

Lesson / Week 12

Leading Causes of Mortality and Morbidity in the US

- Risk Factors
- Heart Disease Rates by Population Groups
- Cancer Rates by Site and Population Groups
- Stroke

Health statistics, United States 2009

<http://www.cdc.gov/nchs/data/hus/hus09.pdf#047>

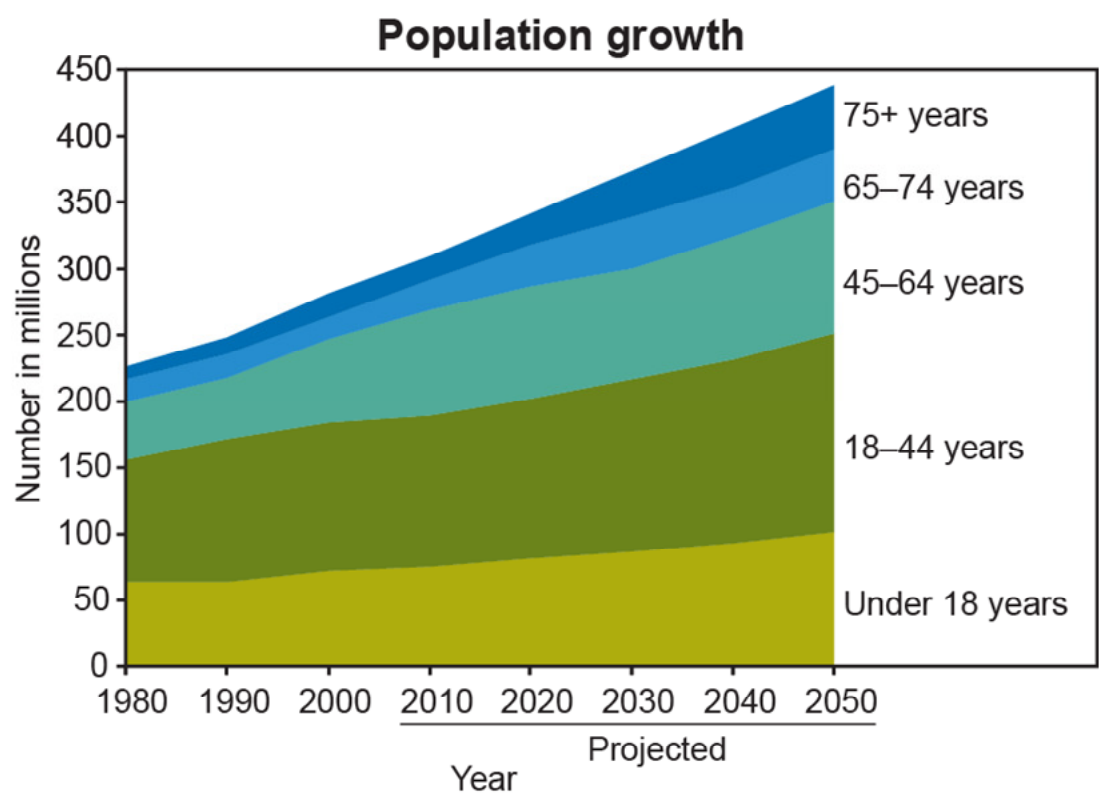
Mortality rates (per 100,000) by cause 1981-2007

<http://205.207.175.93/HDI/TableViewer/tableView.aspx>

Background

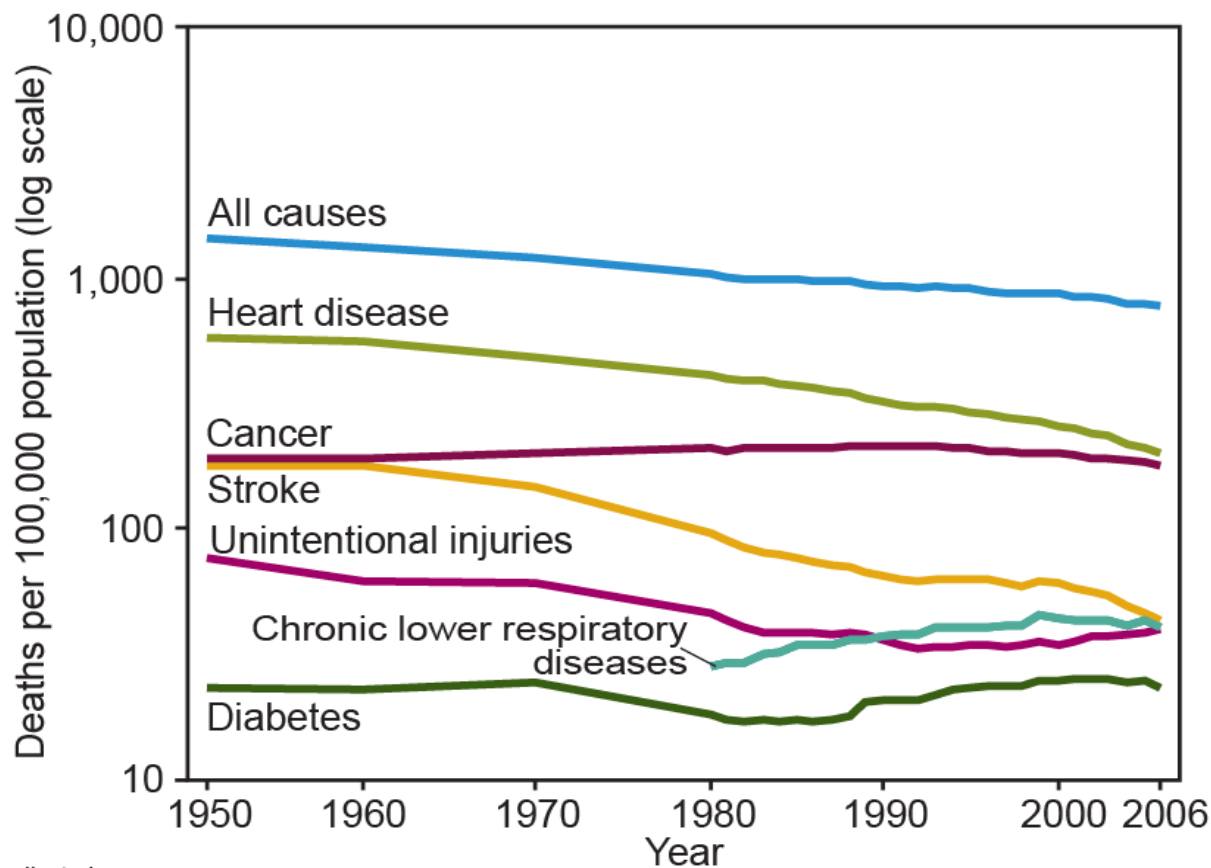
- The health status of the Nation, as well as its need for health care resources, is determined in part by the **size** and **composition** of its population.
- In 2007 there were 302 million **U.S. residents**, up from 281 million in 2000 and 227 million in 1980.
- Between 1980 and 2007, the percentage of **Americans age 75 and over** increased from 4% to 6%.
- Between 1980 and 2008, the percentage of **children who were Hispanic or Asian** more than doubled. During the same period, the percentage of adults who were Hispanic more than doubled, and the percentage of adults who were Asian tripled.
- As overall death rates have declined, racial and ethnic disparities in mortality have persisted, but the gap in life expectancy between the black and white populations has narrowed.
- Life expectancy at birth in the United States lags behind that in most other industrialized countries. Life expectancy and infant mortality are often used to gauge the overall health of a population. Life expectancy in this country shows a long-term upward trend, and infant mortality shows a long-term downward trend.
- In 2007, **life expectancy** at birth for the total population reached a record high of 77.9 years, up from 75.4 years in 1990.

- Between 1990 and 2007, **life expectancy at birth** increased 3.5 years for **males** and 1.6 years for **females**.



- The gap in life expectancy between males and females narrowed from 7.0 years in 1990 to 5.1 years in 2007.
- Between 1990 and 2007, **life expectancy at birth** increased more for the **black** than for the **white** population, thereby narrowing the gap in life expectancy between these two racial groups. In 1990, life expectancy at birth for the white population was 7.0 years longer than for the black population. By 2007, the difference had narrowed to 4.6 years.
- Among **37 countries and territories** that submitted data to the Organization for Economic Co-operation and Development (OECD) in 2005, **life expectancy** in the U.S. was below that of most other industrialized countries.
- Overall mortality was 25% higher for **black Americans** than for white Americans in 2007, compared with 37% higher in 1990.

