Smoking is estimated to cause 32% of all cancer deaths in the US.[101]

Historically, black men were more likely to smoke than white men, but rates have converged in recent years (Figure 7). Smoking prevalence over time has been more similar in black and white women. In 2014, 22% of black men were current cigarette smokers compared to 20% of white men; the prevalence of smoking among black and white women was 14% and 18%, respectively (Figure 8). Among high school students in 2014, 6% of black males and 3% of black females were current cigarette smokers compared to 13% of white males and 9% of white females.[102] Blacks are more likely than whites to smoke menthol cigarettes, which are thought to be more addictive than non-menthol varieties and may contribute to lower cessation success among blacks.[103, 104]

An emerging trend is the use of electronic nicotine delivery systems (ENDS), more commonly known as e-cigarettes. These battery-operated devices allow the user to inhale a vapor produced from cartridges or tanks filled with a liquid typically containing nicotine, propylene glycol and/or vegetable glycerin, other chemicals, and sometimes flavoring. E-cigarettes are promoted as a healthier alternative to traditional cigarettes and a way to bypass smoke-free laws; however, to date there is little scientific evidence to support these claims.

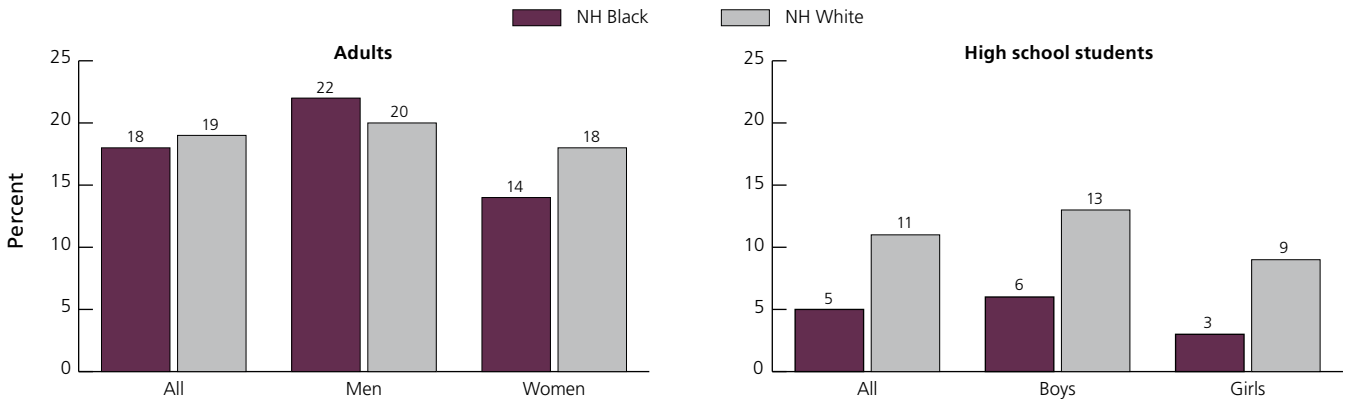
Figure 7. Adult Cigarette Smoking* Prevalence (%) by Sex and Race, 1965-2014



*Ages 18 and older and ever smoked 100 cigarettes in lifetime and smoking every day or some days at time of survey. Note: Estimates are age adjusted to the US standard population. Long term data on smoking prevalence are not available by Hispanic ethnicity.

Sources: 1965-2013: Health, United States, 2014: With Special Feature on Adults Ages 55-64.[74] 2014: Centers for Disease Control and Prevention. National Health Interview Survey, 2014. Public use data file.[105]

Figure 8. Current* Cigarette Smoking (%) by Sex and Race/Ethnicity, US, 2014



NH: non-Hispanic. *Adults: Ages 18 and older and ever smoked 100 cigarettes in lifetime and smoking every day or some days at time of survey. High school students: Smoked on at least 1 day out of the 30 days preceding the survey. Note: Adult estimates are age adjusted to 2000 US standard population.

Sources: Adults: Centers for Disease Control and Prevention. National Health Interview Survey, 2014. Public use data file.[105] High school students: Centers for Disease Control and Prevention, Office on Smoking and Health and Food and Drug Administration, Center for Tobacco Products. National Youth Tobacco Survey, 2014. Public use data file.[102]

E-cigarette use is much more common among whites than blacks and among youth than adults. For example, among adults, 7% of blacks have ever tried e-cigarettes and 2% are current users, compared to 15% and 5%, respectively, among whites.[105] Among high school students, about 6% of blacks report being current users compared to 15% of whites.[106] Adolescent e-cigarette users are more likely to try cigarette, cigar, or hookah smoking than non-users.[107]

Overweight and Obesity, Physical Activity, and Nutrition

The World Cancer Research Fund has estimated that about 20% of cancers that occur in the US are due to poor nutrition (including excess alcohol consumption), physical inactivity, and excess weight, and thus could be prevented.[6] For the 83% of people who do not smoke, maintaining a healthy body weight, being physically active on a regular basis, and eating a healthy diet are the most important ways to reduce cancer risk. Studies estimate that adults who follow all of these lifestyle recommendations, including not smoking, are 36% less likely to be diagnosed with cancer and 40% less likely to die from the disease.[108] Unfortunately, the majority of Americans are not following these recommendations.

Trends in overweight and obesity are largely influenced by the environments in which people live, learn, work, and play. As a result, the Society's guidelines include explicit recommendations for community action to facilitate the availability of healthy, affordable food choices and opportunities for physical activity in communities, schools, and workplaces.

The American Cancer Society's nutrition and physical activity guidelines[109] for individual choices include:

- Achieving and maintaining a healthy weight throughout life
- Adopting a physically active lifestyle
- Consuming a healthy diet with an emphasis on plant sources
- Limiting alcohol consumption

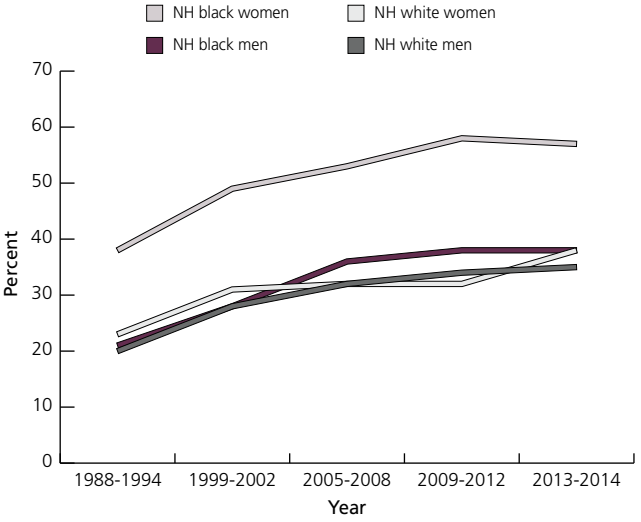
Overweight and Obesity

Overweight (body mass index [BMI] 25.0-29.9 kg/m^2) and obesity (BMI ≥ 30.0 kg/m^2) are associated with increased risk for developing many cancers, including cancers of the breast in postmenopausal women, colorectum, endometrium, kidney, and pancreas, as well as adenocarcinoma of the esophagus.[109] Excess weight may also be associated with increased risk of cancers of the liver, cervix, ovary, and gallbladder; non-Hodgkin lymphoma; myeloma; and aggressive forms of prostate cancer.[109]

Although knowledge about the relationship between weight loss and cancer risk is limited, some studies suggest that losing weight may reduce the risk of (postmenopausal) breast cancer.[110-112] Research has also shown that modest weight loss improves insulin sensitivity and biochemical markers of hormone metabolism, which are thought to contribute to the relationship between obesity and certain cancers.[113]

The prevalence of obesity in black women, who have the highest BMI of any sex-racial/ethnic group, increased from 38% in 1988-1994 to 57% in 2013-2014 (Figure 9, page 18). In women, there is little racial difference in rates of overweight, but blacks are much more likely to be obese (57% versus 38%). In contrast, black

Figure 9. Trends in Adult* Obesity (BMI ≥30) Prevalence (%), by Sex and Race/Ethnicity, US, 1988-2014



NH: non-Hispanic. *Ages 20 and older. Estimates are age adjusted to the 2000 US standard population.

