Supplementary Online Content

Hardy ST, Sahuja S, Jaeger BC, et al. Trends in blood pressure and hypertension among US children and adolescents, 1999-2018. JAMA Netw Open. 2021;4(4):e213917. doi:10.1001/jamanetworkopen.2021.3917

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This supplementary material has been provided by the authors to give readers additional information about their work.
**eTable 1. Definition of Normal Blood Pressure, Elevated Blood Pressure, and Hypertension**

| Blood pressure category                          | Children age 8 to 12 years                      | Children and adolescents age 13 to 17 years |
|--------------------------------------------------|------------------------------------------------|--------------------------------------------|
| Normal blood pressure                            | SBP and DBP < 90<sup>th</sup> percentile†       | SBP < 120 mm Hg and DBP < 80 mm Hg        |
| Elevated blood pressure§                          | SBP and/or DBP ≥ 90<sup>th</sup> to < 95<sup>th</sup> percentile or SBP ≥ 120 mm Hg and DBP < 80 mm Hg to the 95<sup>th</sup> percentile (whichever is lower) | SBP 120 to 129 mm Hg and DBP < 80 mm Hg |
| Hypertension§                                     | SBP and/or DBP ≥ 95<sup>th</sup> percentile or SBP ≥ 130 mm Hg and/or DBP ≥ 80 mm Hg | SBP ≥ 130 mm Hg and/or DBP ≥ 80 mm Hg    |

BP: blood pressure, SBP: systolic blood pressure, DBP: diastolic blood pressure

*Definitions were obtained from the 2017 American Academy of Pediatrics Clinical Practice Guideline

†Percentiles were determined using age-, sex-, and height-specific percentile tables from the 2017 American Academy of Pediatrics Clinical Practice Guideline.

§High blood pressure was defined as having either elevated blood pressure or hypertension.
### Table 2. Age-Adjusted Mean Systolic and Diastolic Blood Pressure Among US Children and Adolescents, Aged 8-12 and 13-17 Years, From 1999-2002 to 2015-2018

