

Statistical Fact Sheet — Populations

Youth and Cardiovascular Diseases — Statistics

Diseases and Risk Factors	Total Population	Total Males	Total Females	Non-Hispanic Whites		Non-Hispanic Blacks		Mexican Americans	
				Males	Females	Males	Females	Males	Females
Congenital Defects									
Mortality 2001 (all ages)	4.1 K	2.1 K	1.9 K	1.8 K	1.5 K	0.4 K	0.3 K	—	—
Mortality 2001 (< age 15)	2.1 K	1.1 K	1.0 K	—	—	—	—	—	—
Tobacco									
Prevalence grades 9-12:									
Current tobacco use 2001	—	38.5%	29.5%	—	—	—	—	—	—
Current cigar use 2001	—	22.1%	8.5%	—	—	—	—	—	—
Smokeless tobacco use 2001	—	14.8%	1.9%	—	—	—	—	—	—
High school students:									
Used any tobacco product in last 30 days	—	—	—	43.4%	32.3%	21.6%	17.4%	31.5%	27.2%
Blood Cholesterol									
Ages 4-19:									
Mean total cholesterol mg/dL	165	—	—	162	166	168	171	163	165
Ages 4-19:									
Mean HDL cholesterol mg/dL	—	—	—	48	50	55	56	51	52
Ages 12-19:									
Mean LDL cholesterol mg/dL	—	—	—	91	100	99	102	93	92
Physical Inactivity									
Prevalence 2001 grades 9-12:									
Vigorous activity last 7 days	—	—	—	73.7%	59.8%	72.4%	47.8%	68.8%	52.4%
Moderate activity last 7 days	—	—	—	29.8%	24.7%	23.7%	16.5%	25.9%	18.5%
Overweight									
Prevalence 2001:									
Preschool children ages 2-5	>10%	—	—	10%	8%	8%	11%	11%	11%
Children ages 6-11	3.8 M (15.3%)	2.0 M (16.0%)	1.8 M (14.5%)	11.9%	12.0%	17.6%	22.1%	27.3%	19.6%
Adolescents ages 12-19	5.0 M (15.5%)	2.6 M (15.5%)	2.4 M (15.5%)	13.0%	12.2%	20.5%	25.7%	27.5%	19.4%
Students grades 9-12	—	—	—	12.4%	5.3%	17.5%	14.6%	21.3%	8.8%

Note: K = thousands; M = millions; mg/dL = milligrams per deciliter; overweight in children is body mass index (BMI) 95th percentile or higher by age and sex of the CDC 2000 growth chart; (—) = data not available.

Sources: See bullet points in this fact sheet.

Note: Death rates are age-adjusted per 100,000 population, based on the 2000 U.S. standard. Some data are reported according to ICD/9 codes and some use ICD/10 codes.

Congenital Cardiovascular Defects (ICD/10 codes Q20-Q28) (ICD/9 codes 745-747)

Congenital cardiovascular defects, also known as congenital heart defects, are structural problems arising from abnormal formation of the heart or major blood vessels. At least 15 distinct types of congenital defects are recognized, with many additional anatomic variations.

- Defects range in severity from tiny pinholes between chambers that are nearly irrelevant and often resolve spontaneously, to major malformations that result in fetal loss or death in infancy or childhood. Common defects diagnosed in infancy include
 - tetralogy of Fallot (9-14 percent).
 - transposition of the great arteries (10-11 percent).
 - atrioventricular septal defect (4-10 percent).
 - coarctation of the aorta (8-11 percent).
 - hypoplastic left heart syndrome (4-8 percent).
 - ventricular septal defect (14-16 percent).

Most defects can be corrected or improved with surgery or catheter-based therapy.

Major defects are usually apparent in the neonatal period, but minor defects may not be detected until adulthood. Thus, true measures of incidence for congenital heart disease would need to record new cases of defects presenting anytime in fetal life through adulthood. However, estimates are only available for new cases detected between birth and 30 days of life, known as birth prevalence, or as new cases detected in the first year of life only. Both of these are typically reported as cases per 1,000 live births per year, and do not distinguish between tiny defects that resolve without treatment and major malformations. To distinguish more serious defects, some studies also report new cases of sufficient severity to undergo an invasive procedure or result in death within the first year of life. Despite the absence of true incidence figures, some data are available, and are shown in the Table below.