Sources: 1988-2012: Health, United States, 2014: With Special Feature on Adults Ages 55-64.[74] 2013-2014: Centers for Disease Control and Prevention. National Health and Nutrition Examination Survey, 2014. Public use data file.[188]

men are much less likely to be overweight than white men (31% versus 40%), but obesity prevalence is similar (Figure 10).

State variation in the prevalence of obesity among blacks and whites is shown in Figure 11 (page 20). The prevalence of obesity ranges from 23% in Vermont to 44% in Arkansas among blacks and from 10% in Washington, DC, to 35% in West Virginia among whites. Notably, in 14 states, 40% or more of non-Hispanic black adults were obese during 2012-2014. Among non-Hispanic whites, the obesity prevalence did not exceed 40% in any state.

In 2013-2014, the prevalence of both overweight and obesity were more common among black girls than white girls, but similar among boys (Figure 10). Excess body weight is of particular concern in children because about 7 in 10 youth who are overweight by adolescence will remain overweight as adults.[114, 115] Furthermore, overweight black youth are even more likely to become obese adults than their white counterparts.[116]

Physical Activity

Physical activity acts in a variety of ways to reduce the risk of several types of cancer, including cancers of the breast, colon, and endometrium.[117] In addition, regular physical activity reduces the risk of other chronic diseases, such as heart disease, type II diabetes, osteoporosis, and hypertension , as well as helps maintain a healthy body weight by balancing caloric intake with energy expenditure.[109, 118, 119] Being active is thought to reduce cancer risk largely by improving energy metabolism and reducing circulating concentrations of estrogen, insulin, and insulin-like growth factors.[120] Physical activity can also improve the quality of life of cancer patients and is associated with a reduction in cancer recurrence and overall mortality.[121-124]

The American Cancer Society guidelines for physical activity recommend:[109]

- Adults should engage in at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity activity each week.
- Children and teens should get at least 1 hour of moderate- or vigorous-intensity activity each day, with vigorous activity on at least 3 days each week.
- Sedentary activities, such as sitting, lying down, and watching television and other forms of screen-based entertainment, should be limited for both adults and children.
- Any physical activity above usual activity levels has health benefits.

In 2014, 38% of black adults reported no leisure-time physical activity compared to 26% of white adults (Table 7). About one-half of all men and of white women, reported meeting recommended levels of aerobic activity, compared to only 38% of black women. The percentage of black adults who met recommended guidelines for aerobic activity increased from 30% in 1998 to 44% in 2014, compared to an increase from 43% to 54% among whites.[74]

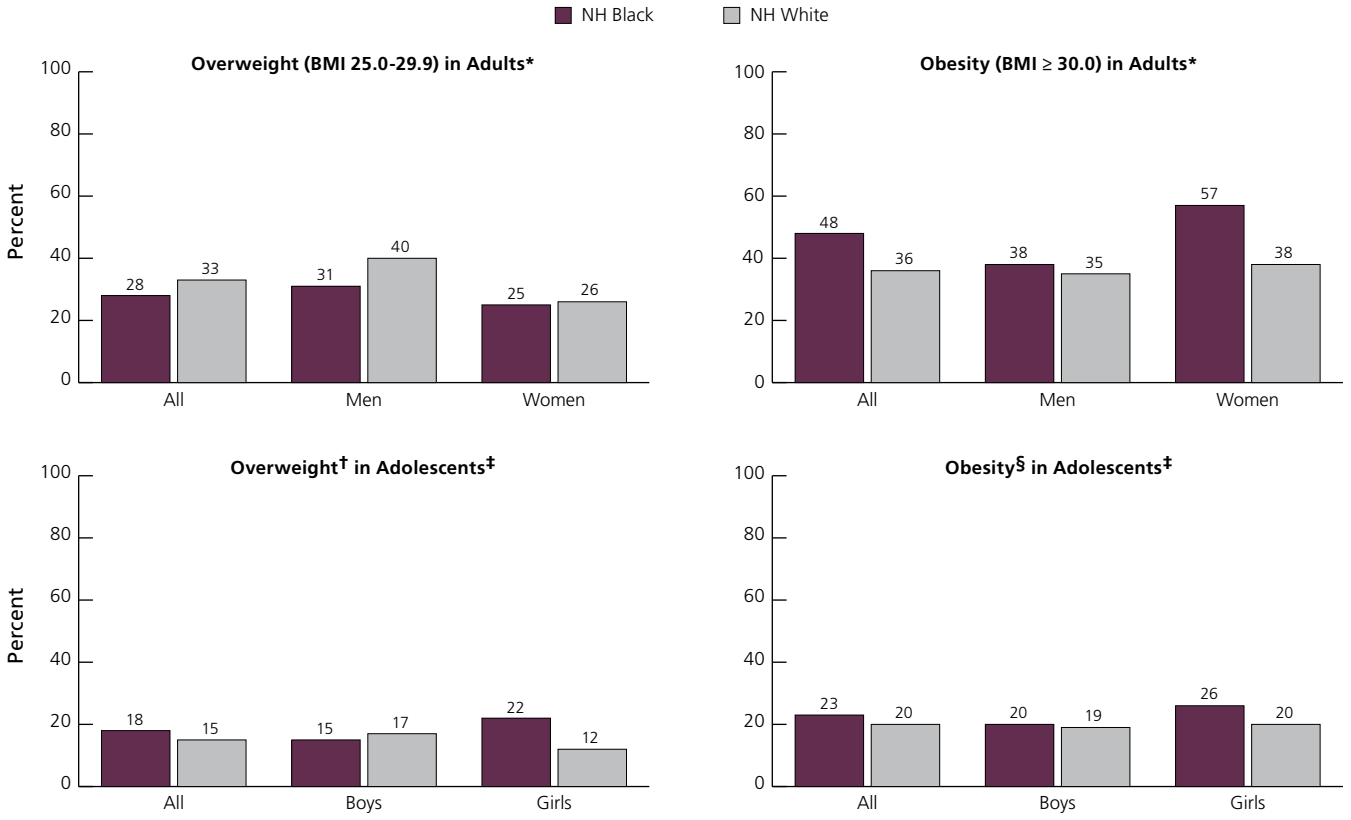
Table 7. Physical Activity Prevalence (%) in Adults*, by Sex and Race/Ethnicity, US, 2014

	NH Black	NH White
No leisure-time physical activity		
All	38	26
Men	34	25
Women	41	27
Met recommendations for aerobic activity†		
All	44	54
Men	51	56
Women	38	52

NH: non-Hispanic. *Ages 18 and older. †Includes 150 minutes of moderate-intensity activity or 75 minutes of vigorous-intensity activity each week.

Source: Source: Centers for Disease Control and Prevention. National Health Interview Survey, 2014. Public use data file.[105]

Figure 10. Prevalence (%) of Overweight and Obesity by Sex and Race/Ethnicity, US, 2013-2014



NH: non-Hispanic. *Ages 20 and older. †BMI for age 85-94th percentile of the CDC Growth Charts. ‡Ages 12 to 19. §BMI for age ≥95th percentile of the CDC Growth Charts. Note: Adult estimates are age adjusted to the 2000 US standard population.

