2019 Heart Disease & Stroke Statistical Update Fact Sheet
Children & Cardiovascular Diseases*

Out-of-Hospital Cardiac Arrest

- Each year, approximately 7,037 children younger than 18 years of age experienced out of-hospital cardiac arrest (EMS assessed) based on 2016 data.
- In 2016, 13.2% of children with nontraumatic cardiac arrest treated by EMS survived to hospital discharge.
- Among children who had out-of-hospital cardiac arrest, bystander CPR rates were 61.4% in 2014.
- According to a 2016 study, the most common causes of sudden death in competitive young athletes were hypertrophic cardiomyopathy (36%), coronary artery anomalies (19%), myocarditis (7%), arrhythmogenic right ventricular cardiomyopathy (5%), coronary artery disease (4%), and commotio cordis (3%).

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

- According to studies in 2010 and 2011, an estimated minimum of 40,000 infants are expected to be affected by congenital cardiovascular defects each year in the United States. Of these, about 25%, or 2.4 per 1,000 live births, require invasive treatment in the first year of life.
- According to a 2011 study, the birth prevalence of CCDs is reported as 6.9 per 1000 live births in North America, In 2016, congenital cardiovascular defects were the most common cause of infant death resulting from birth defects; 22% of infants who died of a birth defect had a heart defect. According to 2001 and 2008 studies, hospitalization of infants with congenital heart defects was common; one third of patients with congenital heart defects required hospitalization during infancy, often in an ICU.
- In 2014, 39,000 U.S. adults and children (21,000 males; 18,000 females) diagnosed with congenital heart defects were discharged from short-stay hospitals.

Stroke in Children

- In a northern California birth group, from 1997 to 2003, the prevalence of perinatal strokes was 29 per 100,000 live births, or one per 3,500 live births.
- According to a 2015 study, diagnostic delays were more common in ischemic than hemorrhagic stroke in children. According to 2003 and 2011 studies, the most common cause of arterial ischemic stroke in children was a cerebral arteriopathy, found in more than half of all cases.
- According to 2006 and 2014 studies, despite current treatments, 1 of 10 children with ischemic or hemorrhagic stroke had a recurrence within 5 years.
- According to a 2014 study, among young adult survivors of childhood stroke, 37% had no functional deficits, 42% had mild deficits, 8% had moderate deficits, and 15% had severe deficits.

High Blood Pressure (HBP)

- In 2011 to 2012, 11.0% of children and adolescents aged 8 to 17 years had either HBP or borderline HBP. No change occurred in the prevalence of borderline HBP (7.6% versus 9.4%) or either HBP or borderline HBP (10.6% versus 11.0%) between 1999 to 2000 and 2011 to 2012.
- In 2011 to 2012, HBP was more common among boys (1.8%) than girls (1.4%) and among Hispanics (2.4%) than non–Hispanic (NH) blacks (1.9%), NH whites (1.1%), and NH Asians (1.7%). Although having either HBP or borderline HBP was more common among boys than girls, NH blacks were more likely to have either HBP or borderline HBP than Hispanic, NH white, or NH Asian boys or girls.
- In 2003 to 2010, the distribution of poor, intermediate, and ideal BP among children 8 to 11 years of age was 2.8%, 4.8%, and 92.5%, respectively, among boys and 3.5%, 5.0%, and 91.5%, respectively, among girls.

Smoking

- In 2016, for adolescents aged 12 to 17 years:
    - 5.3% used tobacco products, and 3.4% smoked cigarettes in the past month.
    - 1.4% used smokeless tobacco in the past month.
    - Of adolescents who smoked, 15% smoked cigarettes daily.
    - 1.8% were current cigar smokers and 0.5% were current pipe tobacco smokers
- In 2016, e-cigarettes were the most commonly used tobacco products in youth: in the prior 30 days, 4.3% of middle school and 11.3% of high school students endorsed use.
- According to 2014-2015 data, cigarette use in the past month for adolescents aged 12 to 17 years was 4.6% for males and 3.8% for females.
- NH white adolescents (5.4%) were more likely than Hispanic (2.7%), NH black (2.6%), NH American Indian or Alaska Native (4.8%), or NH Asian (1.1%) adolescents to report cigarette use in the past month.

