



# The Latest Data and Reports from *The National Health and Nutrition Examination Survey* *(NHANES)*

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Acting NHANES Director

May 5, 2020  
NCHS Webinar

# National Center for Health Statistics (NCHS)

- It is the designated Federal statistical agency for health
- Its mission is to provide statistical information that will guide actions and policies to improve the health of the American people
- It monitors the nation's health by collecting, analyzing, and disseminating health data to identify health problems, risk factors, & disease patterns

# NCHS Data Systems



National Vital  
Statistics  
System



National  
Health  
Interview  
Survey



National  
Health and  
Nutrition  
Examination  
Survey



National  
Health Care  
Surveys

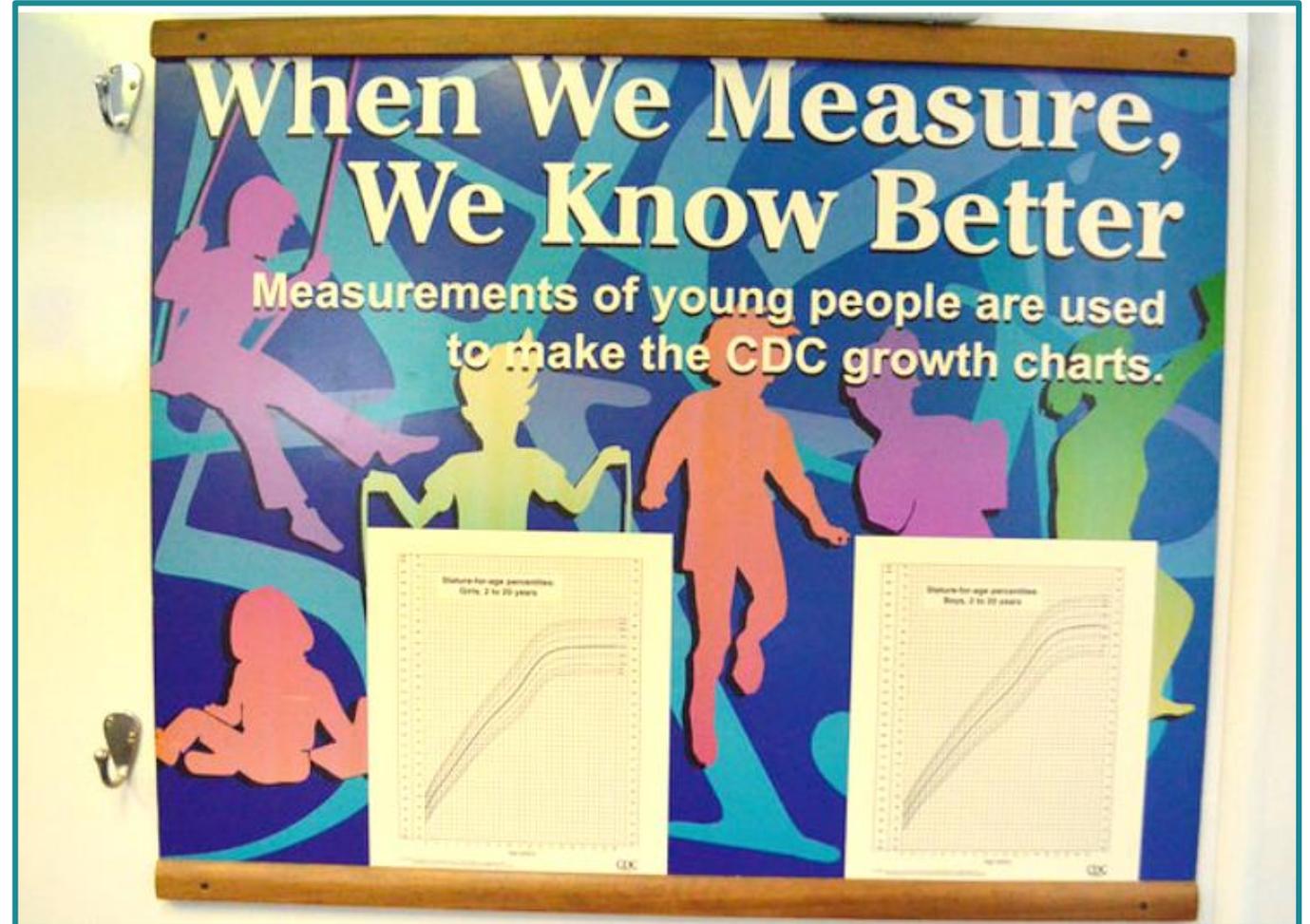


# The National Health and Nutrition Examination Survey (NHANES)



# The Mission of NHANES

To provide timely and objectively measured health and nutrition information that can guide actions and policies to improve the health of the Nation



# NHANES Objectives

- Estimate the percentage of persons in the US population with selected health conditions (chronic and infectious diseases)
- Monitor trends in the prevalence, awareness, treatment and control of selected diseases and conditions
- Estimate prevalence and trends in environmental exposures
- Study the relationships among diet, nutrition and health
- Establish and maintain a biospecimen program

# History of NHANES

Survey	Dates	Ages
NHES I	1960 – 62	18 – 79 years
NHES II	1963 – 65	6 – 11 years
NHES III	1966 – 70	12 – 17 years
NHANES I	1971 – 75	1 – 74 years
NHANES II	1976 – 80	6 months – 74 years
HHANES	1982 – 84	6 months – 74 years
NHANES III	1988 – 94	2 months +



# History of NHANES

Survey	Dates	Ages
NHANES	1999 - 2000	All ages
NHANES	2001 - 2002	All ages
NHANES	2003 – 2004	All ages
NHANES	2004 – 2006	All ages
NHANES	2007 -2008	All ages
NHANES	2009 – 2010	All ages
NHANES	2011 – 2012	All ages
NHANES	2013 – 2014	All ages
NHANES	2015 – 2016	All ages
NHANES	2017 – 2018	All ages
NHANES	2019 – 2020	All ages

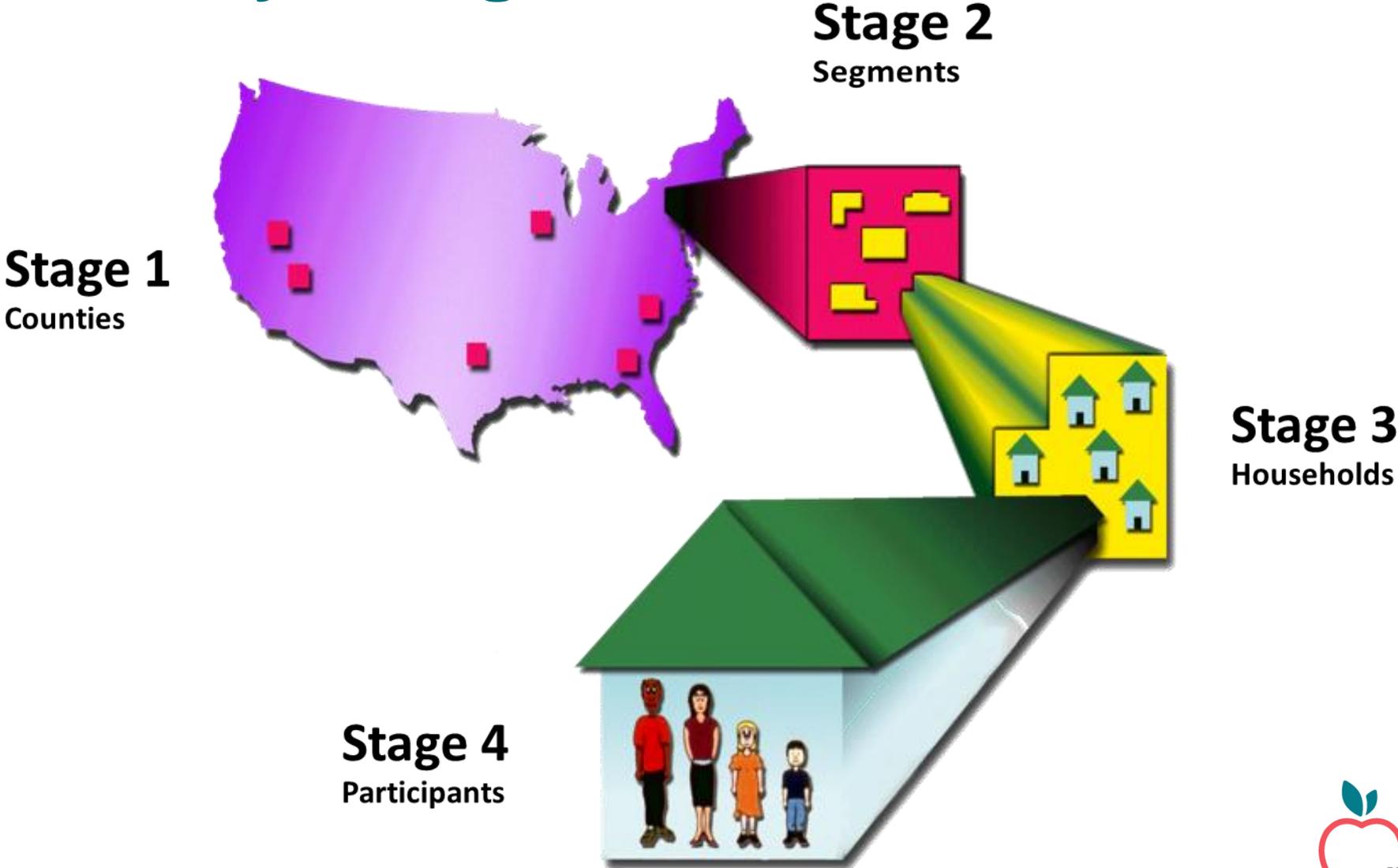


# NHANES Sample

- Nationally representative
- Civilian, non-institutionalized US population
- 5,000 individuals examined annually
- Oversampled groups:
  - Non-Hispanic blacks
  - Non-Hispanic Asians
  - Hispanics
  - 80+ years of age
  - Low income whites



# NHANES Survey Design



# NHANES Components

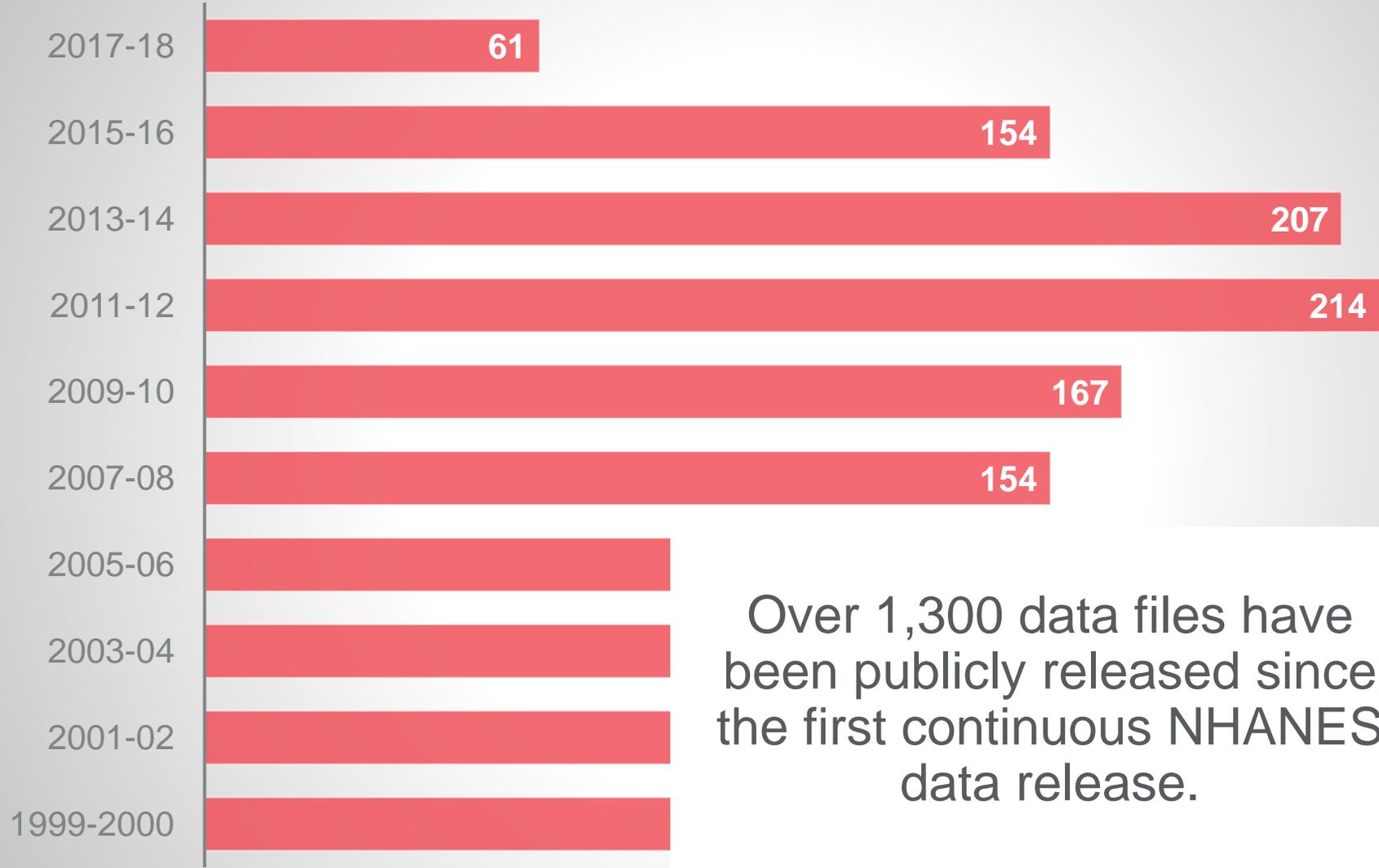
- In-person home interview
- Health examinations in mobile exam centers (MEC)
  - Physical exam measurements
  - Specialized testing
  - Private interviews
  - Biospecimen collection
  - Dietary assessment



# Data Release Process

- QC
  - Editing/cleanup
  - Weighting
  - Data preparation
  - Documentation
  - Confidentiality review
- Public data released in 2-year cycles

The screenshot displays the National Center for Health Statistics website for the National Health and Nutrition Examination Survey (NHANES). The page is titled "NHANES Questionnaires, Datasets, and Related Documentation" and features a navigation menu on the left with options like "About NHANES", "What's New", and "Questionnaires, Datasets, and Related Documentation". The main content area includes a "Survey Methods" section with a document icon, a "Search Variables" section with a magnifying glass icon, and a "Continuous NHANES" section with a grid of buttons for various survey periods: NHANES 2019-2020, 2017-2018, 2015-2016, 2013-2014, 2011-2012, 2009-2010, 2007-2008, and 2005-2006. The CDC logo and tagline "CDC 24/7: Saving Lives, Protecting People™" are visible at the top left of the page.

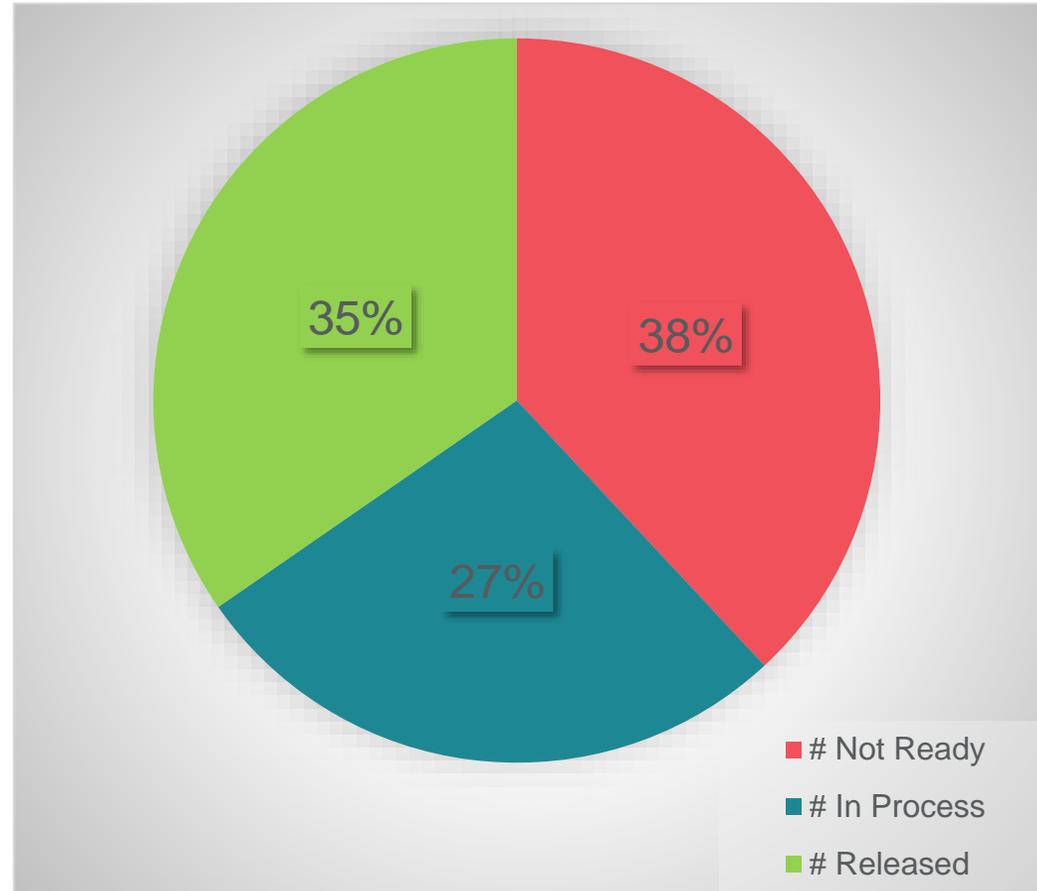


Over 1,300 data files have been publicly released since the first continuous NHANES data release.