|                               | NHANES Years | 1999-2002 | 2003-2006 | 2007-2010 | 2011-2014 | 2015-2018 | P trend \^ | P interaction |
|-------------------------------|--------------|-----------|-----------|-----------|-----------|-----------|------------|--------------|
| **Age 8-12 Years**            |              |           |           |           |           |           |            |              |
| **Age-Adjusted Mean Systolic Blood Pressure, mm Hg (95% confidence interval)** |              |           |           |           |           |           |            |              |
| Overall                       | 102.4 (101.7-103.1) | 103.3 (102.4-104.1) | 102.5 (101.4-103.2) | 101.5 (100.8-102.2) | 102.5 (101.9-103.2) | 0.21 | 0.88 |              |
| **Sex**                       |              |           |           |           |           |           |            |              |
| Female                        | 101.7 (100.9-102.5) | 102.9 (101.7-104.1) | 102.1 (100.9-103.3) | 100.9 (100.1-101.6) | 102.1 (101.2-102.9) | 0.37 |              |              |
| Male                          | 102.9 (101.9-103.9) | 103.5 (102.6-104.5) | 102.5 (101.6-103.4) | 102.1 (101.3-102.9) | 102.9 (101.3-103.5) | 0.26 |              |              |
| **Race**                      |              |           |           |           |           |           | 0.89       |              |
| Non-Hispanic White            | 101.9 (101.0-102.8) | 103.1 (101.9-104.3) | 102.6 (101.5-103.7) | 101.2 (100.2-102.1) | 102.1 (101.1-103.0) | 0.37 |              |              |
| Non-Hispanic Black            | 103.4 (102.6-104.2) | 103.7 (102.5-105.0) | 103.1 (102.0-104.2) | 102.6 (101.5-103.6) | 103.0 (101.9-104.1) | 0.28 |              |              |
| Hispanic                      | 102.7 (101.5-103.9) | 103.7 (102.7-104.8) | 101.5 (100.1-103.0) | 101.5 (100.6-102.4) | 102.9 (101.9-103.9) | 0.53 |              |              |
| Non-Hispanic Asian \^         | -            | -         | -         | -         | 100.9 (99.3-102.4) | 103.0 (100.8-105.2) | 0.14 |              |              |
| Non-Hispanic other            | 104.2 (102.1-106.3) | 101.7 (99.1-104.4) | 101.4 (99.4-103.6) | 102.6 (100.9-104.4) | 102.1 (100.4-103.8) | 0.48 |              |              |
| **Body mass index\^**         |              |           |           |           |           |           | 0.87       |              |
| Normal                        | 100.7 (100.0-101.4) | 101.5 (100.6-102.5) | 100.6 (99.7-101.4) | 99.9 (99.1-100.7) | 100.7 (100.0-101.5) | 0.26 |              |              |
| Overweight                    | 105.6 (104.5-106.6) | 104.0 (102.4-105.6) | 104.1 (102.6-105.7) | 102.4 (101.3-103.5) | 103.8 (102.4-105.2) | 0.01 |              |              |
| Obese                         | 106.9 (105.2-108.5) | 108.8 (107.6-110.1) | 106.9 (105.8-108.1) | 107.5 (105.4-108.2) | 107.5 (106.7-108.4) | 0.75 |              |              |
| **Poverty-to-income ratio\^**  |              |           |           |           |           |           | 0.40       |              |
| <1.30                         | 102.8 (101.6-103.9) | 103.6 (102.6-104.7) | 102.5 (101.6-103.4) | 101.9 (100.9-102.9) | 103.3 (102.4-104.2) | 0.78 |              |              |
| 1.30-3.49                     | 102.2 (101.4-103.1) | 103.9 (102.7-105.0) | 102.7 (101.7-103.7) | 102.0 (101.1-102.9) | 103.0 (102.2-103.9) | 0.75 |              |              |
| ≥3.50                         | 101.6 (100.4-102.8) | 102.1 (100.8-103.4) | 102.2 (100.9-103.4) | 100.7 (99.4-102.1) | 100.9 (99.4-102.5) | 0.22 |              |              |
| **Age-Adjusted Mean Diastolic Blood Pressure, mm Hg (95% confidence interval)** |              |           |           |           |           |           |            |              |
| Overall                       | 57.2 (56.5-58.0) | 54.3 (53.2-55.5) | 53.0 (51.6-54.4) | 51.9 (50.1-53.7) | 53.2 (52.2-54.1) | <0.001 |              |              |
| **Sex**                       |              |           |           |           |           |           | 0.06       |              |
| Female                        | 57.4 (56.5-58.2) | 54.5 (53.2-55.9) | 54.3 (52.8-55.8) | 53.1 (51.2-55.0) | 54.0 (52.6-55.4) | <0.001 |              |              |
| Male                          | 57.1 (56.1-58.1) | 54.2 (52.9-55.5) | 51.7 (50.1-53.2) | 50.7 (48.7-52.8) | 52.4 (51.2-53.7) | <0.001 |              |              |
| **Race**                      |              |           |           |           |           |           | 0.96       |              |
| Non-Hispanic White            | 57.0 (55.9-58.1) | 53.9 (52.3-55.6) | 53.1 (51.2-54.9) | 52.8 (50.3-55.4) | 52.5 (51.2-53.8) | <0.001 |              |              |
| Non-Hispanic Black            | 57.4 (55.8-59.0) | 54.9 (53.6-56.3) | 54.1 (51.8-56.3) | 50.4 (48.3-52.5) | 54.5 (52.4-56.6) | 0.001 |              |              |
| Hispanic                      | 57.5 (56.3-58.7) | 55.1 (53.9-56.3) | 52.4 (51.0-53.7) | 50.3 (48.2-52.5) | 53.2 (51.9-54.4) | <0.001 |              |              |
| Non-Hispanic Asian            | -            | -         | -         | -         | 52.2 (50.2-54.2) | 55.0 (53.1-57.0) | 0.06 |              |              |
| Non-Hispanic other            | 59.6 (55.9-63.3) | 53.9 (51.6-56.3) | 52.3 (48.6-56.3) | 52.3 (48.7-55.9) | 54.3 (50.8-57.7) | 0.10 |              |              |
| **Body mass index**           |              |           |           |           |           |           | 0.15       |              |
| Normal                        | 56.6 (55.6-57.5) | 54.1 (52.9-55.4) | 51.4 (49.8-53.1) | 51.2 (49.5-52.9) | 52.0 (50.7-53.3) | <0.001 |              |              |

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| Race                  | Overweight | Obese | Body mass index |
|-----------------------|------------|-------|-----------------|
|                       | Overall    | Sex   |                 |
|                       |            | Female| Male            |
|                       |            |       | Normal          |
|                       |            |       | Overweight      |
|                       |            |       | Obese           |
|                       |            |       |                 |
| Poverty-to-income ratio | <1.30      | 1.30-3.49 | ≥3.50 |
|                       | 57.5 (56.4-58.6) | 53.8 (52.0-55.7) | 53.6 (52.1-55.0) | 51.2 (48.8-53.5) | 53.6 (52.2-54.9) | <0.001 |
|                       | 57.0 (55.7-58.3) | 54.5 (53.4-55.6) | 52.9 (50.5-55.3) | 52.3 (50.5-54.0) | 53.5 (52.0-55.0) | <0.001 |
|                       | 57.2 (55.8-58.6) | 54.3 (52.2-56.4) | 52.6 (51.0-54.3) | 52.8 (50.1-55.6) | 52.5 (50.4-54.5) | <0.001 |
| Age 13-17 Years       | Overall    |       |                 |
|                       | 109.2 (108.7-109.7) | 109.7 (108.9-110.4) | 108.5 (107.7-109.3) | 108.4 (107.8-109.1) | 108.4 (107.8-109.1) | 0.007 |
|                       |            |       |                 |
|                       |            |       | Normal          |
|                       |            |       | Overweight      |
|                       |            |       | Obese           |
|                       |            |       |                 |
|                       |            |       | Poverty-to-income ratio | <1.30 | 1.30-3.49 | ≥3.50 |
|                       | 108.5 (108.7-109.3) | 109.8 (108.7-110.8) | 108.3 (107.2-109.4) | 107.9 (107.0-108.8) | 107.6 (106.7-108.6) | 0.007 |
|                       | 111.7 (110.9-112.5) | 112.0 (111.1-112.9) | 111.1 (110.1-112.1) | 111.1 (110.1-112.0) | 110.9 (109.8-111.9) | 0.06 |
|                       |            |       |                 |
|                       |            |       | Normal          |
|                       |            |       | Overweight      |
|                       |            |       | Obese           |
|                       |            |       |                 |
|                       |            |       | Poverty-to-income ratio | <1.30 | 1.30-3.49 | ≥3.50 |
|                       | 108.6 (108.7-109.5) | 109.4 (108.3-110.2) | 108.1 (107.0-109.1) | 108.8 (107.5-110.0) | 108.9 (107.7-110.1) | 0.42 |
|                       |            |       |                 |
|                       |            |       | Normal          |
|                       |            |       | Overweight      |
|                       |            |       | Obese           |
|                       |            |       |                 |
|                       |            |       | Poverty-to-income ratio | <1.30 | 1.30-3.49 | ≥3.50 |
|                       | 108.6 (108.7-109.5) | 109.4 (108.2-110.5) | 108.0 (106.5-109.5) | 107.6 (106.2-109.1) | 107.1 (106.1-108.2) | 0.008 |

