



# **Prevalence of Nutrition-Related Chronic Health Conditions and Nutritional Biomarkers: Individuals Ages 1 Year and Older**

Supplementary Data Analysis for the 2025 Dietary Guidelines Advisory  
Committee

Federal Data Analysis Team and 2025 Dietary Guidelines Advisory Committee

Data analysis provided by: United States Department of Health and Human Services, Centers for Disease Control and  
Prevention, National Center for Health Statistics

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## Introduction

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The 2025 Dietary Guidelines Advisory Committee (Committee) used data analysis to describe the current health and dietary intakes in the United States. The federal data analysis team and interagency collaborations supported the work of the Committee by analyzing data on specific topics and questions. The federal data analysis team included expert scientists with advanced degrees in nutrition, statistics, and epidemiology from the following Departments and agencies:

### **United States Department of Health and Human Services (HHS)**

- Office of Disease Prevention and Health Promotion (ODPHP), Office of the Assistant Secretary for Health (OASH)
- National Cancer Institute, National Institutes of Health
- National Center for Health Statistics, Centers for Disease Control and Prevention

### **United States Department of Agriculture (USDA)**

- Center for Nutrition Policy and Promotion (CNPP), Food and Nutrition Service (FNS), Food, Nutrition, and Consumer Services
- Agricultural Research Service, Research, Education, and Economics

A collection of federal data sources, including the National Health and Nutrition Examination Survey (NHANES), informed the Committee's work. The Federal Data Analysis Plan described the data analysis process and strategy and specified the analyses that would be used to support the Committee in answering the data analysis questions.<sup>1</sup> Data analysis results for the 2025 Committee are summarized in the Federal Data Analysis Reports and synthesized in the 2025 Committee's Scientific Report however should not be interpreted as dietary guidance.<sup>2-7</sup> The Committee's Scientific Report also includes conclusion statements which describe the state of the science based on the evidence considered for each data analysis question.

This supplemental report, *Prevalence of Nutrition-Related Chronic Health Conditions and Nutritional Biomarkers: Individuals Ages 1 Year and Older*, includes the results of data analyses conducted for the 2025 Committee by the federal data analysis team. These data tables contributed to the evidence for the following data analysis questions:

- What is the current prevalence of nutrition-related chronic health conditions?
- Which nutrients and/or dietary components present a substantial public health concern because of underconsumption or overconsumption?

## Acknowledgments and Funding

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The federal data analysis team supported the Committee by facilitating, executing, and documenting the work necessary to analyze federal data on dietary intake, nutrients and/or dietary components of public health concern, and nutrition-related chronic health conditions. The federal data analysis team was comprised of staff from ODPHP and CNPP, along with project leadership, and was supported by interagency collaborators who collected and analyzed the federal data. Contractor support was also provided for analysis of food category sources of nutrients, dietary components, and food groups. The Committee members were involved in identifying additional data analysis topics and needs, synthesizing analysis results, and writing conclusion statements for the Scientific Report.

Contributors to this supplementary data analysis are recognized below.

## Federal Data Analysis Team

United States Department of Health and Human Services, Office of the Assistant Secretary for Health, Office of Disease Prevention and Health Promotion

- Dana DeSilva, PhD, RD (Data Analysis Project Co-Lead)
- Janet de Jesus, MS, RD (Dietary Guidelines Project Lead; Designated Federal Officer)
- Dennis Anderson-Villaluz, MBA, RD, LDN, FAND
- Kara Beckman, PhD
- Sarah Karp, MNSP, RD, LDN
- Joe Rorabaugh-Irwin, MS, RD, LD, CDCES (Former Detailee; United States Department of Health and Human Services, Indian Health Services, Haskell Indian Health Center)

United States Department of Agriculture, Food, Nutrition, and Consumer Services, Food and Nutrition Service, Center for Nutrition Policy and Promotion