# NHANES 2017-18 Data Release

- First set of 2017–2018 data released in February 2020.
- Included over 50 questionnaire, examination, and laboratory data files
- As of May 1, over 1/3 of all 2017-18 data have been released
- Another 27% are in process for release

Figure: Percent of 2017-18 NHANES Data Files Released, In Process, and Not Ready



## National Health and Nutrition Examination Survey

- About NHANES +
- What's New +
- Questionnaires, Datasets, and Related Documentation +
- Survey Participants +
- Biospecimen Program +
- New Content and Proposal Guidelines
- Publications and Products +
- Tutorials +
- Listserv
- Contact Us

### Related Sites

[NHANES Longitudinal Study](#)

[Growth Charts](#)

[Surveys and Data Collection Systems](#)

[Research Data Center](#)



# National Health and Nutrition Examination Survey

## Survey Participants



If you were selected, learn more about participating

## Survey Data and Documentation



Access data, documentation & response rates

## Publications and Products



View health and nutrition reports & CDC Growth Charts

## Data Analysis Tutorials



Review step-by-step guidance on using NHANES data



## Upcoming Webinar

The Latest Data Release and Reports from the National Health and Nutrition Examination Survey



Date: May 5, 2020  
Time: 2 p.m. – 3 p.m. EDT

[Click here for details on how to join!](#)

## What's New

### Publications

- [National Health and Nutrition Examination Survey, 2015–2018: Sample Design and Estimation Procedures](#) [PDF – 2 MB]
- [Hypertension Prevalence Among Adults Aged 18 and Over: United States, 2017–2018](#)
- [Total and High-density Lipoprotein Cholesterol in Adults: United States, 2015–2018](#)

### Data Release

- [Ferritin \(FERTIN\\_J 2017-2018\)](#)
- [Preventive Aspirin Use \(RXQASA\\_J 2017-2018\)](#)

### Updated Data

The 2001-2002 surplus serum folate dataset was updated to

<https://www.cdc.gov/nchs/nhanes/index.htm>



- About NHANES +
- What's New** -
- Archive
- Questionnaires, Datasets, and Related Documentation +
- Survey Participants +
- Biospecimen Program +
- New Content and Proposal Guidelines
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### Related Sites

- [NHANES Longitudinal Study](#)
- [Growth Charts](#)
- [Surveys and Data Collection Systems](#)
- [Research Data Center](#)

## What's New

### April 2020

#### Publications

- [National Health and Nutrition Examination Survey, 2015–2018: Sample Design and Estimation Procedures](#) [PDF – 2 MB]
- [Hypertension Prevalence Among Adults Aged 18 and Over: United States, 2017–2018](#)
- [Total and High-density Lipoprotein Cholesterol in Adults: United States, 2015–2018](#)

#### Data Release

- [Ferritin](#) (FERTIN\_J 2017-2018)
- [Preventive Aspirin Use](#) (RXQASA\_J 2017-2018)

### Updated Data

The 2001-2002 surplus serum folate dataset was updated to correct a calibration bias in the serum folic acid determination. Please refer to the analytic notes in the documentations accompanying the datasets for more details.

- [Folate – Folic acid & 5-methyltetrahydrofolate – Serum \(Surplus\)](#) (SSFA\_B\_R 2001-2002)

2015-2016 Oral Health – Dentition dataset were updated with additional data on secondary restoration codes that were collected on teeth had untreated dental caries and had an existing restoration. Updates were made to both the data file as well as the documentation.

- [Oral Health – Dentition](#) (OHXDEN\_I 2015-2016)

### March 2020

#### Publications

- [Prevalence and Trends in Hepatitis B Virus Infection in the United States, 2015–2018](#)

#### On This Page

- [April 2020](#)
- [March 2020](#)
- [February 2020](#)
- [January 2020](#)
- [December 2019](#)
- [November 2019](#)
- [October 2019](#)
- [September 2019](#)
- [August 2019](#)
- [July 2019](#)
- [June 2019](#)
- [May 2019](#)
- [April 2019](#)
- [March 2019](#)
- [February 2019](#)
- [January 2019](#)



## NHANES Questionnaires, Datasets, and Related Documentation



### Survey Methods

Plan & Operations, Sample Design, Estimation & Weighting Procedures, Analytic Guidelines, etc.



### Search Variables

Simple keyword search for Continuous NHANES (1999 and on) variables

### Continuous NHANES

NHANES  
2019-2020

NHANES  
2017-2018

NHANES  
2015-2016

NHANES  
2013-2014

NHANES  
2011-2012

NHANES  
2009-2010

NHANES  
2007-2008

NHANES  
2005-2006

NHANES  
2003-2004

NHANES  
2001-2002

NHANES  
1999-2000

### Prior to 1999



### NHANES III

Conducted from 1988-1994, the third National Health and Nutrition Examination



### Hispanic HANES

During 1982-1984, NHANES temporarily shifted to a population-specific survey. The

About NHANES +

What's New +

**Questionnaires, Datasets, and Related Documentation** -

Survey Methods and Analytic Guidelines

Search Variables

Frequently Asked Questions

All Continuous NHANES +

NHANES 2019-2020 +

**NHANES 2017-2018** -

Demographics Data

Dietary Data

Examination Data

Laboratory Data

Questionnaire Data

Limited Access Data

Questionnaire Instruments



## NHANES 2017-2018

### Data, Documentation, Codebooks, SAS Code

 Demographics Data

 Dietary Data

 Examination Data

 Laboratory Data

 Questionnaire Data

 Limited Access Data

### Contents in Detail

 Questionnaire Instruments

 Laboratory Methods

 Procedure Manuals

 Brochures and Consent Documents

### Using the Data

 Overview

 Release Notes

 Laboratory Data Overview

 Questionnaire Data Overview

 Examination Data Overview

 Survey Methods and Analytic Guidelines

 Response Rates and Population Totals

 NHANES Web Tutorial

### Contents at a Glance

 What's New

 Survey Content Brochure [PDF - 568 KB]

 Frequently Asked Questions (FAQs)

 General Information about NHANES Documentation Files



## NHANES 2017–2018 Examination Data

- [NHANES 2017-2018 Examination Variable List](#)
- [Procedure Manuals](#)
- [2017-2018 Examination Data Overview](#)
- [SAS Universal Viewer](#)

Data File Name	Doc File	Data File	Date Published
Blood Pressure	<a href="#">BPX J Doc</a>	<a href="#">BPX J Data [XPT - 1.4 MB]</a>	February 2020
Body Measures	<a href="#">BMX J Doc</a>	<a href="#">BMX J Data [XPT - 1.4 MB]</a>	February 2020
Dual-Energy X-ray Absorptiometry - Whole Body	<a href="#">DXX J Doc</a>	<a href="#">DXX J Data [XPT - 3.6 MB]</a>	March 2020
Liver Ultrasound Transient Elastography	<a href="#">LUX J Doc</a>	<a href="#">LUX J Data [XPT - 677.8 KB]</a>	March 2020
Oral Health - Dentition	<a href="#">OHXDEN J Doc</a>	<a href="#">OHXDEN J Data [XPT - 8.9 MB]</a>	February 2020
Oral Health - Recommendation of Care	<a href="#">OHXREF J Doc</a>	<a href="#">OHXREF J Data [XPT - 786.7 KB]</a>	February 2020

About NHANES +

What's New +

Questionnaires, Datasets, and Related Documentation +

Survey Participants +

Biospecimen Program +

New Content and Proposal Guidelines

Survey Results and Products +

Tutorials +

Listserv



## National Health and Nutrition Examination Survey

# NHANES 2017–2018 Limited Access Data

These datasets are not released to the public. However, secure, on-site access is granted through [NCHS's Research Data Center \(RDC\)](#) to guarantee the confidentiality of the survey participants. The documents below are provided to help analysts determine if these NHANES datasets contain variables relevant to their analyses before submitting an application to use the RDC.

- [NHANES 2017-2018 Limited Access Variable List](#)
- [Questionnaire Instruments](#)
- [Laboratory Methods](#)
- [SAS Universal Viewer](#)

Data File Name	Doc File	Data File	Date Published
Drug Use - Youth	<a href="#">DUQY_J_R Doc</a>	RDC Only	February 2020
Mental Health - Depression Screener - Youth	<a href="#">DPQY_J_R Doc</a>	RDC Only	February 2020
Reproductive Health - Women 12 Years and Older	<a href="#">RHQ_J_R Doc</a>	RDC Only	February 2020

<https://www.cdc.gov/rdc/>

🏠 RDC

Restricted Data +

Location of Access +

Proposal Process +

Confidentiality

Accessing Restricted Data

Preparing for proposal  
Submission

Providing the Public Use Data

Output

Fees and Invoicing

Publishing Guidelines +

Reference Materials

Directions

FAQs

Attention:



All National Center for Health Statistics RDCs are closed.

NCHS researchers may not enter any NCHS or FSRDC facility until they are informed that the facility has reopened. We will continue to accept and review new proposals and amendments. Please direct all RDC related questions to [rdca@cdc.gov](mailto:rdca@cdc.gov).

## Research Data Center (RDC)

The National Center for Health Statistics (NCHS) operates the Research Data Center (RDC) to allow researchers access to restricted-use data. The RDC is responsible for protecting the confidentiality of survey respondents, study subjects, or institutions while providing access to the restricted-use data for statistical purposes. For access to the restricted-use data, researchers must submit a research proposal outlining the need for restricted-use data. The proposal provides a framework for NCHS to identify potential disclosure risks and how the data will be used.



### 1. [Preparing for Proposal Submission](#)

1. [Restricted Data](#)
2. [Access Modes](#)
3. [The Proposal Process](#)

### 2. [Accessing Restricted Data](#)

1. [Confidentiality](#)
2. [Approved Projects: Next Steps](#)
3. [Publishing Guidelines](#)

[RDC](#)[Restricted Data](#) +[Location of Access](#) +[Proposal Process](#) +[Confidentiality](#)[Accessing Restricted Data](#)[Preparing for proposal Submission](#)[Providing the Public Use Data](#)[Output](#)[Fees and Invoicing](#)[Publishing Guidelines](#) +[Reference Materials](#)[Directions](#)[FAQs](#)

### Related Sites

[National Center for Health Statistics](#)[U.S. Census Bureau, Center for Economic Studies](#) 

## Preparing for Proposal Submission

The Proposal Process outlined below provides the primary steps that lead to the NCHS Review Committee decision for proposal approval.

To access restricted-use data through the RDC, you must submit a proposal. The NCHS Review Committee will review your proposal using the following criteria:

1. A well-defined research question that addresses a public health concern.
2. Explanation of what restricted-use variables are needed to complete the project and why.
3. The disclosure risk associated with:
  - the requested restricted-use variables
  - the requested mode of access
  - analytic plan (this includes statistical methods) and
  - the nature and composition of your planned output.

The RDC does not review the proposal for scientific merit.

Once the RDC receives your proposal, the RDC Director will assign an RDC Analyst to work with you. The RDC Analyst is your primary contact for the duration of your project. At any time, if you have questions, please contact your RDC Analyst.

Your RDC Analyst will help you with the follow:

- Facilitates review of your proposal
- Creates your analytic data set
- Accepts payment
- Accepts your NCHS Confidentiality required paperwork
- Provides your dataset to the RDC location described in your proposal
- Reviews your output for disclosure risk
- Provides your approved output to you

### The Proposal Process

**Step 1:** Determine a need for restricted-use data. [Restricted Data](#)

**Step 2:** Determine a preferred location of access. [Location of Access](#)

**Step 3:** Draft your research proposal. [The Proposal](#)

**Step 4:** Submit your proposal (using the Proposal Format, include page numbers) as one document to [rdca@cdc.gov](mailto:rdca@cdc.gov)

About NHANES +

What's New +

Questionnaires, Datasets, and Related Documentation -

**Survey Methods and Analytic Guidelines**

Search Variables

Frequently Asked Questions

All Continuous NHANES +

NHANES 2019-2020 +

NHANES 2017-2018 +

NHANES 2015-2016 +

NHANES 2013-2014 +

NHANES 2011-2012 +

NHANES 2009-2010 +

NHANES 2007-2008 +

NHANES 2005-2006 +

NHANES 2003-2004 +

NHANES 2001-2002 +

NHANES 1999-2000 +

NHANES III +

Hispanic NHANES +

NHANES II +

## NHANES Survey Methods and Analytic Guidelines



**Plan and Operations**  
Reports on survey planning and field operations



**Sample Design**  
Reports on survey sample design, sample selection, sampling rates



**Estimation and Weighting**  
Reports on methods for calculating weights and variance estimation



**Analytic Guidelines**  
Reports on guidelines for analyzing NHANES data



**Response Rates and Population Totals**  
Survey response rates (screener, interview, and exam) and U.S. population



**Other Resources**  
Other resources for Analysts

### Plan and Operations

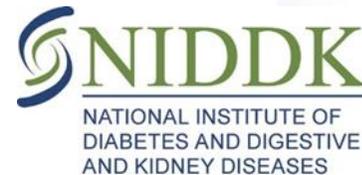
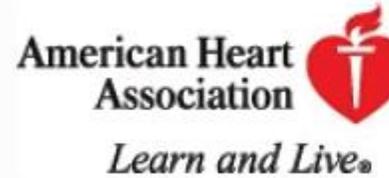
Description	Documentation	Published
National Health and Nutrition Examination Survey: Plan and Operations, 1999-2010	<a href="#">[PDF - 451 KB]</a>	August 2013
Plan and Operation of the Third National Health and Nutrition Examination Survey, 1988-94	<a href="#">[PDF - 20.8 MB]</a>	July 1994
National Health and Nutrition Examination Survey: National Youth Fitness Survey Plan, Operations, and Analysis, 2012	<a href="#">[PDF - 1.08 MB]</a>	April 2014

### Sample Design

Description	Documentation	Published
National Health and Nutrition Examination Survey, 2015-2018: Sample Design and Estimation Procedures	<a href="#">[PDF - 1.71 MB]</a>	April 2020

# Who uses the NHANES data?

- Federal Agencies
- Academic Institutions
- Industry
- General Public
- Policy Makers



# Where are the NHANES data reported?

- Scientific Journals
- National News Outlets
- Local News Outlets
- Government Publications

WebMD



American Society for Nutrition  
Excellence in Nutrition Research and Practice



CNN.com



The New York Times

Atlanta Journal-Constitution

The Salt Lake Tribune



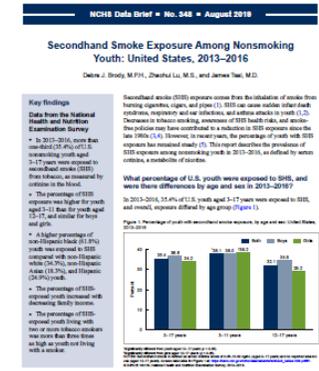
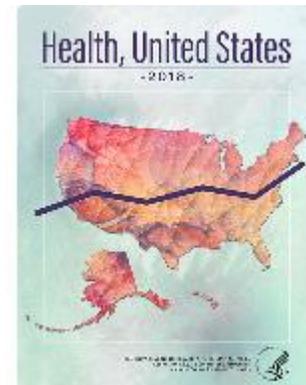
National Health Statistics Reports  
Number 117 • September 24, 2013

Trends in Apolipoprotein B, Non-high-density Lipoprotein Cholesterol, and Low-density Lipoprotein Cholesterol for Adults Aged 20 and Over, 2005-2016

Abstract  
Introduction  
Objective: Children for whom cholesterol was found to be elevated in the...  
Introduction: The National Health and Nutrition Examination Survey (NHANES) is a...  
Conclusion: The prevalence of elevated cholesterol levels among U.S. adults aged 20 and over...  
Keywords: cholesterol, lipoproteins, adults, NHANES



The Journal of Infectious Diseases

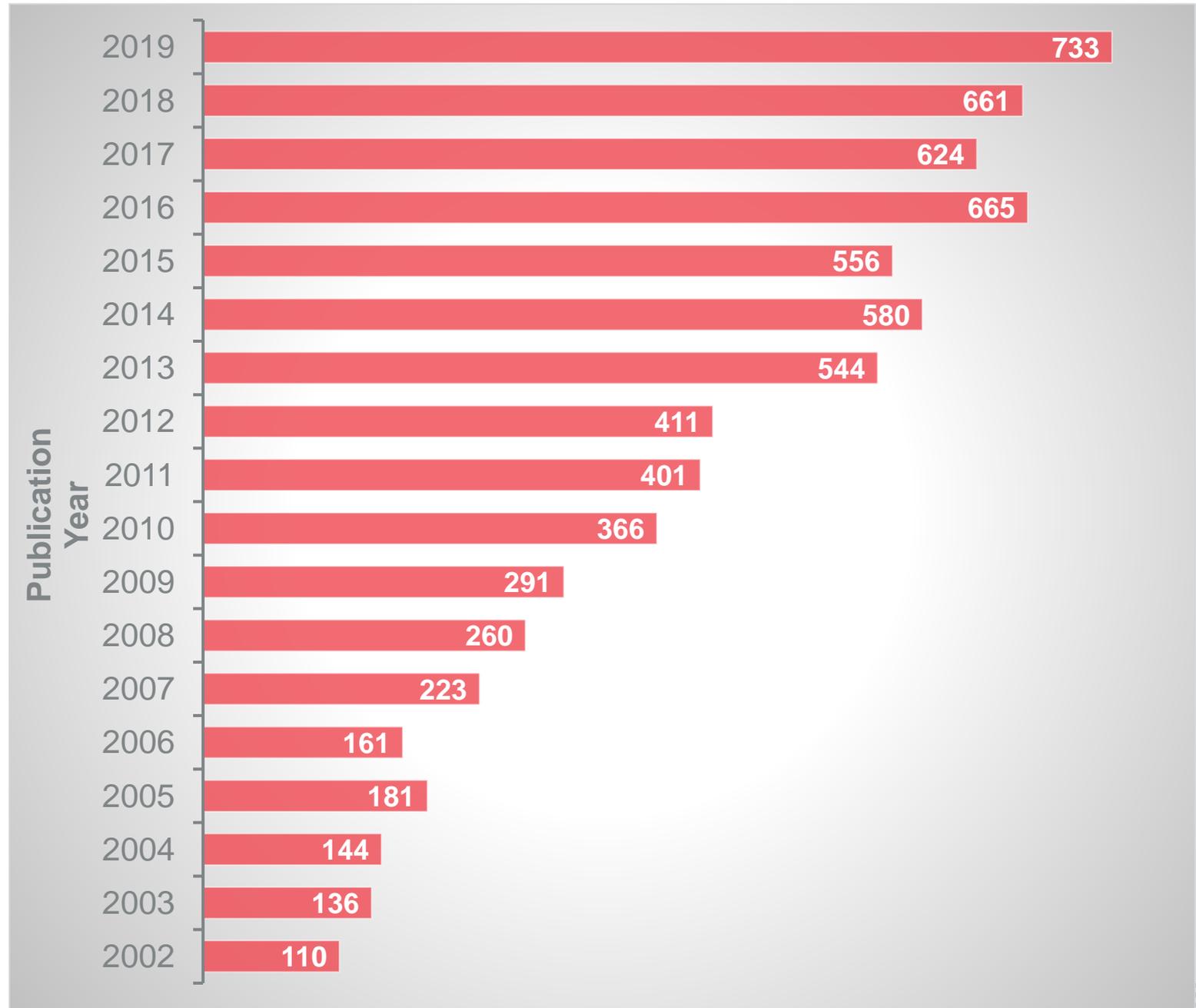


Medscape



# How many NHANES publications have there been?

- Over 7000 publications using NHANES data (based on PubMed)



# Various types of NCHS Publications

The image displays six distinct NCHS publications arranged in two rows. The top row includes an NCHS Data Brief on obesity prevalence, a report on HIV infection in adults, and three Vital and Health Statistics series. The bottom row features a report on the U.S. National System, a report on the National Health Examination Survey sample design, and a report on the impact of a checkbox on maternal mortality. Each publication includes its title, authors, and a brief description of its content.