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| Body mass index          | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | P value for trend in age-adjusted blood pressure levels across survey years. |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------------------------------------------------------------|
| Normal                   | 62.8 (61.7-64.0) | 60.0 (59.2-60.9) | 59.8 (58.4-61.3) | 59.4 (58.0-60.8) | 60.9 (59.8-62.0) | 0.02 |
| Overweight               | 61.4 (60.2-62.7) | 57.8 (56.2-59.4) | 58.6 (56.2-60.9) | 58.3 (56.2-60.5) | 59.6 (57.9-61.3) | 0.38 |
| Obese                    | 61.5 (59.9-63.1) | 59.8 (58.3-61.3) | 60.6 (58.5-62.8) | 61.0 (58.5-63.1) | 61.1 (59.2-62.9) | 0.78 |
| Poverty-to-income ratio   |        |        |        |        |        |        |        |        |        |        |        |                                                                                 |
| <1.30                    | 61.9 (60.2-63.4) | 59.4 (58.4-60.4) | 59.4 (57.7-61.1) | 58.5 (56.7-60.2) | 60.3 (58.9-61.6) | 0.08 |
| 1.30–3.49                | 62.9 (61.7-64.1) | 58.8 (57.7-59.9) | 59.6 (58.1-61.1) | 59.7 (57.5-61.9) | 61.2 (59.9-62.6) | 0.59 |
| ≥3.50                    | 62.9 (62.0-63.7) | 60.7 (59.5-61.8) | 60.3 (58.1-62.5) | 60.3 (58.6-62.1) | 60.7 (59.2-62.1) | 0.04 |

NHANES: National Health and Nutrition Examination Survey

* P value for trend in age-adjusted blood pressure levels across survey years.
† Non-Hispanic Asians were not presented in 1999-2002, 2003-2006, and 2007-2010 due to small sample sizes.
‡ Body mass index was categorized as normal (body mass index 5th percentile to < 85th percentile), overweight (body mass index 85th percentile to < 95th percentile) and obese (body mass index ≥ 95th percentile) based on age- and sex-specific growth charts developed by the Centers for Disease Control and Prevention in 2000. Due to a small sample size, children with a body mass index < 5th percentile are not presented.
§ A poverty-to-income ratio < 1.30 indicates that the family income was below 130% of the poverty level.
Age-adjustment was performed using direct standardization with the standard being US children and adolescents across the entire time period from 1999 to 2018.
eTable 3. Systolic and Diastolic Blood Pressure Percentiles Among US Children and Adolescents, Aged 8-12 and 13-17 Years, From 1999-2002 to 2015-2018