- Colleen M. Cruz, MPH, RDN (Data Analysis Project Co-Lead)
- Eve Stoodly, PhD (Dietary Guidelines Project Lead)
- Meghan Adler, MS, RDN
- Hazel Hiza, PhD, RDN
- Kevin Kuczynski, MS, RD
- Tessa Lasswell, MPH, RDN
- Chinwe Obudulu, MS, RD, LD
- TusaRebecca Pannucci, PhD, MPH, RD
- Leigh Ann Richardson, PhD, MPH (Contractor, Panum Telecom, LLC [A wholly owned subsidiary of Aretum])
- Kelley Scanlon, PhD, RD

## Interagency Collaborations

United States Department of Agriculture, Research, Education, and Economics, Agricultural Research Service

- Joseph Goldman, MA
- Alanna Moshfegh, MS, RD
- Pamela Pehrsson, PhD
- Donna Rhodes, MS, RD
- Rhonda Sebastian, MA

United States Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics

- Joseph Afful, MS (Contractor, Peraton)
- Nicholas Ansai, MPH
- Margaret Carroll, MSPH
- Cheryl Fryar, MSPH
- Heather Hamner, PhD, MS, MPH
- Cynthia Ogden, PhD, MRP
- Bryan Stierman, MD, MPH
- Anne Williams, PhD, MPH

United States Department of Health and Human Services, National Institutes of Health, National Cancer Institute

- Kevin Dodd, PhD
- Kirsten Herrick, PhD, MSc
- Audrey Goldbaum, PhD, MPH
- Lisa Kahle, BA
- Jill Reedy, PhD, MPH, RDN
- Marissa Shams-White, PhD, MS, MPH
- Edwina Wambogo, PhD, MPH, RDN
- Amelia Willits-Smith, PhD

**2025 Dietary Guidelines Advisory Committee: Data Analysis and Food Pattern Modeling Subcommittee**

- Heather A. Eicher-Miller, PhD (Data Analysis Chair)
- Christopher A. Taylor, PhD, RDN, LD, FAND
- Sarah L. Booth, PhD
- Steven A. Abrams, MD
- Carol Byrd-Bredbenner, PhD, RD, FAND
- Valarie Blue Bird Jernigan, DrPH, MPH
- Teresa Fung, ScD, RD
- Sameera Talegawkar, PhD
- Deirdre Tobias, ScD

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## Supplemental Data Tables: Prevalence of Nutrition-Related Chronic Health Conditions and Nutritional Biomarkers: Individuals Ages 1 Year and Older

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**Prevalence of high low density lipoprotein cholesterol (LDL-C) among adolescents ages 12-19 years by sex, race-Hispanic origin, and weight status: United States, 2017-March 2020**

	Sample size <sup>1</sup>	Percent	Standard error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age Category (years)</b>	12-19				
<b>Total<sup>2</sup></b>	1111	4.9	0.7	3.6	6.5
<b>Household Food Security</b>					
Full	596	3.3	0.7	2.0	5.0
Marginal	148	5.8*	1.9	2.5	11.3
Low	198	6.8*	2.8	2.3	15.1
Very Low	122	11.0	2.7	6.0	18.0
<b>SNAP Participation (Current)</b>					
Yes	306	6.8	1.7	3.8	11.1
No	749	4.1	0.7	2.7	5.9

High LDL cholesterol is defined as LDL-C  $\geq$ 130 mg/dL.

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup> Number of youths examined in the morning who fasted at least 8 1/2 hours but less than 24 hours prior to venipuncture and with calculated LDL-C.

<sup>2</sup> Total includes those with missing household food security or SNAP participation data.

NOTE: Age is age at examination.

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020.