**NCHS Data Brief**  
**Prevalence of Obesity among United States Adults**  
Craig M. Hales, M.D., Margaret D. Carroll, M.S.  
Obesity is a leading cause of death and increases the risk of heart disease, diabetes, and other chronic diseases. In 2015-2016, 42.4% of U.S. adults were obese, up from 35.1% in 2005-2006. The age-adjusted prevalence of severe obesity in adults was 0.2% and was higher in women than in men. Among adults, the prevalence of both obesity and severe obesity was highest in non-Hispanic black adults compared with other race and Hispanic-origin groups. The prevalence of severe obesity was highest among adults aged 40-59 compared with other age groups. From 1999-2000 through 2017-2018, the prevalence of both obesity and severe obesity increased among adults.

**National Health and Nutrition Examination Survey**  
Number 83 ■ September 24, 2019  
**HIV Infection in Adults Aged 18-59: Data from the 2007-2012 National Health and Nutrition Examination Survey**  
by Joseph Woodring, D.O., Geraldine McQuillan, Ph.D.  
**Abstract**  
Objectives—This report presents estimates of HIV status with key risk factors, and the prevalence among HIV-infected adults, based on the 2007-2012 National Health and Nutrition Examination Survey (NHANES).  
Methods—HIV prevalence was estimated based on 18-79 during 2007-2012. Starting in 2009, antibody testing was expanded from age group 18-79 to include 18-59. HIV prevalence for 2007-2012 was estimated using 6 weights for participants aged 18-59 from NHANES and corresponding weights for participants aged 60-79. This HIV prevalence calculation assumes that HIV prevalence and levels of all relevant cofactors were similar between 2007-2008 and 2009-2012 for adults aged 18-79. HIV prevalence was estimated using an enzyme-linked immunosorbent assay (ELISA) for HIV, followed by confirmatory Western blot for HIV.  
Results—During 2007-2012, the overall HIV prevalence among U.S. households was 0.39%. HIV prevalence was higher among men than women, and non-Hispanic black persons were more likely to be HIV-infected than all other race and Hispanic-origin persons. HIV prevalence was higher among persons with a history of sexually transmitted infection, 10 or more lifetime sexual partners, or a history of same-sex sex. HIV prevalence was higher among persons who reported any lifetime history of HIV infection. HIV prevalence was higher among persons who reported any lifetime history of HIV infection.  
Keywords: HIV testing • risk factors • population

**NATIONAL CENTER FOR HEALTH STATISTICS**  
**Vital and Health Statistics**  
Series 1, Number 62  
**The U.S. National System: Transition to the 21st Century, 1990-2010**  
Programs and Collection

**NATIONAL CENTER FOR HEALTH STATISTICS**  
**Vital and Health Statistics**  
Series 2, Number 184  
**National Health Examination Survey: Sample Design and Data Evaluation and Methods**

**NATIONAL CENTER FOR HEALTH STATISTICS**  
**Vital and Health Statistics**  
Series 3, Number 44  
**The Impact of a Checkbox on Maternal Mortality in the United States**  
Analytical and Epidemiology

September 2014  
**Prevalence of Overweight, Obesity, and Extreme Obesity Among Adults: United States, 1960-1962 Through 2011-2012**  
by Cheryl D. Fryar, M.S.P.H., Margaret D. Carroll, M.S.P.H., and Cynthia L. Ogden, Ph.D., Division of Health and Nutrition Examination Surveys  
Results from the 2011-2012 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 33.9% of U.S. adults aged 20 and over are overweight, 35.1% are obese, and 6.4% are extremely obese. Body mass index (BMI), expressed as weight in kilograms divided by height in meters squared (kg/m<sup>2</sup>), is commonly used to classify overweight (BMI 25.0-29.9), obesity (BMI greater than or equal to 30.0), and extreme obesity (BMI greater than or equal to 40.0).  
Age-adjusted trends in obesity and overweight prevalence since 1988-1994 are shown in Table 1. It is also possible to examine trends since 1960 among adults aged 20-74 (Table 2). The age-adjusted sex-specific trends of overweight, obesity, and extreme obesity are shown in the lower Table 2 shows the age-adjusted estimates of obesity prevalence by race and Hispanic origin for men and women since 1988-1994.  
The prevalence of obesity as measured by BMI among non-Hispanic Asian adults was much lower than that reported for non-Hispanic white, non-Hispanic black, and Hispanic adults. Although BMI is widely used as a measure of body fat, at a given BMI level body fat may vary by sex, age, and race and Hispanic origin. In particular, research suggests that Asian persons may have more body fat than white persons, especially at lower BMIs, and that health risks may begin at a lower BMI among Asian persons compared with others.  
NHANES, conducted by CDC's National Center for Health Statistics (NCHS), is a stratified, multistage probability sample of the civilian noninstitutionalized population of the United States. The survey began oversampling non-Hispanic Asian persons in 2011-2012, and the total Hispanic population in 2007-2008. Beginning in 2007-2008, Mexican American persons were no longer oversampled but are included in the oversampled total Hispanic population.  
A household interview and a physical examination are conducted for each survey participant. During the physical examination, conducted in a mobile examination center, height and weight are measured as part of a comprehensive set of body measurements. These measurements are taken by trained health technicians, using standardized measuring procedures and equipment. Observations for pregnant women and for persons missing a valid height or weight measurement were not included in the data analysis.  
For additional information on NHANES methods, visit [http://www.cdc.gov/nchs/nhanes/survey\\_methods.htm](http://www.cdc.gov/nchs/nhanes/survey_methods.htm)

# Various types of NCHS Publications

## NCHS Data Brief

NCHS Data Brief ■ No. 360 ■ February 2020

### Prevalence of Obesity and Severe Obesity Among Adults: United States, 2017–2018

Craig M. Hales, M.D., Margaret D. Carroll, M.S.P.H., Cheryl D. Fryar, M.S.P.H., and Cynthia L. Ogden, Ph.D.

**Key findings**

**Data from the National Health and Nutrition Examination Survey**

- In 2017–2018, the age-adjusted prevalence of obesity in adults was 42.4%, and there were no significant differences between men and women among all adults or by age group.
- The age-adjusted prevalence of severe obesity in adults was 9.2% and was higher in women than in men.
- Among adults, the prevalence of both obesity and severe obesity was highest in non-Hispanic black adults compared with other race and Hispanic-origin groups.
- The prevalence of severe obesity was highest among adults aged 40–59 compared with other age groups.
- From 1999–2000 through 2017–2018, the prevalence of both obesity and severe obesity increased among adults.

Obesity is associated with serious health risks (1). Severe obesity further increases the risk of obesity-related complications, such as coronary heart disease and end-stage renal disease (2,3). From 1999–2000 through 2015–2016, a significantly increasing trend in obesity was observed (4). This report provides the most recent national data for 2017–2018 on obesity and severe obesity prevalence among adults by sex, age, and race and Hispanic origin. Trends from 1999–2000 through 2017–2018 for adults aged 20 and over are also presented.

**What was the prevalence of obesity among adults in 2017–2018?**

The age-adjusted prevalence of obesity among U.S. adults was 42.4% in 2017–2018. The prevalence was 40.0% among younger adults aged 20–39, 44.8% among middle-aged adults aged 40–59, and 42.8% among older adults aged 60 and over. There were no significant differences in prevalence by age group (Figure 1).

Figure 1. Prevalence of obesity among adults aged 20 and over, by sex and age: United States, 2017–2018

Sex	20 and over	20-39	40-59	60 and over
Total	42.4	40.0	44.8	42.8
Men	43.0	40.3	46.4	42.2
Women	41.8	39.7	43.3	43.3

NOTES: Estimates for adults aged 20 and over were age adjusted by the direct method to the 2000 U.S. Census population using the age groups 20–29, 30–39, 40–49, and 50 and over. Crude estimates are 42.5% for total, 43.2% for men, and 42.1% for women. Access data table for Figure 1 at: [https://www.cdc.gov/nchs/data/tables/obesity2017\\_2018\\_tables-508.pdf](https://www.cdc.gov/nchs/data/tables/obesity2017_2018_tables-508.pdf). SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

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NCHS reports can be downloaded from: <https://www.cdc.gov/nchs/products/index.htm>

- Short reports (8 pages with up to 5 simple figures) on a current health or health care topic
- Intended for general public, and policy/programmatic audiences

# Various types of NCHS Publications

## National Health Statistics Reports

**National Health Statistics Reports**  
Number 83 ■ September 24, 2015

**HIV Infection in U.S. Household Population Aged 18–59: Data From the National Health and Nutrition Examination Survey, 2007–2012**  
by Joseph Woodring, D.O., M.P.H., M.T.M.H.; Deanna Kruszon-Moran, M.S.; and Geraldine McQuillan, Ph.D., Division of Health and Nutrition Examination Surveys

**Abstract**  
*Objectives*—This report presents estimates of HIV prevalence, the association of HIV status with key risk factors, and the prevalence of antiretroviral drug use among HIV-infected adults, based on the 2007–2012 National Health and Nutrition Examination Survey (NHANES).  
*Methods*—HIV prevalence was estimated based on 10,466 NHANES respondents aged 18–59 during 2007–2012. Starting in 2009, the NHANES age range for HIV antibody testing was expanded from age group 18–49 to age group 18–59. HIV prevalence for 2007–2012 was estimated using 6 years of data and corresponding weights for participants aged 18–49 from NHANES 2007–2012, and 4 years of data and corresponding weights for participants aged 50–59 from NHANES 2009–2012. This HIV prevalence calculation assumes that HIV prevalence, and the relationship between prevalence and levels of all relevant cofactors, were the same between survey periods: 2007–2008 and 2009–2012 for adults aged 50–59. HIV antibody status was measured using an enzyme-linked immunosorbent assay (ELISA) to detect antibody to HIV, followed by confirmatory Western blot for those with a positive ELISA test.  
*Results*—During 2007–2012, the overall HIV prevalence among adults aged 18–59 residing in U.S. households was 0.39%. Men were more likely to be HIV-infected than women, and non-Hispanic black persons were more likely to be HIV-infected than all other race and Hispanic origin subgroups combined. HIV infection was associated with high-risk populations, including those with herpes simplex virus type 2 infection, 10 or more lifetime sexual partners, a history of prior sexually transmitted infection, or a history of same-sex sexual contact among men. One-half of HIV-infected adults were on antiretroviral therapy (51.9%). Among HIV-infected adults, 86.1% reported any lifetime history of HIV testing outside of blood donations.  
**Keywords:** HIV testing • risk factors • population surveillance • health care disparities

**Introduction**  
In the United States, 1.2 million people are living with HIV, and an estimated 50,000 people become infected with HIV each year (1). Approximately one of every five HIV-infected persons is undiagnosed (2), and persons unaware of their HIV status are estimated to transmit more than one-half of all infections (1,3,4). To help attain a national goal of having 90% of HIV-positive people become aware of their status by 2020 (5), delivering cost-effective, evidence-based, and scalable programs to at-risk populations has been shown to increase awareness of HIV status and reduce HIV transmission (6–9). Monitoring national trends of HIV prevalence and HIV risk factors remains important national health surveillance activities to better understand the health behaviors and characteristics influencing these trends.  
The National Health and Nutrition Examination Survey (NHANES) is a cross-sectional survey designed to provide national statistics on the health and nutritional status of the noninstitutionalized civilian U.S. population through household interviews and standardized physical examinations, including the collection of biologic samples in mobile examination

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- Longer reports on analysis of a health topic, data evaluation, or methods or measurement research

# Various types of NCHS Publications

## Vital and Health Statistic Series



- Technical Reports
- Series 1 provide details on survey programs and collection procedures
- Series 2 provide data evaluation and methods research
- Series 3 provide statistics derived from analytical and epidemiological studies

# Various types of NCHS Publications

## Health E-Stats

September 2014

**Prevalence of Overweight, Obesity, and Extreme Obesity Among Adults: United States, 1960–1962 Through 2011–2012**

by Cheryl D. Fryar, M.S.P.H., Margaret D. Carroll, M.S.P.H., and Cynthia L. Ogden, Ph.D.,  
Division of Health and Nutrition Examination Surveys

Results from the 2011–2012 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 33.9% of U.S. adults aged 20 and over are overweight, 35.1% are obese, and 6.4% are extremely obese. Body mass index (BMI), expressed as weight in kilograms divided by height in meters squared ( $\text{kg}/\text{m}^2$ ), is commonly used to classify overweight (BMI 25.0–29.9), obesity (BMI greater than or equal to 30.0), and extreme obesity (BMI greater than or equal to 40.0).

Age-adjusted trends in obesity and overweight prevalence since 1988–1994 are shown in [Table 1](#). It is also possible to examine trends since 1960 among adults aged 20–74 ([Table 2](#)). The age-adjusted sex-specific trends of overweight, obesity, and extreme obesity are shown in the [figure](#). [Table 3](#) shows the age-adjusted estimates of obesity prevalence by race and Hispanic origin for men and women since 1988–1994.

The prevalence of obesity as measured by BMI among non-Hispanic Asian adults was much lower than that reported for non-Hispanic white, non-Hispanic black, and Hispanic adults. Although BMI is widely used as a measure of body fat, at a given BMI level body fat may vary by sex, age, and race and Hispanic origin. In particular, research suggests that Asian persons may have more body fat than white persons, especially at lower BMIs, and that health risks may begin at a lower BMI among Asian persons compared with others.

NHANES, conducted by CDC's National Center for Health Statistics (NCHS), is a stratified, multistage probability sample of the civilian noninstitutionalized population of the United States. The survey began oversampling non-Hispanic Asian persons in 2011–2012, and the total Hispanic population in 2007–2008. Beginning in 2007–2008, Mexican American persons were no longer oversampled but are included in the oversampled total Hispanic population.

A household interview and a physical examination are conducted for each survey participant. During the physical examination, conducted in a mobile examination center, height and weight are measured as part of a comprehensive set of body measurements. These measurements are taken by trained health technicians, using standardized measuring procedures and equipment. Observations for pregnant women and for persons missing a valid height or weight measurement were not included in the data analysis.

For additional information on NHANES methods, visit:  
[http://www.cdc.gov/nchs/nhanes/surveys\\_methods.htm](http://www.cdc.gov/nchs/nhanes/surveys_methods.htm)



- Very short (<500 words)
- On a health topic or methods or measurement issues

# Latest NHANES 2017-2018 Data Briefs

**NCHS Data Brief ■ No. 360 ■ February 2020**

### Prevalence of Obesity and Severe Obesity in the United States, 2017–2018

Craig M. Hales, M.D., Margaret D. Carroll, M.S.P.H., Cheryl D. Fryar, M.S.P.H., Laurie K. Barker, M.S.P.H., and Geraldine McQuillan, Ph.D.

**Key findings**

- Obesity is associated with serious health risks, increases the risk of obesity-related complications, heart disease and end-stage renal disease (1,3). 2015–2016, a significantly increasing trend in report provides the most recent national data for severe obesity prevalence among adults by sex, origin. Trends from 1999–2000 through 2017–2018 are also presented.
- In 2017–2018, the age-adjusted prevalence of obesity in adults was 42.4%, and there were no significant differences between men and women among all adults or by age group.
- The age-adjusted prevalence of severe obesity in adults was 9.2% and was higher in women than in men.
- Among adults, the prevalence of both obesity and severe obesity was highest in non-Hispanic black adults compared with other race and Hispanic-origin groups.
- The prevalence of severe obesity was highest among adults aged 40–59 compared with other age groups.
- From 1999–2000 through 2017–2018, the prevalence of both obesity and severe obesity increased among adults.

**What was the prevalence of obesity 2017–2018?**

The age-adjusted prevalence of obesity among 2017–2018. The prevalence was 40.0% among 44.8% among middle-aged adults aged 40–59, aged 60 and over. There were no significant differences between men and women among all adults or by age group (Figure 1).

**Figure 1. Prevalence of obesity among adults aged 20 and over, by sex, race and Hispanic origin, and U.S. birth origin, 2017–2018**

Group	20 and over	40-59	60 and over
Total	42.4	40.0	44.8
Men	42.4	40.0	44.8
Women	42.4	40.0	44.8
Non-Hispanic white	42.4	40.0	44.8
Non-Hispanic black	42.4	40.0	44.8
Hispanic	42.4	40.0	44.8
U.S. born	42.4	40.0	44.8
Non-U.S. born	42.4	40.0	44.8

NOTE: Estimates for adults aged 20 and over were age adjusted by the direct method to the 2000 standard U.S. population. Data are based on the 2017–2018 NHANES survey. Data are not shown for those who did not answer the question. Percentages are based on the total population aged 20 and over. U.S. born includes persons born within the 50 United States and DC. Non-U.S. born includes persons born outside the 50 United States and DC. SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

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NCHS reports can be downloaded from: <https://www.cdc.gov/nchs/products/index>

**NCHS Data Brief ■ No. 361 ■ March 2020**

### Prevalence and Trends in Hepatitis B Virus Infection in the United States, 2015–2018

Deanna Kusznor-Moran, M.S., Ryne Paulose-Ram, Ph.D., M.A., Crescent B. Laurie K. Barker, M.S.P.H., and Geraldine McQuillan, Ph.D.