|                      | NHANES Years                  | P trend* |
|----------------------|-------------------------------|----------|
|                      | 1999-2002                     | 2003-2006| 2007-2010| 2011-2014| 2015-2018 |          |
| **Systolic Blood Pressure, mm Hg** |                               |          |          |          |          |          |
| 5th percentile       | 88.0 (86.7, 89.3)              | 88.7 (87.6, 89.7) | 88.0 (86.4, 89.6) | 88.7 (87.7, 89.6) | 88.7 (87.4, 89.9) | 0.31     |
| 15th percentile      | 93.3 (92.1, 94.6)              | 93.3 (92.4, 94.3) | 93.0 (91.7, 94.3) | 92.7 (92.0, 93.3) | 94.0 (93.4, 94.6) | 0.73     |
| 25th percentile      | 96.7 (95.7, 97.6)              | 96.7 (95.4, 97.9) | 96.0 (95.0, 97.0) | 95.3 (94.4, 96.3) | 96.7 (96.0, 97.3) | 0.56     |
| 50th percentile      | 102.0 (101.4, 102.6)           | 102.0 (101.0, 103.0) | 102.0 (101.0, 103.0) | 100.7 (100.0, 101.3) | 102.0 (101.4, 102.6) | 0.56     |
| 75th percentile      | 107.3 (106.4, 108.3)           | 110.0 (108.7, 111.3) | 108.0 (107.0, 109.0) | 107.3 (106.2, 108.4) | 108.0 (107.4, 108.6) | 0.76     |
| 85th percentile      | 111.3 (110.0, 112.6)           | 113.3 (112.1, 114.6) | 112.0 (111.0, 113.0) | 111.3 (110.4, 112.3) | 111.3 (110.4, 112.3) | 0.55     |
| 95th percentile      | 117.8 (116.2, 119.3)           | 119.3 (117.8, 120.7) | 118.7 (116.4, 120.9) | 117.3 (116.4, 118.3) | 117.3 (116.1, 118.6) | 0.37     |
| **Diastolic Blood Pressure, mm Hg** |                               |          |          |          |          |          |
| 5th percentile       | 38.0 (34.8, 41.2)              | 34.0 (31.4, 36.6) | 28.5 (23.4, 33.7) | 23.3 (19.2, 27.5) | 28.7 (25.5, 31.9) | 0.09     |
| 15th percentile      | 46.7 (45.7, 47.6)              | 42.7 (41.4, 43.9) | 40.7 (39.1, 42.3) | 38.7 (34.8, 42.5) | 42.0 (40.1, 43.9) | 0.18     |
| 25th percentile      | 50.7 (49.7, 51.6)              | 47.3 (45.6, 49.0) | 46.0 (44.4, 47.6) | 44.7 (42.7, 46.6) | 46.7 (45.4, 47.9) | 0.14     |
| 50th percentile      | 58.0 (57.0, 59.0)              | 55.3 (54.4, 56.3) | 54.0 (52.4, 55.6) | 54.0 (52.1, 55.9) | 54.7 (53.7, 55.6) | 0.13     |
| 75th percentile      | 65.3 (64.7, 66.0)              | 62.0 (61.0, 63.0) | 62.0 (60.6, 63.4) | 61.3 (59.4, 63.3) | 62.0 (60.8, 63.2) | 0.16     |
| 85th percentile      | 68.0 (67.0, 69.0)              | 66.0 (65.0, 67.0) | 66.0 (64.9, 67.1) | 65.3 (63.4, 67.3) | 66.0 (65.0, 67.0) | 0.16     |
| 95th percentile      | 73.3 (72.7, 74.0)              | 71.3 (69.7, 73.0) | 72.0 (70.7, 73.3) | 71.3 (69.1, 73.6) | 72.0 (70.4, 73.6) | 0.37     |

|                      | 2002-2015                     | 2016-2018 | 2018                          | P trend* |
|----------------------|-------------------------------|-----------|-------------------------------|----------|
| **Systolic Blood Pressure, mm Hg** |                               |           |                               |          |
| 5th percentile       | 116.0 (115.1, 116.9)           | 114.7 (113.4, 115.9) | 114.7 (113.7, 115.6) | 0.06     |
| 15th percentile      | 119.3 (118.7, 120.0)           | 118.7 (118.0, 119.3) | 118.0 (116.7, 119.3) | 0.01     |
| 25th percentile      | 126.7 (125.4, 127.9)           | 127.3 (125.1, 129.5) | 126.0 (124.1, 127.9) | 0.07     |
| **Diastolic Blood Pressure, mm Hg** |                               |           |                               |          |
| 5th percentile       | 45.0 (42.4, 47.5)              | 41.3 (39.7, 42.9) | 40.7 (35.2, 46.2) | 39.3 (35.6, 43.0) | 43.3 (41.2, 45.4) | 0.53     |
| 15th percentile      | 52.0 (51.0, 53.0)              | 49.0 (48.0, 50.0) | 50.0 (48.4, 51.6) | 48.7 (46.7, 50.6) | 50.0 (48.7, 51.3) | 0.36     |
| 25th percentile      | 56.0 (54.7, 57.3)              | 53.3 (52.4, 54.3) | 54.0 (52.1, 55.9) | 53.3 (51.8, 54.9) | 54.7 (53.4, 55.9) | 0.53     |
| 50th percentile      | 63.3 (62.4, 64.3)              | 60.0 (59.4, 60.6) | 60.7 (59.4, 61.9) | 60.7 (59.1, 62.3) | 62.0 (61.0, 63.0) | 0.70     |
| 75th percentile      | 70.0 (69.4, 70.6)              | 67.3 (66.4, 68.3) | 67.1 (65.9, 68.4) | 67.3 (65.9, 68.7) | 68.0 (67.0, 69.0) | 0.35     |
| 85th percentile      | 73.3 (72.4, 74.3)              | 71.3 (70.4, 72.3) | 70.0 (68.4, 71.6) | 71.3 (70.4, 72.3) | 71.3 (70.7, 72.0) | 0.36     |