**Prevalence of high low density lipoprotein cholesterol (LDL-C  $\geq$ 100 mg/dL) among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	20+					20-39				
<b>Total<sup>1</sup></b>	5935	59.8	1.1	57.6	61.9	1820	52.2	1.6	49	55.4
<b>Household Food Security</b>										
Full	3459	59.5	1.5	56.3	62.6	950	50	2.4	45.1	55
Marginal	816	59.2	2.5	54	64.3	305	58.4	3.6	50.7	65.9
Low	890	62.5	2.1	58.1	66.8	325	58.5	4.1	49.7	66.9
Very Low	500	63.9	3.7	56	71.3	167	49.6	5	38.9	60.3
<b>SNAP Participation (Current)</b>										
Yes	1205	52	2.5	56	66.5	435	54.5	3.7	46.7	62.2
No	4423	59.9	1.4	57	62.6	1305	52.1	1.6	48.8	55.4



**Prevalence of high low density lipoprotein cholesterol (LDL-C  $\geq$ 100 mg/dL) among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2015-March 2020 (continued)**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	40-59					60+				
<b>Total<sup>1</sup></b>	1995	73.4	1.4	70.3	76.2	2120	53.2	1.9	49.2	57.1
<b>Household Food Security</b>										
Full	1147	73	2	68.6	77	1362	54.3	2.3	49.4	59.1
Marginal	263	72.5	3.4	65	79.1	248	41.8	5	31.4	52.8
Low	295	74.1	2.9	67.6	79.9	270	51.1	4.4	41.9	60.3
Very Low	203	78.2	3.4	70.5	84.7	130	65.2	6.7	49.9	78.5
<b>SNAP Participation (Current)</b>										
Yes	407	75.1	3.2	68	81.3	363	52.9	4.5	43.4	62.2
No	1486	73.2	1.6	69.7	76.5	1632	53.7	2.2	49.1	58.3

High LDL cholesterol is defined as LDL-C  $\geq$ 100 mg/dL.

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup> Total includes those with missing household food security or SNAP participation data.

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020.

**Prevalence of low high density lipoprotein cholesterol (HDL-C <40 mg/dL) among children and adolescents ages 12-19 years by food security and SNAP participation status: United States, 2015-March 2020**

	Sample size <sup>1</sup>	Percent	Standard error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age Category (years)</b>	12-19				
<b>Total<sup>2</sup></b>	2722	13.7	0.9	11.9	15.8
<b>Household Food Security</b>					
Full	1448	12.0	1.1	9.8	14.6
Marginal	385	16.7	2.8	11.4	23.2
Low	476	15.6	2.1	11.5	20.5
Very Low	295	17.6	2.5	12.6	23.4
<b>SNAP Participation (Current)</b>					
Yes	756	15.8	1.9	12.2	20.1
No	1832	12.8	1.1	10.6	15.3

Low HDL cholesterol is defined as HDL-C <40 mg/dL.

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup> Number of youths with measured HDL-C.

<sup>2</sup> Total includes those with missing household food security or SNAP participation data.

Note: Age is age at examination.

Sample size is unweighted; Estimates are weighted using examination sample weights.

Source: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020

**Prevalence of low high density lipoprotein cholesterol (< 40 mg/dL) among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	20+					20-39				
<b>Total<sup>1</sup></b>	13078	17.2	0.6	16.0	18.5	4126	18.2	1.0	16.2	20.3
<b>Household Food Security</b>										
Full	7669	15.1	0.7	13.8	16.5	2181	15.2	1.1	13.1	17.6
Marginal	1772	21.3	1.6	18.1	24.7	657	22.5	2.8	17.0	28.7
Low	1858	22.8	1.5	19.9	25.9	700	24.0	2.7	18.6	30.1
Very Low	1154	24.8	2.1	20.6	29.5	396	25.8	2.5	20.9	31.3
<b>SNAP Participation (Current)</b>										
Yes	2676	22.6	1.1	20.5	24.9	992	24.4	1.7	20.9	28.1
No	9692	16.3	0.7	14.9	17.8	2920	17.0	1.2	14.7	19.5