- According to the CDC, 1 in every 110 babies in the metropolitan Atlanta area was born with a congenital heart defect, including some infants with tiny defects that resolved without treatment. Some defects occur more commonly in males or females, or in whites or blacks. (MACDP, *Pediatrics*. 2001;107)
- 9.0 defects per 1,000 live births are expected, or 36,000 babies per year in the United States. Of these, several studies suggest that 9,200, or 2.3 per 1,000 live births, require invasive treatment or result in death in the first year of life. (BWIS; Moller, 1998)
- Estimates are also available for bicommissural aortic valves, occurring in 13.7 per 1,000 people; these defects may not require treatment in infancy, but can cause problems later in adulthood. (*JACC*. 2002;39:1890-1900; *AJC*. 1984;53:849-855)
- Some studies suggest that as many as 5 percent of newborns, or 200,000 per year, are born with tiny muscular ventricular septal defects, almost all of which close spontaneously. (*JACC*. 1995;26:1545-1548; *Arch Dis Child Fetal Neonatal Ed*. 1999;81:F61-63) These defects nearly never require treatment, so they aren't included in the Table below.

Annual Incidence of Congenital Cardiovascular Defects

Type of Presentation	Rate per 1,000 Live Births	Number
Fetal loss	Unknown	Unknown
Invasive procedure during first year	2.3	9,200
Detected during first year *	9.0	36,000
Bicommissural aortic valve	13.7	54,800
Other defects detected after first year	Unknown	Unknown
Total	Unknown	Unknown

* Includes stillbirths and pregnancy termination less than 20 weeks gestation; includes some defects that resolve spontaneously or don't require treatment.

- Thousands of babies are born each year with congenital heart defects.
- 51.7 percent of deaths from congenital cardiovascular defects in 2001 occurred in people under age 15. Crude infant death rates (under 1 year) were 44.0 for white babies and 56.2 for black babies.
- In 2000 over 25,000 cardiovascular operations for congenital heart disease were performed on children under age 20. 54 percent of operations were performed in males. (HCUP KID2000)
- Inpatient mortality after all types of cardiac surgery was 4.7 percent. However, mortality risk varies substantially for different defect types, from 0.3 percent for atrial septal defect repair to 20.1 percent for first stage palliation for hypoplastic left heart syndrome. In unadjusted analyses, mortality after cardiac surgery was somewhat higher for females than for males (4.8 percent vs. 4.6 percent). (HCUP KID2000)

End-Stage Renal Disease (ICD/10 code N18.0)

- The average incidence rates for pediatric ESRD are more than twice as high among children 15-19 years as for children 10-14 years. The rates are more than 3 times higher than those for children ages 0-4 and 5-9.
- Children with pediatric ESRD have high transplantation rates. More than 44 percent of children starting therapy received a transplant during the first year of therapy, compared with 10 percent of patients 20-64 years of age at ESRD incidence.

Cardiomyopathy (ICD/10 code I42) (ICD/9 code 425)

- Recent studies show that 36 percent of young athletes who die suddenly have probable or definite hypertrophic cardiomyopathy.
- Since 1996 the NHLBI's Pediatric Cardiomyopathy Registry has collected data on all children with newly diagnosed cardiomyopathy in New England and the Central Southwest (Texas, Oklahoma and Arkansas). The overall incidence of cardiomyopathy is
 - 1.13 cases per 100,000 in children younger than age 18.
 - 8.34 per 100,000 in children under 1 year.
 - 0.70 per 100,000 in children ages 1-18.

The annual incidence was lower in white than in black children; higher in boys than in girls; higher in New England (1.44 per 100,000) than in the Central Southwest (0.98 per 100,000).

Kawasaki Disease (ICD/10 M30.3) (ICD/9 code 446.1)

- About 80 percent of patients with Kawasaki disease are under age 5. Most are under age 2. Children older than 8 years are rarely affected.
- Up to 2,500 cases of Kawasaki disease are diagnosed yearly. It occurs more often among boys (63 percent) and among those of Asian ancestry.