**Key findings**

- Hepatitis B virus (HBV) is a type of viral hepatitis that is spread through contact with contaminated blood, or from an infected person's blood or body fluids. HBV may cause a liver infection that is acute or chronic or long-term infection. Vaccination groups in 1982, and universal vaccination of newborns beginning in 1991 in the United States (2). This report provides estimates of past or present hepatitis B virus (HBV) infection was 4.3%, and was higher among men (5.3%) than women (3.4%).
- Past or present HBV infection was highest among non-Hispanic Asian adults (21.1%) compared with non-Hispanic white (2.1%), non-Hispanic black (10.8%), and Hispanic (3.8%) adults, and was higher among those born outside of the United States than those who were U.S. born.
- The prevalence of hepatitis B vaccination, based on blood test results, was 25.2%, and was highest among non-Hispanic Asian adults compared with non-Hispanic white, non-Hispanic black, and Hispanic adults.
- From 1999 through 2018, the prevalence of past or present infection decreased from 5.7% to 4.3%, evidence of vaccination increased from 13.3% to 25.2%.

**Did the prevalence of any past or present infection differ by sex, race and Hispanic origin during 2015–2018, the prevalence of any past or present infection among adults aged 18 and over (Figure 1).**

**Figure 1. Age-adjusted prevalence of past or present hepatitis B virus infection, by sex, race and Hispanic origin, and U.S. birth origin, 2015–2018**

Group	Prevalence (%)
Total population	4.3
Men	5.3
Women	3.4
Non-Hispanic white	2.1
Non-Hispanic black	10.8
Hispanic	3.8
U.S. born	4.3
Non-U.S. born	21.1

NOTE: Estimates for adults aged 18 and over were age adjusted by the direct method to the 2000 standard U.S. population. Data are based on the 2015–2018 NHANES survey. Data are not shown for those who did not answer the question. Percentages are based on the total population aged 18 and over. U.S. born includes persons born within the 50 United States and DC. Non-U.S. born includes persons born outside the 50 United States and DC. SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.

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**NCHS Data Brief ■ No. 364 ■ April 2020**

### Hypertension Prevalence Among Adults Aged 18 and Over in the United States, 2017–2018

Yechiam Ostchega, Ph.D., R.N., Cheryl D. Fryar, M.S.P.H., Tatiana Nwan Duong T. Nguyen, D.O.

**Key findings**

- Hypertension is a major risk factor for cardiovascular disease and has been shown to decrease the incidence and heart failure (1,2). This report provides 2017–2018 prevalence estimates using the 2017 American College of Cardiology/American Heart Association definition of hypertension which redefines hypertension by lowering the previous definition of 140/90 mmHg to 130/80 mmHg (4). This change percentage of people as having hypertension.
- Adjusted for age, the 2017–2018 hypertension prevalence was 45.4% among adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth origin (Figure 1).
- Adjusted for age, the 2017–2018 hypertension prevalence was 45.4% among men (51.9%) and 40.5% among women (39.7%).
- Hypertension increased with age: 22.4% (aged 18–39), 54.5% (40–59), and 74.5% (60 and over).
- Hypertension prevalence was higher among non-Hispanic black (57.1%) than non-Hispanic white (43.6%) or Hispanic (43.7%) adults.
- Hypertension was lowest among college graduates compared with those having a high school education or less, and those with more than high school or some college. This trend was similar among both men and women.
- Overall hypertension prevalence decreased from 47.0% in 1999–2000 to 41.7% in 2013–2014 and then increased to 45.4% in 2017–2018.

**Were differences seen in the prevalence among adults by sex and age during 2017–2018?**

Adjusted for age, the 2017–2018 hypertension prevalence was 45.4% among men (51.9%) and 40.5% among women (39.7%) (Figure 1). The prevalence of hypertension was higher among men than women among all adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth origin (Figure 1).

**Figure 1. Prevalence of hypertension among adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth origin, 2017–2018**

Group	18 and over	40-59	60 and over
Total	45.4	45.4	45.4
Men	51.9	51.9	51.9
Women	40.5	40.5	40.5
Non-Hispanic white	43.6	43.6	43.6
Non-Hispanic black	57.1	57.1	57.1
Hispanic	43.7	43.7	43.7
U.S. born	45.4	45.4	45.4
Non-U.S. born	45.4	45.4	45.4

NOTE: Estimates for adults aged 18 and over were age adjusted by the direct method to the 2000 standard U.S. population. Data are based on the 2017–2018 NHANES survey. Data are not shown for those who did not answer the question. Percentages are based on the total population aged 18 and over. U.S. born includes persons born within the 50 United States and DC. Non-U.S. born includes persons born outside the 50 United States and DC. SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

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**NCHS Data Brief ■ No. 363 ■ April 2020**

### Total and High-density Lipoprotein Cholesterol in Adults: United States, 2015–2018

Margaret D. Carroll, M.S.P.H., and Cheryl D. Fryar, M.S.P.H.

**Key findings**

- High total cholesterol ( $\geq 240$  mg/dL) and low high-density lipoprotein cholesterol (HDL-C,  $< 40$  mg/dL) are independent and modifiable risk factors for coronary heart disease (1–3). Declining trends were seen in the prevalence of high total cholesterol from 1999–2000 to 2015–2016 and in low HDL-C from 2007–2008 to 2015–2016 (4). This report presents 2015–2018 estimates of the prevalence of high total cholesterol and low HDL-C among U.S. adults aged 20 and over and trends through 2017–2018.
- During 2015–2018, 11.4% of adults had high total cholesterol, and prevalence was similar by race and Hispanic origin.
- The prevalence of high total cholesterol was highest among adults aged 40–59.
- Over one-quarter of men (26.6%) and 8.5% of women had low high-density lipoprotein cholesterol (HDL-C).
- In men, the prevalence of low HDL-C was lowest in non-Hispanic black adults. In women, prevalence was highest in Hispanic adults.
- High total cholesterol prevalence declined from 1999–2000 to 2017–2018. Low HDL-C prevalence declined from 2007–2008 to 2017–2018.

**What was the prevalence of high total cholesterol among adults during 2015–2018?**

During 2015–2018, the prevalence of high total cholesterol in U.S. adults was 11.4%. No significant difference was seen in the prevalence of high total cholesterol between men (10.5%) and women (12.1%) (Figure 1). The prevalence was highest among adults aged 40–59 (15.7%) compared with other age groups (Figure 1).

**Figure 1. Prevalence of high total cholesterol among adults aged 20 and over, by sex, age, race and Hispanic origin, United States, 2015–2018**

Group	Prevalence (%)
Total	11.4
Men	10.5
Women	12.1
20-39	7.5
40-59	15.7
60 and over	11.4
Non-Hispanic white	11.7
Non-Hispanic black	10.0
Non-Hispanic Asian	11.0
Hispanic	10.9

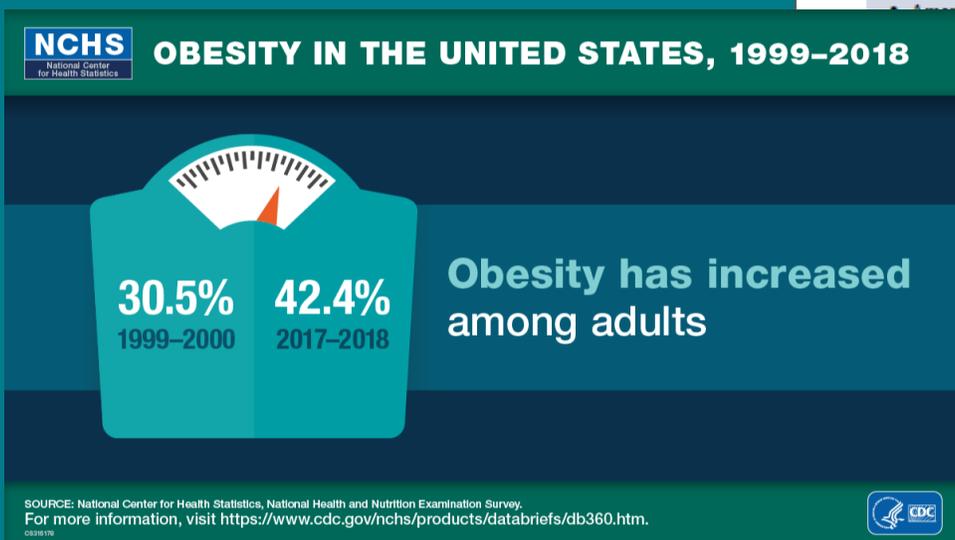
NOTE: Estimates for adults aged 20 and over were age adjusted by the direct method to the 2000 standard U.S. population. Data are based on the 2015–2018 NHANES survey. Data are not shown for those who did not answer the question. Percentages are based on the total population aged 20 and over. SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.

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# Obesity among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>



## Prevalence of Obesity and Severe Obesity Among Adults: United States, 2017-2018

Craig M. Hales, M.D., Margaret D. Carroll, M.S.P.H., Cheryl D. Fryar, M.S.P.H., and Cynthia L. Ogden, Ph.D.

### Key findings

#### Data from the National Health and Nutrition Examination Survey

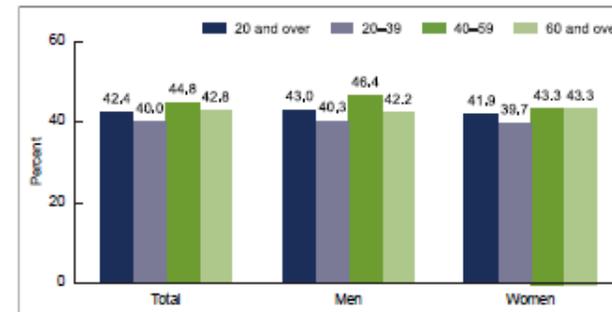
- In 2017-2018, the age-adjusted prevalence of obesity in adults was 42.4%, and there were no significant differences between men and women among all adults or by age group.
- The age-adjusted prevalence of severe obesity in adults was 9.2% and was higher in women than in men.

Obesity is associated with serious health risks (1). Severe obesity further increases the risk of obesity-related complications, such as coronary heart disease and end-stage renal disease (2,3). From 1999-2000 through 2015-2016, a significantly increasing trend in obesity was observed (4). This report provides the most recent national data for 2017-2018 on obesity and severe obesity prevalence among adults by sex, age, and race and Hispanic origin. Trends from 1999-2000 through 2017-2018 for adults aged 20 and over are also presented.

### What was the prevalence of obesity among adults in 2017-2018?

The age-adjusted prevalence of obesity among U.S. adults was 42.4% in 2017-2018. The prevalence was 40.0% among younger adults aged 20-39, 44.8% among middle-aged adults aged 40-59, and 42.8% among older adults aged 60 and over. There were no significant differences in prevalence by age group (Figure 1).

Figure 1. Prevalence of obesity among adults aged 20 and over, by sex and age: United States, 2017-2018



NOTES: Estimates for adults aged 20 and over were age adjusted by the direct method to the 2000 U.S. Census population using the age groups 20-39, 40-59, and 60 and over. Crude estimates are 42.5% for total, 43.0% for men, and 42.1% for women. Access data table for Figure 1 at: [https://www.cdc.gov/nchs/data/databriefs/db360\\_tables-508.pdf](https://www.cdc.gov/nchs/data/databriefs/db360_tables-508.pdf).

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-2018.



# Obesity among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>

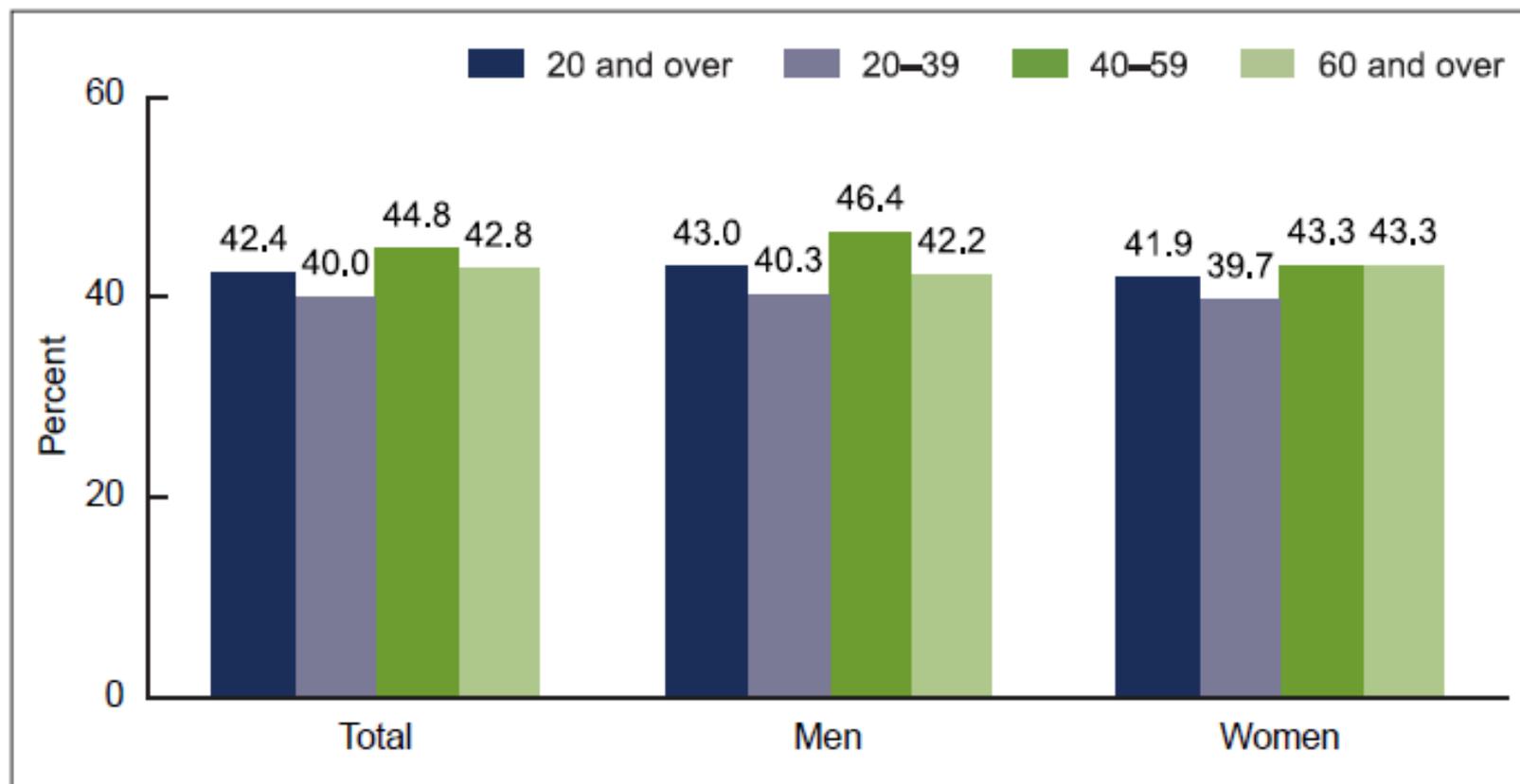
- Obesity is associated with serious health risks.
- Severe obesity further increases the risk of obesity-related complications, such as coronary heart disease and end-stage renal disease.
- A significantly increasing trend in obesity was observed from 1999–2000 through 2015–2016.
- This report provides the most recent national data on obesity and severe obesity prevalence among US adults.

# Obesity among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>

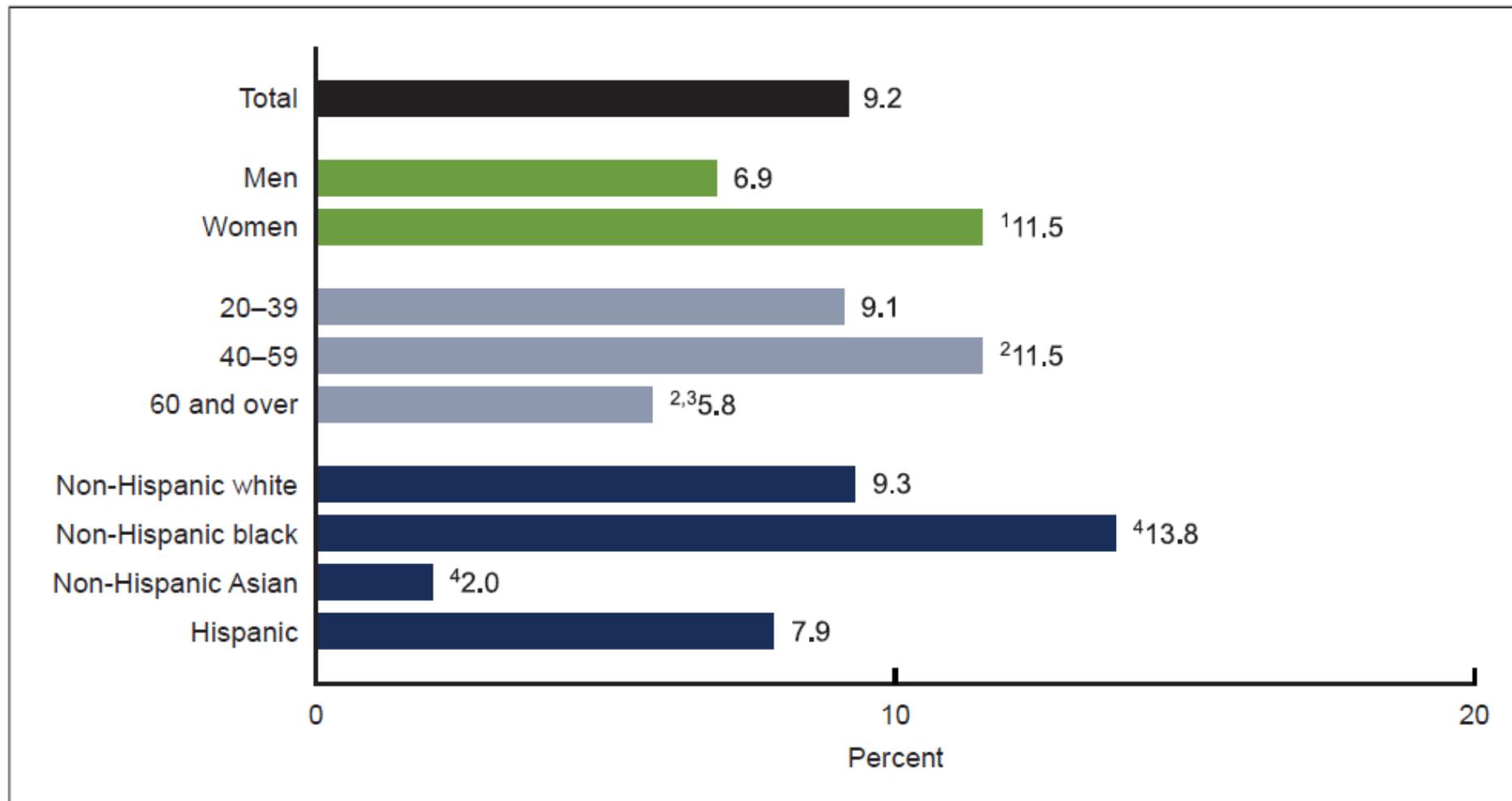
- NHANES 2017-18 data for prevalence estimates; 1999-2000 through 2017-18 to evaluate trends
- Estimates are based on measured height and weight collected from participants during examination at the mobile examination center (MEC)
- Obesity = BMI  $\geq$  30 kg/m<sup>2</sup>; severe obesity = BMI  $\geq$  40 kg/m<sup>2</sup>
- Analysis used examination sample weights
- Estimates were age adjusted using the direct method to the 2000 projected U.S. Census population

Figure 1. Prevalence of obesity among adults aged 20 and over, by sex and age: United States, 2017–2018



NOTES: Estimates for adults aged 20 and over were age adjusted by the direct method to the 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Crude estimates are 42.5% for total, 43.0% for men, and 42.1% for women. Access data table for Figure 1 at: [https://www.cdc.gov/nchs/data/databriefs/db360\\_tables-508.pdf#1](https://www.cdc.gov/nchs/data/databriefs/db360_tables-508.pdf#1). SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

Figure 3. Age-adjusted prevalence of severe obesity among adults aged 20 and over, by sex, age, and race and Hispanic origin: United States, 2017–2018



<sup>1</sup>Significantly different from men.