High Blood Cholesterol

- According to 2013-2016 data, among children age 6 to 11 years, the mean total blood cholesterol level was 157.8 mg/dL; 157.9 mg/dL for boys and 157.7 mg/dL for girls.
- According to 2013-2016 data, among adolescents age 12 to 19 years, the mean total blood cholesterol level was 154.4 mg/dL; 151.6 mg/dL for boys and 157.5 mg/dL for girls.
- According to 2009 and 2010 studies, fewer than 1% of adolescents were eligible for pharmacological treatment on the basis of guidelines from the American Academy of Pediatrics.
- From 1999 to 2016, mean serum total cholesterol for adolescents 12 to 19 years of age decreased across all subgroups of race and sex.

Physical Activity

- In 2015, the prevalence of high school students who met aerobic activity recommendations of ≥60 minutes of PA on all 7 days of the week was 27.1% nationwide and declined from 9th (31.0%) to 12th (23.5%) grades. At each grade level, the prevalence was higher in boys than in girls.

Physical Activity (continued)

- In 2015, the prevalence of students meeting activity recommendations on ≥5 days per week was higher among NH white boys (62.0%), NH black boys (52.2%), and Hispanic boys (53.5%) than NH white girls (43.5%), NH black girls (33.4%), and Hispanic girls (33.1%).
- Based on 2003 to 2004 data, only 8% of 12- to 19-year-olds accumulated ≥60 minutes of moderate to vigorous PA on ≥5 days per week, whereas 42% of 6- to 11-year-olds achieved similar activity levels.
- Nationwide in 2015, 14.3% of high school students, 9th to 12th grade, reported that they did not participate ≥60 minutes of any kind of physical activity on any 1 of the previous 7 days. Girls were more likely than boys to report this level of inactivity (17.5% versus 11.1%).
- In 2015, the prevalence of inactivity was highest in black (25.2%) and Hispanic (19.2%) girls, followed by black boys (16.2%), white girls (14.3%), Hispanic boys (11.9%), and white boys (8.8%).
- Nationwide in 2015, 41.7% of high school students used a computer for activities other than school work (e.g., videogames or other computer games) for ≥3 hours per day on an average school day.
- In 2015, the prevalence of using computers ≥3 hours per day (for activities other than school work) was highest among NH black girls (48.4%), followed by Hispanic girls (47.4%), Hispanic boys (45.1%), NH black boys (41.2%), NH white boys (38.9%), and NH white girls (38.3%).In 2015, the prevalence of watching television ≥3 hours per day was highest among NH black girls (41.5%) and boys (37.0%), followed by Hispanic girls (29.2%) and boys (27.4%) and NH white boys (21.4%) and girls (18.8%).

Overweight and Obesity

- Between 2011 and 2014, 24.0 million children ages 2 to 19 were overweight or obese; 32.3% of boys and 32.0% of girls. Of all children, 12.3 million were obese; 16.3% of boys and 16.7% of girls.
- The prevalence of obesity was highest among Hispanic boys (21.7%) and girls (21.0%), followed by NH black girls (20.0%) and boys (17.5%), NH white girls (14.7%) and boys (14.0%), and NH Asian boys (11.4%) and girls (5.3%).

Diabetes Mellitus (DM) (ICD-9 250; ICD-10 E10 to E14)

- Approximately 193,000 people <20 years of age were diagnosed with DM in 2015.
- During 2011 to 2012, an estimated 17,900 people <20 years of age in the United States were newly diagnosed with type 1 DM, and 5300 people <20 years old were newly diagnosed with type 2 DM.
- Type 2 DM, a disease usually diagnosed in adults ≥40 years of age, is being diagnosed among people <20 years of age. Between 2001 and 2009, the prevalence of type 2 DM in youth increased by 30.5%.
- According to 2005 to 2014 data, among youths with type 2 DM, 10.4% are overweight and 79.4% are obese.
- Among US adolescents aged 12 to 19 years in 2005 to 2014, the prevalence of prediabetes was 17.7%.   Males were more likely to have prediabetes than females (22.0% versus 13.2%). Also, the prevalence of prediabetes was higher in NH blacks (21.0%) and Hispanics (22.9%) than in NH white participants (15.1%).