Tobacco

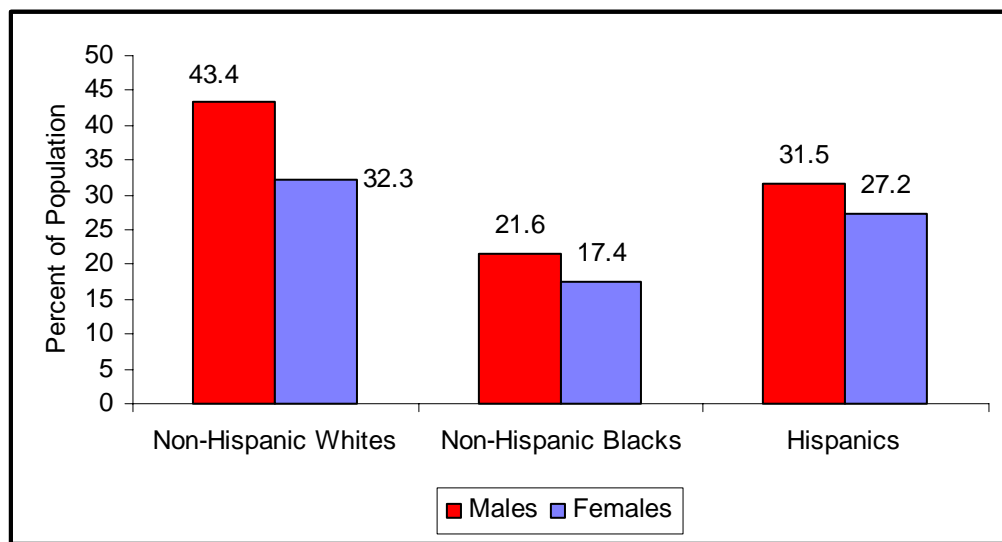
- According to a 2001 survey of students in grades 9-12,
 - 38.5 percent of males and 29.5 percent of females report current tobacco use.
 - 22.1 percent of males and 8.5 percent of females report current cigar use.
 - 14.8 percent of males and 1.9 percent of females report current smokeless tobacco use.

(YRBS, United States, 2001, *MMWR*, Vol. 51, No. SS-4, June 28, 2002, CDC/NCHS)
- In 1996 about 15 million children and adolescents under age 18 were exposed to environmental tobacco smoke in the home. (*MMWR*, Vol. 46, No. 44, Nov. 7, 1997, CDC/NCHS)
- About 80 percent of people who use tobacco begin before age 18, with the most common ages of initiation being 14 to 15. (*MMWR*, Vol. 48, No. 31, Aug. 1999, CDC/NCHS)
- From 1980 to 2002 the percentage of high school seniors who smoked in the past month decreased 12.5 percent.
 - For males it decreased 2.2 percent.
 - For females it decreased 23.7 percent.
 - For whites it decreased 0.3 percent.
 - For blacks or African Americans it decreased 55.2 percent.

(*Health, United States, 2003*, CDC/NCHS)

Prevalence of High School Students Using any Tobacco Product Within the Last 30 Days by Race/Ethnicity and Sex

YRBS, United States: 2001



Source: *MMWR*, Vol. 51, No. SS-4, June 28, 2002, CDC/NCHS.

- An estimated 3.2 million Americans tried their first cigarette in 1997; most of these new users (2.3 million) were ages 12-17.
- An estimated 1.7 million Americans began smoking cigarettes daily in 1998. More than half of these new smokers were younger than age 18. This translates to more than 4,000 new regular smokers per day, including more than 2,000 youths.

- After increasing since the early 1990s, the number of 12- to 17-year-olds initiating daily smoking dropped significantly between 1997 and 1998, from 1.1 million in 1997 to 864,000 in 1998. (National Household Survey on Drug Abuse, analyzed by CDC/NCHS and the Substance Abuse and Mental Health Services Administration)

High Blood Cholesterol and Other Lipids

- Among children and adolescents ages 4-19, the mean total blood cholesterol level is 165 mg/dL. For boys it's 163 mg/dL and for girls it's 167 mg/dL. The racial/ethnic breakdown is
 - For non-Hispanic whites, 162 mg/dL for boys and 166 mg/dL for girls.
 - For non-Hispanic blacks, 168 mg/dL for boys and 171 mg/dL for girls.
 - For Mexican Americans, 163 mg/dL for boys and 165 for girls.

(NHANES III [1988-94], CDC/NCHS)

- About 10 percent of adolescents ages 12-19 have total cholesterol levels exceeding 200 mg/dL. (NHANES III [1988-94], CDC/NCHS)
- For children and adolescents ages 12-19, mean LDL cholesterol levels are
 - Among non-Hispanic whites, 91 mg/dL for boys and 100 mg/dL for girls.
 - Among non-Hispanic blacks, 99 mg/dL for boys and 102 mg/dL for girls.
 - Among Mexican Americans, 93 mg/dL for boys and 92 mg/dL for girls.