*P trend: p < 0.05.
| 95th percentile | 78.0 (76.7, 79.3) | 76.0 (75.4, 76.6) | 76.7 (75.4, 77.9) | 76.0 (75.0, 77.0) | 75.3 (74.4, 76.3) | 0.08 |
|-----------------|------------------|------------------|------------------|------------------|------------------|-----|

Age-adjustment was performed using direct standardization with the standard being US children and adolescents across the entire time period from 1999 to 2018.
### eTable 4. Age-Adjusted Prevalence of Normal Blood Pressure, Elevated Blood Pressure and Hypertension Among US Children and Adolescents, Aged 8-12 and 13-17 Years, From 1999-2002 to 2015-2018

| NHANES Years | 1999-2002 | 2003-2006 | 2007-2010 | 2011-2014 | 2015-2018 | P trend* | P interaction |
|--------------|-----------|-----------|-----------|-----------|-----------|----------|--------------|
| **Age 8-12 Years** | | | | | | | |
| **Age-Adjusted Normal Blood Pressure, Percent (95% Confidence Interval)** | | | | | | | |
| Overall | 87.8 (85.1-90.5) | 86.5 (83.6-89.4) | 88.5 (85.9-91.1) | 91.0 (89.4-92.6) | 89.9 (88.0-91.7) | 0.02 | 0.19 |
| **Sex** | | | | | | | |
| Female | 90.0 (87.4-92.6) | 87.8 (84.2-91.4) | 87.9 (84.0-91.7) | 92.1 (90.1-94.1) | 89.8 (87.1-92.6) | 0.35 | |
| Male | 86.0 (82.5-89.6) | 85.4 (81.7-89.1) | 89.1 (86.4-91.7) | 90.0 (87.6-92.4) | 89.8 (87.5-92.1) | 0.01 | |
| **Race** | | | | | | | |
| Non-Hispanic White | 88.8 (85.4-92.2) | 86.5 (81.9-91.0) | 88.4 (85.0-91.7) | 91.0 (88.6-93.4) | 90.2 (87.6-92.9) | 0.17 | 0.50 |
| Non-Hispanic Black | 86.5 (82.5-90.4) | 86.5 (82.9-90.0) | 88.7 (85.2-92.1) | 90.9 (88.6-93.3) | 90.1 (86.2-94.0) | 0.07 | |
| Hispanic | 86.3 (81.4-91.3) | 86.0 (82.2-89.8) | 88.8 (84.3-93.3) | 91.2 (88.6-93.8) | 88.6 (85.3-91.8) | 0.17 | |
| Non-Hispanic Asian† | . | . | . | 94.3 (90.7-97.9) | 90.5 (84.9-96.1) | 0.28 | |
| Non-Hispanic other | 83.8 (73.6-94.0) | 89.2 (80.1-98.3) | 88.0 (80.4-95.7) | 87.0 (80.6-93.4) | 93.4 (89.0-97.9) | 0.24 | |
| **Body mass index‡** | | | | | | | |
| Normal | 91.3 (88.7-93.9) | 89.1 (84.9-93.3) | 91.4 (89.0-93.8) | 94.4 (92.7-96.1) | 93.3 (91.9-94.7) | 0.01 | 0.61 |
| Overweight | 83.6 (78.0-89.3) | 90.4 (86.0-94.8) | 87.3 (83.1-91.5) | 89.7 (86.3-93.0) | 86.8 (82.0-91.6) | 0.46 | |
| Obese | 76.4 (70.0-82.7) | 73.7 (67.9-79.6) | 81.1 (77.8-86.3) | 81.2 (76.0-86.4) | 80.9 (77.1-84.7) | 0.08 | |
| **Poverty-to-income ratio§** | | | | | | | |
| <1.30 | 87.8 (83.0-92.5) | 85.8 (82.5-89.0) | 86.8 (83.5-89.0) | 89.9 (87.0-92.8) | 87.5 (84.8-90.2) | 0.63 | 0.51 |
| 1.30-3.49 | 85.4 (81.8-89.0) | 85.1 (80.2-90.1) | 89.6 (85.9-93.4) | 90.8 (87.2-94.4) | 87.7 (85.0-90.3) | 0.07 | |
| ≥3.50 | 92.1 (88.9-95.2) | 89.0 (83.3-94.7) | 88.3 (84.3-92.2) | 93.0 (90.1-96.0) | 93.4 (90.2-96.6) | 0.28 | |
| **Age-Adjusted Elevated Blood Pressure, Percent (95% Confidence Interval)** | | | | | | | |
| Overall | 7.0 (5.4-8.6) | 7.3 (5.6-9.0) | 6.5 (4.7-8.3) | 4.3 (3.0-5.6) | 5.5 (3.9-7.0) | 0.02 | 0.73 |
| **Sex** | | | | | | | |
| Female | 6.0 (4.2-7.8) | 6.4 (3.6-9.1) | 6.3 (3.7-8.9) | 3.3 (1.9-4.7) | 5.4 (3.3-7.6) | 0.18 | |
| Male | 7.8 (5.6-9.9) | 8.0 (5.6-10.5) | 6.9 (5.0-8.7) | 5.2 (3.4-7.0) | 5.7 (4.0-7.4) | 0.03 | |
| **Race** | | | | | | | |
| Non-Hispanic White | 6.6 (4.3-8.9) | 7.9 (5.2-10.5) | 6.6 (4.2-9.0) | 4.1 (1.9-6.2) | 5.3 (2.5-8.0) | 0.14 | 0.56 |
| Non-Hispanic Black | 7.9 (5.5-10.3) | 6.6 (3.9-9.2) | 5.4 (3.2-7.6) | 6.1 (4.1-8.0) | 5.5 (3.3-7.8) | 0.29 | |
| Hispanic | 6.9 (3.7-10.2) | 7.6 (4.6-10.6) | 6.4 (3.2-9.6) | 4.8 (3.2-6.4) | 6.5 (4.2-8.8) | 0.44 | |
| Non-Hispanic Asian | . | . | . | 0.9 (-0.3-2.2) | 4.4 (0.2-8.6) | 0.06 | |
| Non-Hispanic other | 10.8 (2.8-18.9) | 4.4 (-0.1-9.0) | 8.6 (2.3-14.9) | 2.1 (-0.1-4.3) | 2.4 (-0.01-4.8) | 0.08 | |
| **Body mass index** | | | | | | | |