Source: Centers for Disease Control and Prevention. National Health and Nutrition Examination Survey, 2013-2014. Public use data file.[188]

Just over one-fourth of high school students (26% of blacks and 28% of whites) report at least 60 minutes of physical activity each day.[125] Screen-based entertainment is more common among black than white students. On an average school day, about 54% of blacks watch three or more hours of TV per day compared to 25% of whites. Further, 49% of black students report three or more hours of other screen-based entertainment (e.g., video or computer games, computer use for something other than school work) per day compared to 37% of white students.[125]

Nutrition

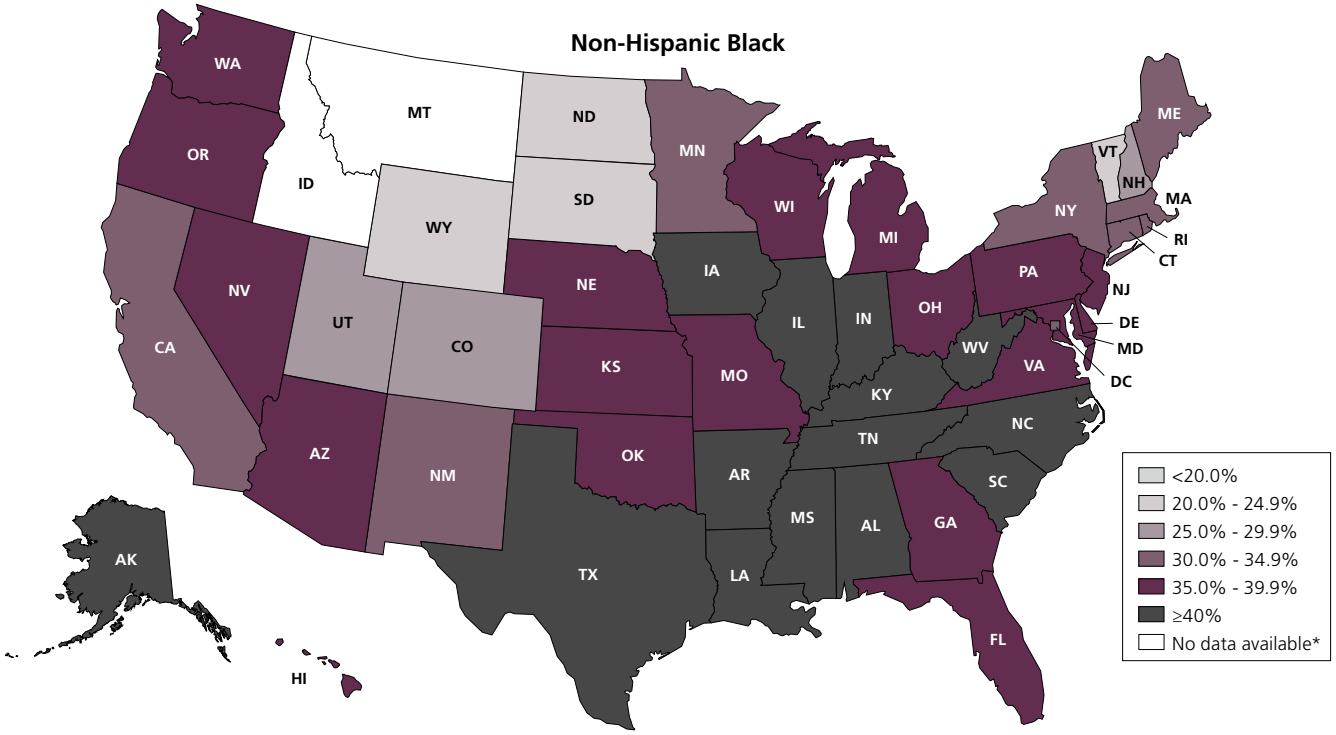
Evidence suggests that healthy dietary patterns, in combination with regular physical activity, are needed to maintain a healthy body weight and reduce cancer risk. Studies have shown that individuals who eat more processed and red meat, potatoes, refined grains, and sugar-sweetened beverages and foods are at a higher risk of developing or dying from a variety of cancers. Alternatively, adhering to a diet that contains a variety of fruits and vegetables, whole grains, fish or poultry, and fewer red and processed meats is associated with lower risk.

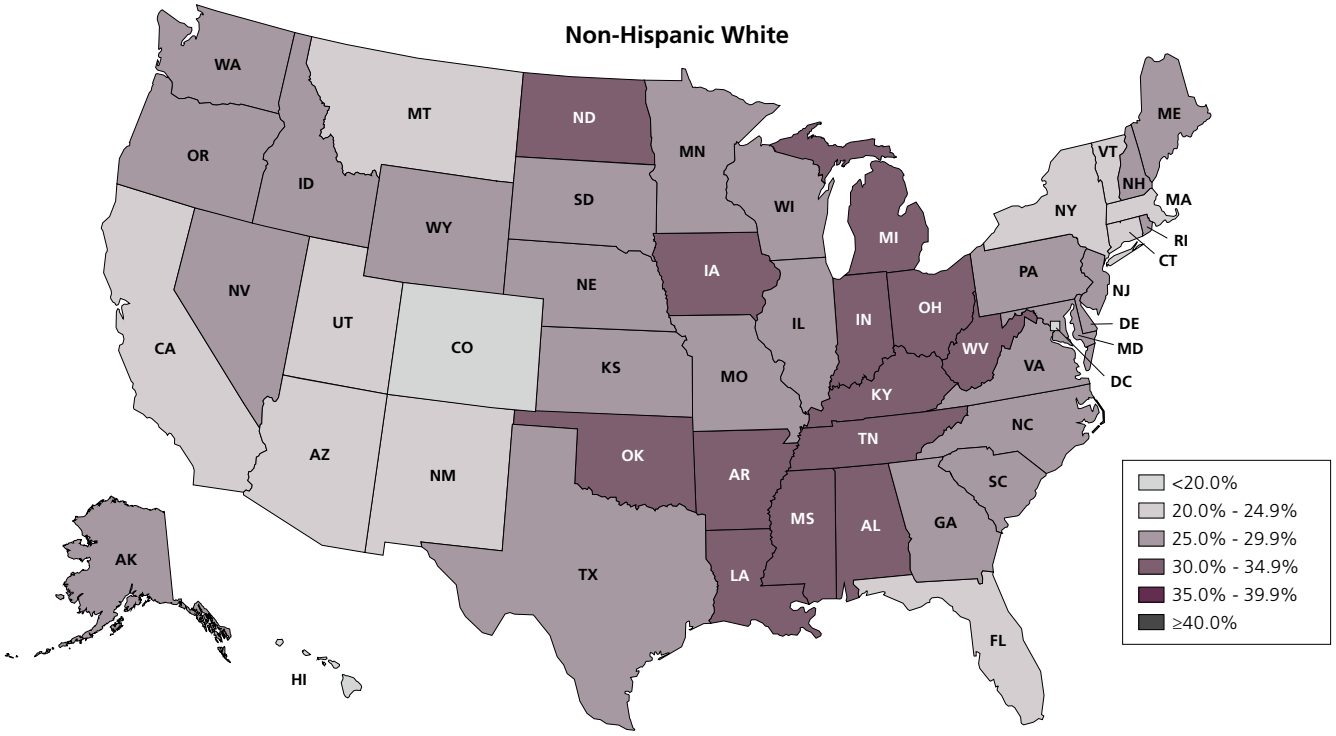
The American Cancer Society guidelines for nutrition recommend:[109]

- Consuming a healthy diet with an emphasis on plant foods
- Controlling portion size to achieve and maintain a healthy weight
- Limiting consumption of processed and red meats
- Eating at least 2½ cups of vegetables and fruits each day
- Choosing whole grains instead of refined grain products

Evidence suggests that dietary and lifestyle behaviors consistent with the American Cancer Society guidelines are associated with lower death rates for all causes combined, and for cancer and cardiovascular diseases, specifically.[126] Despite the known benefits of a healthy diet, Americans are not following recommendations. According to the US Department of Agriculture, the majority of Americans would need to substantially lower their intake of added sugars, added fats, refined grains, and sodium, and increase their consumption of fruits, vegetables, whole grains, and low-fat dairy products in order to meet US Dietary Guidelines.

Figure 11. Prevalence of Obesity (BMI≥30), Adults 18 Years and Older, 2012-2014





*Sample size <50 and/or relative standard error ≥30%.