Healthy Diet

Based on 2011 to 2012 data, the average dietary consumption by US children and teenagers of selected foods and nutrients related to cardiometabolic health is detailed below:

- Whole Grains— <1 serving per day in all age/sex groups, with <5% of all children in different age/sex subgroups meeting guidelines of ≥3 servings/day.
- Fruit— consumption was low and decreased with age: 1.7 to 1.9 servings/day in younger boys and girls (5–9 years of age), 1.4 servings/day in adolescent boys and girls (10–14 years of age), and 0.9 to 1.3 servings/day in teenage boys and girls (15–19 years of age). The proportion meeting guidelines of ≥2 cups/day was also low and decreased with age: ≈8% to 14% in those 5 to 9 years of age, 3% to 8% in those 10 to 14 years of age, and 5% to 6% in those 15 to 19 years of age. When 100% fruit juices were included, the number of servings consumed increased by ≈50%, and proportions consuming ≥2 cups/day increased to nearly 25% of those 5 to 9 years of age, 20% of those 10 to 14 years, and 15% of those 15 to 19 years of age.
- Nonstarchy vegetable—consumption ranged from 1.1 to 1.5 servings/day, with <1.5% of children in different age/sex subgroups meeting guidelines of ≥2.5 cups/day.
- Fish and shellfish— consumption ranged between 0.3 and 1.0 servings/week in all age/sex groups. Among all ages, only 7% to 14% of youths consumed ≥2 servings/week.
- Sugar-sweetened beverages— consumption was higher in boys than girls in the 5- to 9-year-old (7.7 versus 6.0 servings (8 fl oz/serving) per week) and 10- to 14-year-old (11.6 versus 9.7 servings per week) groups, but it was higher in girls than in boys in the 15- to 19-year-old group (14 versus 12.4 servings per week). . Only about half of children 5 to 9 years of age and one quarter of boys 15 to 19 years of age consumed <4.5 servings/week.
- Sodium— consumption ranged from 3.1 to 3.5 g/d. Only 2% to 11% of children in different age and sex subgroups consumed <2.3 g/d.
- Saturated fat — consumption was ≈11% of calories in boys and girls in all age groups.
- Nuts, seeds, and beans — consumption ranged from 1.1 to 2.7 servings per week among different age and sex groups, and generally <15% of children in different age and sex subgroups consumed ≥4 servings per week.
- Processed meats — consumption ranged from 1.4 to 2.3 servings per week, and the majority of children consumed no more than 2 servings per week of processed meats.

For additional information, charts and tables, see
Heart Disease & Stroke Statistics – 2019 Update

Additional charts may be downloaded directly from
https://www.ahajournals.org/doi/10.1161/CIR.0000000000000659 or
https://www.heart.org/en/about-us/heart-and-stroke-association-statistics

Many statistics in this Fact Sheet come from unpublished tabulations compiled for this document and can be cited using the document citation listed below. The data sources used for the tabulations are listed in the full document. Additionally, some statistics come from published studies. If you are citing any of the statistics in this factsheet, please review the full Heart Disease and Stroke Statistics document to determine data sources and original citations.

The American Heart Association requests that this document be cited as follows:
Benjamin EJ, Muntner P, Alonso A, Bittencourt MS, Callaway CW, Carson AP, Chamberlain AM, Chang AR, Cheng S, Das SR, Delling FN, Djousse L,Elkind MSV, Ferguson JF, Fornage M, Jordan LC, Khan SS, Kissela BM, Knutson KL, Kwan TW, Lackland DT, Lewis TT, Lichtman JH, Longenecker CT, Loop MS, Lutsey PL, Martin SS, Matsushita K, Moran AE, Mussolino ME, O'Flaherty M, Pandey A, Perak AM, Rosamond WD, Roth GA, Sampson UKA, Satou GM, Schroeder EB, Shah SH, Spartano NL, Stokes A, Tirschwell DL, Tsao CW, Turakhia MP, VanWagner LB, Wilkins JT, Wong SS, Virani SS; on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics - 2019 update: a report from the American Heart Association [published online ahead of print January 31, 2019]. *Circulation.* doi: 10.1161/CIR.0000000000000659.

If you have questions about statistics or any points made in the 2019 Statistical Update, please contact the American Heart Association National Center, Office of Science & Medicine at statistics@heart.org. Please direct all media inquiries to News Media Relations at http://newsroom.heart.org/newsmedia/contacts.

* Due to inconsistencies in reporting, some statistics may be unreliable.
Unless otherwise noted, all statistics in this Fact Sheet pertain to the United States.