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| Race            | Sex       | Age  | Poverty-to-income ratio | Normal | Overweight | Obese  | Adjusted Normal Blood Pressure, Percent (95% Confidence Interval) | Adjusted Hypertension, Percent (95% Confidence Interval) |
|-----------------|-----------|------|-------------------------|--------|------------|--------|---------------------------------------------------------------------|-----------------------------------------------------------|
| Non-Hispanic White | Female    | 13   | <1.30                   | 4.6    | 5.7        | 6.7    | 4.9 (3.2-6.7)                                                       | 4.5 (2.8-6.3)                                              |
| Non-Hispanic Black | Male      | 13   | <1.30                   | 5.6    | 7.0        | 8.7    | 5.0 (3.2-7.2)                                                       | 7.2 (4.7-9.6)                                              |
| Hispanic        |           |      | ≥3.50                   | 6.7    | 7.0        | 8.7    | 4.0 (2.2-5.8)                                                       | 4.9 (3.1-6.7)                                              |
| Non-Hispanic Asian |          |      |                         | .      | .          | 4.7    | 4.1 (1.6-7.8)                                                       | .                                                          |
| Non-Hispanic other |          |      |                         | 5.4    | 6.3        | 4.7    | 3.4 (0.3-7.0)                                                       | 10.9 (4.4-17.0)                                           |
| Body mass index |           |      |                         | 3.5    | 4.6        | 5.1    | 3.5 (1.9-5.1)                                                       | 3.2 (2.0-4.5)                                              |
| Normal          |           |      |                         | 5.1    | 6.4        | 8.2    | 3.5 (1.8-5.1)                                                       | 3.2 (2.0-4.5)                                              |
| Overweight      |           |      | ≥3.50                   | 12.8   | 13.8       | 9.2    | 4.6 (3.2-5.6)                                                       | 4.9 (1.1-8.7)                                              |
| Obese           |           |      |                         | 12.8   | 13.8       | 9.2    | 8.2 (5.1-11.2)                                                      | 9.7 (6.7-12.7)                                             |
| Poverty-to-income ratio |       |      | <1.30                   | 5.9    | 6.7        | 7.9    | 5.9 (2.4-9.5)                                                       | 4.9 (2.8-7.0)                                              |
| 1.30–3.49       |           |      |                         | 5.6    | 7.4        | 4.5    | 5.6 (3.6-7.7)                                                       | 5.4 (3.4-7.4)                                              |
| ≥3.50           |           |      |                         | 2.9    | 4.0        | 3.1    | 2.9 (1.3-4.6)                                                       | 1.0 (0.3-3.0)                                              |
| Age 13-17 Years |           |      |                         | 77.5   | 78.1       | 79.1   | 78.1 (74.8-81.5)                                                    | 79.1 (75.6-82.6)                                           |
| Age-Adjusted Normal Blood Pressure, Percent (95% Confidence Interval) |       |      |                         | 80.5   | 80.5       | 80.5   | 80.5 (76.0-85.1)                                                    | 80.5 (76.0-85.1)                                           |
| Non-Hispanic White |         |      |                         | 84.9   | 83.8       | 86.6   | 84.9 (82.1-87.6)                                                    | 86.6 (83.1-90.2)                                           |
| Non-Hispanic Black |         |      |                         | 78.5   | 79.6       | 86.3   | 78.5 (74.8-82.2)                                                    | 86.3 (83.1-90.2)                                           |
| Hispanic        |           |      |                         | 85.8   | 85.1       | 84.7   | 85.8 (82.6-89.0)                                                    | 84.7 (80.6-88.9)                                           |
| Non-Hispanic Asian |         |      |                         | .      | .          | 90.3   | 90.3 (86.0-94.6)                                                    | 91.6 (86.7-96.5)                                           |