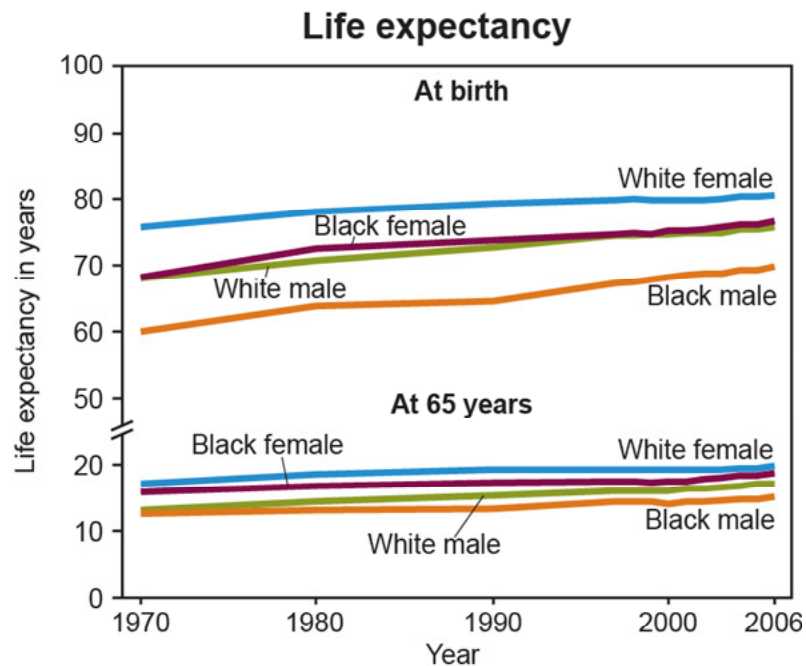
Death rates for leading causes of death: All ages



Age-adjusted.

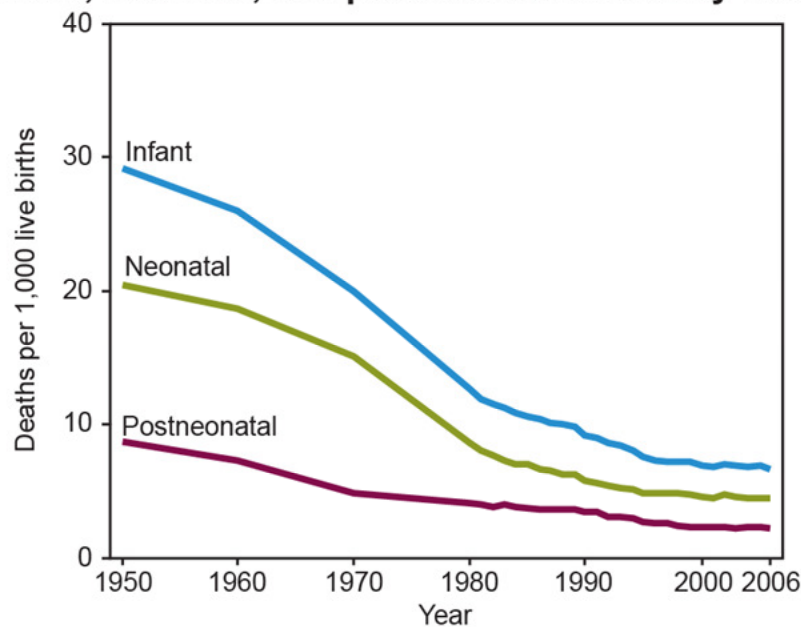
SOURCE: CDC/NCHS, *Health, United States, 2009*, Figure 18. Data from the National Vital Statistics System.

- In 2006, age-adjusted death rates for the black population exceeded those for the white population by 48% for **stroke** (cerebrovascular disease), 31% for **heart disease**, 21% for **cancer** (malignant neoplasms), 113% for **diabetes**, and 786% for **HIV disease**.
- In 2007, the **infant mortality** rate was 6.77 infant deaths per 1,000 live births, 27% lower than in 1990.
- Large disparities in **infant mortality** rates among **racial and ethnic groups** continue to exist. In 2005, infant mortality rates were highest for infants of non-Hispanic black mothers (13.63 deaths per 1,000 live births).
- In 2007, American men could expect to live 3.5 years longer—and women 1.6 years longer—than they did in 1990.
- The gap in life expectancy between the black and white populations has narrowed, but it persists.
- Mortality from heart disease, stroke, and cancer has continued to decline in recent years, although mortality from chronic lower respiratory diseases and unintentional injuries has not.



- Infant mortality—a major component of overall life expectancy—declined through 2001 and has changed little since then. However, both life expectancy and infant mortality continue to lag behind levels in many other developed countries.

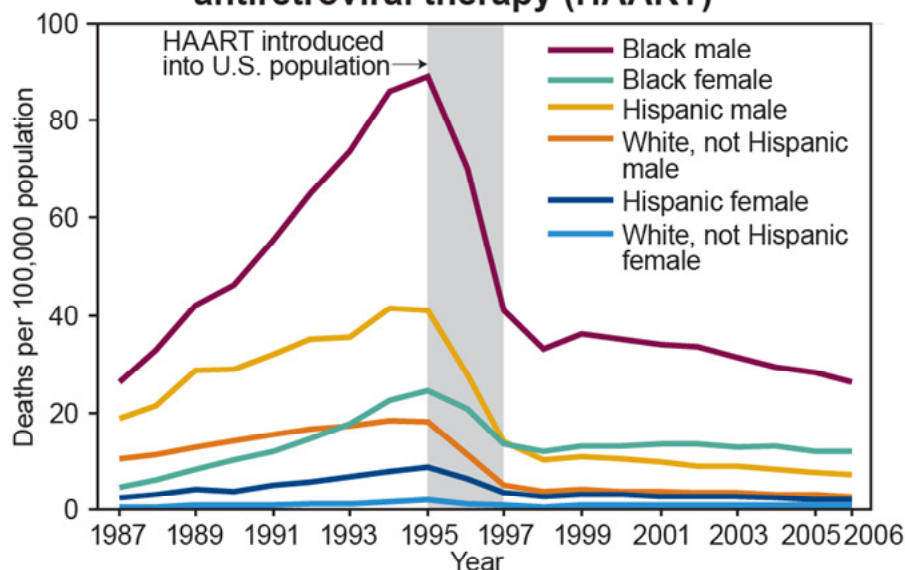
Infant, neonatal, and postneonatal mortality rates



- Longer life spans are generally considered desirable, particularly when healthy years of life are increased. But with an aging population and longer life expectancy come an increasing prevalence of chronic diseases and conditions associated with aging, including hypertension, diabetes, end-stage renal disease, and certain types of cancer, as well as Alzheimer's disease and other dementias.

- Although aging is associated with increased functional limitations and conditions that affect quality of life, those at younger ages may also face these issues.
- In 2007, 69 million adults 18 years of age and over had basic actions difficulty (including movement or emotional difficulty or trouble seeing or hearing) or complex activity limitation (such as work or self-care limitations), an increase from about 61 million in 1997.
- One-quarter of adults 18–64 years of age had at least one basic actions difficulty or complex activity limitation in 2007, compared with 62% of adults 65 years of age and over.
- The percentage of adults 65 and over with fair or poor respondent-reported overall health status was 27% in 2007, down 2 percentage points for this older age group since 1991.
- About one-half of the adult population 75 years of age and over reported joint pain in 2007, similar to the percentage in 2002.
- Infectious disease remains an important cause of morbidity and mortality.
- The number of new cases of many infectious diseases, such as measles and rubella, has decreased greatly as a result of vaccination and other prevention initiatives. However, incidence rates of some communicable diseases, including chlamydia, have increased. In addition, newly recognized infectious agents have emerged and caused substantial public health concern and investment. These include influenza H1N1, SARS, H5N1 avian influenza, and some particularly virulent or drug-resistant bacterial strains, such as Methicillin-Resistant *Staphylococcus aureus* (MRSA).
- Influenza and pneumonia remain major causes of death, particularly among persons 65 years of age and over, and HIV/AIDS continues to spread.
- The **leading cause of death** differs by age group. In 2007, the leading cause of death was unintentional injuries for people 1–44 years of age, cancer for adults 45–64 years of age, and heart disease for adults 65 years and over.
- Age-adjusted mortality from **heart disease**—the leading cause of death overall—declined 41% between 1990 and 2007, continuing a long-term downward trend.
- Age-adjusted mortality from **cancer** (malignant neoplasms)—the second leading cause of death overall—decreased 18% between 1990 and 2007.
- The age-adjusted death rate for **HIV disease** has declined slowly since 1999, after a sharp decrease during the mid 1990s associated with the widespread adoption of highly active antiretroviral therapy (HAART). The death rate for HIV disease is higher for those 35–54 years of age than for other ages.