**Prevalence of low high density lipoprotein cholesterol (< 40 mg/dL) among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2015-March 2020 (continued)**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	40-59					60+				
<b>Total<sup>1</sup></b>	4344	18.6	0.9	16.7	20.6	4608	14.3	0.7	12.9	15.9
<b>Household Food Security</b>										
Full	2512	16.6	1.1	14.4	18.8	2976	13.5	0.9	11.7	15.3
Marginal	592	21.8	2.7	16.5	27.9	523	17.5	2.5	12.6	23.3
Low	609	23.8	2.7	18.5	29.8	549	18.0	1.9	14.3	22.2
Very Low	425	26.0	2.9	20.3	32.4	333	20.3	4.9	11.2	32.3
<b>SNAP Participation (Current)</b>										
Yes	876	24.5	2.0	20.5	28.9	808	15.8	2.1	11.7	20.7
No	3235	17.5	1.0	15.5	19.6	3537	14.2	0.8	12.6	15.9

Low HDL cholesterol is defined as HDL-C <40 mg/dL.

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup>Total includes those with missing household food security or SNAP participation data.

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020.

**Prevalence of high triglycerides ( $\geq 150$  mg/dL) among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	20+					20-39				
<b>Total<sup>1</sup></b>	5991	20.6	0.8	19.0	22.3	1834	15.5	1.2	13.1	18.1
<b>Household Food Security</b>										
Full	3482	19.3	1.2	16.9	21.8	954	13.1	1.7	9.8	16.9
Marginal	830	22.6	2.5	17.6	28.2	309	18.5	3.2	12.5	25.9
Low	898	27.2	2.0	23.2	31.5	327	21.7	3.5	14.9	29.9
Very Low	510	22.0	3.1	16.0	28.9	171	18.1	3.7	11.0	27.1
<b>SNAP Participation (Current)</b>										
Yes	1217	22.4	1.7	19.1	26.0	438	15.9	2.2	11.7	21.0
No	4465	20.4	1.0	18.5	22.4	1315	15.4	1.4	12.7	18.5

**Prevalence of high triglycerides ( $\geq 150$  mg/dL) among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2015-March 2020 (continued)**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	40-59					60+				
<b>Total<sup>1</sup></b>	2026	25.9	1.6	22.6	29.3	2131	20.8	1.4	18.1	23.7
<b>Household Food Security</b>										
Full	1160	23.1	1.8	19.5	27.0	1368	21.1	1.7	17.7	24.9
Marginal	271	31.5	5.3	21.1	43.6	250	19.4	4.5	10.9	30.6
Low	300	37.7	3.5	30.7	45.1	271	21.0	3.4	14.5	28.9
Very Low	207	27.1	5.3	17.0	39.4	132	19.7	5.3	9.9	33.1
<b>SNAP Participation (Current)</b>										
Yes	414	31.8	3.0	25.8	38.2	365	20.4	2.7	15.2	26.4
No	1509	24.8	1.8	21.3	28.6	1641	21.1	1.5	18.2	24.2

High triglycerides is defined as triglycerides ( $\geq 150$  mg/dL).

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup> Total includes those with missing household food security or SNAP participation data.

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020.

**Prevalence of hypertension among children and adolescents ages 8-17 years by food security and SNAP participation status: United States, 2017-March 2020**

	Sample size	Percent	Standard error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age Category (years)</b>	8-17				
<b>Total<sup>1</sup></b>	2323	5.1	0.7	3.8	6.8
<b>Household Food Security</b>					
Full	1210	5.4	1.1	3.3	8.2
Marginal	385	7.0*	2.0	3.4	12.5
Low	414	3.5	0.9	1.9	6.0
Very low	217	3.4*	1.3	1.2	7.4
<b>SNAP Participation (Current)</b>					
Yes	717	6.1	1.1	4.0	8.9
No	1495	5.0	0.9	3.3	7.1

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup>Total includes those with missing household food security or SNAP participation data.

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >5 and <30 and relative confidence interval width >130%.

**NOTES:**

Age is age at interview.

Sample size is unweighted; Estimates are weighted using examination sample weights.

Participants aged 8–12 years without a measured height were excluded.

Hypertension calculated based on an average of up to 3 oscillometric blood pressure measurements. 98.4% of participants included in the analysis completed all 3 blood pressure measurements.