<sup>2</sup>Significantly different from adults aged 20–39.

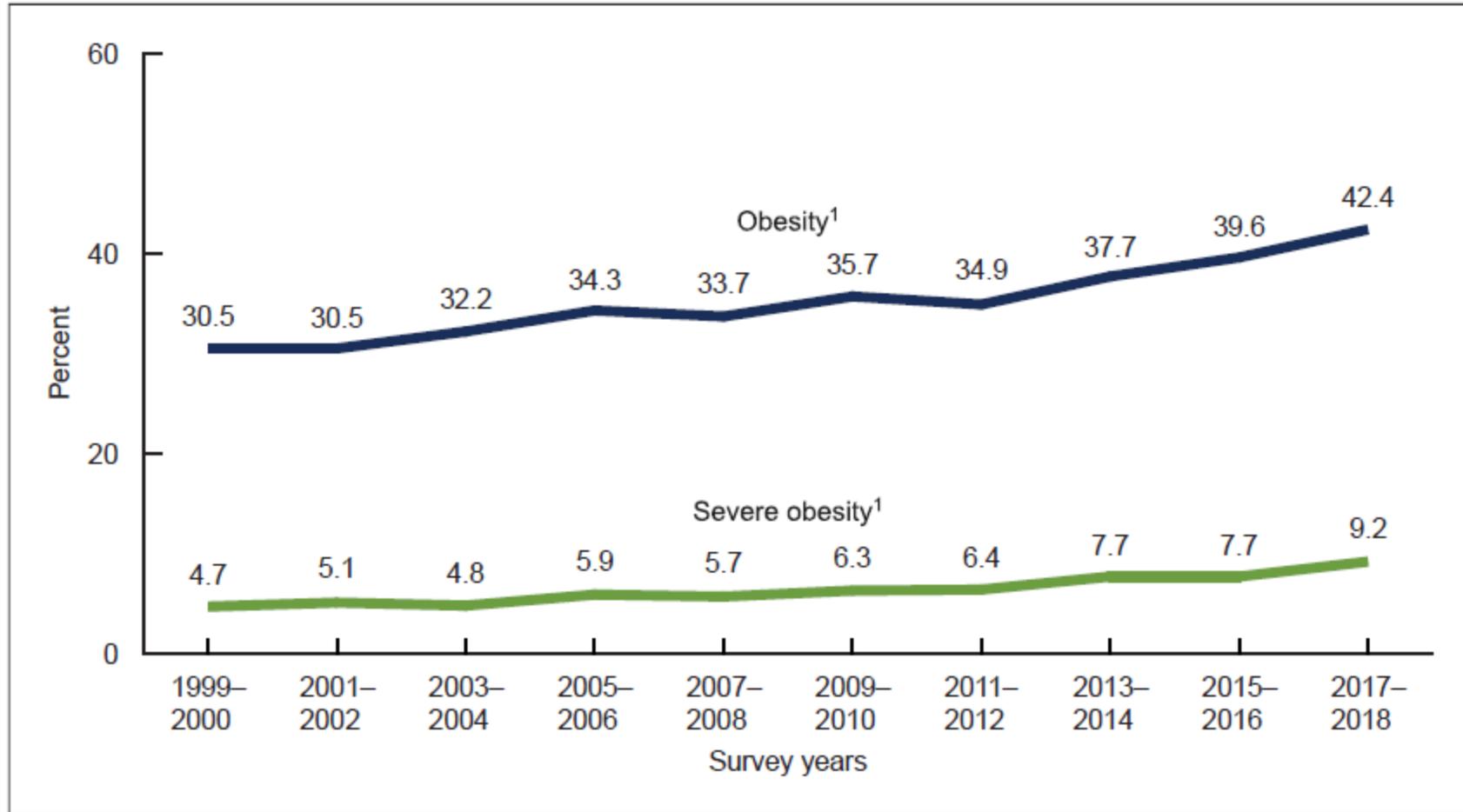
<sup>3</sup>Significantly different from adults aged 40–59.

<sup>4</sup>Significantly different from all other race and Hispanic-origin groups.

NOTES: Estimates for adults aged 20 and over were age adjusted by the direct method to the 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Crude estimates are 9.0% for total, 6.8% for men, and 11.1% for women. Access data table for Figure 3 at: [https://www.cdc.gov/nchs/data/databriefs/db360\\_tables-508.pdf#3](https://www.cdc.gov/nchs/data/databriefs/db360_tables-508.pdf#3).

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

Figure 4. Trends in age-adjusted obesity and severe obesity prevalence among adults aged 20 and over: United States, 1999–2000 through 2017–2018



<sup>1</sup>Significant linear trend.

NOTES: Estimates were age adjusted by the direct method to the 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Access data table for Figure 4 at: [https://www.cdc.gov/nchs/data/databriefs/db360\\_tables-508.pdf#4](https://www.cdc.gov/nchs/data/databriefs/db360_tables-508.pdf#4).

SOURCE: NCHS, National Health and Nutrition Examination Survey, 1999–2018.

# Obesity among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>

- Monitoring the prevalence of obesity and severe obesity is relevant for public health programs.
- Healthy People 2020 has established a goal of lowering the percentage of adults with obesity to no more than 30.5%.
- Based on the latest NHANES data from 2017-18, the prevalence of obesity among US adults has moved further away from this goal.

# Hepatitis B among adults

<https://www.cdc.gov/nchs/products/databriefs/db361.htm>

**HEPATITIS B IN THE UNITED STATES, 2015-2018**

**Men are more likely than women to be infected with hepatitis B**

5.3% MEN  
3.4% WOMEN

SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS, NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY. For more information, visit <https://www.cdc.gov/nchs/products/databriefs/db361.htm>.

## Prevalence and Trends in Hepatitis B Virus Infection in the United States, 2015–2018

Deanna Kruszon-Moran, M.S., Ryne Paulose-Ram, Ph.D., M.A., Crescent B. Martin, M.P.H., M.A., Laurie K. Barker, M.S.P.H, and Geraldine McQuillan, Ph.D.

### Key findings

#### Data from the National Health and Nutrition Examination Survey

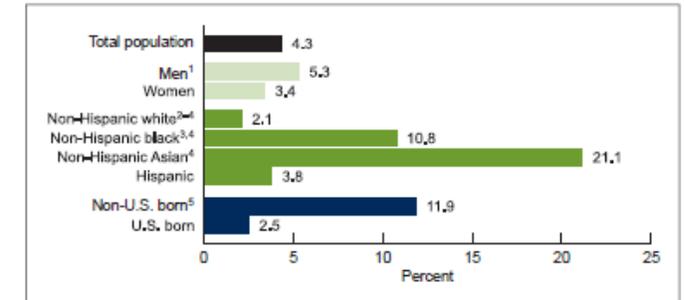
- The prevalence of any past or present hepatitis B virus (HBV) infection was 4.3%, and was higher among men (5.3%) than women (3.4%).
- Past or present HBV infection was highest among non-Hispanic Asian adults (21.1%) compared with non-Hispanic white (2.1%), non-Hispanic black (10.8%), and Hispanic (3.8%) adults, and higher among adults born in the United States (11.9%) than those who were U.S. born (2.5%).

Hepatitis B virus (HBV) is a type of viral hepatitis transmitted through sexual contact, contaminated blood, or from an infected mother to her newborn (1). HBV may cause a liver infection that is acute or short-term, but may also cause chronic or long-term infection. Vaccination was targeted to high-risk groups in 1982, and universal vaccination of newborns was recommended beginning in 1991 in the United States (2). This report provides 2015–2018 prevalence estimates of past or present HBV infection and evidence of hepatitis B vaccination, based on blood collected in the National Health and Nutrition Examination Survey (NHANES).

### Did the prevalence of any past or present HBV infection differ by sex, race and Hispanic origin, or U.S. birth status?

During 2015–2018, the prevalence of any past or present HBV infection was 4.3% among adults aged 18 and over (Figure 1).

Figure 1. Age-adjusted prevalence of past or present hepatitis B virus infection among adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth status: United States, 2015–2018



<sup>1</sup>Significantly different from women.  
<sup>2</sup>Significantly different from non-Hispanic black persons.  
<sup>3</sup>Significantly different from non-Hispanic Asian persons.  
<sup>4</sup>Significantly different from Hispanic persons.  
<sup>5</sup>Significantly different from U.S.-born persons.

NOTE: The presence of antibody to hepatitis B core antigen is evidence of past or present infection. Percentages are age adjusted by the direct method to the 2000 projected U.S. population using age groups 20–29, 30–39, 40–49, 50–59, and 60 and over. U.S. born includes persons born within the 50 United States and the District of Columbia. Access data table for Figure 1 at: <https://www.cdc.gov/nchs/data/databriefs/db361-tables-508.pdf>.  
 SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.



# Hepatitis B among adults

<https://www.cdc.gov/nchs/products/databriefs/db361.htm>

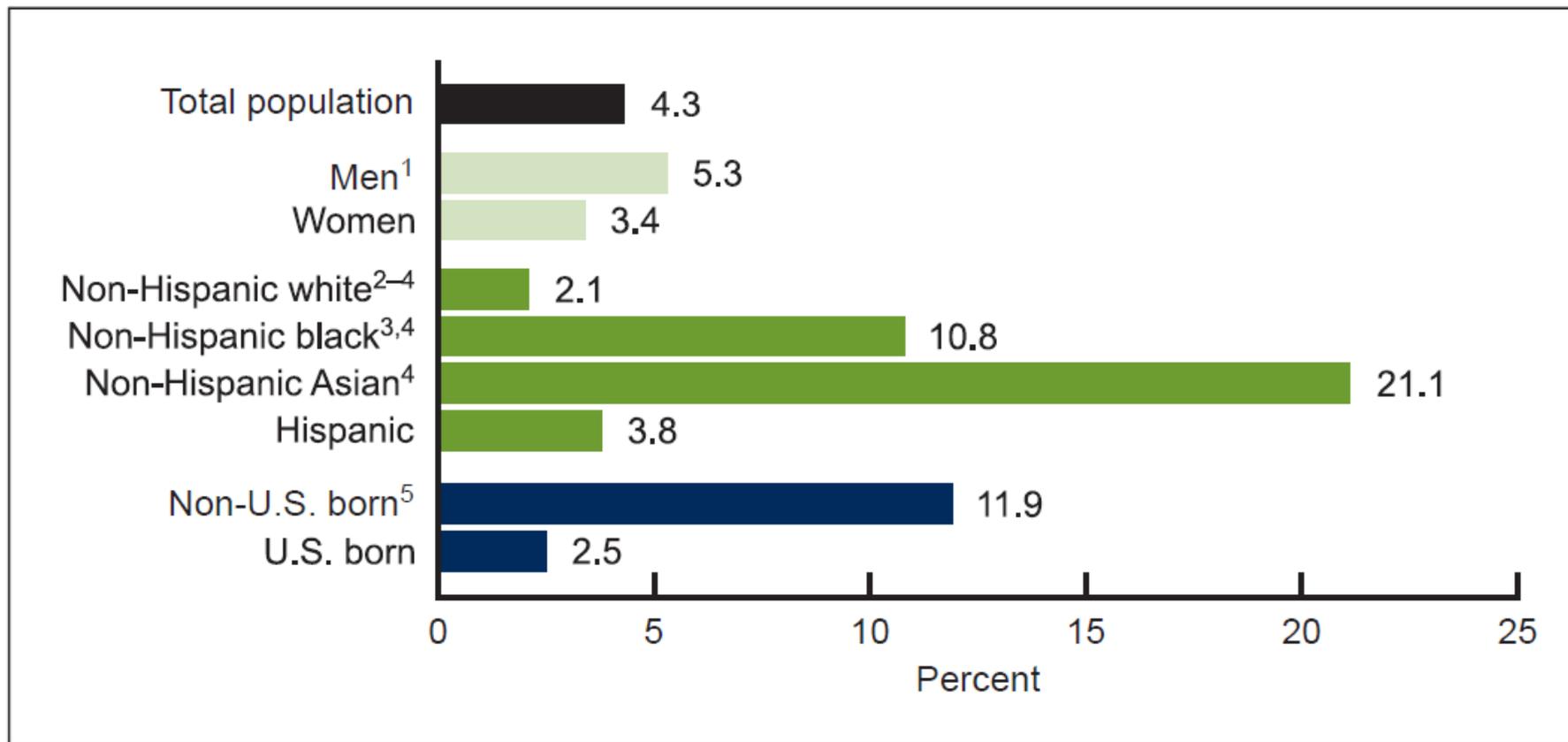
- Hepatitis B virus (HBV) is a type of viral hepatitis transmitted through sexual contact, contaminated blood, or infected mother to newborn.
- HBV may cause liver infection
- Vaccination to high-risk groups in 1982; Universal vaccination of newborns in 1991
- This report provides the most recent national data on the prevalence HBV infection and hepatitis B vaccination among U.S. adults

# Hepatitis B among adults

<https://www.cdc.gov/nchs/products/databriefs/db361.htm>

- NHANES 2015-18 data for prevalence estimates; 1999-2000 through 2017-18 to evaluate trends
- Estimates are based on the laboratory testing of blood samples collected from participants during examination at the mobile examination center.
- Presence of antibody to hepatitis B antigen were used to define infection and vaccination.
- Analysis used examination sample weights
- Estimates were age adjusted using the direct method to the 2000 projected U.S. Census population.

Figure 1. Age-adjusted prevalence of past or present hepatitis B virus infection among adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth status: United States, 2015–2018



<sup>1</sup>Significantly different from women.

<sup>2</sup>Significantly different from non-Hispanic black persons.

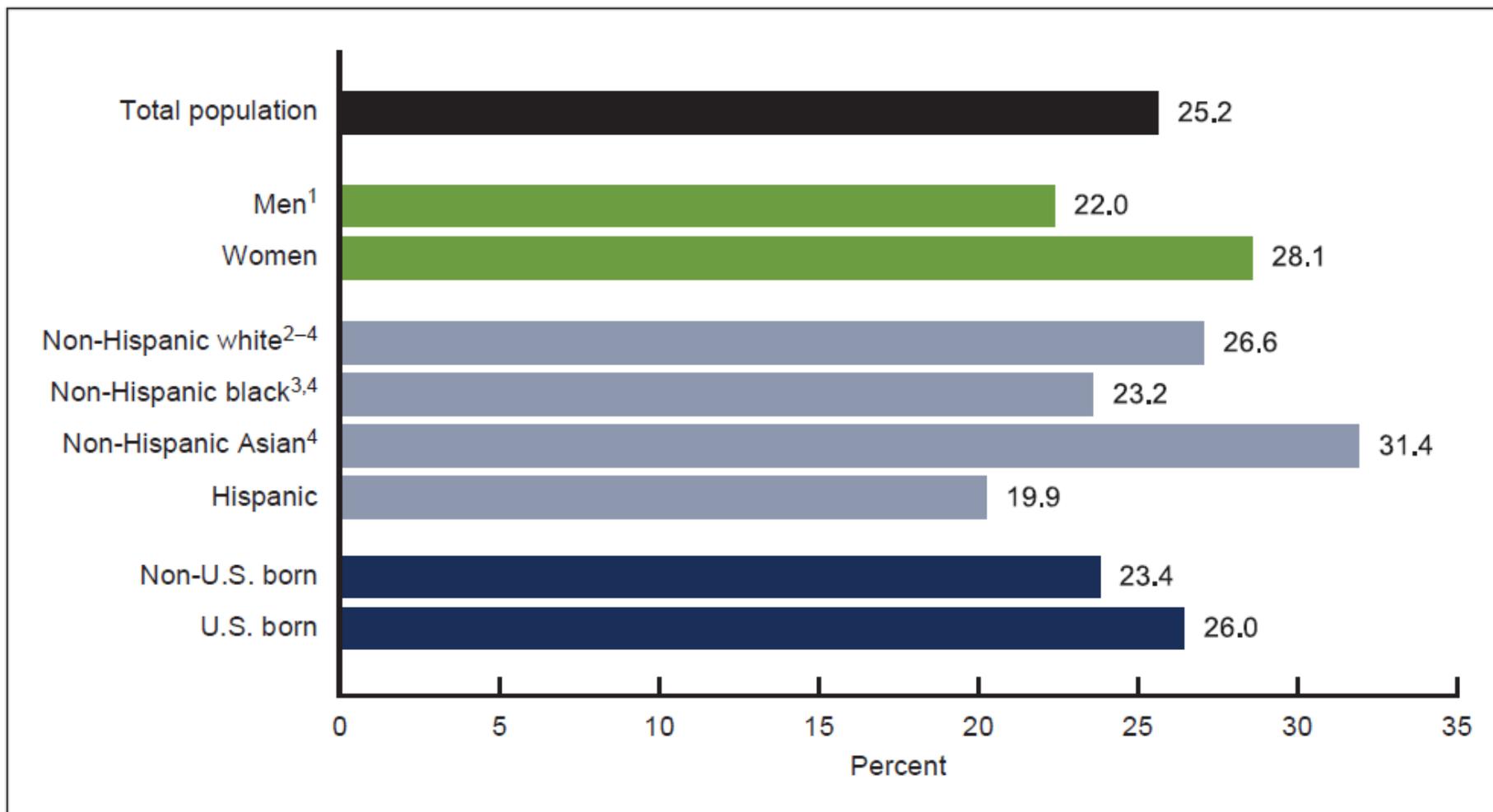
<sup>3</sup>Significantly different from non-Hispanic Asian persons.