HIV death rates and introduction of highly active antiretroviral therapy (HAART)



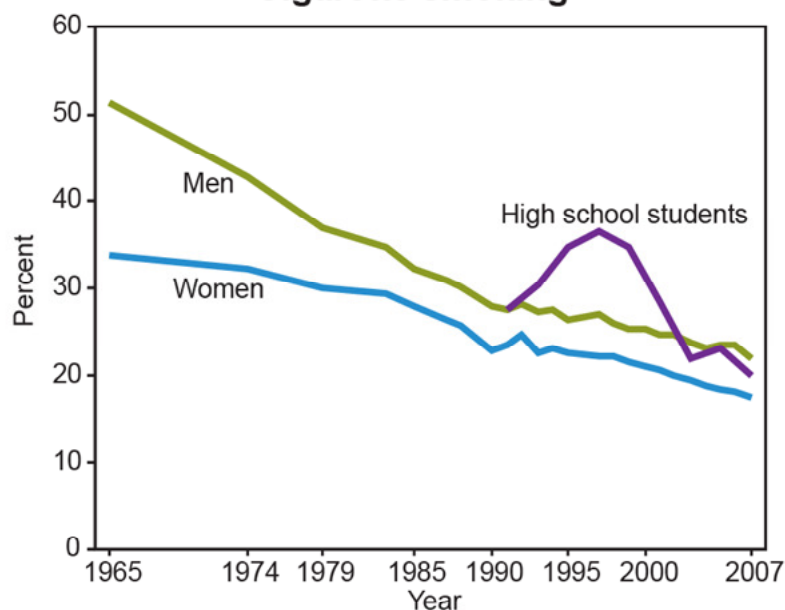
SOURCE: CDC/NCHS, *Health, United States, 2009*, Figure 35. Data from the National Vital Statistics System.

- The **homicide** rate for **black males 15–24 years of age** decreased sharply from the early to the late 1990s and has remained relatively stable since then.

Major Risk Factors

- Of concern for all Americans is the high prevalence of people with risk factors such as tobacco use, high cholesterol, obesity, and insufficient exercise, which are associated with chronic diseases and conditions such as heart disease, cancer, diabetes, and hypertension.

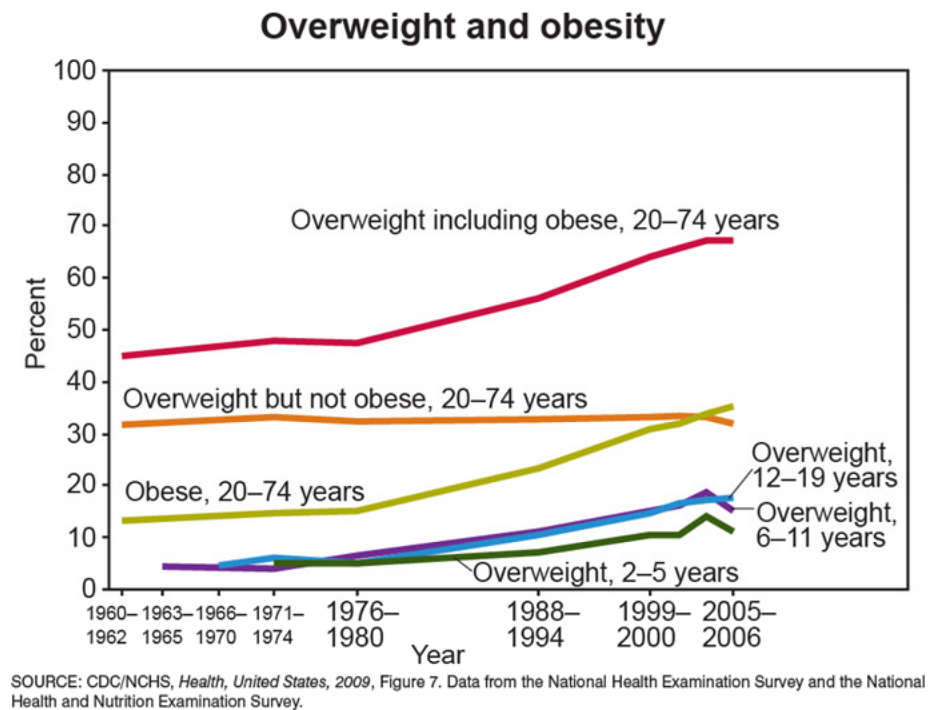
Cigarette smoking



SOURCE: CDC/NCHS, *Health, United States, 2009*, Figure 6. Data from the National Health Interview Survey and the Youth Risk Behavior Survey.

- Declines in tobacco use have slowed in the past decade, and in 2007 22% of men and 17% of women were cigarette smokers.

- Cholesterol levels have been dropping, in particular for the oldest adults, due in large part to increased use of drug therapy.
- Obesity rates do not appear to be increasing as rapidly as they did in past decades but remain high, with more than one-third of adults 20 years of age and over classified as obese in 2005–2006.



- Obesity rates among women continue to vary by race and ethnicity; 53% of non-Hispanic black women 20 years of age and over were obese in 2003–2006, compared with 42% of women of Mexican origin and 32% of non-Hispanic white women.
- The percentage of adults 18 years of age and over who engaged in regular leisure-time physical activity has not increased in the past decade.
- Obesity increases the risk of heart disease, diabetes, and stroke. Heavy and chronic use of alcohol and use of illicit drugs increase the risk of disease and injuries. Cigarette smoking increases the risk of lung cancer, heart disease, emphysema, and other diseases. Regular physical activity reduces the risk of disease and enhances mental and physical functioning.
- Between 1976–1980 and 2005–2006, the prevalence of **overweight among preschool-age children** 2–5 years of age more than doubled, from 5% to 11%.
- The prevalence of **overweight among school-age children** and adolescents increased between 1976–1980 and 2005–2006. The prevalence of overweight more than doubled, from 7% to 15%, among children 6–11 years of age and more than tripled, from 5% to 18%, among adolescents 12–19 years.

- Among **adults** 20–74 years of age, **obesity** rates have more than doubled since 1976–1980. From 1976–1980 to 2005–2006, the percentage of adults who were obese increased from 15% to 35% (age-adjusted).
- In 2007, 8% of people 12 years of age and over reported use of any illicit drugs in the past month, 6% reported marijuana use, and 3% reported nonmedical use of prescription drugs. Use of **illicit drugs** was higher among persons 16–25 years of age than for persons in other age groups.
- In 2007, 21% of adults 18 years of age and over reported having **five or more drinks in a day** at least once in the past year, and 9% reported having five or more drinks in a day at least 12 times in the past year.
- In 2007, 20% of U.S. adults were current **cigarette smokers**, only a slight decrease from 21% in the previous 3 years. Men were more likely to be current cigarette smokers than women (22% compared with 18%, age-adjusted).
- In 2005–2006, 30% of adults often or almost always had **trouble sleeping** in the past month.
- Measures of health status include respondent-assessed health status, prevalence of selected diseases and conditions, and mental health status. Measures of disability include prevalence of basic actions difficulty, complex activity limitations, and limitations in functioning associated with chronic health conditions.
- In 2007, the percentage of noninstitutionalized adults reporting their **health as fair or poor** ranged from 6% of those 18–44 years of age to 31% of those 75 years and over. The proportion of all persons with fair or poor health was three times higher among persons living in poverty compared with those in higher income families.
- The prevalence of **hypertension**—defined as elevated blood pressure or taking antihypertensive medication—increases with age. In 2003–2006, 36% of men and women 45–54 years of age had hypertension, compared with 65% of men and 80% of women 75 years and over.
- The percentage of adults with **diabetes** (including both diagnosed and undiagnosed) increased from 1988–1994 (8%) to 2003–2006 (10%). Diabetes is more common among non-Hispanic black persons and Mexican Americans than among non-Hispanic white persons.
- Between 1988–1994 and 2003–2006, the percentage of both men and women 55 years of age and over with **a high total serum cholesterol level** (greater than or equal to 240 mg/dL) declined. However, older women were more likely to have high serum

cholesterol than older men. In 2003–2006, 24% of women 65–74 years of age had high serum cholesterol, compared with 11% of men of the same age.

Total Cholesterol Level (mg/dL)

Less than 200	Desirable
200-239	Borderline high
240 and above	High

LDL Cholesterol Level (mg/dL)

Less than 100	Optimal
100-129	Near optimal/above optimal
130-159	Borderline high
160-189	High
190 and above	Very high

Blood sugar

<u>Types of test</u>	Normal diabetes	Pre diabetes	Type 1 or 2 diabetes
Simple blood sugar level test	• 80-100 mg/dl	• 100 -199 mg/dl	• >200 mg/dl
Fasting blood sugar level test	• 80-100 mg/dl	• 100 -125 mg/dl	• >126 mg/d
Oral-glucose-tolerance-test	• <140 mg/dl	• 140 -199 mg/dl	• >200 mg/dl
A1C Test	• 4- 6 %	• -	• > 7 %

Oral-glucose-tolerance-test: The patient is asked to drink a sweet liquid containing glucose. It is best to drink the liquid quickly. A blood sample is collected 1 later. Normally, blood glucose levels peak within an hour and then begin to drop.

The A1C Test: The A1C test result reflects your average blood sugar level for the past two to three months. Specifically, the A1C test measures what percentage of your hemoglobin — a protein in red blood cells that carries oxygen — is coated with sugar (glycated).

- From 1990 to 2006, the number of **new cases of lung and bronchus cancer** per 100,000 population declined on average 2% per year among males and remained

unchanged among females. Cancer of the lung and bronchus is the second most common newly diagnosed cancer among males (after prostate cancer) and females (after breast cancer).

