



# 2020 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 2015 data.
- In 2015, 13.2% of children with nontraumatic cardiac arrest treated by EMS survived to hospital discharge.
- Sports-related SCA accounted for 39% of SCAs among those ≤18 years of age between 2002 and 2015.

## 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.
- In 2017, congenital cardiovascular defects were the most common cause of infant death resulting from birth defects; 2.5% 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 2016, 45,000 U.S. adults and children (25,000 males; 20,000 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 2019 publications, 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.

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Unless otherwise noted, all statistics in this Fact Sheet pertain to the United States.

## High Blood Pressure (HBP) (continued)

- 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 2018:

- 27.1% of high school students used tobacco products and 8.1% smoked cigarettes in the past month, whereas 7.2% of middle school students used tobacco products and 1.8% smoked cigarettes in the past month.
- 5.9% of high school students and 1.8% of middle school students used smokeless tobacco in the past month.
- 7.6% of high school students and 1.6% of middle school students were current cigar smokers.
- In 2015 to 2017, 19.4% of high school smokers smoked cigarettes daily and 12.8% of middle school smokers smoked cigarettes daily.
- In 2018, e-cigarettes were the most commonly used tobacco products in youth: in the prior 30 days, 20.8% of high school students endorsed use.
- In 2018, NH white adolescents (9.9%) were more likely than Hispanic (7.2%) and NH black (3.2%) adolescents to report cigarette use in the past month. For cigars, in 2018, black adolescents (9.2%) reported higher use in the past month than NH white (7.8%) and Hispanic (7.3%) adolescents.

## High Blood Cholesterol

- According to 2013 to 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 males and 157.7 mg/dL for females.
- 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 males and 157.5 mg/dL for females.
- Among youth 6 to 19 years of age, the prevalence of adverse TC levels (TC  $\geq$ 200 mg/dL) in 2009 to 2016 was 7.1%.

## Physical Activity

- In 2017, the prevalence of high school students who met aerobic activity recommendations of  $\geq$ 60 minutes of PA on all 7 days of the week was 26.1% nationwide and declined from 9th (30.6%) to 12th (22.9%) grades. At each grade level, the prevalence was higher in males than in females.
- In 2017, the prevalence of students meeting activity recommendations on  $\geq$ 5 days per week was higher among NH white boys (59.4%), NH black boys (54.5%), and Hispanic boys (52.6%) than NH white girls (38.8%), NH black girls (29.9%), and Hispanic girls (36.9%).
- Based on 2003 to 2004 data, only 8% of 12- to 19-year-olds accumulated  $\geq$ 60 minutes of moderate to vigorous PA on  $\geq$ 5 days per week, whereas 42% of 6- to 11-year-olds achieved similar activity levels.
- Nationwide in 2017, 15.4% of high school students, 9th to 12th grade, reported that they did not participate  $\geq$ 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 (19.5% versus 11.0%).
- In 2015, the prevalence of inactivity was highest in black (26.6%) and Hispanic (20.0%) girls, followed by NH white girls (16.7%), NH black boys (12.7%), Hispanic boys (12.3%), and white boys (10.2%).

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## Physical Activity (continued)

- Nationwide in 2017, 43.0% of high school students used a computer for activities other than schoolwork (e.g., videogames or other computer games) for  $\geq 3$  hours per day on an average school day.
- In 2017, the prevalence of using computers  $\geq 3$  hours per day (for activities other than schoolwork) was highest among NH black boys (47.7%), followed by Hispanic girls (46.8%), NH black girls (46.7%), Hispanic boys (43.9%), NH white boys (41.7%), and NH white girls (39.6%). In 2015, the prevalence of watching television  $\geq 3$  hours per day was highest among NH black boys (37.8%) and girls (32.8%), followed by Hispanic boys (21.9%) and girls (19.5%), and NH white girls (18.4%) and boys (16.9%).

## Overweight and Obesity

- Between 2013 and 2016, 25.4 million children ages 2 to 19 were overweight or obese; 34.2% of boys and 34.3% of girls. Of all children, 13.2 million were obese; 18.1% of boys and 17.5% of girls.
- The prevalence of obesity was highest among Hispanic boys (24.3%), followed by NH black girls (23.0%), Hispanic girls (22.9%), NH black boys (17.9%), NH white boys (15.3%) and girls (14.1%), and NH Asian boys (11.9%) and girls (7.4%).

## 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 5,300 people <20 years old were newly diagnosed with type 2 DM.
- Type 2 DM, a disease usually diagnosed in adults  $\geq 40$  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 a 2010 study, among youths with type 2 DM, 10.4% were overweight and 79.4% were 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  $\geq 3$  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  $\geq 2$  cups/day was also low and decreased with age:  $\approx 8\%$  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  $\approx 50\%$ , and proportions consuming  $\geq 2$  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.

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## Healthy Diet (continued)

- 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  $\geq 2.5$  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  $\geq 2$  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.
- Consumption of sweets and bakery desserts was higher among 5- to 9-year-old and 10- to 14-year-old (6.6 to 8.3 servings per week) boys and girls and modestly lower (4.7 to 6 servings per week) among 15- to 19-year-olds. A minority of children in all age and sex subgroups consumed <2.5 servings per 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  $\approx 11\%$  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  $\geq 4$  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.
- Consumption of dietary fiber ranged from 14 to 16 g/d. Fewer than 3% of children in all age and sex subgroups consumed  $\geq 28$  g/d.

For additional information, charts and tables, see [Heart Disease & Stroke Statistics – 2020 Update](#)

Additional charts may be downloaded directly from the [online publication](#) or [www.heart.org/statistics](http://www.heart.org/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:

Virani SS, Alonso A, Benjamin EJ, Bittencourt MS, Callaway CW, Carson AP, Chamberlain AM, Chang AR, Cheng S, Delling FN, Djousse L, Elkind MSV, Ferguson JF, Fornage M, 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, Perak AM, Rosamond WD, Roth GA, Sampson UKA, Satou GM, Schroeder EB, Shah SH, Shay CM, Spartano NL, Stokes A, Tirschwell DL, VanWagner LB, Tsao CW; on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics— 2020 update: a report from the American Heart Association. *Circulation*. 2020;141:e1–e458. doi: 10.1161/CIR.0000000000000757

If you have questions about statistics or any points made in the 2020 Statistical Update, please contact the American Heart Association National Center, Office of Science & Medicine at [statistics@heart.org](mailto:statistics@heart.org). Please direct all media inquiries to News Media Relations at <http://newsroom.heart.org/newsmedia/contacts>.

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