Source: Centers for Disease Control and Prevention.[127]

Adults

- In 2013, only 11% of blacks consumed three or more servings of vegetables per day compared to 15% of whites.[128]
- About 29% of both black and white adults reported eating two or more servings of fruits daily.[128]

Youth

- In 2013, about 18% of black high school students consumed vegetables three or more times per day compared to 14% of white students.[125]
- More black high school students (38%) than white students (30%) reported consuming two or more daily servings of fruit or 100% fruit juice.[125]

Community Action Strategies

The dramatic rise in obesity levels in the US in the past several decades has serious implications for public health and the economy.[119] In 2012, it was estimated that treating obesity-related illness in the US costs $190.2 billion per year.[129] There is growing recognition that multiple aspects of social environments where people live, work, and play appear to be linked to overweight and obesity.[130,131] Although healthy eating and physical activity are a matter of individual choice, the local food environment (e.g., fast-food outlet density versus supermarkets) and built-environment features (e.g., accessibility to parks, gyms, or other recreational settings) can influence individual choice and ability to adopt a healthy lifestyle.[119, 132, 133] Specifically, community-level actions are needed to: (1) increase access to healthy foods in schools, worksites, and communities and decrease access to and marketing of foods and beverages of low nutritional value (particularly to youth); (2) provide safe, enjoyable spaces for physical activity in schools; and (3) provide safe, physically active transportation (such as biking and walking) and recreation in communities. For example, a study from Baltimore City reported that a 2009 policy change in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program resulted in a sustained increase in the availability of healthy food, particularly within neighborhoods with a majority of black residents.[134]

Infectious Agents

Chronic infection with hepatitis B virus and hepatitis C virus causes cirrhosis and liver cancer, and is also increasingly recognized as a risk factor for non-Hodgkin lymphoma.[135-137] Chronic infection with the human papillomavirus causes almost all cervical and anal cancers, as well as some cancers in the oral cavity for which incidence rates are increasing. Human immunodeficiency virus infection increases the risk of many cancers because it weakens the immune system.

Hepatitis B Virus (HBV)

Most (95%) newly infected adults will clear the virus within six months of infection, whereas the majority of infected infants will become chronically infected.[138] In the US, the risk of transmission is greatest through perinatal and sexual contact with an infected person.[138] Vaccination against HBV, which has been available since 1982, is the primary prevention strategy in reducing prevalence of the virus.[140, 141] Those who should be vaccinated include newborns, unvaccinated children younger than 18 years of age, high-risk adults (e.g., health care workers), and unvaccinated adults with type I or type II diabetes.

- In the US, an estimated 38,000 people are newly infected each year, and between 850,000 and 2.2 million people in the US are living with chronic HBV infection.[142]
- Between 1999 and 2008, the prevalence of past or present HBV infection was estimated to be about 10% among blacks compared to 3%-4% among whites and Hispanics.[141]
- In 2014, 91% of black adolescents had received at least three HBV vaccine doses, similar to the vaccine coverage among whites (92%).[143]

Hepatitis C Virus (HCV)

In contrast to HBV infection, there is no vaccine to protect against HCV infection, which often becomes chronic (75%-85%) regardless of age at infection. Most people who are infected will not experience symptoms for many years and are unaware of their infection until significant liver damage has occurred.[144] About 60-70% of people with chronic HCV will develop liver disease, which can lead to liver cancer; the risk of liver disease is higher among heavy alcohol drinkers and people co-infected with HBV or human immunodeficiency virus (HIV).[145] Transmission primarily occurs through sharing needles during injection drug use, but may also occur through needle stick injuries in health care settings, mother-to-child transmission during birth, and sexual contact with an infected partner (although this is rare).[146] People who received donated blood, blood products, or organs prior to 1992, when HCV screening began, are also at increased risk for infection.[144] The Centers for Disease Control and Prevention recommends one-time screening among men and women born between 1945 and 1965 because people in this age group account for three-quarters of all HCV-infected individuals in the US, and periodic screening for people with high-risk behaviors.[147]

- Between 2003 and 2010, 2.7 million people (representing 1% of the US population) were estimated to have chronic HCV infection.[148]
- Chronic HCV infection is more common among blacks than persons of other races/ethnicities.[148]

Human Papillomavirus (HPV)

Virtually all cervical cancers are caused by persistent HPV infection, though most HPV infections are cleared by the immune system and do not cause cancer. Persistent HPV infection also causes 90% of all anal cancers, more than 60% of certain types of oropharyngeal cancers (particularly cancers of the lingual and palatine tonsils), and 40% of vaginal, vulvar, and penile cancers.[149] There are more than 100 types of HPV, at least 12 of which cause cancer.[135] Types 16 and 18 account for about 70% of all cervical cancer cases worldwide and almost all cases of other HPV-related cancers.[138]

The Food and Drug Administration has approved three vaccines for the prevention of HPV infections. The most recent recommendations of the Advisory Committee on Immunization Practices (ACIP) were published in March 2015 (see box below). The American Cancer Society published its own HPV vaccination recommendations in 2007, which are generally consistent with those of the ACIP, although, at present the Society has no recommendation regarding the use of HPV vaccine in males.[150]

Initiation and completion of the HPV vaccine series remain lower than other routinely recommended vaccines among both girls and boys in all racial and ethnic groups.[143]

HPV Vaccine Recommendations from the Advisory Committee on Immunization Practices*[139]

Females

Using HPV2, HPV4, or HPV9

- Ages 11-12 (may start at 9 years of age): routine vaccination with 3 doses
- Through age 26: vaccination of those who have not been previously vaccinated or have not completed the 3-dose series

Males

Using HPV4 or HPV9

- Ages 11-12 (may start at 9 years of age): routine vaccination with 3 doses
- Ages 13-21: vaccination of those who have not been previously vaccinated or have not completed the 3-dose series; males 22-26 years of age may also be vaccinated
- Through age 26: vaccination of those who have a weakened immune system (including those with HIV infection) and for men who have sex with men

*The Advisory Committee on Immunization Practices issues national recommendations for the use of vaccines in the US that are published by the CDC.

Table 8. HPV Vaccination (2014) and Use of Cancer Screening Examinations and Tests (2013), US

	NH Black (%)	NH White (%)
HPV vaccination* (youth 13-17 years)		
Girls		
≥ 1 dose	66	56
≥ 3 doses	39	38
Boys		
≥ 1 dose	42	36
≥ 3 doses	20	19
Breast cancer (women 40 years and older)		
Mammogram in the past two years	66	66
Cervical cancer (women 21-65 years†)		
Pap test in the past three years	82	83
Colorectal cancer (adults 50 years and older)		
FOBT in the past year	9	7
Endoscopy‡	57	58
FOBT or Endoscopy§	59	61
Prostate cancer (men 50 years and older)		
PSA test in the past year	33	37

HPV: human papillomavirus. NH: non-Hispanic. FOBT: fecal occult blood test. PSA: prostate-specific antigen. *Complete vaccination series consists of 3 doses. †Among women with intact uteri. ‡Sigmoidoscopy in the past 5 years or colonoscopy in the past 10 years. §FOBT in the past year, sigmoidoscopy in the past 5 years, or colonoscopy in the past 10 years. Note: Estimates for screening are age-adjusted to the 2000 US standard population.

Sources: Vaccination: Reagan-Steiner S, Yankey D, Jeyarajah J, et al. *MMWR Morb Mortal Wkly Rep.* 2015 Jul 31;64(29):784-92. Screening: Centers for Disease Control and Prevention. National Health Interview Survey, 2013. Public use data file.[105]

- In 2014, a higher proportion of black adolescent girls (66%) had initiated the 3-dose HPV vaccination series compared to whites (56%); however, black and white girls were equally likely to receive all three doses (blacks: 39%, whites: 38%) (Table 8).
- Similarly, 42% of black boys had initiated HPV vaccination compared to 36% of whites, but completion rates were the same (black: 20%, white: 19%) (Table 8).

It is important to remember that HPV vaccination supplements, rather than replaces, cervical cancer screening because the vaccines do not provide protection against all types of HPV that cause cervical cancer. All women, even those who have been vaccinated, should receive regular cervical cancer screening according to recommendations (page 23).[151, 152]

Human Immunodeficiency Virus (HIV)

Infection with HIV weakens the immune system's ability to destroy cancer cells as well as its resistance to infection with other cancer-causing viruses, such as HCV, HBV, HPV, Kaposi

sarcoma-associated herpesvirus (KSHV)/human herpesvirus 8, and Epstein-Barr virus. As a result, people with HIV (and especially those with AIDS) have a higher incidence of cancers of the liver, cervix, anus, and oropharynx, as well as non-Hodgkin's lymphoma, Hodgkin lymphoma, and Kaposi sarcoma.[153-155] HIV is primarily transmitted through sexual intercourse and injection drug use, although other infection routes are possible. Blacks account for 44% of all new HIV infections, despite representing only 12% of the total population. In 2013, the rate of new HIV cases among blacks was 55.9 per 100,000 population compared to 6.6 per 100,000 population among whites.[156]

Cancer Screening

Regular screening can help detect cancer at an early stage, improving treatment options and outcomes. Screening can also help prevent cervical and colorectal cancers by detecting precancerous lesions that can be removed. The American Cancer Society guidelines for the early detection of cancer are on page 24. Visit **cancer.org** for additional information on cancer screening in the most recent edition of *Cancer Prevention & Early Detection Facts & Figures*.