- Between 1988–1994 and 2001–2004, approximately one-quarter of adults 20–64 years of age and children 6–19 years of age had **untreated dental caries**, down from approximately one-half in 1971–1974.
- In 2007, approximately 2.0 million nonfatal **workplace injuries and illnesses** in the private sector involved days away from work, job transfer, or restricted duties at work, for a rate of 2.1 cases per 100 full-time workers.
- The rate of all reported nonfatal occupational injuries and illnesses in private industries was cut in half from 1989 (8.6 cases per 100 full-time workers) to 2007 (4.2 cases per 100).
- In 2007, there were nearly 36,000 **new AIDS cases** reported. Males 13 years of age and over accounted for 73% of all new cases. Black males made up 31% of all new cases, and black females accounted for 17% of all new cases.
- From 1990 to 2007, the incidence rate for **chlamydia** increased from 160 to 370 cases per 100,000 population, while the rate for **gonorrhea** and **syphilis** declined. In 2007, incident cases of **acute viral hepatitis A and B** were at historically low levels.
- In 2006–2007, 3% of the noninstitutionalized population 18 years of age and over was classified as having **serious psychological distress**. Adults living below the poverty level were more than four times as likely to report serious psychological distress as adults in families with an income at least twice the poverty level (7.2% compared with 1.6%, age-adjusted).
- In 2005–2006, women 18 years of age and over (6.6%) were about 50% more likely than men (4.4%) to have current **depression**.
- Between 1991 and 2007, the percentage of **high school students** who reported attempting suicide ranged between 7% and 9%, and the percentage who reported a **suicide attempt** that required medical attention ranged between 2% and 3%.
- In 2007, 59% of noninstitutionalized adults 65 years of age and over had **basic actions difficulty** (including movement or emotional difficulty or trouble seeing or hearing), and 34% had a **complex activity limitation** (such as work or self-care limitations).
- In 2007, 10% of adults 18 years of age and over reported **trouble seeing, even with glasses or contacts**. Trouble seeing increased with age from 7% of adults 18–44 years of age to 18% of adults 75 years and over.
- In 2006–2007, speech problems, learning disabilities, and attention-deficit/hyperactivity disorder (ADHD or ADD) were the most frequently reported causes of **activity limitation among children 5–11 years of age**.
- Arthritis and other musculoskeletal conditions were the leading causes of **activity limitation** among working-age **adults 18–64 years** of age in 2006–2007. Mental illness was the second most frequently mentioned condition causing activity limitation among

adults 18–44 years of age and the third most frequently mentioned among adults 45–54 years of age.

Heart Disease Rates by Population Groups

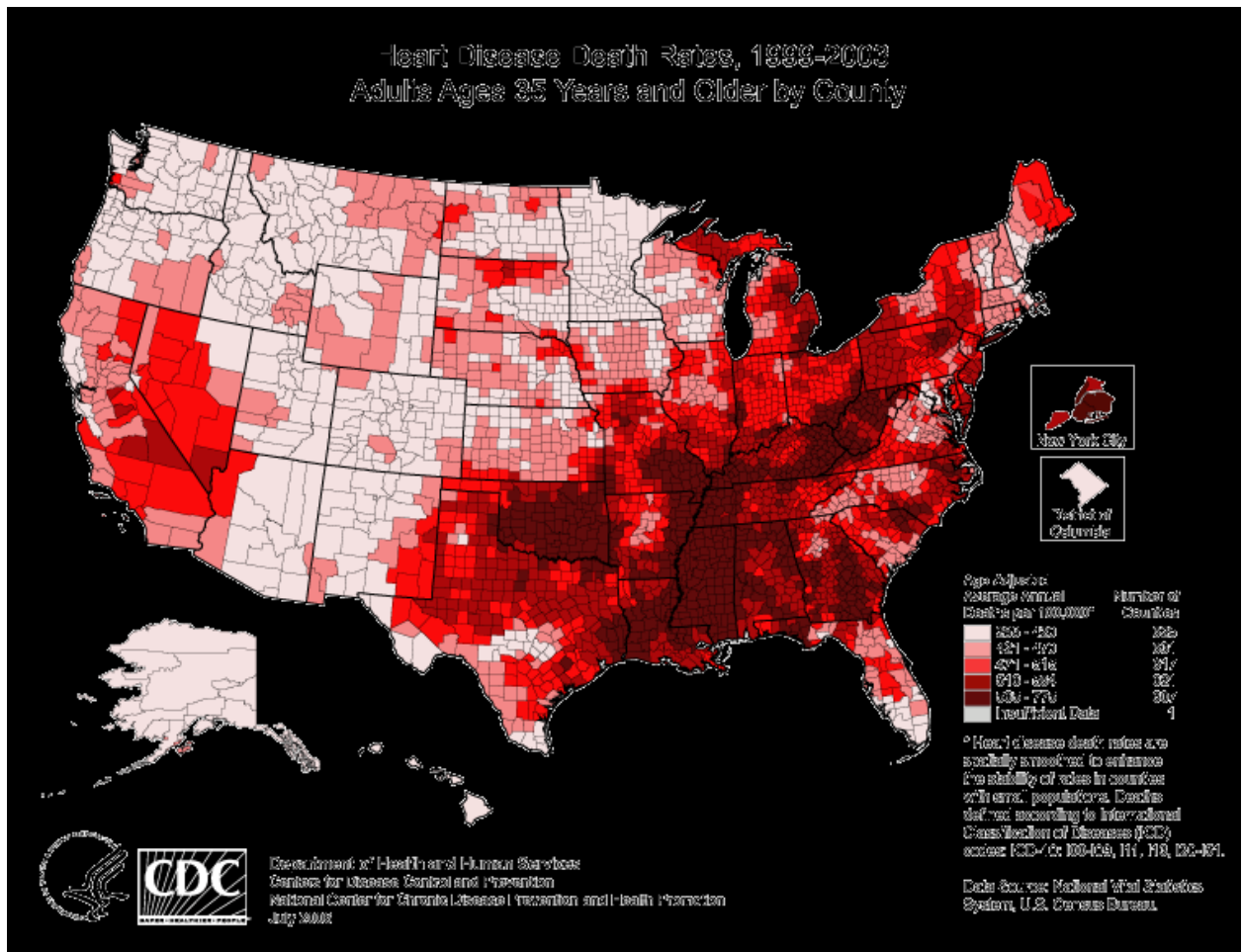
- In 2006, a total of 2.4 million deaths were reported in the United States. The overall age-adjusted death rate was 46% lower in 2006 than in 1950.
- The reduction in overall mortality since 1950 was driven mostly by declines in mortality from heart disease, stroke, and unintentional injuries.
- In 2006, the age-adjusted death rate for heart disease—the leading cause of death—was 66% lower than the rate in 1950 (Figure 18 and Table 32).
- The age-adjusted death rate for stroke (cerebrovascular disease), the third leading cause of death, had declined 76% since 1950 (see table below).
- Heart disease and stroke mortality are associated with risk factors such as diabetes, high cholesterol, high blood pressure, smoking, and dietary factors.
- Other important factors include socioeconomic status, obesity, and physical inactivity.
- Factors contributing to the decline in heart disease and stroke mortality include better control of risk factors, improved access to screening, increased early detection, and better treatment and care, including new drugs and expanded uses for existing drugs .

Diseases of the heart: Age-adjusted mortality per 100,000 populations (1950 to 2007)

1950	1960	1970	1980	1981	1982	1983	1984	1985	1986	1987
588.8	559.0	492.7	412.1	397.0	389.0	388.9	378.8	375.0	365.1	355.9
1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
352.5	332.0	321.8	312.5	304.0	308.1	297.5	293.4	285.7	277.7	271.3
1999	2000	2001	2002	2003	2004	2005	2006	2007		
266.5	257.6	247.8	240.8	232.3	217.0	211.1	200.2	190.9		

- Many technological advances have been directed at preventing, diagnosing, and treating heart disease, the leading cause of death in the United States.
- Examples include drugs (statins), imaging (computed tomography, CT), procedures (angioplasty), and devices (stents).
- For many people with coronary artery disease (CAD), a common form of heart disease, coronary artery revascularization may be needed.
- One procedure to treat CAD is percutaneous transluminal coronary angioplasty (PTCA), more commonly called angioplasty.
- In PTCA, narrowed (or stenotic) arteries are treated to improve blood flow and reduce blockage.
- Compared with coronary artery bypass surgery, another widespread treatment for CAD, PTCA is relatively noninvasive and reduces length-of-stay in the hospital, recovery time, and expense. Therefore, PTCA is generally preferable in patients for whom both procedures are an option .
- PTCA was first introduced about 30 years ago.
- Since then, additional modifications, including the introduction of stents, have improved the procedure.
- First introduced in the 1980s, stents are mesh-like devices that are inserted into the artery during PTCA to expand the artery and prevent restenosis (recurrent plaque development).
- One complication of early stents was clotting (thrombosis) at the site of the stent. To address this complication, drug-eluting stents were approved in 2003.
- Drug-eluting stents release short-term medication to reduce the risk of clotting and have been found to be better than bare stents at preventing restenosis and, consequently, the need for revascularization.
- Data from the National Hospital Discharge Survey were used to examine changes that have occurred in PTCA procedures since the introduction of stents, and in particular, the introduction of bare (non-drug-eluting) stents.
- Discharges with PTCA procedures were separated into those including a drug-eluting stent (starting with 2003 data), those including a bare stent, and those with no stent.