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| Overall Age | Non-Hispanic other | 81.6 (70.8-92.5) | 92.5 (89.3-95.7) | 87.4 (77.7-97.2) | 87.9 (79.3-96.5) | 85.8 (79.9-91.7) | 0.75 |
| Sex | Normal | 88.1 (85.7-90.4) | 87.6 (84.3-90.9) | 90.6 (88.3-92.9) | 90.9 (88.5-93.3) | 93.3 (91.5-95.1) | <0.001 |
| | Overweight | 81.4 (75.9-86.9) | 82.9 (79.2-86.9) | 80.6 (74.2-87.0) | 83.6 (77.6-89.7) | 86.0 (80.8-91.2) | 0.31 |
| | Obese | 65.0 (60.3-69.7) | 69.1 (62.8-75.4) | 74.0 (69.1-78.9) | 79.7 (75.1-84.4) | 73.5 (68.0-79.1) | 0.007 |
| Poverty-to-income ratio | <1.30 | 83.5 (79.9-87.1) | 86.6 (83.7-89.6) | 86.6 (83.7-89.5) | 86.4 (82.9-89.8) | 86.2 (83.4-89.0) | 0.31 |
| | 1.30-3.49 | 84.3 (81.5-87.1) | 82.5 (79.5-85.6) | 87.0 (83.7-90.2) | 87.6 (84.7-90.6) | 86.3 (82.6-90.0) | 0.08 |
| | ≥3.50 | 84.1 (81.2-87.1) | 83.7 (79.8-87.7) | 85.2 (80.9-89.6) | 87.6 (82.7-92.6) | 90.9 (88.1-93.8) | 0.003 |
| Age-Adjusted Elevated Blood Pressure, Percent (95% Confidence Interval) | Overall | 9.5 (8.0-11.0) | 10.7 (8.9-12.4) | 9.5 (7.5-11.4) | 9.9 (7.8-11.9) | 8.4 (6.7-10.1) | 0.23 |
| | Sex | Female | 5.3 (3.7-6.9) | 6.4 (4.6-8.2) | 4.9 (3.2-6.6) | 4.7 (2.7-6.8) | 5.7 (3.4-8.0) | 0.75 |
| | Male | 13.8 (11.4-16.1) | 14.8 (12.1-17.5) | 14.0 (10.8-17.2) | 15.4 (11.6-19.3) | 11.3 (8.7-13.9) | 0.24 |
| Race | Non-Hispanic White | 9.2 (7.0-11.3) | 10.1 (7.9-12.2) | 8.4 (6.1-10.8) | 8.4 (5.2-11.6) | 7.3 (4.7-9.9) | 0.16 |
| | Non-Hispanic Black | 12.4 (9.5-15.3) | 14.5 (11.9-17.1) | 13.2 (9.4-16.9) | 13.3 (10.5-16.0) | 13.5 (8.9-18.0) | 0.94 |
| | Hispanic | 9.2 (6.5-11.9) | 11.5 (8.5-14.4) | 9.5 (6.8-12.1) | 12.4 (8.8-16.2) | 7.7 (5.5-9.8) | 0.56 |
| | Non-Hispanic Asian | 5.9 (3.1-10.2) | 5.5 (2.0-8.9) | 5.5 (2.0-8.9) | 6.6 (3.1-10.2) | 5.5 (2.0-8.9) | 0.64 |
| | Non-Hispanic other | 7.1 (3.6-11.0) | 4.9 (0.2-9.5) | 11.8 (2.1-21.4) | 7.6 (0.9-14.4) | 11.0 (4.0-18.1) | 0.18 |
| Body mass index | Normal | 7.1 (5.8-8.3) | 8.2 (6.0-10.4) | 6.2 (4.2-8.3) | 7.3 (5.0-9.5) | 5.8 (4.0-7.5) | 0.22 |
| | Overweight | 14.0 (9.6-18.3) | 10.0 (6.8-13.2) | 13.3 (7.4-19.1) | 14.4 (8.7-20.2) | 9.4 (4.9-13.9) | 0.52 |
| | Obese | 17.8 (14.1-21.6) | 21.5 (15.7-27.4) | 17.0 (11.7-22.4) | 15.0 (10.3-19.7) | 15.7 (11.3-20.0) | 0.14 |
| Poverty-to-income ratio | <1.30 | 11.0 (8.0-14.0) | 9.9 (7.6-12.2) | 9.7 (7.4-12.1) | 10.5 (7.4-13.3) | 10.5 (8.1-12.9) | 0.93 |
| | 1.30-3.49 | 9.4 (7.0-11.8) | 11.4 (8.7-14.1) | 7.8 (5.2-10.4) | 10.8 (7.7-13.8) | 8.2 (5.5-11.0) | 0.38 |
| | ≥3.50 | 8.6 (6.2-11.0) | 10.5 (7.6-13.4) | 10.6 (6.6-14.5) | 9.2 (5.1-13.2) | 7.9 (5.2-10.5) | 0.54 |
| Age-Adjusted Hypertension, Percent (95% Confidence Interval) | Overall | 6.6 (5.6-7.7) | 5.5 (4.2-6.8) | 4.6 (3.2-6.0) | 2.5 (1.6-3.5) | 3.7 (2.6-4.7) | <0.001 |
| | Sex | Female | 4.5 (2.4-6.7) | 3.8 (2.4-5.1) | 2.3 (1.2-3.5) | 1.1 (-0.1-2.3) | 1.2 (0.6-1.9) | <0.001 |
| | Male | 8.7 (6.8-10.6) | 7.1 (5.1-9.0) | 6.9 (4.9-8.9) | 4.0 (2.3-5.8) | 6.0 (3.9-8.1) | 0.02 |
| Race | Non-Hispanic White | 6.0 (4.6-7.3) | 6.1 (4.1-8.1) | 5.0 (2.6-7.2) | 1.6 (0.0-3.2) | 2.3 (0.8-3.8) | <0.001 |
| | Non-Hispanic Black | 9.1 (6.8-11.3) | 5.9 (3.6-8.1) | 7.0 (4.3-9.6) | 4.7 (2.1-7.3) | 6.8 (4.2-9.4) | 0.18 |
| | Hispanic | 5.0 (3.4-6.6) | 3.4 (1.8-5.1) | 3.1 (2.0-4.2) | 2.8 (1.4-4.2) | 5.8 (3.7-7.9) | 0.66 |