Hypertension defined for ages 8–12 years as systolic blood pressure ≥130 mmHg or ≥95th percentile for age, height, and sex, whichever is lower or diastolic blood pressure ≥80 mmHg or ≥95th percentile for age, height, and sex, whichever is lower. Blood pressure percentiles for age calculated as age in years + 6.5 months.

Hypertension defined for ages 13–17 years as systolic blood pressure ≥130 mmHg or diastolic blood pressure ≥80 mmHg.

See: <https://publications.aap.org/pediatrics/article/140/3/e20171904/38358/>

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of hypertension among adults ages 18 years and older, by age and food security and SNAP participation: United States, 2017-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	18+					18-39				
<b>Total<sup>1</sup></b>	7948	48.1	1.3	45.4	50.8	2608	23.4	1.4	20.5	26.5
<b>Household Food Security</b>										
Full	4678	48.6	1.8	44.8	52.4	1393	22.7	2.1	18.5	27.3
Marginal	1049	45.5	2.0	41.2	49.8	386	23.5	2.2	19.1	28.2
Low	1042	45.6	2.3	40.7	50.6	399	25.2	2.7	19.9	31.2
Very Low	701	47.2	3.0	40.9	53.6	273	23.1	3.6	16.0	31.6
<b>SNAP Participation (Current)</b>										
Yes	1576	48.8	2.1	44.5	53.2	610	23.5	2.7	18.1	29.6
No	5834	47.7	1.5	44.5	50.8	1820	23.2	1.7	19.7	27.0



**Prevalence of hypertension among adults ages 18 years and older, by age and food security and SNAP participation: United States, 2017-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	40-59					60+				
<b>Total<sup>1</sup></b>	∫	52.4	1.8	48.7	56.2	2806	74.1	1.3	71.4	76.7
<b>Household Food Security</b>										
Full	1464	49.7	2.8	43.8	55.5	1821	73.0	1.5	69.7	76.2
Marginal	338	57.8	3.2	51.0	64.4	325	77.8	4.0	68.3	85.5
Low	343	54.1	4.6	44.1	63.9	300	81.1	2.6	75.2	86.2
Very Low	236	65.2	4.7	54.7	74.7	192	76.7*	7.8	56.6	90.7
<b>SNAP Participation (Current)</b>										
Yes	517	64.7	3.1	58.1	71.0	449	77.9	4.2	67.9	85.9
No	1849	49.6	2.2	45.0	54.3	2165	73.6	1.3	70.8	76.3

Hypertension is defined as a systolic blood pressure  $\geq 130$  or diastolic blood pressure  $\geq 80$  or currently taking medication to lower blood pressure. Hypertension calculated based on average of up to 3 Oscillo metric blood pressure measurements.

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup> Total includes those with missing household food security or SNAP participation data.

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width  $>30$ .

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of prediabetes among adolescents ages 12-19 years, by food security and SNAP participation status: United States, 2017-March 2020**

Characteristics	Sample size	Percent	Standard error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age Category (years)</b>	12-19				
<b>Total<sup>1</sup></b>	675	38.3	4.2	29.6	47.7
<b>Household Food Security</b>					
Full	368	36.6	5.2	26.0	48.2
Marginal	109	45.7*	7.9	29.1	63.1
Low	97	42.2	5.6	30.3	54.9
Very Low	70	36.6	5.4	25.2	49.2
<b>SNAP Participation (Current)</b>					
Yes	162	38.0	5.8	26.0	51.2
No	475	38.6	5.2	27.9	50.3

SNAP is Supplemental Nutrition Assistance Program.

Pregnant females and participants with missing data for one or either A1c or FPG were excluded.

<sup>1</sup> Total includes those with missing household food security or SNAP participation data.

Prediabetes is defined (by ADA) as having one or more of the following measurements:

- Fasting blood glucose level of 100-125 mg/dL (5.6-6.9 mmol/L);
- A1C level of 5.7-6.4%.