<sup>4</sup>Significantly different from Hispanic persons.

<sup>5</sup>Significantly different from U.S.-born persons.

NOTES: The presence of antibody to hepatitis B core antigen is evidence of past or present infection. Percentages are age adjusted by the direct method to the 2000 projected U.S. population using age groups 20–29, 30–39, 40–49, 50–59, and 60 and over. U.S. born includes persons born within the 50 United States and the District of Columbia. Access data table

Figure 2. Age-adjusted prevalence of serologic evidence of hepatitis B vaccination among adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth status: United States, 2015–2018



<sup>1</sup>Significantly different from women.

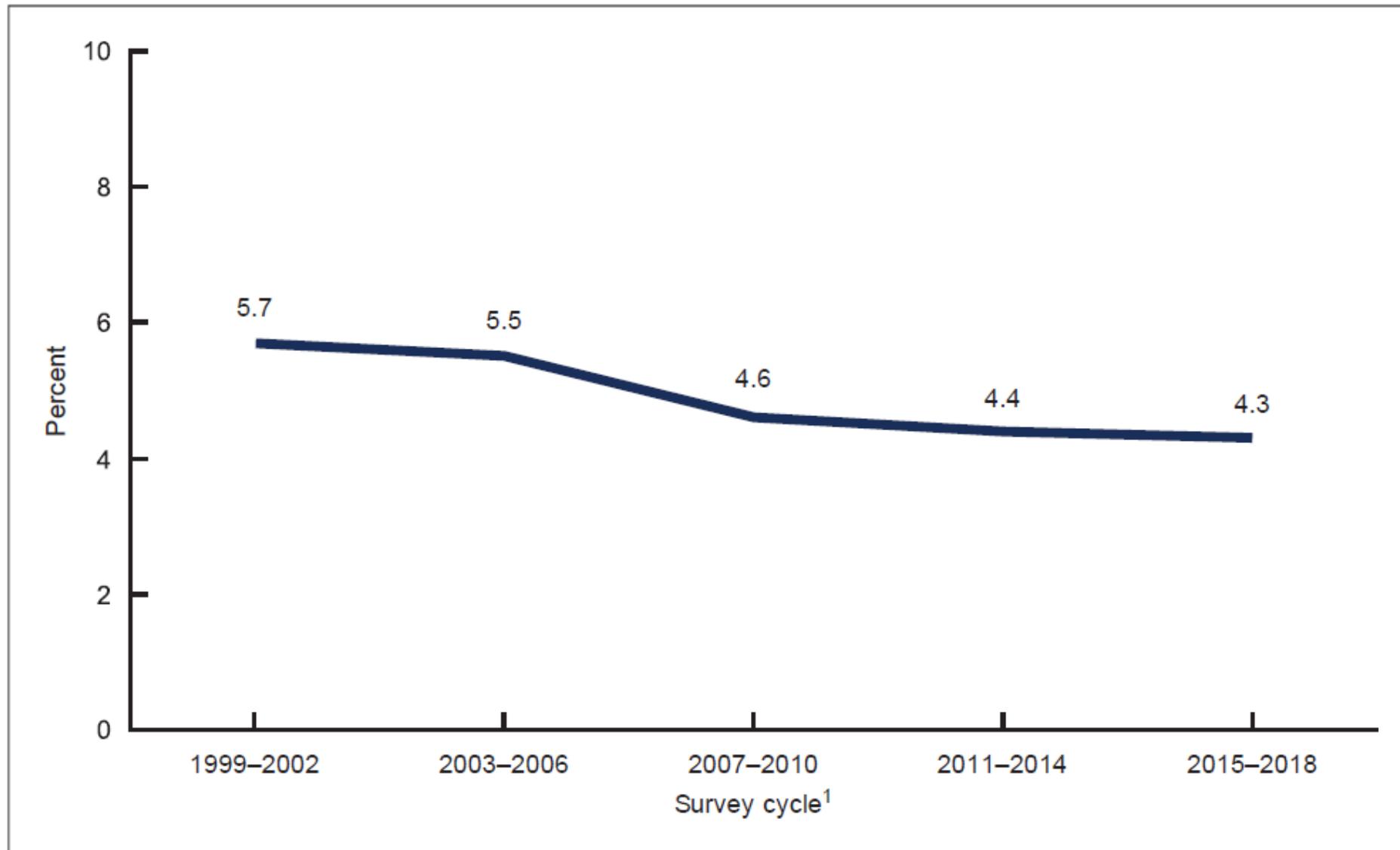
<sup>2</sup>Significantly different from non-Hispanic black persons.

<sup>3</sup>Significantly different from non-Hispanic Asian persons.

<sup>4</sup>Significantly different from Hispanic persons.

NOTES: The presence of antibody to hepatitis B surface antigen but absence of antibody to hepatitis B core antigen is evidence of hepatitis B vaccination. Percentages are age adjusted by the direct method to the 2000 projected U.S. population using age groups 20–29, 30–39, 40–49, 50–59, and 60 and over. U.S. born includes persons born within the 50 United States and the District of Columbia. Access data table for Figure 2 at: <https://www.cdc.gov/nchs/data/>

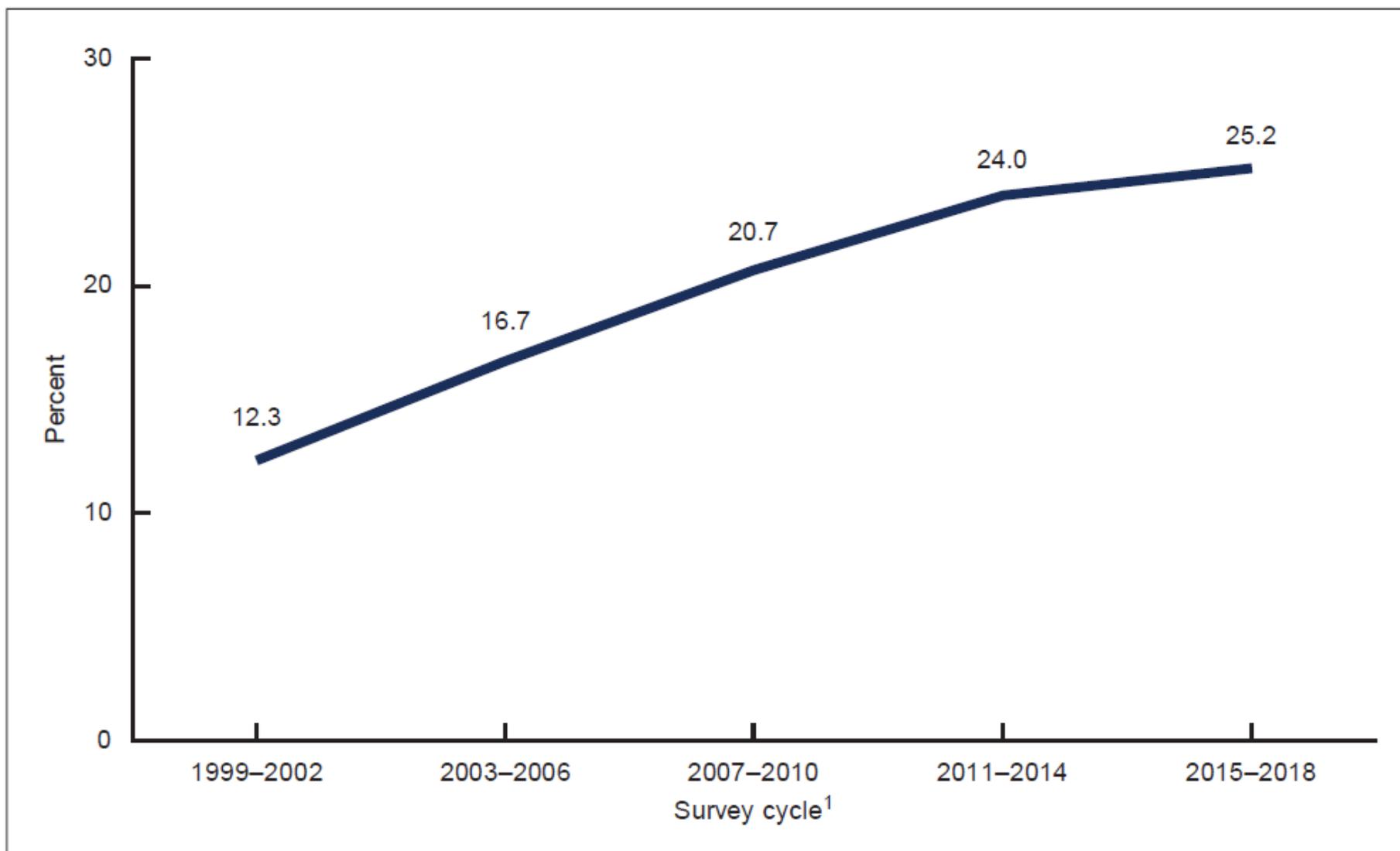
Figure 3. Trends in the age-adjusted prevalence of past or present hepatitis B virus infection among adults aged 18 and over: United States, 1999–2018



<sup>1</sup>Significant linear decline over time for any past or present hepatitis B virus infection ( $p < 0.05$ ).

NOTES: All values meet National Center for Health Statistics presentation standards. The presence of antibody to hepatitis B core antigen is evidence of past or present infection. Percentages are age adjusted by the direct method to the 2000 projected U.S. population using age groups 20–29, 30–39, 40–49, 50–59, and 60

Figure 4. Trends in the age-adjusted prevalence of serologic evidence of hepatitis B vaccination among adults aged 18 and over: United States, 1999–2018



<sup>1</sup>Significant linear increase over time for hepatitis B virus vaccination ( $p < 0.05$ ).

NOTES: The presence of antibody to hepatitis B surface antigen but absence of antibody to hepatitis B core antigen is evidence of hepatitis B vaccination. Percentages are age adjusted by the direct method to the 2000 projected U.S. population using age groups 20–29, 30–39, 40–49, 50–59, and 60 and over.

# Total Cholesterol and High-Density Lipoprotein (HDL) Cholesterol among Adults

<https://www.cdc.gov/nchs/data/databriefs/db363-h.pdf>

**NCHS**  
National Center for Health Statistics

## CHOLESTEROL IN THE UNITED STATES, 2015–2018



**Women have higher levels of good cholesterol (high-density lipoprotein cholesterol) than men**

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2015–2018. For more information, visit <https://www.cdc.gov/nchs/products/databriefs/db363.htm>.



## Total and High-density Lipoprotein Cholesterol in Adults: United States, 2015–2018

Margaret D. Carroll, M.S.P.H., and Cheryl D. Fryar, M.S.P.H.

### Key findings

#### Data from the National Health and Nutrition Examination Survey

- During 2015–2018, 11.4% of adults had high total cholesterol, and prevalence was similar by race and Hispanic origin.
- The prevalence of high total cholesterol was highest among adults aged 40–59.
- Over one-quarter of men (26.6%) and 8.5% of women had low high-density lipoprotein cholesterol (HDL-C).
- In men, the prevalence of low HDL-C was lowest in non-Hispanic black adults. In women, the prevalence was highest in non-Hispanic white adults.

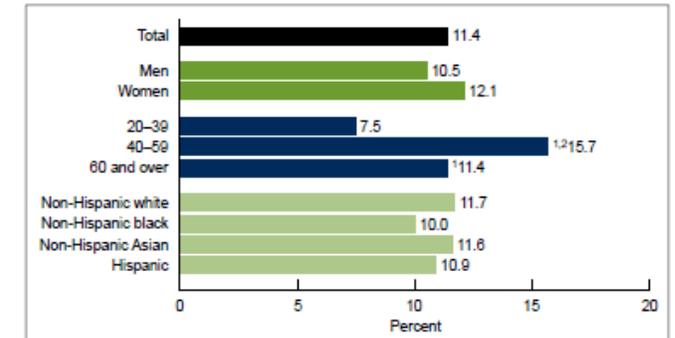
High total cholesterol (≥ 240 mg/dL) and low high-density lipoprotein cholesterol (HDL-C, < 40 mg/dL) are independent and modifiable risk factors for coronary heart disease (1–3). Declining trends were seen in the prevalence of high total cholesterol from 1999–2000 to 2015–2016 and in low HDL-C from 2007–2008 to 2015–2016 (4). This report presents 2015–2018 estimates of the prevalence of high total cholesterol and low HDL-C among U.S. adults aged 20 and over and trends through 2017–2018.

High total cholesterol (≥ 240 mg/dL) and low high-density lipoprotein cholesterol (HDL-C, < 40 mg/dL) are independent and modifiable risk factors for coronary heart disease (1–3). Declining trends were seen in the prevalence of high total cholesterol from 1999–2000 to 2015–2016 and in low HDL-C from 2007–2008 to 2015–2016 (4). This report presents 2015–2018 estimates of the prevalence of high total cholesterol and low HDL-C among U.S. adults aged 20 and over and trends through 2017–2018.

### What was the prevalence of high total cholesterol among adults during 2015–2018?

During 2015–2018, the prevalence of high total cholesterol in U.S. adults was 11.4%. No significant difference was seen in the prevalence of high total cholesterol between men (10.5%) and women (12.1%) (Figure 1). The prevalence was highest among adults aged 40–59 (15.7%) compared with

Figure 1. Prevalence of high total cholesterol among adults aged 20 and over, by sex, age, and race and Hispanic origin: United States, 2015–2018



<sup>1</sup>Significantly different from adults aged 20–39.  
<sup>2</sup>Significantly different from adults aged 60 and over.  
NOTES: High total cholesterol is ≥ 240 mg/dL or more. All estimates except those by age were age adjusted by the direct method to the projected 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Crude estimates are 11.5% for total, 10.3% for men, and 12.6% for women. Access data table for Figure 1 at: <https://www.cdc.gov/nchs/data/databriefs/db363-tables-508.pdf#1>.  
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.

# Total and High-Density Lipoprotein (HDL) Cholesterol in Adults

<https://www.cdc.gov/nchs/data/databriefs/db363-h.pdf>

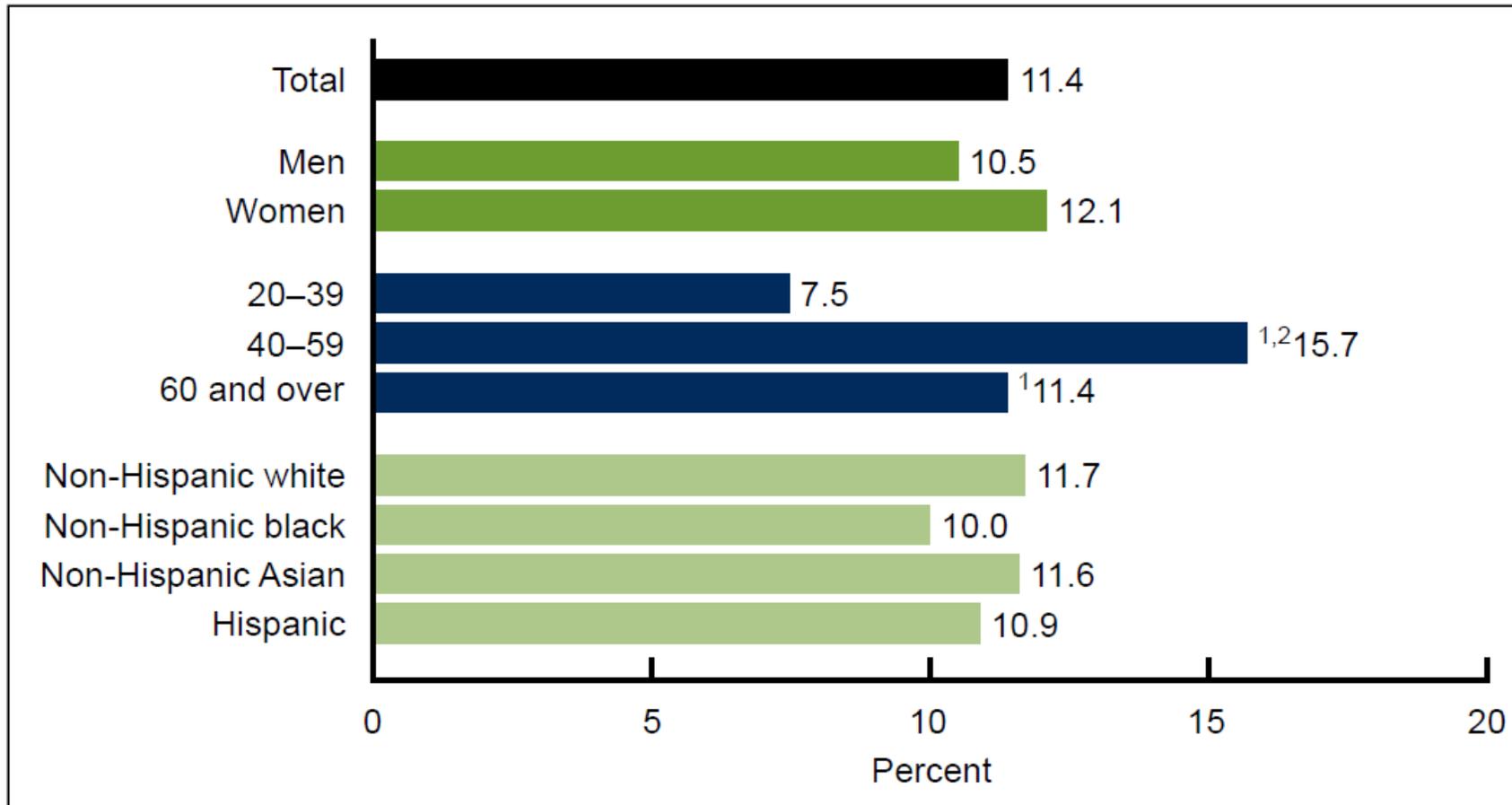
- High total cholesterol and low high-density lipoprotein cholesterol are independent and modifiable risk factors for coronary heart disease.
- Declining trends were seen in the prevalence of high total cholesterol from 1999–2000 to 2015–2016 and in low HDL-C from 2007–2008 to 2015–2016.
- This report presents the most recent national data on the prevalence of high total cholesterol and low HDL-C among U.S. adults

# Total and High-Density Lipoprotein (HDL) Cholesterol in Adults

<https://www.cdc.gov/nchs/data/databriefs/db363-h.pdf>

- NHANES 2015-18 data for prevalence estimates; 1999-2018 to evaluate trends in high total cholesterol; 2007-18 for low HDL-C (due to method changes).
- Estimates are based on the laboratory testing of blood samples collected from participant during their examination at the mobile examination center.
- High total cholesterol: serum total cholesterol  $\geq$  240 mg/dL
- Low HDL cholesterol: serum HDL-C  $<$  40 mg/dL
- Analysis used examination sample weights.
- Estimates were age adjusted using the direct method to the 2000 projected U.S. Census population.