- Between 1996 and 2006, the rate of discharges with any PTCA procedure among persons 45 years of age and over was fairly steady, while the rate for PTCA discharges without a stent declined by 84% .
- The diffusion of stent insertion was fairly rapid.
- In 1996, almost two-thirds of PTCA discharges among persons 45 years of age and over did not include stent insertion, but by 2006 less than one-tenth of discharges had no type of stent.
- Further, there was swift adoption of the drug-eluting stent, replacing the insertion of a bare stent.



http://www.cdc.gov/gis/mq_heartdisease_stroke.htm

- In 2002, the year before the first drug-eluting stent was approved, 82% of PTCA discharges among person 45 years of age and over had a bare stent inserted.

- In 2004, the year after drug-eluting stents were approved, 69% of PTCA discharges had a drug-eluting stent inserted, and by 2006, 77% of PTCA discharges included a drug-eluting stent.
- The rate of discharges with PTCA, and consequently the rate of PTCA with stent insertion, varied by age and sex.
- In 2006, the rate of PTCA discharges among those 65 years of age and over (86.2 per 10,000 persons) was double that for patients 45–64 years of age (39.7 per 10,000 persons).
- PTCA discharges were about twice as likely among men 65 years of age and over compared with women in that age group, and about two-and-a-half times as likely among men 45–64 years of age than women.
- The likelihood of receiving a drug-eluting stent among PTCA discharges did not vary by age or sex.
- The series of events accompanying the use of drug-eluting coronary artery stents—their introduction, adoption, rapid diffusion, and subsequent reconsideration—is an example of the complexities of technological advancement in medicine.
- The dilemma is how to best target new technologies, given that they are often more expensive than older options and their impact on broader and more diverse population subgroups is not fully known until they are more widely used and studied over longer periods.
- Initial studies of the use of drug-eluting stents indicated they were better than bare stents at preventing restenosis.
- On the basis of this evidence, drug-eluting stents were quickly adopted and used in place of bare stents, regardless of patient characteristics.
- More recent studies, after the diffusion of drug-eluting stents, suggest that patients receiving drug-eluting stents may be at risk for developing thrombosis, often up to a year after their PTCA.
- As more data are obtained, evidence suggests that drug-eluting stents may be best targeted at certain population subgroups with coronary artery disease, such as older patients and those with diabetes.

Cancer

- Overall age-adjusted death rates for cancer, the second leading cause of death, rose between 1960 and 1990 and then declined (see Table below).
- Between 1990 and 2006, overall death rates for cancer declined 16%. The trend in the overall cancer death rate reflects in part the trend in the death rate for lung cancer. Since 1970, the death rate for lung cancer for the total population has been higher than the death rate for any other cancer site.

Cancer: Age-adjusted mortality per 100,000 populations (1950 to 2007)

1950	1960	1970	1980	1981	1982	1983	1984	1985	1986	1987
193.9	193.9	198.6	207.9	206.4	208.3	209.1	210.8	211.3	211.5	211.7
1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
212.5	214.2	216.0	215.2	213.5	213.5	211.7	209.9	206.7	203.4	200.7
1999	2000	2001	2002	2003	2004	2005	2006	2007		
200.8	199.6	196.0	193.5	190.1	185.8	183.8	180.7	178.4		

Cancer among Men

<http://www.cdc.gov/Features/CancerStatistics/>

Note: The numbers in parentheses are the age-adjusted (U.S. standard) rates per 100,000 people.

The three most common cancers among men include:

- Prostate cancer (152.6): First among men of all races and Hispanic origin populations.
- Lung cancer (82.7): Second among white, black, American Indian/Alaska Native, and Asian/Pacific Islander men; third among Hispanic men.

- Colorectal cancer (54.1): Second among Hispanic men; third among white, black, American Indian/Alaska Native, and Asian/Pacific Islander men.

The leading causes of cancer death among men are:

- Lung cancer (67.5): First among men of all racial and Hispanic origin populations.
- Prostate cancer (23.6): Second among white, black, American Indian/Alaska Native, and Hispanic men; fourth among Asian/Pacific Islander men.
- Liver cancer: Second among Asian/Pacific Islander men.
- Colorectal cancer (20.5): Third among men of all races and Hispanic origin populations.

Cancer Among Women

The three most common cancers among women include:

- Breast cancer (119.3): First among women of all races and Hispanic origin populations.
- Lung cancer (55.0): Second among white, black, and American Indian/Alaska Native women, and third among Asian/Pacific Islander and Hispanic women.
- Colorectal cancer (41.1): Second among Asian/Pacific Islander and Hispanic women and third among white, black, and American Indian/Alaska Native women.

The leading causes of cancer death among women are:

- Lung cancer (40.2): First among white, black, Asian/Pacific Islander, and American Indian/Alaska Native women and second among Hispanic women.
- Breast cancer (23.4): First among Hispanic women and second among white, black, Asian/Pacific Islander, and American Indian/Alaska Native women.
- Colorectal cancer (14.5): Third among women of all races and Hispanic origin populations.

Interactive web map (cancer rates by state):

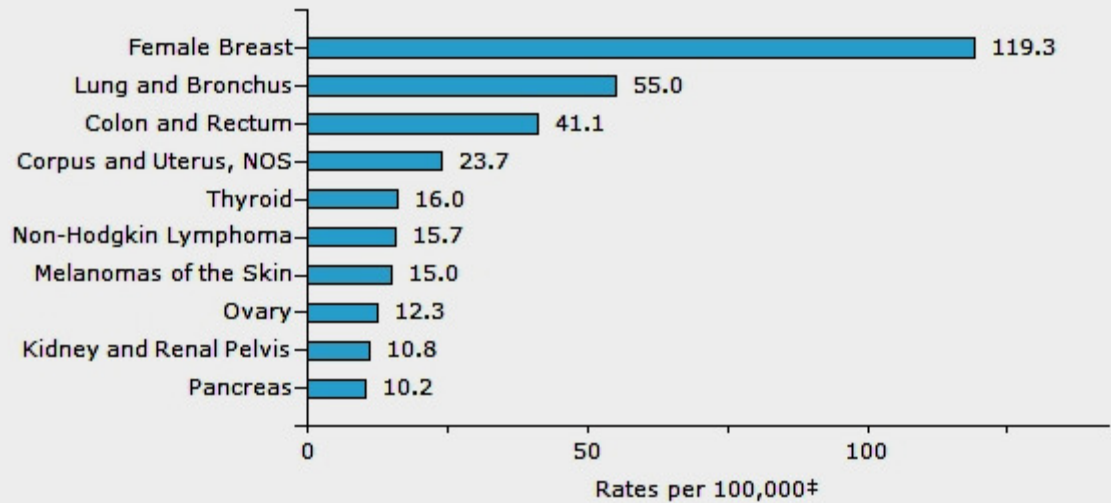
http://apps.nccd.cdc.gov/DCPC_INCA/DCPC_INCA.aspx

Top ten cancers by race/ethnicity

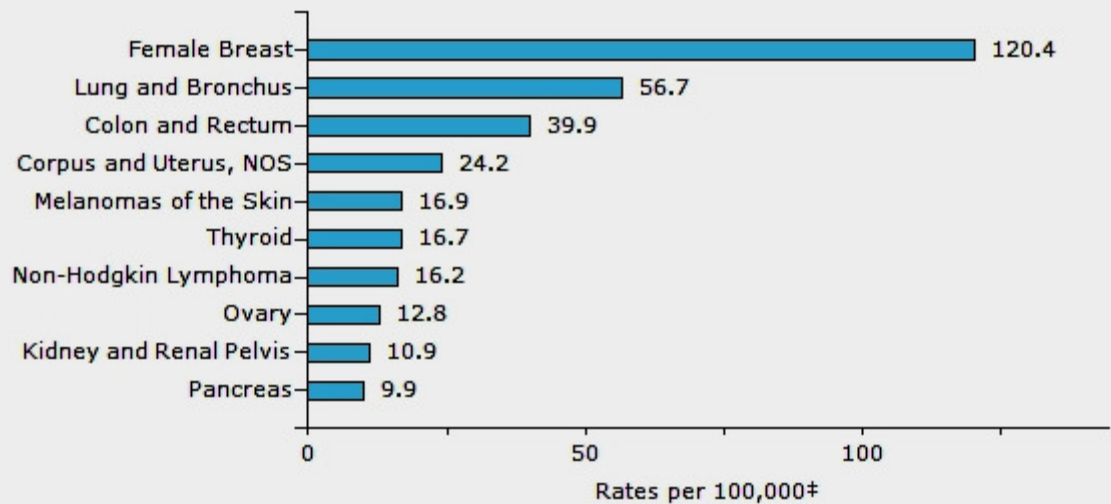
<http://apps.nccd.cdc.gov/uscs/toptencancers.aspx>

Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. standard population

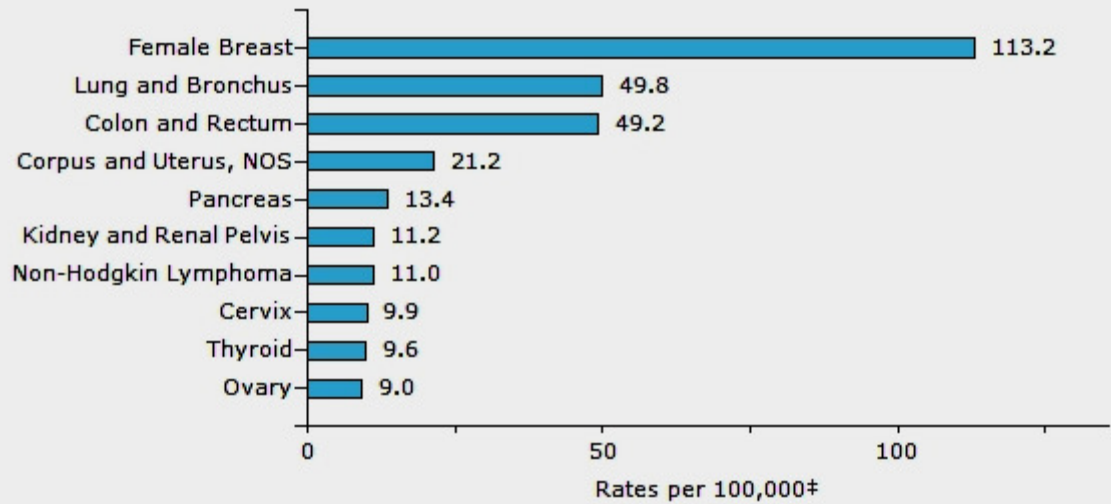
Top 10 Cancer Sites: 2006, Female, United States—All Races



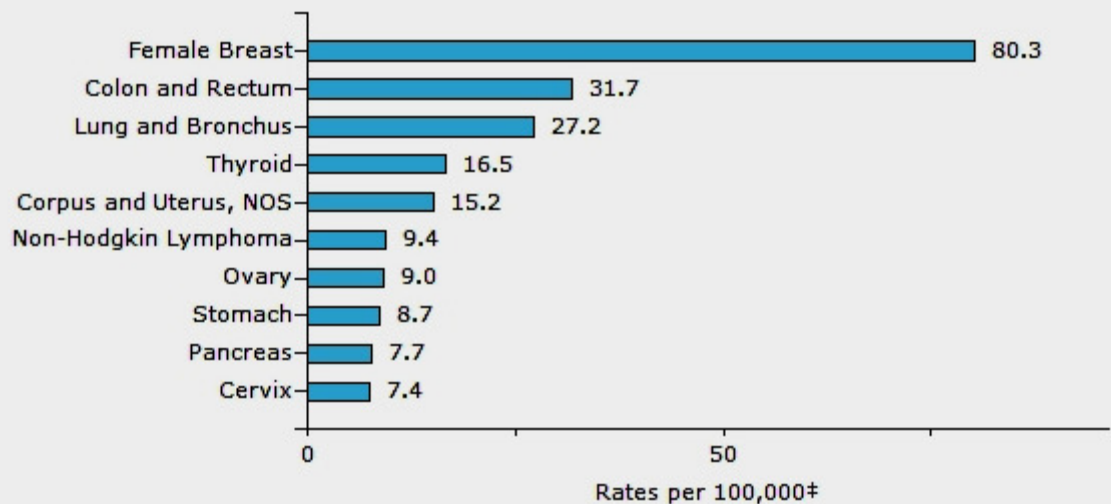
Top 10 Cancer Sites: 2006, Female, United States—White



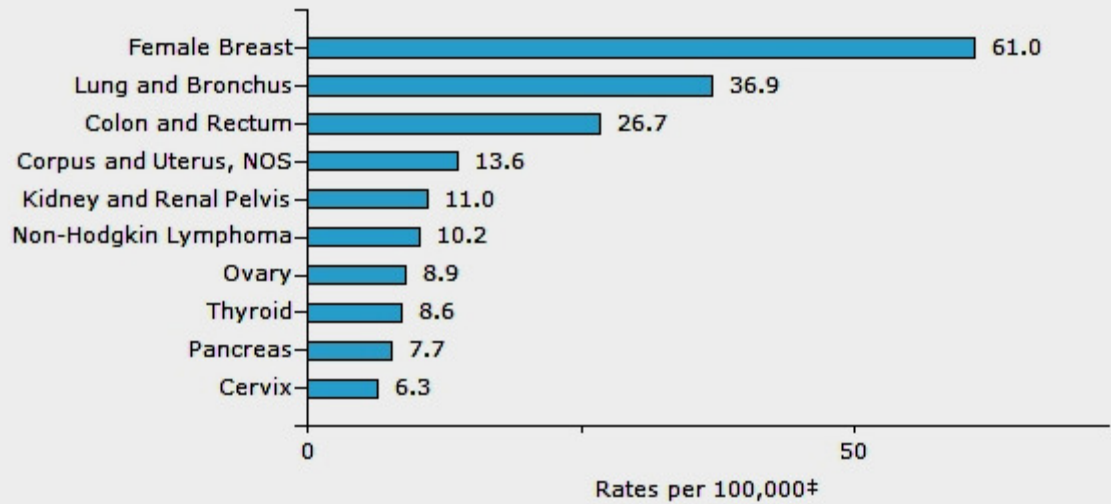
Top 10 Cancer Sites: 2006, Female, United States—Black



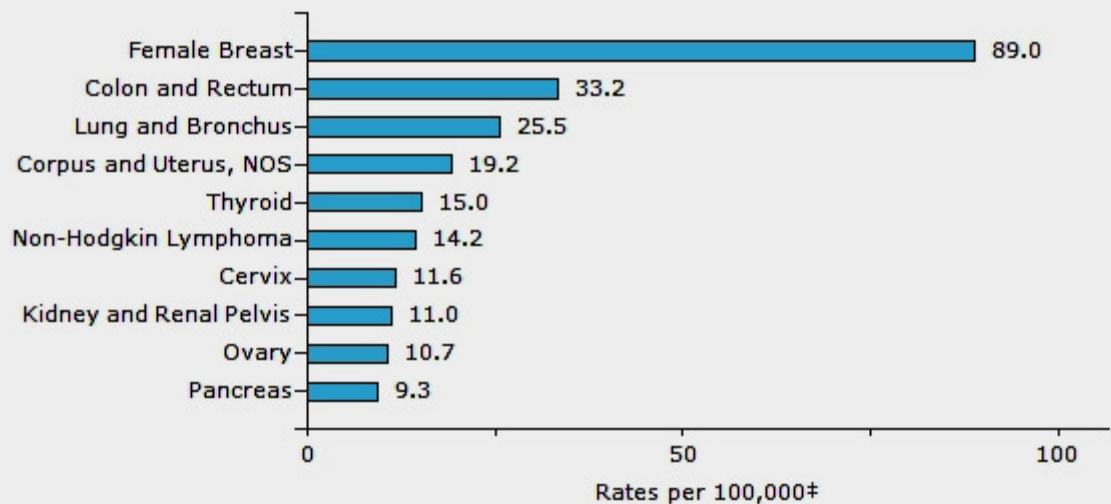
Top 10 Cancer Sites: 2006, Female, United States—Asian/Pacific Islander



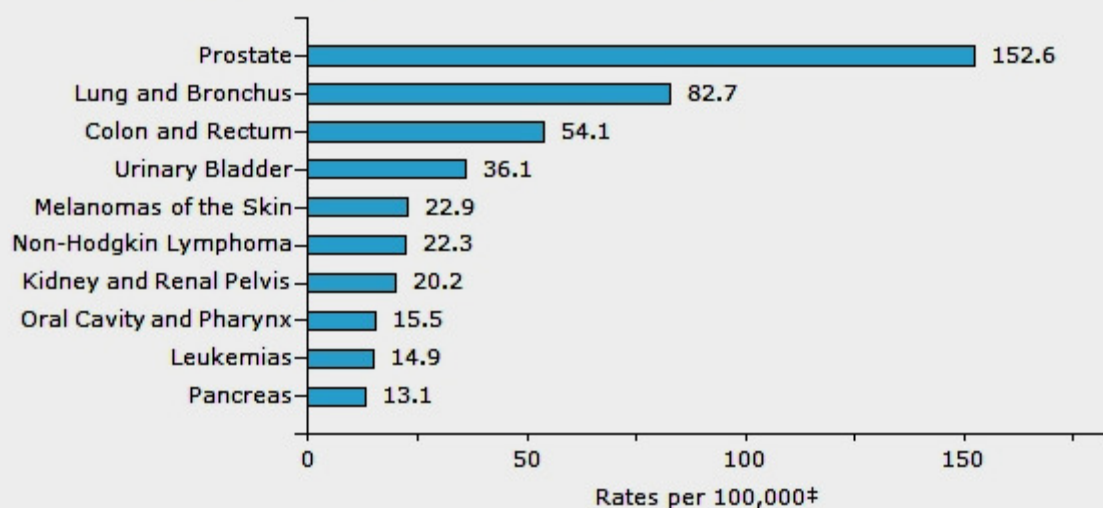
Top 10 Cancer Sites: 2006, Female, United States—American Indian/Alaska Native