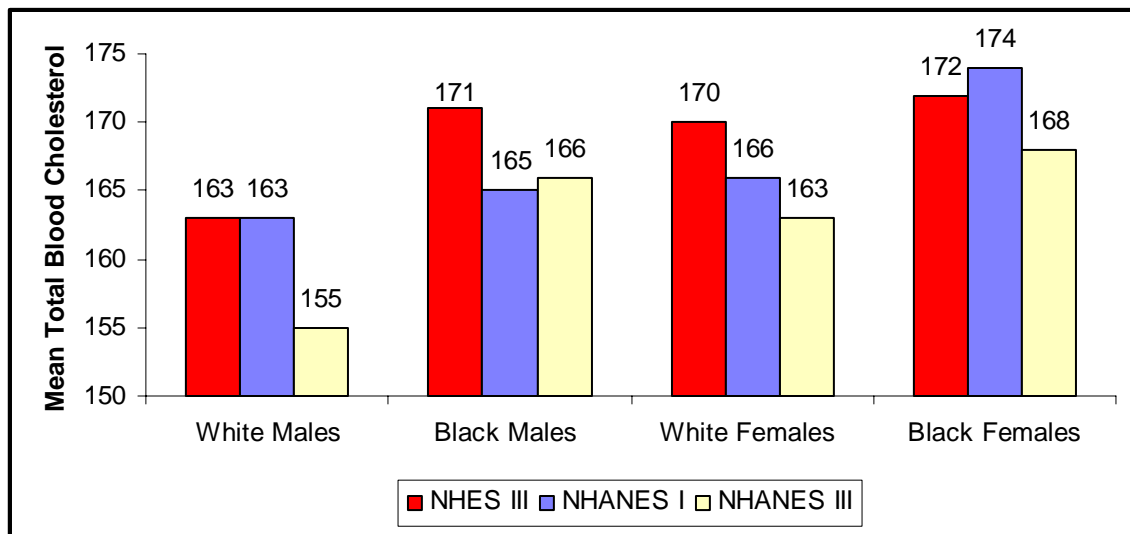
Higher LDL (bad) cholesterol levels combined with other risk factors increase the risks of heart disease, heart attack and stroke. (NHANES III [1988-94], CDC/NCHS)

- For children and adolescents ages 4-19, mean HDL cholesterol levels are
 - Among non-Hispanic whites, 48 mg/dL for boys and 50 mg/dL for girls.
 - Among non-Hispanic blacks, 55 mg/dL for boys and 56 mg/dL for girls.
 - Among Mexican Americans, 51 mg/dL for boys and 52 mg/dL for girls.

The higher a person's HDL (good) cholesterol level is, the better. (NHANES III [1988-94], CDC/NCHS)

Trends in Mean Total Blood Cholesterol Among Adolescents Ages 12-17 by Sex, Race and Survey

NHES III, NHANES I & NHANES III: 1966-70, 1971-74, 1988-94



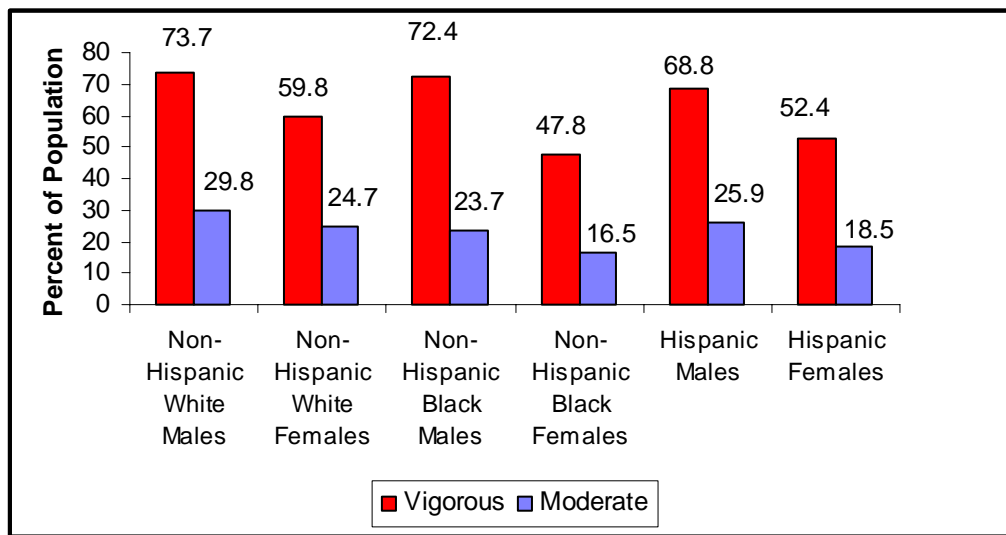
Source: CDC/NCHS. *Prev Med.* 1998;27:879-890.