Breast Cancer Screening

In October 2015, the American Cancer Society issued a new breast cancer screening guideline recommending that average-risk women undergo annual screening mammography beginning at 45 years of age; at age 55 women may transition to biennial screening or continue with annual screening, continuing as long as their overall health is good and life expectancy is 10 or more years.[157] In addition, women 40 to 44 years of age should have the choice to begin annual screening.

Mammography screening in women ages 40 and older peaked in 2000 for white women (72%) and in 2003 for black women (71%), declined slightly in both groups through 2005, and has since been generally stable.[74, 158] In 2013, 66% of both black and white women ages 40 and older reported receiving a mammogram within the past two years (Table 8).

Despite similar breast cancer screening rates, breast cancer is detected at an advanced stage more often in black than in white women (Figure 4, page 10), which has been largely attributed to longer intervals between mammograms and lack of timely follow-up of suspicious results.[39, 40] Further, the actual prevalence of screening may be different than it appears here based on national survey data because evidence suggests black women may be more likely than white women to overestimate mammography utilization.[159]

Visit **cancer.org** for more information on breast cancer and breast cancer screening in the most recent edition of *Breast Cancer Facts & Figures*.

Cervical Cancer Screening

The Society recommends that women at average risk for cervical cancer begin screening at age 21 and continue at regular intervals through at least age 65.[152] For women ages 21-29, screening should be done every three years with conventional or liquid-based Pap tests. For women ages 30-65, screening should be done every five years with both the HPV test and the Pap test (preferred), or every three years with the Pap test alone (acceptable). Women older than 65 who have had three or more consecutive negative Pap tests or two or more consecutive negative HPV and Pap tests within the past 10 years, with the most recent test occurring within 5 years, as well as women who have had a total hysterectomy, should stop cervical cancer screening. In 2013, utilization of the Pap test (past 3 years) was similar

National Breast and Cervical Cancer Early Detection Program

The Centers for Disease Control and Prevention's (CDC) National Breast and Cervical Cancer Early Detection Program (NBCCEDP), helps low-income, uninsured, and underinsured women gain access to breast and cervical cancer screening and diagnostic services. The NBCCEDP has served more than 4.7 million women since it began in 1991.[160] During the 2009-2013 time period, 14% of the women screened for cervical cancer were black, 27% were Hispanic, and 45% white. In the same time period, 18%, 24% and 46% of the women screened for breast cancer were black, Hispanic, and white, respectively.[161] However, only about 7% of eligible women are screened for cervical cancer and only about 11% of those eligible receive breast cancer screening services through the program.[160] Medical assistance and treatment for women diagnosed with cancer through the NBCCEDP is available through Medicaid. The program is currently implemented in all 50 states, the District of Columbia, 5 US territories, and 12 American Indian/Alaska Native organizations. Each state Department of Health will have information about how to contact the nearest screening center. Visit **cdc.gov/cancer/nbccedp** for additional information.

American Cancer Society Recommendations for the Early Detection of Cancer in Average-risk Asymptomatic People*

Cancer Site	Population	Test or Procedure	Recommendation
Breast	Women, ages 40-54	Mammography	Women should undergo regular screening mammography starting at age 45 years. Women ages 45 to 54 should be screened annually. Women should have the opportunity to begin annual screening between the ages of 40 and 44.
	Women, ages 55+		Transition to biennial screening, or have the opportunity to continue annual screening. Continue screening as long as overall health is good and life expectancy is 10+ years.
Cervix	Women, ages 21-29	Pap test	Screening should be done every 3 years with conventional or liquid-based Pap tests.
	Women, ages 30-65	Pap test & HPV DNA test	Screening should be done every 5 years with both the HPV test and the Pap test (preferred), or every 3 years with the Pap test alone (acceptable).
	Women, ages 66+	Pap test & HPV DNA test	Women ages 66+ who have had ≥3 consecutive negative Pap tests or ≥2 consecutive negative HPV and Pap tests within the past 10 years, with the most recent test occurring in the past 5 years should stop cervical cancer screening.
	Women who have had a total hysterectomy		Stop cervical cancer screening.
Colorectal†	Men and women, ages 50+	Guaiac-based fecal occult blood test (gFOBT) with at least 50% sensitivity or fecal immunochemical test (FIT) with at least 50% sensitivity, **OR**	Annual testing of spontaneously passed stool specimens. Single stool testing during a clinician office visit is not recommended, nor are "throw in the toilet bowl" tests. In comparison with guaiac-based tests for the detection of occult blood, immunochemical tests are more patient-friendly and are likely to be equal or better in sensitivity and specificity. There is no justification for repeating FOBT in response to an initial positive finding.
		Stool DNA test, **OR**	Every 3 years
		Flexible sigmoidoscopy (FSIG), **OR**	Every 5 years alone, or consideration can be given to combining FSIG performed every 5 years with a highly sensitive gFOBT or FIT performed annually.
		Double-contrast barium enema, **OR**	Every 5 years
		Colonoscopy, **OR**	Every 10 years
		CT Colonography	Every 5 years
Endometrial	Women at menopause		Women should be informed about risks and symptoms of endometrial cancer and encouraged to report unexpected bleeding to a physician.
Lung	Current or former smokers ages 55-74 in good health with 30+ pack-year history	Low-dose helical CT (LDCT)	Clinicians with access to high-volume, high-quality lung cancer screening and treatment centers should initiate a discussion about annual lung cancer screening with apparently healthy patients ages 55-74 who have at least a 30 pack-year smoking history, and who currently smoke or have quit within the past 15 years. A process of informed and shared decision making with a clinician related to the potential benefits, limitations, and harms associated with screening for lung cancer with LDCT should occur before any decision is made to initiate lung cancer screening. Smoking cessation counseling remains a high priority for clinical attention in discussions with current smokers, who should be informed of their continuing risk of lung cancer. Screening should not be viewed as an alternative to smoking cessation
Prostate	Men, ages 50+	Prostate-specific antigen test with or without digital rectal examination	Men who have at least a 10-year life expectancy should have an opportunity to make an informed decision with their health care provider about whether to be screened for prostate cancer, after receiving information about the potential benefits, risks, and uncertainties associated with prostate cancer screening. Prostate cancer screening should not occur without an informed decision-making process.

CT-Computed tomography. *All individuals should become familiar with the potential benefits, limitations, and harms associated with cancer screening. †All positive tests (other than colonoscopy) should be followed up with colonoscopy.

between black (82%) and white (83%) women (Table 8, page 22). Among women of all races, cervical cancer screening prevalence is lower in women with no health insurance, women with lower levels of educational attainment, and recent immigrants.[162]

As mentioned in the Infectious Agents section (page 21), the HPV vaccine offers additional potential to reduce the occurrence of cervical cancer, though women who receive the HPV vaccine should still follow recommended screening guidelines because vaccination does not protect against all types of cancer-causing HPV.