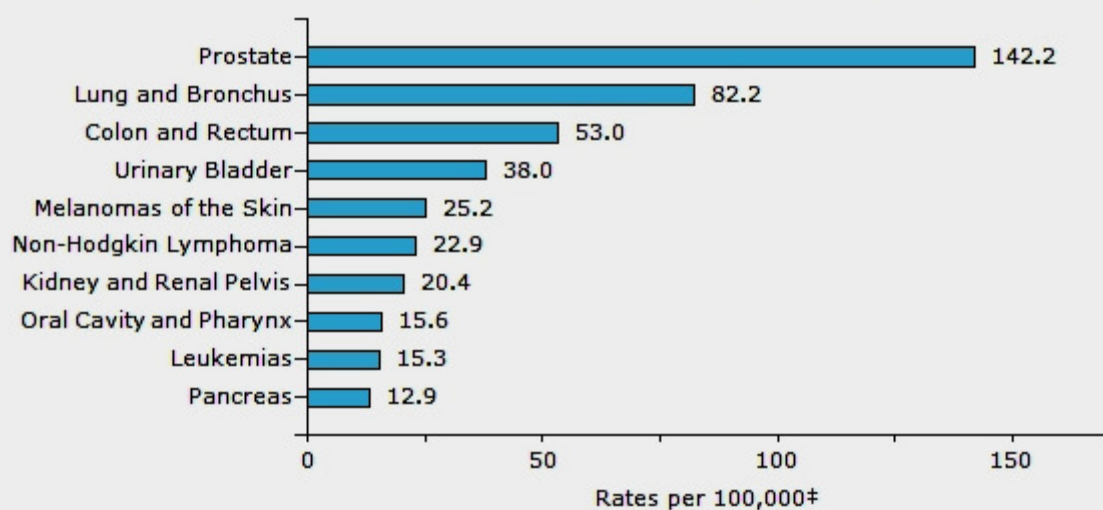
Top 10 Cancer Sites: 2006, Female, United States—Hispanic



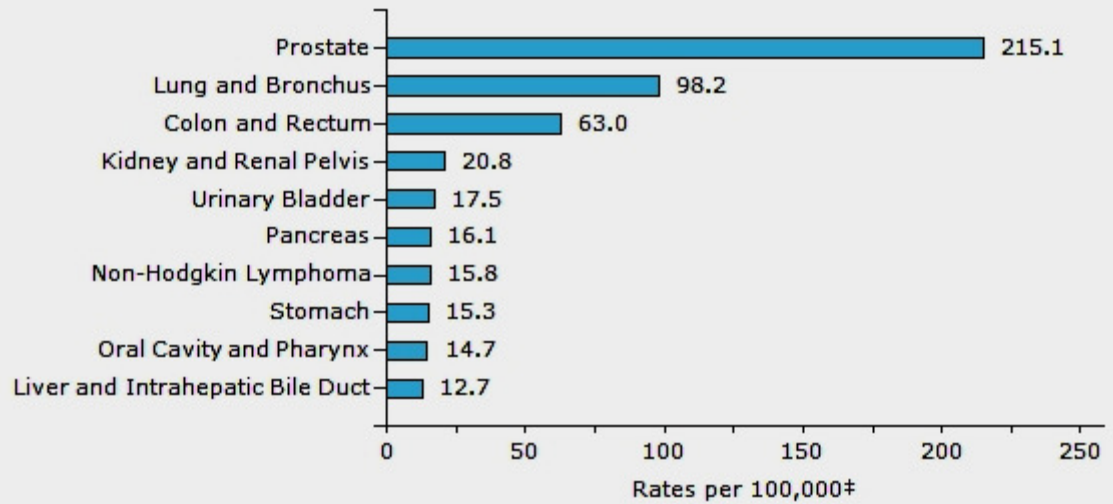
Top 10 Cancer Sites: 2006, Male, United States—All Races



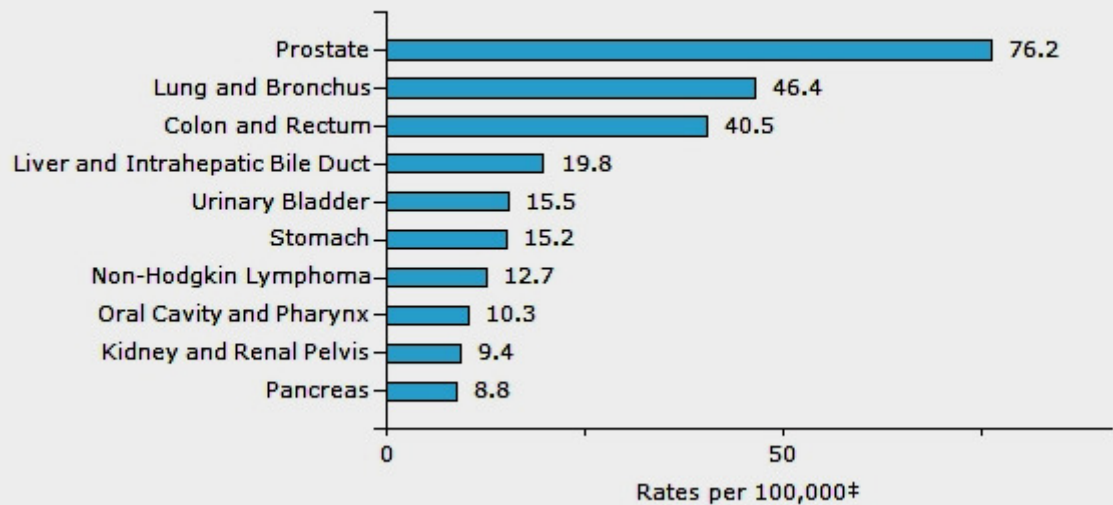
Top 10 Cancer Sites: 2006, Male, United States—White



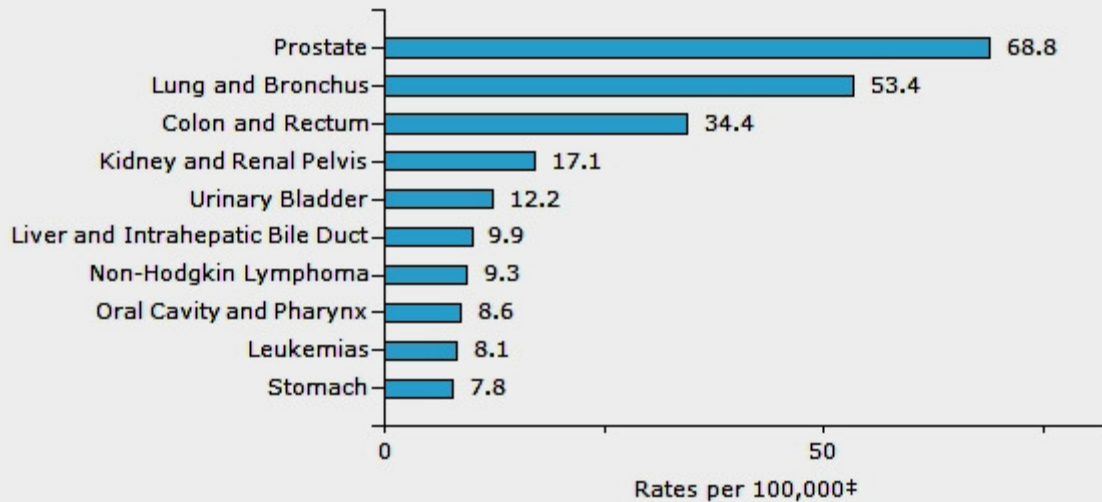
Top 10 Cancer Sites: 2006, Male, United States—Black