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of diabetes among adults ages 18 years and over, by age and food security and SNAP participation: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	18+					18-44				
	<b>Total Diabetes</b>									
<b>Total<sup>1</sup></b>	6264	15.7	0.7	14.2	17.3	2544	5.4	0.5	4.4	6.6
<b>Household Food Security</b>										
Full	3630	14.8	0.9	13.0	16.7	1347	4.6	0.6	3.4	6.0
Marginal	858	17.6	2.0	13.7	22.1	385	7.1	1.6	4.2	11.0
Low	939	18.6	1.7	15.4	22.3	440	7.1	1.4	4.5	10.5
Very Low	548	16.5	1.7	13.2	20.2	260	7.1	1.6	4.2	11.0
<b>SNAP Participation (Current)</b>										
Yes	1276	19.5	1.5	16.6	22.7	575	8.1	1.3	5.7	11.1
No	4659	14.9	0.8	13.4	16.5	1845	4.8	0.6	3.8	6.1
	<b>Diagnosed Diabetes</b>									
<b>Total<sup>1</sup></b>	6264	11.1	0.6	9.9	12.4	2544	3	0.4	2.3	3.9
<b>Household Food Security</b>										
Full	3630	10.3	0.7	8.9	11.7	1347	2.3	0.5	1.4	3.7
Marginal	858	11.6	1.6	8.6	15.2	385	4.3	1.2	2.1	7.6
Low	939	13.7	1.4	10.9	16.9	440	4.4	1.2	2.4	7.4
Very Low	548	13.3	1.4	10.6	16.5	260	4.5*	1.3	2.2	8.2
<b>SNAP Participation (Current)</b>										
Yes	1276	13.6	1.2	11.2	16.3	575	4.0	0.9	2.5	6.1
No	4659	10.5	0.6	9.3	11.9	1845	2.9	0.5	2.0	4.0
	<b>Undiagnosed Diabetes</b>									
<b>Total<sup>1</sup></b>	6264	4.6	0.4	3.9	5.4	2544	2.4	0.3	1.7	3.1

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Household Food Security</b>										
<b>Full</b>	3630	4.6	0.5	3.6	5.7	1347	2.3	0.5	1.4	3.5
<b>Marginal</b>	858	6.0	1.2	3.7	9.0	385	2.8	0.9	1.2	5.4
<b>Low</b>	939	4.9	0.8	3.5	6.8	440	2.6	0.7	1.4	4.6
<b>Very Low</b>	548	3.1	0.7	1.8	5.0	260	2.6	1.0	0.9	5.5
<b>SNAP Participation (Current)</b>										
<b>Yes</b>	1276	5.9	0.9	4.2	8.0	575	4.1	1.1	2.2	6.9
<b>No</b>	4659	4.4	0.4	3.7	5.2	1845	2.0	0.3	1.4	2.7

**Prevalence of diabetes among adults ages 18 years and over, by age and food security and SNAP participation: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	45-64					65+				
	<b>Total Diabetes</b>									
<b>Total<sup>1</sup></b>	2210	20.9	1.4	18.1	23.8	1510	29.9	1.4	27.1	32.8
<b>Household Food Security</b>	<b>Diagnosed Diabetes</b>									
<b>Full</b>	1255	18.5	1.8	15.0	22.3	1028	26.4	1.4	23.6	29.3
<b>Marginal</b>	311	27.2	3.9	19.5	36.0	162	41.1	4.7	31.3	51.5
<b>Low</b>	336	26.5	2.7	21.1	32.4	163	53.3	5.4	41.6	64.8
<b>Very Low</b>	206	23.1	4.1	15.3	32.6	82	54.4	6.2	40.6	67.6
<b>SNAP Participation (Current)</b>	<b>Undiagnosed Diabetes</b>									
<b>Yes</b>	460	27.1	3.2	20.8	34.1	241	47.0	3.8	39.1	55.0
<b>No</b>	1629	19.3	1.5	16.4	22.4	1185	28.1	1.4	25.3	31.1
<b>Total<sup>1</sup></b>	2210	14.7	1.1	12.5	17.2	1510	22.9	1.4	20.1	25.8
<b>Household Food Security</b>	<b>Diagnosed Diabetes</b>									
<b>Full</b>	1255	12.8	1.4	10.1	15.9	1028	19.6	1.4	16.9	22.5
<b>Marginal</b>	311	17.5	3.2	11.3	25.2	162	30.4	4.7	20.8	41.3
<b>Low</b>	336	17.7	2.6	12.7	23.7	163	48.1	5.6	36.0	60.3
<b>Very Low</b>	206	20.7	3.8	13.4	29.7	82	44.2	5.0	33.2	55.6
<b>SNAP Participation (Current)</b>	<b>Undiagnosed Diabetes</b>									
<b>Yes</b>	460	19.6	2.6	14.5	25.4	241	37.5	3.6	30.2	45.4
<b>No</b>	1629	13.3	1.3	10.9	16.1	1185	21.4	1.4	18.7	24.3
<b>Total<sup>1</sup></b>	2210	6.1	0.8	4.6	7.9	1510	7	0.9	5.3	9.1