Colorectal Cancer Screening

Screening can result in the detection and removal of colorectal polyps that might have become cancerous, as well as the detection of cancer at an early stage, when treatment may be less extensive and more successful. The American Cancer Society recommends several options for colorectal cancer screening beginning at age 50 for persons at average risk.[163] Structural examinations, which detect both cancer and precancerous lesions, include flexible sigmoidoscopy, colonoscopy, computed tomography (CT) colonography, and double-contrast barium enema. Less invasive tests that usually only detect cancer are home-collection stool kits, including the guaiac-based fecal occult blood test (gFOBT), the fecal immunochemical test (FIT), and the multi-target sDNA test. Visit **cancer.org** for more detailed information on colorectal cancer screening options. Individuals at increased risk of developing colorectal cancer (e.g., those with a personal or family history of colorectal cancer or polyps, chronic inflammatory bowel disease, or inherited genetic mutations) should discuss with their physician whether earlier and/or more intensive screening is indicated. From 2000 to 2013, colorectal cancer screening increased from 32% to 59% in blacks and from 40% to 61% in whites.[105]

In 2009, the CDC initiated the Colorectal Cancer Control Program, which provides financial support to several states and tribal organizations to increase population-level colorectal cancer screening.[164] The National Colorectal Cancer Roundtable (NCCRT), a coalition of public, private, and nonprofit organizations, was established by the American Cancer Society and the CDC to reduce colorectal cancer incidence and mortality in the US.[165] In 2014, the NCCRT launched the 80% by 2018 initiative which aims to increase the colorectal cancer screening prevalence among adults ages 50 or older to 80% by the year 2018.[166]

Prostate Cancer Screening

At this time, there are insufficient data to recommend for or against routine screening for prostate cancer with the digital rectal examination (DRE) or the prostate-specific antigen (PSA) test for men at average risk.[151] Since 2010, the American Cancer Society has recommended that asymptomatic men who have at least a 10-year life expectancy have an opportunity to make an informed decision with their health care provider about whether to be screened for prostate cancer, after receiving information about the uncertainties, risks, and potential benefits associated with prostate cancer screening.[167] Prostate cancer screening should not occur without an informed decision-making process. Although men at average risk should receive this information beginning at age 50, black men are at a higher risk of prostate cancer and should receive this information beginning at age 45, as should other men at higher risk (men who have a father or brother diagnosed with prostate cancer before age 65). Men who are at even higher risk (because they have several close relatives who were diagnosed with prostate cancer at an early age) should have this discussion with their provider beginning at age 40.

- Despite being at a higher risk of disease, in 2013, 33% of black men ages 50 and older reported having had a PSA test in the past year compared to 37% of their white counterparts (Table 8, page 22).
- In 2010, the majority of men (64%) reported no shared decision-making process with their health care provider regarding PSA testing.[168]
- Black men are less likely than white men to be provided the option of having a PSA test and to be told of the uncertainty of the benefit of testing.[169]

Lung Cancer Screening

The American Cancer Society recommends that clinicians with access to high-volume, high-quality lung cancer screening and treatment centers should initiate a discussion about lung cancer screening with apparently healthy patients 55 to 74 years of age who have at least a 30 pack-year smoking history and who currently smoke or have quit within the past 15 years.[170] In this high-risk population, large randomized clinical trials have shown a 20% reduction in lung cancer deaths among those screened with low-dose spiral computed tomography (LDCT).[171, 172] Patients should be informed of the potential benefits, limitations, and harms associated with LDCT screening for lung cancer before making a decision. For current smokers, the discussions should also include information about the health risks associated with continuing to smoke.

Factors That Influence Health

Socioeconomic Status

In 2014, 26% of blacks compared to 10% of non-Hispanic whites were living below the federal poverty level and 22% of blacks had completed four years of college compared to 36% of non-Hispanic whites.[173, 174] Because of historical context and social structure, race is correlated with socioeconomic status (SES) in the United States. SES is highly correlated with cancer risk and outcomes across the continuum from prevention to palliative care. Persons with lower SES are more likely to engage in behaviors that increase cancer risk because of marketing strategies that target these populations, as well as environmental and community factors, such as fewer opportunities for physical activity and less access to fresh fruits and vegetables. No single factor (such as education or income) fully captures all of the important characteristics that may influence the association between SES and health, but for most cancers, risk is inversely related to SES, regardless of which measure is used. Similarly, people with lower SES also have higher cancer death rates than those with higher SES, regardless of demographic factors such as race/ethnicity. For example, for all cancer sites combined, mortality rates among both black and white men with 12 or fewer years of education are more than twice the rates in men with higher levels of education.[175] Furthermore, progress in reducing cancer death rates has been slower among persons with lower SES.[62, 176]

Access to Care

Lower SES is also associated with financial, structural, and personal barriers to health care, including lack of or inadequate health insurance, reduced access to recommended preventive care and treatment services, and lower literacy levels. Individuals with no health insurance and those with Medicaid insurance are more likely to be diagnosed with advanced cancer and have a higher risk of cancer death compared to those who are privately insured.[12, 177] These factors disproportionately affect blacks; in 2014, 12% of blacks were uninsured compared to 8% of non-Hispanic whites.[178]

Eliminating disparities in health care access is a daunting task for health care policy in the US. The 2010 passage of the Affordable Care Act (ACA) offers some prospects for reducing the number of uninsured, particularly among those with lower SES. ACA-mandated, health insurance coverage is available through health insurance marketplaces that can be accessed at **healthcare.gov**. Some states took advantage of federal incentives to expand their Medicaid program so that even more individuals could gain coverage. However, as of September 1, 2015, only 31 states, as well as Washington DC, had made the decision to utilize federal funding to expand Medicaid.[179] From 2013 to 2014, the percentage of uninsured dropped sharply, from 13.3% to 10.4%.[178] An estimated 11 million adults gained insurance in 2014, 19% of whom were black.[180] The initial open enrollment period under the ACA coincided with a 7% reduction in the uninsured rate for black Americans.[181] Compared to their uninsured counterparts, the newly insured are more likely to have a usual source of care, seek care when it is needed, and utilize preventive services.[180] For more information about how the ACA will impact families affected by cancer, see the Advocacy section on page 27.

How the American Cancer Society Helps Reduce Cancer Disparities

The American Cancer Society is committed to a world free from the pain and suffering of cancer. This section provides highlights and information on some of the efforts that focus on African American and underserved communities.

Prevention and Treatment

The American Cancer Society is doing everything in our power to prevent cancer. We are diligent in encouraging cancer screening for early detection and promoting healthy lifestyles by bringing attention to obesity, healthy diets, physical activity, and avoiding tobacco. For people who are diagnosed with cancer, the Society is available 24 hours a day, seven days a week to provide – among other things – the latest cancer information, emotional support, or free lodging when patients need treatment away from home.

Cancer Information

The American Cancer Society provides the latest information spanning the cancer continuum, from prevention to ways survivors can stay healthy and thrive after treatment, in more than 200 languages, 24 hours a day, seven days a week online at **cancer.org** and at 1-800-227-2345.

Programs and Services

Several American Cancer Society programs and services have been developed to reach African American audiences. Examples include the following:

Community Health Initiatives:
The focus of the American Cancer Society Community Health Initiatives is to promote health equity and address the unequal burden of cancer in underserved communities.

- The Community Health Advocates implementing Nationwide Grants for Empowerment and Equity (CHANGE) Grant Program awards community grants to promote health equity within underserved communities. Since 2011, over 350 CHANGE grants have been awarded, reaching individuals through over 1.5 million outreach and education interactions, providing over 518,000 cancer screenings at low or no cost, and implementing sustainable policy and system changes.
- The TEXT ME WELL Initiative promotes health equity by educating and empowering individuals to take action to live a healthy life. Together with African American national partners, the initiative provides individuals with cancer health education via text message.
- The Society has developed online training opportunities that strengthen the capacity to implement culturally relevant cancer outreach and education. Visit volunteerlearning.cancer.org/course/index.php?categoryid=38 to access the trainings.
- The Society works to build a health equity pipeline of public health professionals to serve as future leaders in the fight against cancer disparities. They offer health equity capstones to select racially diverse scholars pursuing graduate-level degrees in public health.
- Patient Navigator Program: This proactive, community-based support program helps guide patients and their caregivers through their cancer experience. Patient navigators help eliminate barriers and provide access to timely cancer detection, diagnosis, and care within the health care system. Their support includes everything from helping patients find transportation to and from cancer-related appointments; assisting with financial issues, including insurance navigation; identifying community resources; and providing information on the patient's cancer diagnosis and treatment process.

Visit cancer.org to learn more about these programs and other support services in your area.