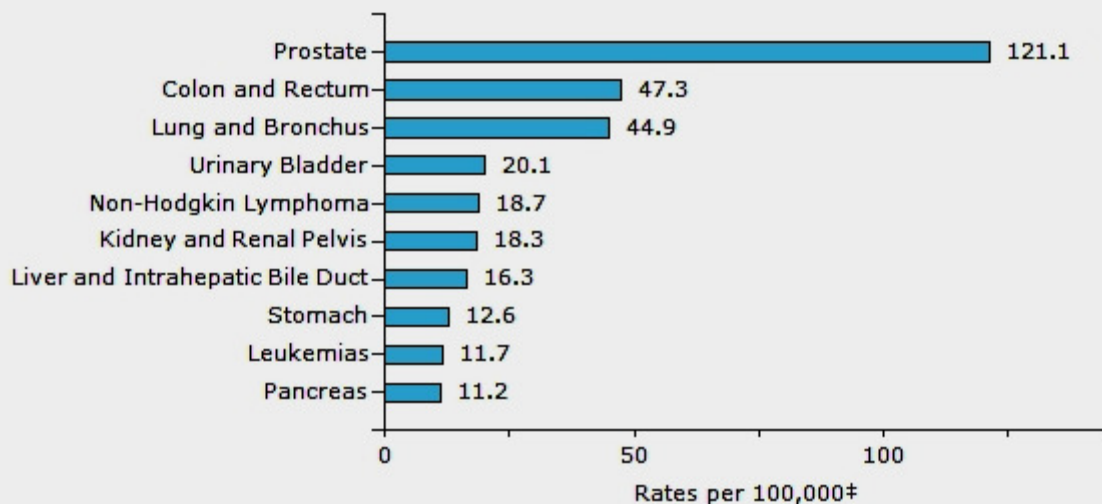
Top 10 Cancer Sites: 2006, Male, United States—Asian/Pacific Islander



Top 10 Cancer Sites: 2006, Male, United States—American Indian/Alaska Native



Top 10 Cancer Sites: 2006, Male, United States—Hispanic



Stroke (cerebrovascular disease)

- The age-adjusted death rate for stroke (cerebrovascular disease), the third leading cause of death, had declined 76% since 1950.
- Heart disease and stroke mortality are associated with risk factors such as diabetes, high cholesterol, high blood pressure, smoking, and dietary factors.

- Other important factors include socioeconomic status, obesity, and physical inactivity.
- Factors contributing to the decline in heart disease and stroke mortality include better control of risk factors, improved access to screening, increased early detection, and better treatment and care, including new drugs and expanded uses for existing drugs.

Stroke: Age-adjusted mortality per 100,000 populations (1950 to 2007)

1950	1960	1970	1980	1981	1982	1983	1984	1985	1986	1987
180.7	177.9	147.7	96.2	89.5	84.2	81.2	78.7	76.4	73.1	71.6
1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
352.5	70.6	66.9	65.3	62.9	61.5	62.7	62.6	63.1	62.5	61.1
1999	2000	2001	2002	2003	2004	2005	2006	2007		
61.6	60.9	57.9	56.2	53.5	50.0	46.6	43.6	42.2		

Stroke Facts

<http://www.cdc.gov/stroke/facts.htm>

Stroke is the third leading cause of death in the United States.¹ People of all ages and backgrounds can have a stroke.

America's Stroke Burden

- In 2006, 137,000 people in the United States died of stroke, accounting for nearly 1 in every 17 deaths. Only heart disease and cancer killed more people.
- Someone in the United States has a stroke every 40 seconds. Every three to four minutes, someone dies of stroke.
- Stroke is the third leading cause of death for both men and women. In 2006, 6 out of every 10 deaths due to stroke were in women.
- Every year, about 795,000 people in the United States have a stroke. About 610,000 of these are first or new strokes. About 185,000 people who survive a stroke go on to have another.

- Ischemic strokes, which occur when blood clots block the blood vessels to the brain, are the most common type of stroke, representing about 85% of all strokes.
- In 2009, stroke will cost the United States \$68.9 billion. This total includes the cost of health care services, medications, and missed days of work.
- Stroke is a leading cause of serious long-term disability.

Stroke Risk Varies by Race and Ethnicity

Stroke is among the five leading causes of death for people of all races and ethnicities. But the risk of having a stroke varies. Compared to whites, African Americans are at nearly twice the risk of having a first stroke. Hispanic Americans' risk falls between the two. Moreover, African Americans and Hispanics are more likely to die following a stroke than are whites.²

Stroke Risk Varies by Age

Although stroke risk increases with age, strokes can—and do—occur at any age. Nearly one quarter of strokes occur in people under the age of 65.

Deaths Vary by Geography

The country's highest death rates due to stroke are in the southeastern United States (see map below).

Early Action is Key

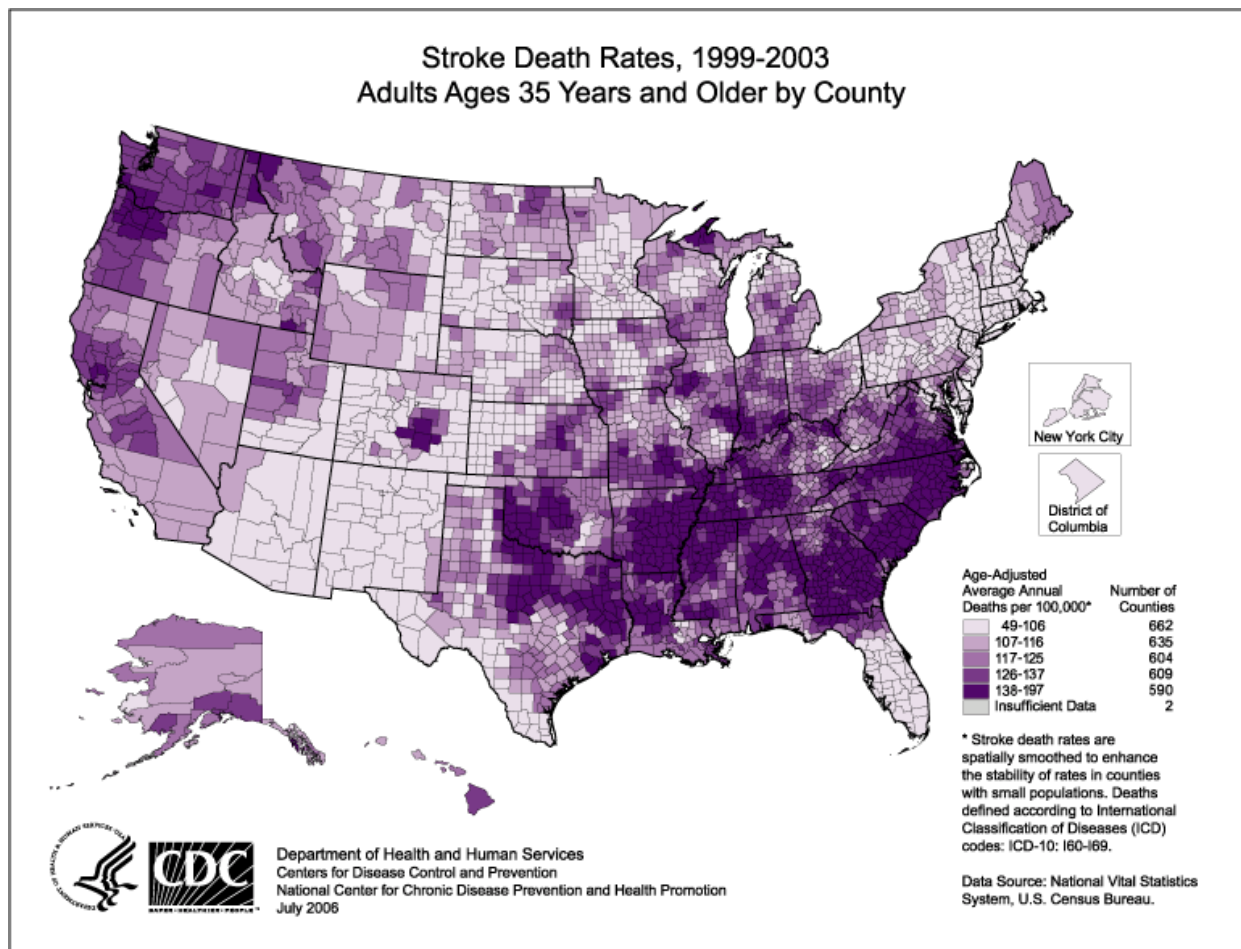
- In a 2005 survey, most respondents—93%—recognized sudden numbness on one side as a symptom of stroke. Only 38% were aware of all major symptoms and knew to call 9-1-1 when someone was having a stroke.
- Patients who arrive at the emergency room within three hours of their first symptoms tend to be healthier three months after a stroke than those whose care was delayed.

Americans at Risk

Below is the percentage of U.S. adults with stroke risk factors in 2005–2006.

Risk Factor	%
Inactivity	39.5
Obesity	33.9
High Blood Pressure	30.5
Cigarette Smoking	20.8
High Cholesterol	15.6
Diabetes	10.1

In 2003, approximately 37% of adults reported having two or more of the risk factors listed above.



http://www.cdc.gov/gis/mg_heartdisease_stroke.htm