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| Non-Hispanic Asian     | .    | .    | .    | 3.1 (0.6-5.5) | 2.9 (0.0-6.0) | 0.76 |
|-----------------------|------|------|------|---------------|---------------|------|
| Non-Hispanic other    | 11.3 (2.3-20.3) | 2.6 (0.0-5.8) | 0.8 (0.0-2.4) | 4.4 (0.0-8.9) | 3.1 (0.0-6.8) | 0.09 |
| Body mass index       |      |      |      |               |               | 0.03 |
| Normal                | 4.8 (3.2-6.4) | 4.2 (2.5-5.9) | 3.2 (2.1-4.2) | 1.8 (1.1-2.4) | 0.9 (0.3-1.6) | <0.001 |
| Overweight            | 4.6 (2.0-7.3) | 7.1 (4.4-9.7) | 6.1 (0.9-11.3) | 1.9 (0.4-3.4) | 4.6 (1.5-7.7) | 0.41 |
| Obese                 | 17.2 (13.1-21.2) | 9.0 (5.8-12.9) | 9.0 (4.5-13.4) | 5.3 (2.0-8.6) | 10.8 (7.3-14.3) | 0.03 |
| Poverty-to-income ratio |      |      |      |               |               | 0.04 |
| <1.30                 | 5.5 (3.9-7.1) | 3.5 (2.1-4.9) | 3.7 (1.6-5.7) | 3.2 (1.9-4.4) | 3.3 (1.3-5.3) | 0.10 |
| 1.30–3.49             | 6.3 (4.1-8.5) | 6.1 (3.0-8.4) | 5.2 (3.0-7.4) | 1.6 (0.7-2.4) | 5.5 (3.2-7.8) | 0.10 |
| ≥3.50                 | 7.3 (5.0-9.6) | 5.8 (3.9-7.6) | 4.2 (1.9-6.4) | 3.2 (0.8-5.6) | 1.2 (0.2-2.2) | <0.001 |

NHANES: National Health and Nutrition Examination Survey, SE: standard error
*P value for trend in age-adjusted blood pressure levels across all survey years.
† Non-Hispanic Asians were not presented in 1999-2002, 2003-2006, and 2007-2010 due to small sample sizes.
‡ Body mass index was categorized as normal (body mass index 5th percentile to < 85th percentile), overweight (body mass index 85th percentile to < 95th percentile) and obese (body mass index ≥ 95th percentile) based on age- and sex-specific growth charts developed by the Centers for Disease Control and Prevention in 2000. Due to a small sample size, children with a body mass index < 5th percentile are not presented.
§ A poverty-to-income ratio < 1.30 indicates that the family income was below 130% of the poverty level.
Age-adjustment was performed using direct standardization with the standard being US children and adolescents across the entire time period from 1999 to 2018.
eFigure. Flowchart Showing the Number of NHANES Participants Included in the Current Analyses

|                  | Overall | 1999-2002 | 2003-2006 | 2007-2010 | 2011-2014 | 2015-2018 |
|------------------|---------|-----------|-----------|-----------|-----------|-----------|
| Completed NHANES interview and exam* | 20,523  | 5,126     | 4,702     | 3,563     | 3,673     | 3,459     |
| Had valid SBP and DBP measurement† | 19,308  | 4,879     | 4,484     | 3,336     | 3,446     | 3,163     |
| Had valid height measurement‡     | 19,273  | 4,870     | 4,477     | 3,330     | 3,442     | 3,154     |

NHANES: National Health and Nutrition Examination Survey; SBP: systolic blood pressure; DBP: diastolic blood pressure.

* NHANES participants 8 to 17 years old who completed the interview and exam.
† Had at least one valid SBP and one DBP measurement.
‡ This criteria only applies to those 8-12 years of age. For this age group, height is used for the determination of blood pressure percentiles for defining elevated blood pressure and hypertension.