Research

The American Cancer Society, is the largest nonprofit, nongovernmental funder of cancer research in the United States. During the past decade, the Society's Extramural Grants program has awarded 193 grants, totaling nearly $128 million, for research in poor and underserved populations, and recently established priority funding for psychosocial, behavioral, health policy, and health services research in hopes of reducing cancer health disparities.

Specific examples of ongoing intramural and extramural research include:

- Assessing the specific needs of black breast cancer survivors through focus groups and surveys, and then using that information to develop programs and resources
- Investigating the extent to which black and white colon cancer patients make changes in health behaviors (e.g., diet, physical activity, and dietary supplement use) and what effect these changes have on colorectal recurrence
- Evaluating treatment delays and differences in the receipt of treatment between black and white breast cancer patients in an effort to improve breast cancer outcomes
- Community-based investigations to better understand influences on health behavior in underserved and racial/ethnic minority communities and identify effective strategies for connecting these individuals to American Cancer Society information, programs, and services
- Monitoring racial and socioeconomic disparities in the cancer burden, including differences in screening, stage at diagnosis, treatment, survival, and mortality

Advocacy

The American Cancer Society and the American Cancer Society Cancer Action Network℠ (ACS CAN), the Society's nonprofit, nonpartisan advocacy affiliate, are dedicated to reducing cancer incidence and mortality rates among minority and medically underserved populations. One way this goal can be achieved is by instituting effective policies and public health programs that promote overall wellness and help save lives. ACS CAN is involved in advocacy efforts at both the state and federal levels. Listed below are some of the efforts that the Society and ACS CAN have been involved with in the past few years:

ACS CAN and the Society are working to improve access to health care for people with cancer, which includes ensuring the implementation of provisions of the Affordable Care Act, thereby:

- Banning pre-existing condition exclusions
- Guaranteeing quality, affordable coverage to all applicants
- Providing free coverage for preventive services for patients in new insurance plans and Medicare
- Eliminating annual and lifetime limits on health benefits
- Providing incentives to focus our health care system toward cancer prevention

- Expanding Medicaid coverage to low-income individuals and families who previously lacked any access to affordable insurance coverage

Other provisions of the law will help address disparities by providing funding to expand community health centers and improving the way information on race, ethnicity, sex, primary language, and disability status is collected and used.

A high priority for ACS CAN at both the state and federal level is fighting to increase funding for the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). This successful program provides community-based breast and cervical cancer screening to low-income, uninsured, and underinsured women (see page 23 for more information). More than 50% of the women screened are from racial/ethnic minority groups. ACS CAN is asking Congress to increase funding to ensure more women will have access to the potentially lifesaving program. While the Affordable Care Act will greatly improve insurance coverage, the NBCCEDP will remain an essential program for improving access to breast and cervical cancer screening and treatment in our nation's most vulnerable populations. ACS CAN also works at the state level to protect Medicaid coverage to ensure cancer patients have access to the treatment they need if they are diagnosed with cancer through the NBCCEDP.

Additionally, ACS CAN is advocating for a national screening, treatment, and outreach program to increase colorectal cancer screening rates in low-income, medically underserved populations. The organization has been instrumental in the introduction of the Removing Barriers to Colorectal Cancer Screening Act of 2015, which will address a barrier to care in the Medicare program for the colorectal cancer preventive service. Unlike private insurance, under Medicare, if a polyp is found and removed during a screening colonoscopy, a beneficiary can be charged a co-pay between $300 and $500. Private insurance covers the colonoscopy with polyp removal without a charge to the patient. This legislation would increase access to care for Medicare beneficiaries by putting coverage for this screening on par with those on private insurance.

Each year, ACS CAN works hard to ensure that the agencies overseeing cancer research and prevention programs receive the funding needed to continue the battle against cancer. The organization continues to lead the fight to maintain and increase the investment the US has made in biomedical and cancer research at the National Institutes of Health (NIH), the National Cancer Institute (NCI), and the Centers for Disease Control and Prevention (CDC). This investment includes increased funding for cancer research at the National Institute on Minority Health and Health Disparities, which the Society was instrumental in helping to establish.

ACS CAN was also a leading partner in the successful passage of the Family Smoking Prevention and Tobacco Control Act, which was signed into law in 2009. This law gives the Food and Drug Administration the authority to regulate tobacco products and stop companies from marketing their deadly products to children. ACS CAN is now working to expedite full implementation of the law, including the regulation of new and emerging products. ACS CAN also advocates for maintaining funding for the Prevention and Public Health Fund, which provides essential funding for evidence-based community-based programs that address tobacco use, poor diet, physical inactivity, and health equity.

ACS CAN is focused on creating healthy schools and healthy communities in all neighborhoods to address the cancer risk factors of poor nutrition, physical inactivity, and overweight and obesity. The organization advocates for the protection of key provisions in the Healthy, Hunger-Free Kids Act, including the requirements for strong nutrition standards for meals and snacks offered to millions of students in schools and comprehensive local school wellness policies. Participation in the National School Lunch Program among students eligible to receive free or reduced-price meals, who are disproportionately black, has increased in recent years. For many of these students, meals provided at school may be the only ones that they get each day. Additionally, ACS CAN advocates for quality physical education and opportunities for physical activity in K-12 schools.

The American Cancer Society champions the cause of the cancer community through our Relay For Life® and Making Strides Against Breast Cancer® programs. The American Cancer Society Relay For Life movement is the world's largest grassroots fundraising event to end every cancer in every community. Rallying the passion of four million people worldwide, Relay For Life events raise critical funds that help fuel the mission of the Society, an organization whose reach touches so many lives – those who are currently battling cancer, those who may face a diagnosis in the future, and those who may avoid a diagnosis altogether thanks to education, prevention, and early detection. The Making Strides Against Breast Cancer walk is a powerful event to raise awareness and funds to end breast cancer. It is the largest network of breast cancer events in the nation, uniting nearly 300 communities to finish the fight. The walks raise critical funds that enable the Society to fund groundbreaking breast cancer research; provide free comprehensive information and services to patients, survivors, and caregivers; and ensure access to mammograms for women who need them so more lives are saved.

Additional Resources

Center to Reduce Cancer Health Disparities (CRCHD)

The CRCHD is central to the National Cancer Institute's efforts to reduce the unequal burden of cancer in our society and train the next generation of competitive researchers in cancer health disparities research. The CRCHD initiates, integrates, and engages in collaborative research studies to promote research and training in cancer health disparities and to identify new and innovative scientific opportunities to improve cancer outcomes in communities experiencing an excess burden of cancer. Visit crchd.cancer.gov for additional information.

Deep South Network for Cancer Control

The purpose of the Deep South Network for Cancer Control is to eliminate the disparity in cancer death rates between blacks and whites in the Deep South. This initiative has increased mammography screening in Mississippi and Alabama and is working toward reducing racial disparities in breast and cervical cancer mortality by encouraging coalition development, community empowerment, and the utilization of community health advisors. Visit www3.ccc.uab.edu/index.php/community-outreach/deep-south-network-for-cancer-control/ for more information about this program.

Cancer Prevention and Control Research Network (CPCRN)

The CPCRN is a collaboration of cancer divisions from two federal agencies: the Division of Cancer Prevention and Control of the Centers for Disease Control and Prevention (CDC) and the Division of Cancer Control & Population Sciences of the National Cancer Institute. The CPCRN is a national network of academic, public health, and community partners who work together to reduce the burden of cancer, especially among those disproportionately affected. Its members conduct community-based participatory cancer research across its eight network centers, crossing academic affiliations and geographic boundaries. Visit cpcrn.org for additional information.

Intercultural Cancer Council (ICC)

The ICC promotes policies, programs, partnerships, and research to eliminate the unequal burden of cancer among racial and ethnic minorities and medically underserved populations in the US and its associated territories. Visit iccnetwork.org for additional information.

National Medical Association (NMA)

The largest and oldest national organization representing physicians and patients of African descent in the US, the NMA is committed to improving the quality of health among socioeconomically disadvantaged individuals and individuals of African descent through its membership, professional development, community health education, advocacy, research, and partnerships with federal and private agencies. The American Cancer Society and the NMA have collaborated to develop and distribute culturally relevant consumer and professional materials that focus on the prevention, early detection, and treatment of breast, prostate, and colorectal cancers, as well as nutrition and physical activity. Visit nmanet.org for additional information.