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Household Food Security</b>										
Full	1255	5.6	0.9	3.9	7.9	1028	6.8	1.1	4.7	9.4
Marginal	311	9.7	2.6	5.1	16.4	162	10.8*	3.5	4.7	20.3
Low	336	8.8	2.1	5.0	14.0	163	5.2*	1.5	2.4	9.8
Very Low	206	2.4	1.0	0.8	5.6	82	10.2*	3.9	3.6	21.5
<b>SNAP Participation (Current)</b>										
Yes	460	7.5	1.8	4.2	12.2	241	9.4	1.8	6.0	13.8
No	1629	5.9	0.8	4.4	7.9	1185	6.7	1.1	4.7	9.2

SNAP is Supplemental Nutrition Assistance Program.

Pregnant females and participants with missing data for one or more measurements used to define diabetes were excluded.

<sup>1</sup>Total includes those with missing household food security or SNAP participation data.

Diabetes is defined as having three or more of the following measurements:

- Reported physician diagnosis of diabetes, or
- Fasting plasma glucose of 126 mg/dL or greater, or
- Hemoglobin A1C of 65 or greater

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >5 and <30 and relative confidence interval width >130%.

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of metabolic syndrome among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2017-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	20+					20-39				
<b>Total<sup>1</sup></b>	3377	39.7	1.6	36.3	43.2	985	23.7	2.0	19.6	28.2
<b>Household Food Security</b>										
Full	1955	38.1	2.5	32.9	43.5	518	20.5	2.6	15.4	26.5
Marginal	466	41.1	3.5	33.8	48.7	156	27.8	4.1	19.5	37.3
Low	484	43.7	3.4	36.6	51.1	162	29.4	5.7	18.1	42.8
Very Low	287	46.6	3.2	39.8	53.5	105	38.0	5.5	26.4	50.6
<b>SNAP Participation (Current)</b>										
Yes	654	45.3	2.4	40.4	50.3	229	30.1	3.7	22.7	38.4
No	2511	38.6	2.0	34.6	42.8	706	22.8	2.4	17.9	28.3

**Prevalence of metabolic syndrome among adults ages 20 years and over, by age and food security and SNAP participation: United States, 2017-March 2020 (continued)**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	40-59					60+				
<b>Total<sup>1</sup></b>	1152	42.8	2.3	38.0	47.8	1240	55.0	2.7	49.2	60.6
<b>Household Food Security</b>										
Full	647	37.7	3.3	31.0	44.8	790	54.7	3.0	48.3	61.0
Marginal	157	52.5*	8.2	34.5	70.1	153	53.8*	7.8	36.5	70.4
Low	174	55.0	4.5	45.3	64.4	148	56.5*	7.7	39.3	72.6
Very Low	117	55.5	6.9	40.2	70.0	65	45.9*	13.1	18.7	75.1
<b>SNAP Participation (Current)</b>										
Yes	234	52.4	5.5	40.4	64.1	191	62.7*	7.9	44.7	78.5
No	852	40.9	2.7	35.3	46.8	953	53.5	2.5	48.2	58.8

SNAP is Supplemental Nutrition Assistance Program.