Figure 1. Prevalence of high total cholesterol among adults aged 20 and over, by sex, age, and race and Hispanic origin: United States, 2015–2018



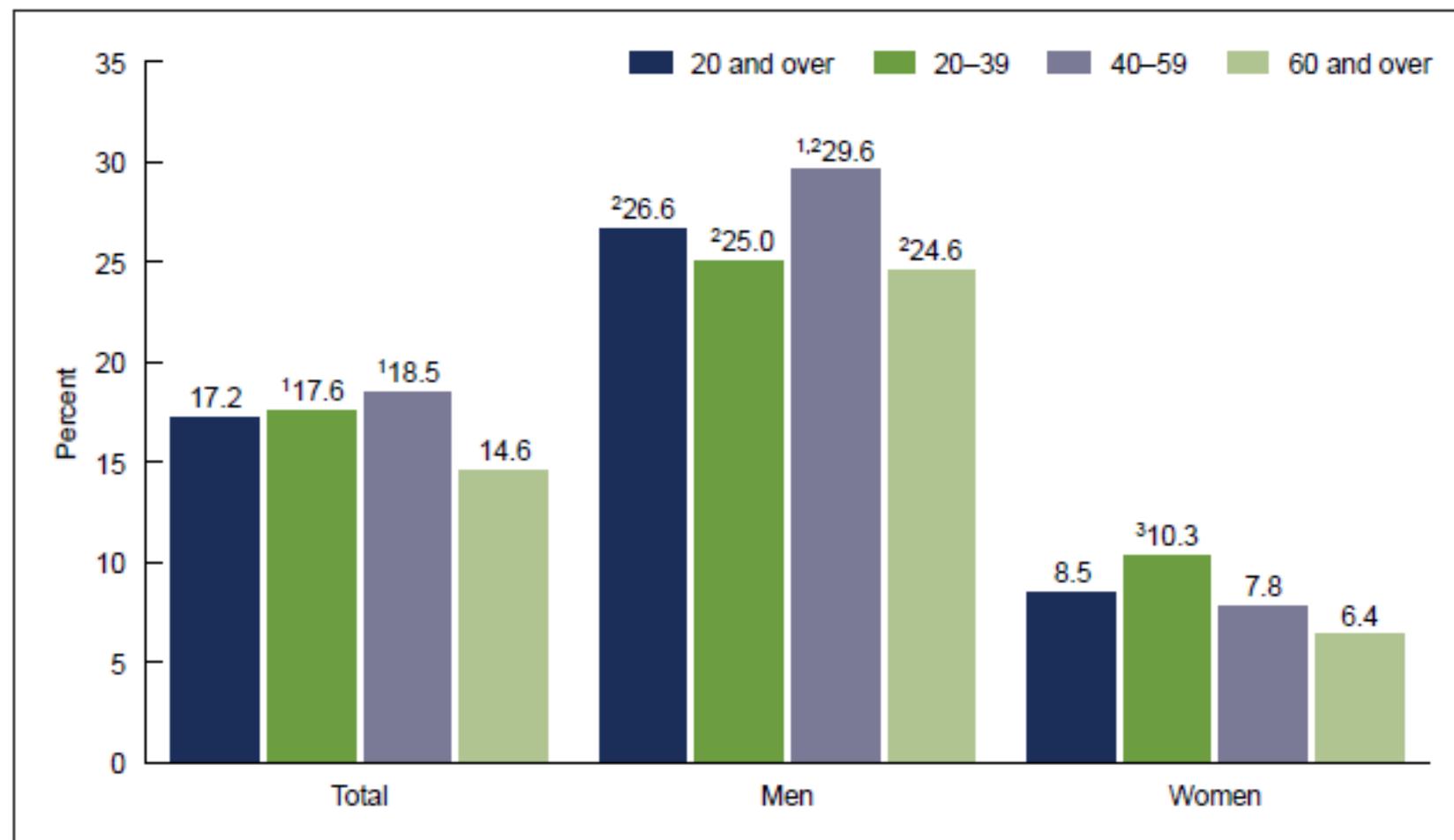
<sup>1</sup>Significantly different from adults aged 20–39.

<sup>2</sup>Significantly different from adults aged 60 and over.

NOTES: High total cholesterol is 240 mg/dL or more. All estimates except those by age were age adjusted by the direct method to the projected 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Crude estimates are 11.5% for total, 10.3% for men, and 12.6% for women. Access data table for Figure 1 at: <https://www.cdc.gov/nchs/data/databriefs/db363-tables-508.pdf#1>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.

Figure 2. Prevalence of low high-density lipoprotein cholesterol among adults aged 20 and over, by sex and age: United States, 2015–2018



<sup>1</sup>Significantly different from adults aged 60 and over.

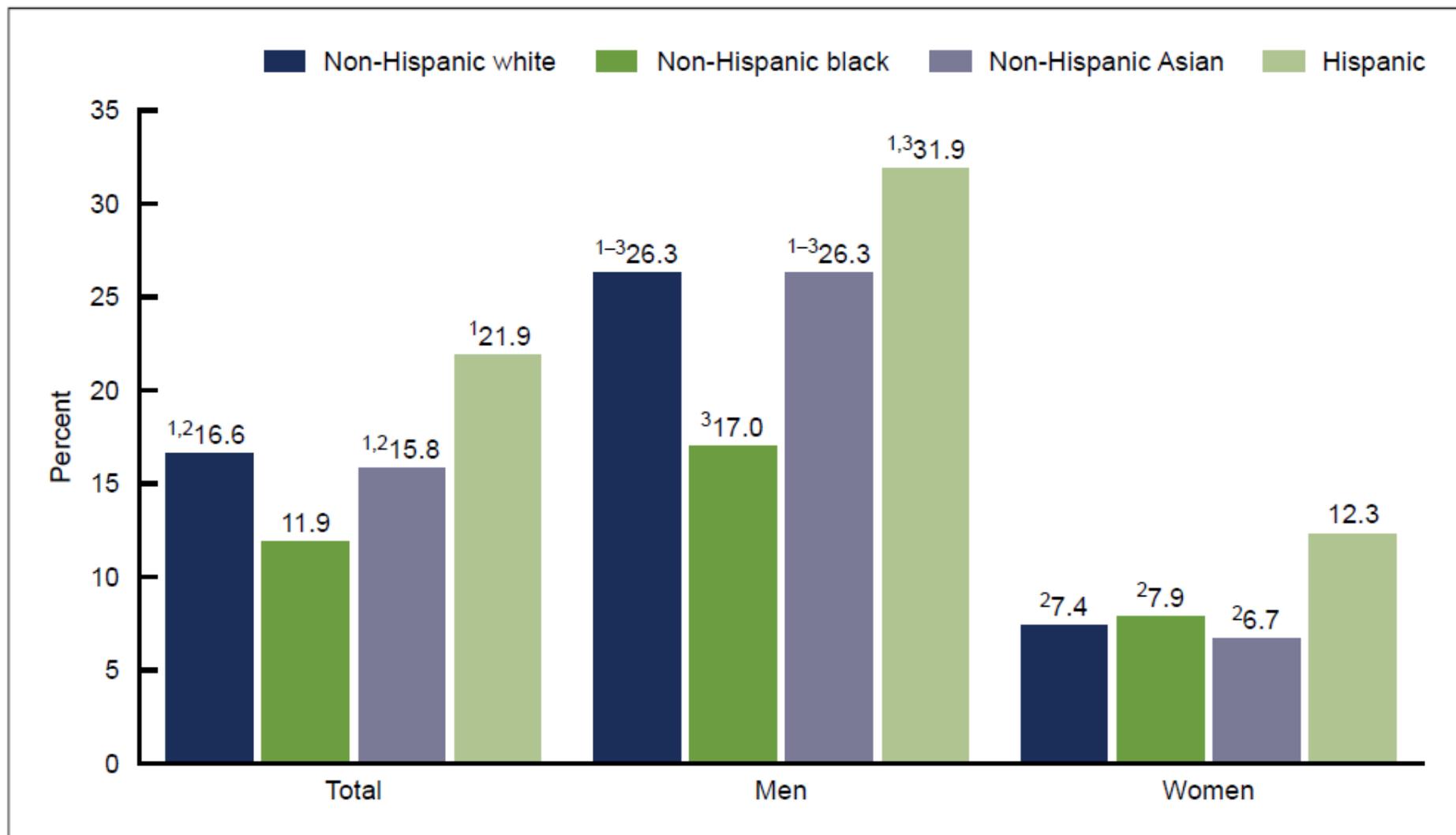
<sup>2</sup>Significantly different from women of the same age group.

<sup>3</sup>Significant decreasing linear trend.

NOTES: Low high-density lipoprotein cholesterol is less than 40 mg/dL. Estimates for the “20 and over” category were age adjusted by the direct method to the projected 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Crude estimates are 17.1% for total, 26.6% for men, and 8.2% for women. Access data table for Figure 2 at: <https://www.cdc.gov/nchs/data/databriefs/db363-tables-508.pdf#2>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.

Figure 3. Age-adjusted prevalence of low high-density lipoprotein cholesterol among adults aged 20 and over, by sex and race and Hispanic origin: United States, 2015–2018



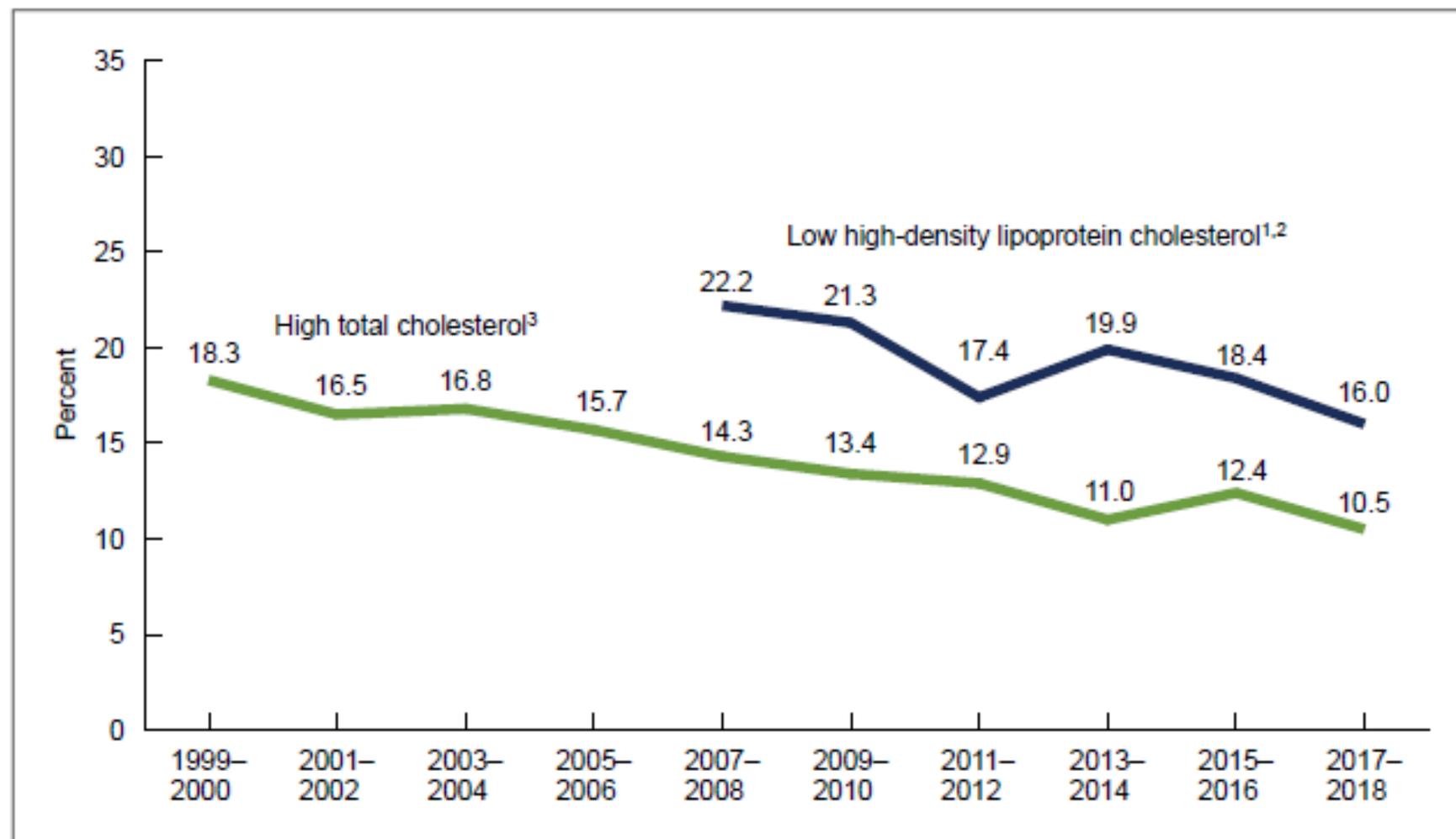
<sup>1</sup>Significantly different from non-Hispanic black adults.

<sup>2</sup>Significantly different from Hispanic adults.

<sup>3</sup>Significantly different from women of the same race and Hispanic-origin group.

NOTES: Low high-density lipoprotein cholesterol is less than 40 mg/dL. All estimates were age adjusted by the direct method to the projected 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Access data table for Figure 3 at: <https://www.cdc.gov/nchs/data/databriefs/db363-tables-508.pdf#3>.

Figure 4. Trends in age-adjusted prevalence of high total cholesterol and low high-density lipoprotein cholesterol among adults aged 20 and over: United States, 1999–2000 through 2017–2018



<sup>1</sup>Percentages prior to 2007–2008 are not presented due to changes in laboratories and methods.

<sup>2</sup>Significant decreasing linear trend from 2007–2008 to 2017–2018.

<sup>3</sup>Significant decreasing linear trend from 1999–2000 to 2017–2018.

NOTES: High total cholesterol is 240 mg/dL or more. Low high-density lipoprotein cholesterol is less than 40 mg/dL. All estimates were age adjusted by the direct method to the projected 2000 U.S. Census population using the age groups 20–39, 40–59, and 60 and over. Access data table for Figure 4 at: <https://www.cdc.gov/nchs/data/databriefs/db363-tables-508.pdf#4>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 1999–2018.

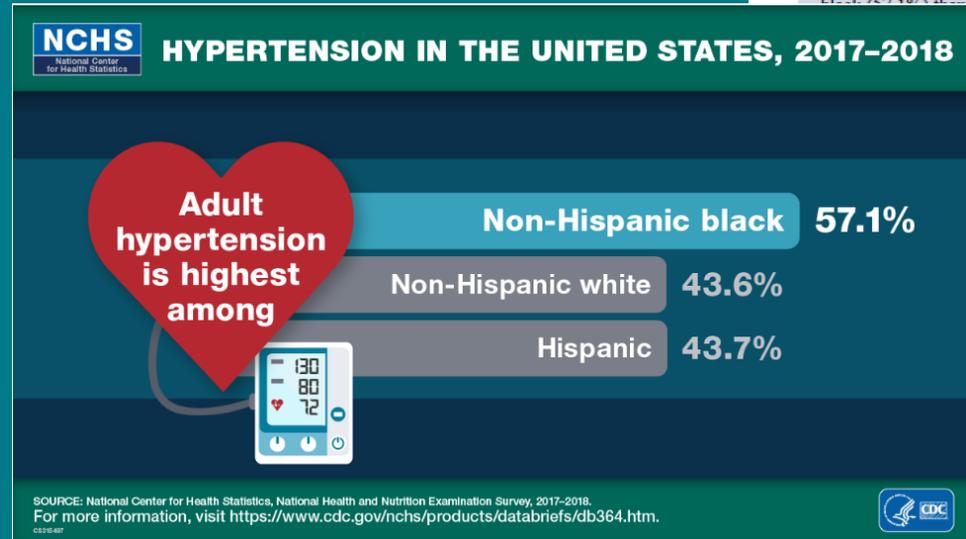
# Total and High-Density Lipoprotein (HDL) Cholesterol in Adults

<https://www.cdc.gov/nchs/data/databriefs/db363-h.pdf>

- Healthy People 2020 has established a goal of lowering the percentage of adults with high total cholesterol to no more than 13.5%.
- During 2015–2018, the overall prevalence in both men and women met this goal.

# Hypertension among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>



## Hypertension Prevalence Among Adults Aged 18 and Over: United States, 2017-2018

Yechiam Ostchega, Ph.D., R.N., Cheryl D. Fryar, M.S.P.H., Tatiana Nwankwo, M.S., and Duong T. Nguyen, D.O.