African American Collaborative Obesity Research Network (AACORN)

The AACORN is a collaboration of academic scholars, emerging scholars, and community research partners dedicated to developing strategies to support healthy eating, physical activity, and healthy weights in black communities. Visit aacorn.org for additional information.

Sources of Statistics

New Cancer Cases. The numbers of new cancer cases among blacks in 2016 is projected using a two-step process. First, the total number of cases in each state is estimated using a spatio-temporal model based on incidence data from 49 states and the District of Columbia for the years 1998-2012 that met the North American Association of Central Cancer Registries' (NAACCR) high-quality standards for incidence. This method considers geographic variations in sociodemographic and lifestyle factors, medical settings, and cancer screening behaviors as predictors of incidence, and also accounts for expected delays in case reporting. The number of new cases is then projected four years ahead using a temporal projection method.

Incidence Rates. Incidence rates are defined as the number of people who are diagnosed with a disease during a given time period divided by the number of people who were at risk for the disease in the population. Incidence rates in this publication are presented per 100,000 people and are age adjusted to the 2000 US standard population to allow comparisons across populations with different age distributions. Incidence data for this publication were collected either by the Surveillance, Epidemiology, and End Results (SEER) program or the National Program of Cancer Registries as reported by NAACCR. Trends in cancer incidence rates provided in this publication are based on delay-adjusted incidence rates from registries in the National Cancer Institute's SEER program and were originally published in *SEER Cancer Statistics Review (CSR) 1975-2012*.[4, 182] Incidence rates for the most recent time period (2008-2012) were obtained from NAACCR.[183] Some of these data were previously published in volumes I and II of *Cancer in North America: 2008-2012*.[184,185]

Cancer Deaths. The estimated numbers of US cancer deaths among blacks are calculated by fitting the numbers of cancer deaths for 1998-2012 to a statistical model that forecasts the numbers of deaths expected to occur in 2016. Data on the number of deaths are obtained from the National Center for Health Statistics (NCHS) at the CDC.

Mortality Rates. Mortality rates or death rates are defined as the number of people who die from cancer during a given year divided by the number of people at risk in the population. In this publication, mortality rates are based on counts of cancer deaths compiled by the NCHS and population data from the US Census Bureau.[186] Death rates in this publication are presented per 100,000 people and are age adjusted to the 2000 US standard population to allow comparisons across populations with different age distributions. All death rates in this publication were age adjusted to the 2000 US standard population. Trends in cancer mortality rates provided for selected cancer sites were based on mortality data from 1975 to 2012 and were first published in the *CSR 1975-2012*.[4]

Survival. Five-year relative survival rates are presented in this report for cancer patients diagnosed between 2005 and 2011 and followed through 2012. Relative survival rates are used to adjust for normal life expectancy (and events such as death from heart disease, accidents, and diseases of old age). These rates are calculated by dividing observed 5-year survival rates for cancer patients by observed 5-year survival rates for people in the general population who are similar to the patient group with respect to age, gender, race, and calendar year of observation. Five-year survival statistics presented in this publication were originally published in the *CSR 1975-2012*.[4]

Probability of Developing or Dying of Cancer. Probabilities of developing or dying of cancer were calculated using DevCan 6.7.3, developed by the National Cancer Institute.[187] These probabilities reflect the average experience of people in the US and do not take into account individual behaviors and risk factors. For example, the estimate of 1 black man in 13 developing lung cancer in a lifetime underestimates the risk for smokers and overestimates the risk for nonsmokers.

Behavioral Risk Factor Surveillance System (BRFSS)[127]: This survey of the US states and territories is conducted by the CDC and the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). Since 1996, all 50 states, the District of Columbia, and Puerto Rico have participated in this annual survey. It is designed to provide state prevalence estimates on behavioral risk factors such as cigarette smoking, physical activity, and cancer screening. Data are gathered through monthly computer-assisted telephone interviews with adults ages 18 and older, living in households in a state or US territory. The methods are generally comparable from state to state and from year to year, which allows states to monitor the effects of interventions over time. The prevalence estimates prior to 2011 are only applicable to adults living in households with a residential telephone line. However, beginning in 2011, data collection was expanded to include adults living in cellular phone-only households (no landlines). Improved weighting, adjustment, and estimation methods were developed to reduce the potential for bias and allow the survey to maintain validity despite declining response rates and the incorporation of cellular telephone interviews. Visit cdc.gov/brfss for more information.

National Health and Nutrition Examination Survey (NHANES)[188]: The CDC's NHANES is a national survey that assesses the health and nutritional status of adults and children in the US. Three cycles of the survey were conducted between 1971 and 1994; the most recent and third cycle, NHANES III, was conducted from 1988 to 1994. Beginning in 1999, the NHANES was implemented as a continuous annual survey. The survey is designed to provide prevalence estimates on the health and

nutritional status of US adults and children. Data are gathered through in-person interviews and direct physical exams in mobile examination centers. The physical exam consists of medical and dental exams, physiological measurements, and laboratory tests. Visit cdc.gov/nchs/nhanes.htm for more information.

National Health Interview Survey (NHIS)[105]: The CDC's NHIS has monitored the health of the nation since 1957. The survey is designed to provide national prevalence estimates on personal, socioeconomic, demographic, and health characteristics (such as cigarette smoking and physical activity) of US adults. Data are gathered through a computer-assisted personal interview of adults 18 years of age and older living in households in the US. Visit cdc.gov/nchs/nhis.htm for more information.

National Immunization Survey-Teen (NIS-Teen): Sponsored by the National Center for Immunizations and Respiratory Diseases (NCIRD), this annual survey is conducted jointly by the NCIRD, the NCHS, and the CDC. It is designed to monitor national, state, and selected local area vaccination coverage among children ages 13-17 in the US. Data are provided by both surveyed households and immunization providers. Telephone interviews are conducted in all 50 states and the District of Columbia, with oversampling in select areas. Beginning in 2011, the NIS-Teen sample was expanded to include cellular telephones in addition to landlines. Immunization data for surveyed adolescents are also collected through a mail survey of their pediatricians, family physicians, and other health care providers. The parents and guardians of eligible adolescents are asked during the telephone interview for consent to contact the adolescents' vaccination providers. Types of immunizations, dates of administration, and additional data about facility characteristics are requested from immunization providers. Visit cdc.gov/vaccines/imz-managers/nis/about.html for more information.

National Youth Tobacco Survey (NYTS): This national survey was first conducted in the fall of 1999. Beginning in 2011, the CDC's Office on Smoking and Health and the US Food and Drug Administration's Center for Tobacco Products began collaborating on the NYTS. Now an annual survey, it is designed to provide national data for public and private students in grades six through 12. The survey includes detailed tobacco-related questions, including topics such as bidis, secondhand smoke exposure, smoking cessation, and school curriculum. Data are gathered through a self-administered questionnaire completed during a required subject or class period. Visit cdc.gov/TOBACCO/data_statistics/surveys/NYTS/ for more information.

Youth Risk Behavior Surveillance System (YRBSS): This biennial survey of the CDC's NCCDPHP began in 1991. It is designed to provide national, state, and local prevalence estimates on health risk behaviors, such as tobacco use, unhealthy dietary behaviors, physical inactivity, and others among youth and young adults who attend public and private high schools. Data are gathered through a self-administered questionnaire completed during a required subject or class period. The state and local surveys are of variable data quality, and caution should be used when comparing data among them. Data from states and local areas with an overall response rate of 60% and appropriate documentation are considered weighted and are generalized to all public and private high school students in grades nine through 12 in the respective jurisdiction. However, data from states and local areas without an overall response rate of 60% and those with inadequate documentation are reported as unweighted and are only applicable to students participating in the survey. Beginning with the 2003 survey, state data that do not meet the weighting requirements described above are no longer publicly available through the CDC. Visit cdc.gov/HealthyYouth/yrbs/index.htm for more information.

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