Physical Inactivity

- 51.7 percent of high school students were enrolled in physical education classes in 2001, but only 32.2 percent attended classes daily. (*MMWR* Vol. 51, No. SS-4, June 28, 2002, CDC/NCHS)

Prevalence of Students in Grades 9-12 Who Participated in Sufficient Vigorous or Moderate Physical Activity During the Past 7 Days by Race/Ethnicity and Sex

YRBS, United States: 2001



Note: "Vigorous activity" is defined as activity causing sweating and hard breathing for at least 20 minutes on 3 or more of the 7 days. "Moderate activity" is defined as activities such as walking or bicycling lasting for at least 30 minutes on 5 or more of the 7 days.

Source: *MMWR*, Vol. 51, No. SS-4, June 28, 2002, CDC/NCHS.

Overweight and Obesity

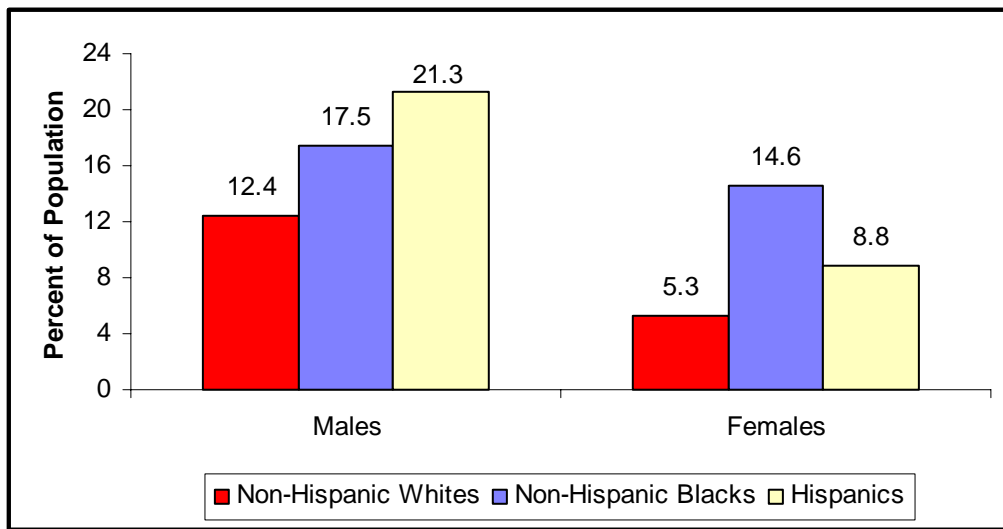
- Among American children ages 6-11, using the 95th percentile of body mass index (BMI) values on the CDC 2000 growth chart, the following are overweight:
 - For non-Hispanic whites, 11.9 percent of boys and 12.0 percent of girls.
 - For non-Hispanic blacks, 17.6 percent of boys and 22.1 percent of girls.
 - For Mexican Americans, 27.3 percent of boys and 19.6 percent of girls.

(NHANES IV [1999-2000], CDC/NCHS)
- Among American adolescents ages 12-19, using the 95th percentile of BMI values on the CDC 2000 growth chart, the following are overweight:
 - For non-Hispanic whites, 13.0 percent of boys and 12.2 percent of girls.
 - For non-Hispanic blacks, 20.5 percent of boys and 25.7 percent of girls.
 - For Mexican Americans, 27.5 percent of boys and 19.4 percent of girls.

(NHANES IV [1999-2000], CDC/NCHS)

Prevalence of Overweight Among Students in Grades 9-12 by Sex and Race/Ethnicity

YRBS, United States: 2001



Note: Overweight is defined as BMI 95th percentile or higher by age and sex of the CDC 2000 growth chart.

Source: *MMWR*, Vol. 51, No. SS-4, June 28, 2002, CDC/NCHS.

Surgery

- An estimated 197,000 cardiovascular procedures were performed on youth age 15 and younger in 2001.

Source Footnotes

AJC – *American Journal of Cardiology*
 BWIS – Baltimore-Washington Infant Study
 CDC/NCHS – Centers for Disease Control and Prevention/National Center for Health Statistics
 HCUP – Healthcare Cost and Utilization Project
 JACC – *Journal of the American College of Cardiology*
 MACDP – Metropolitan Atlanta Congenital Defects Program
 MMWR – *Morbidity and Mortality Weekly Report*
 NHANES I – National Health and Nutrition Examination Survey I
 NHANES III – National Health and Nutrition Examination Survey III
 NHANES IV – National Health and Nutrition Examination Survey IV
 NHES III – National Health Examination Survey III
 YRBS – Youth Risk Behavior Surveillance