### Key findings

#### Data from the National Health and Nutrition Examination Survey

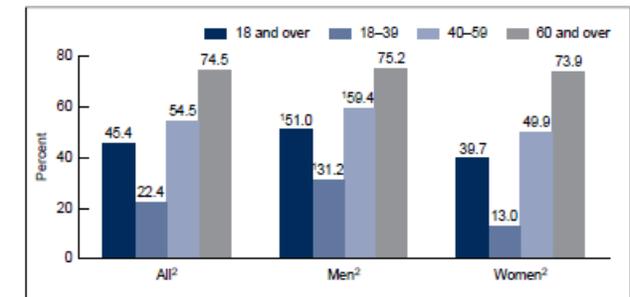
- In survey period 2017-2018, the prevalence of age-adjusted hypertension was 45.4% among adults and was higher among men (51.0%) than women (39.7%).
- Hypertension increased with age: 22.4% (aged 18-39), 54.5% (40-59), and 74.5% (60 and over).
- Hypertension prevalence was higher among non-Hispanic

Hypertension is a major risk factor for cardiovascular disease. Lowering blood pressure has been shown to decrease the incidences of stroke, heart attack, and heart failure (1,2). This report provides 2017-2018 U.S. hypertension prevalence estimates using the 2017 American College of Cardiology and American Heart Association definition of hypertension (3) and new guidelines, which redefine hypertension by lowering the previous threshold levels of 140/90 mmHg to 130/80 mmHg (4). This change categorizes a greater percentage of people as having hypertension.

### Were differences seen in the prevalence of hypertension among adults by sex and age during 2017-2018?

Adjusted for age, the 2017-2018 hypertension prevalence among adults aged 18 and over was 45.4% and was higher among men (51.0%) than women (39.7%) (Figure 1). The prevalence of hypertension increased with age.

Figure 1. Prevalence of hypertension among adults aged 18 and over, by sex and age: United States, 2017-2018



<sup>1</sup>Significantly different from women within the same age group.  
<sup>2</sup>Significant increasing trend by age.  
 NOTES: Hypertension is defined as systolic blood pressure greater than or equal to 130 mmHg or diastolic blood pressure greater than or equal to 80 mmHg, or currently taking medication to lower blood pressure. Estimates for age group 18 and over are age adjusted by the direct method to the U.S. Census 2000 population using age groups 18-39, 40-59, and 60 and over. Crude estimates are 48.2% for all persons, 52.5% for men, and 44.0% for women. Access data table for Figure 1 at: <https://www.cdc.gov/nchs/data/databriefs/db364-tables-509.pdf>.  
 SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-2018.



# Hypertension among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>

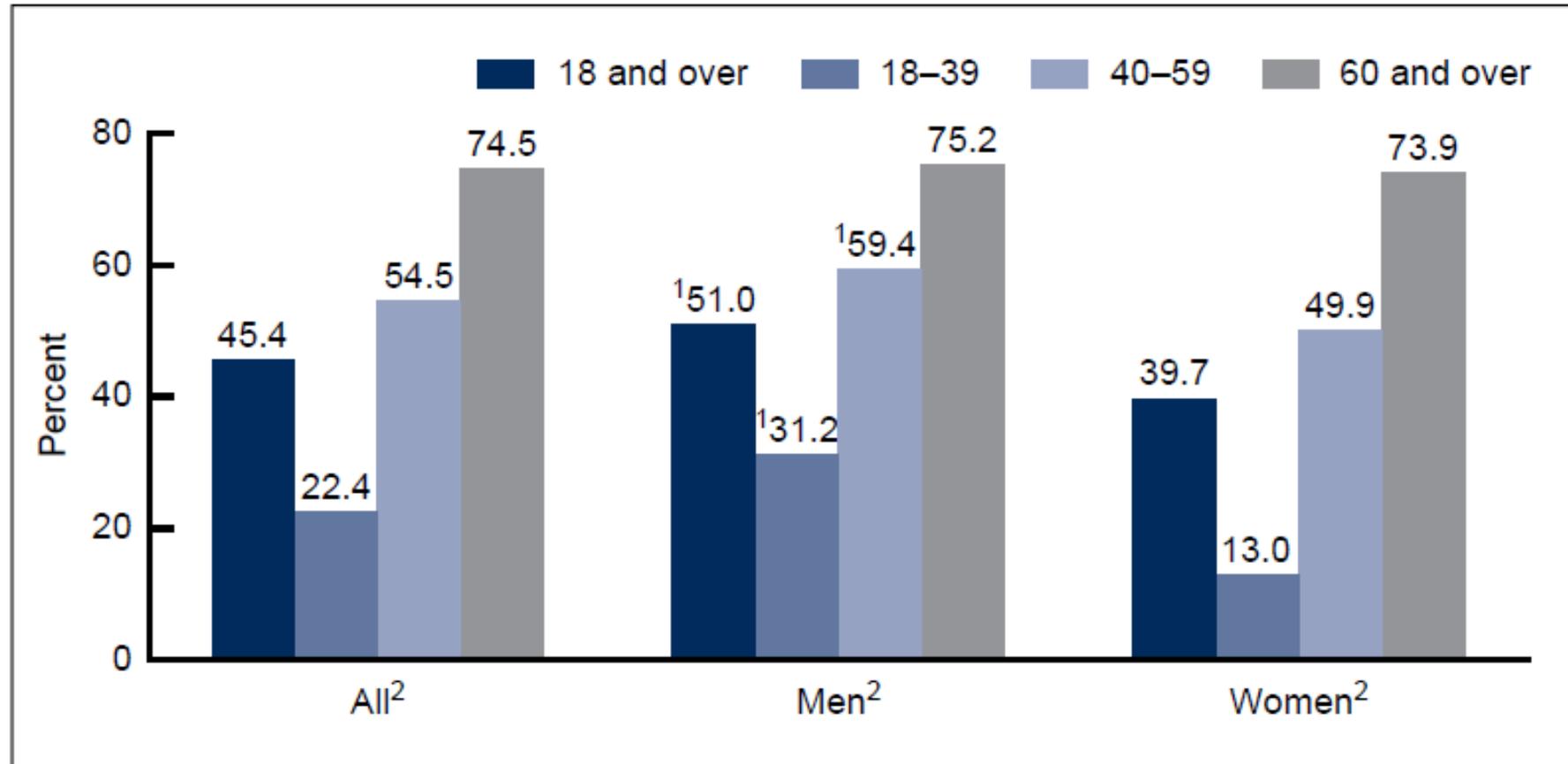
- Hypertension is a major risk factor for cardiovascular disease.
- Lowering blood pressure has been shown to decrease the incidences of stroke, heart attack, and heart failure.
- This report provides the most recent national data on the prevalence of hypertension among U.S. adults

# Hypertension among adults

<https://www.cdc.gov/nchs/products/databriefs/db360.htm>

- NHANES 2017-18 data for prevalence estimates; 1999-2000 through 2017-18 to evaluate trends
- Estimates are based on blood pressure measurements of participants obtained by trained physicians during a single exam visit to the mobile examination center.
- Hypertension was defined as BP  $\geq$  130/80 mmHg or currently taking medication to lower high blood pressure
- Analysis used examination sample weights
- Estimates were age adjusted using the direct method to the 2000 projected U.S. Census population

Figure 1. Prevalence of hypertension among adults aged 18 and over, by sex and age: United States, 2017–2018



<sup>1</sup>Significantly different from women within the same age group.

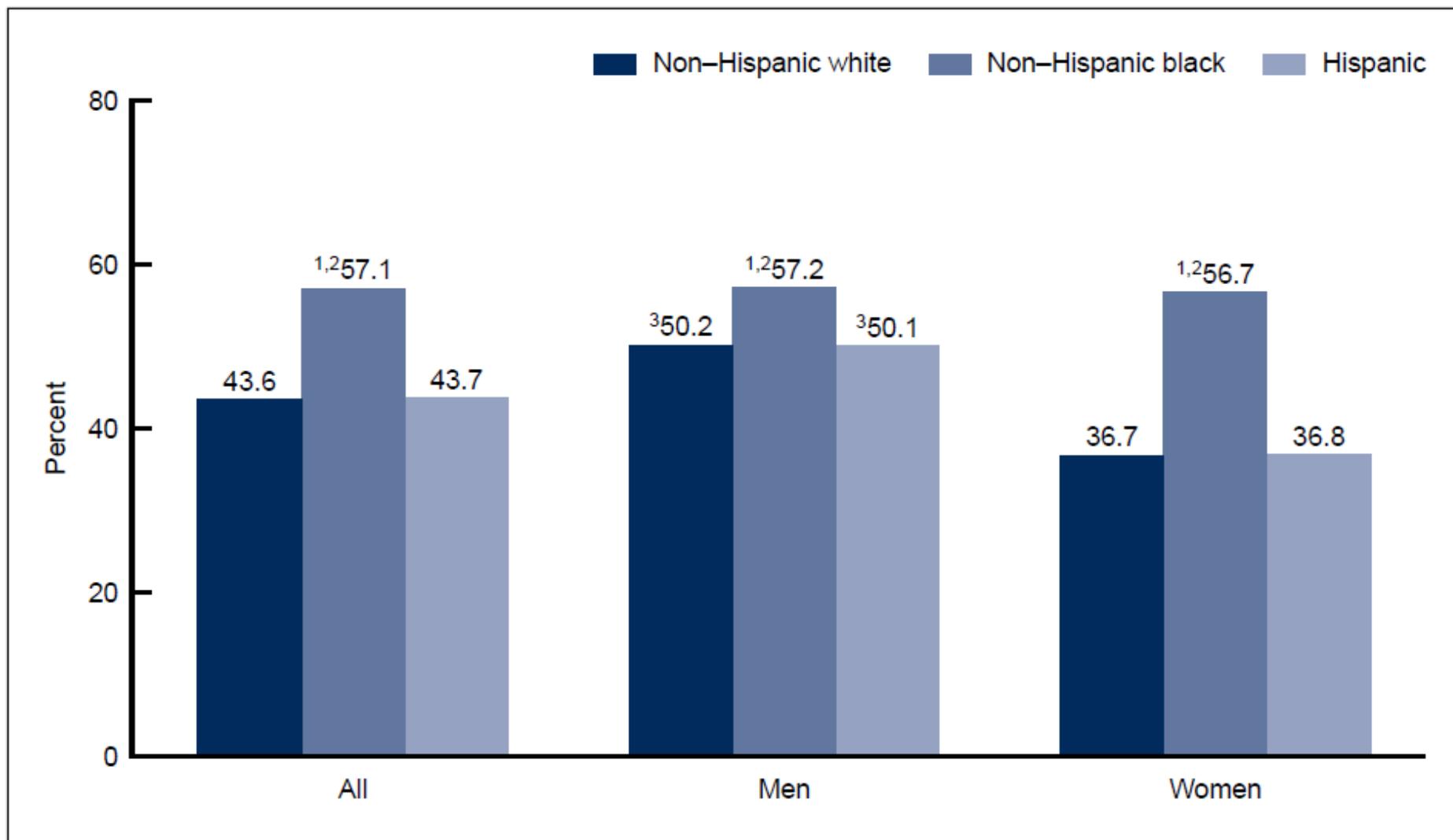
<sup>2</sup>Significant increasing trend by age.

NOTES: Hypertension is defined as systolic blood pressure greater than or equal to 130 mmHg or diastolic blood pressure greater than or equal to 80 mmHg, or currently taking medication to lower blood pressure. Estimates for age group 18 and over are age adjusted by the direct method to the U.S. Census 2000 population using age groups 18–39, 40–59, and 60 and over. Crude estimates are 48.2% for all persons, 52.5% for men, and 44.0% for women. Access data table for Figure 1 at:

<https://www.cdc.gov/nchs/data/databriefs/db364-tables-508.pdf#1>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017–2018.

Figure 2. Age-adjusted prevalence of hypertension among adults aged 18 and over, by sex and race and Hispanic origin: United States, 2017–2018



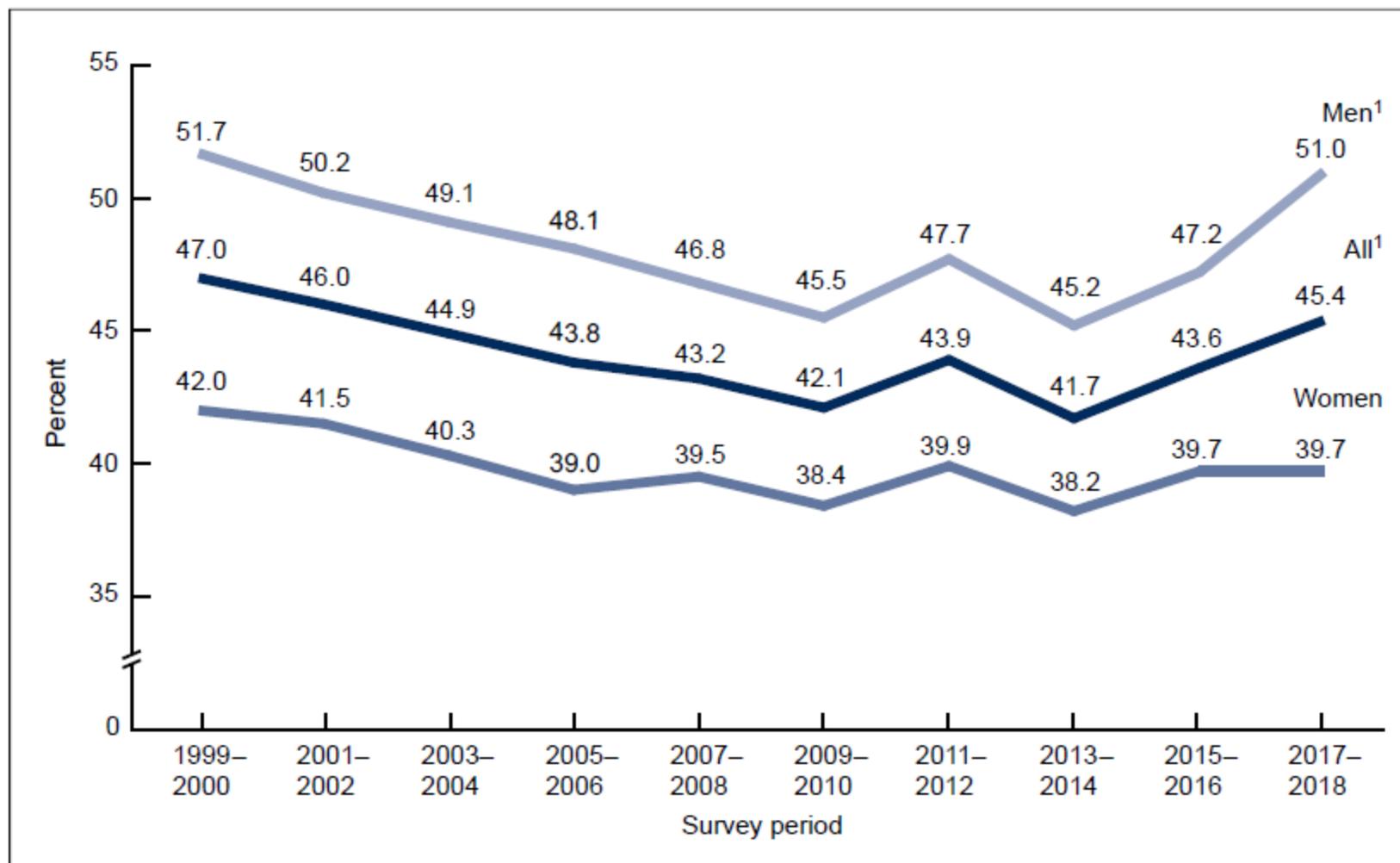
<sup>1</sup>Significantly different from non-Hispanic white.

<sup>2</sup>Significantly different from Hispanic.

<sup>3</sup>Significantly different from women in the same race and Hispanic-origin group.

NOTES: Hypertension is defined as systolic blood pressure greater than or equal to 130 mmHg or diastolic blood pressure greater than or equal to 80 mmHg, or currently taking medication to lower blood pressure. All estimates are age adjusted by the direct method to the U.S. Census 2000 population using age groups 18–39, 40–59, and 60 and over. Access data table for Figure 2 at: <https://www.cdc.gov/nchs/data/databriefs/db364-tables-508.pdf#2>.

Figure 4. Age-adjusted trend in hypertension prevalence among adults aged 18 and over, by sex: United States, 1999–2018



<sup>1</sup>Significant quadratic trend from 1999 through 2018.

NOTES: Hypertension is defined as systolic blood pressure greater than or equal to 130 mmHg or diastolic blood pressure greater than or equal to 80 mmHg, or currently taking medication to lower blood pressure. All estimates are age adjusted by the direct method to the U.S. Census 2000 population using age groups 18–39, 40–59, and 60 and over. Access data table for Figure 4 at: <https://www.cdc.gov/nchs/data/databriefs/db364-tables-508.pdf#4>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 1999–2018.

# Planning for new Data Briefs and other publications

- Using data from 2017-2018 and early survey cycles
  - Dental caries based on 2017-18 oral health data
  - Pain medications based on 2017-18 and early prescription medication data
- Using upcoming 2017-2018 data release
  - Possible publications based on dietary intake data

# NHANES 2019-2020



# NHANES 2020 Data Collection

- All 2020 data collection was suspended on March 16 due to COVID-19.
- NHANES mobile exam center (MEC) trailers are now parked in Maryland.
- We will resume field operations as soon as prudent from public health and logistical perspectives.



# NHANES assistance with COVID-19 Response

- Deployment of NHANES staff
  - Contact tracing, Quarantine station, FEMA National Response Coordination Center (NRCC)
- Trailers / trucks for COVID-19 testing
  - CLIA certified labs
  - Offered use to DOH in NY, MD, and DC
  - 4/24 we transferred our truck to DC's Dept of Forensic Sciences, DOH for mobile testing of DC residents
- Serology testing for SARS-CoV-2
- Burden estimates for severe obesity and other health conditions



# NHANES moving forward

- Continue with the data QC, editing, and release of earlier NHANES cycles
- Continue with NHANES publications
- Planning for our return to data collection
- Planning for a new 2023 survey design and data collection period

**Thank you**



# Questions?

- Please submit your questions via the chat window in the Skype application
- The facilitator will address questions as time allows.
- Questions not answered may be forwarded to [paoquery@cdc.gov](mailto:paoquery@cdc.gov)

<https://www.cdc.gov/nchs>

<https://www.cdc.gov/nchs/nhanes>