Pregnant females and participants with missing data for one or more measurements used to define metabolic syndrome were excluded.

<sup>1</sup>Total includes those with missing household food security or SNAP participation data.

Metabolic syndrome is defined as having three or more of the following measurements:

- Abdominal obesity (Waist circumference of 40 inches or 102cm or greater in men, and 35 inches or 88 cm or greater in women)
- Triglyceride level of 150 milligrams per deciliter of blood (mg/dL) or greater
- HDL cholesterol of less than 40 mg/dL in men or less than 50 mg/dL in women
- Systolic blood pressure of 130 millimeters of mercury (mm Hg) or greater, or diastolic blood pressure of 85 mm Hg or greater or taking high blood pressure medication.
- Based on average of up to 3 oscillometric blood pressure measurements.
- Fasting plasma glucose of 100 mg/dL or greater or taking medication to control diabetes (insulin or pills)

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >30.

Sample size is unweighted; Estimates are weighted using fasting examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.



**Age adjusted prevalence of metabolic syndrome among adults ages 20 years and over, by sex, age, and race-Hispanic origin: United States, 2017-March 2020**

	Sample size	Percent	Standard error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>20 years and over<sup>1</sup></b>	3377	38.1	1.5	35.0	41.2
<b>Sex<sup>1</sup></b>					
Male	1679	36.7	2.5	31.5	42.1
Female	1698	39.5	2.0	35.5	43.7
<b>Age (years)</b>					
20-39	985	23.7	2.0	19.6	28.2
40-59	1152	42.8	2.3	38.0	47.8
60+	1240	55.0	2.7	49.2	60.6
<b>Race and Hispanic origin<sup>1,2</sup></b>					
Non-Hispanic					
Asian	418	29.8	3.1	23.1	37.2
Black	843	36.7	1.8	32.7	40.7
White	1167	37.4	2.2	33.1	41.9
Hispanic	767	42.2	2.1	37.6	46.9

Pregnant females and participants with missing data for one or more measurements used to define metabolic syndrome were excluded.

Metabolic syndrome is defined as having three or more of the following measurements:

- Abdominal obesity (Waist circumference of 40 inches or 102 cm or greater in men, and 35 inches or 88 cm or greater in women)
- Triglyceride level of 150 milligrams per deciliter of blood (mg/dL) or greater
- HDL cholesterol of less than 40 mg/dL in men or less than 50 mg/dL in women
- Systolic blood pressure of 130 millimeters of mercury (mm Hg) or greater, or diastolic blood pressure of 85 mm Hg or greater or taking high blood pressure medication
- Fasting plasma glucose of 100 mg/dL or greater or taking medication to control diabetes (insulin or pills)

<sup>1</sup>Overall, sex specific and race-Hispanic origin estimates are age adjusted by the direct method to the 2000 projected US population using age groups: 20-39, 40-59, and 60 years and over.

<sup>2</sup>Non-Hispanic race categories reflect participants reporting only one race; non-Hispanic persons reporting more than one race are included in the total but are not reported separately.

Sample size is unweighted; Estimates are weighted using fasting examination sample (half sample) weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of overweight, obesity, and severe obesity among children and adolescents ages 2-19, years by age and food security and SNAP and WIC participation: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	2-19					2-5				
	<b>Overweight</b>									
<b>Total<sup>1</sup></b>	8089	16.8	0.7	15.4	18.2	1955	14.7	1.2	12.3	17.3
<b>Household Food Security</b>										
Full	4283	16.0	0.9	14.2	17.8	1030	12.8	1.5	9.9	16.1
Marginal	1245	16.4	1.1	14.3	18.8	338	15.0	2.1	10.9	19.9
Low	1457	18.3	1.4	15.6	21.4	336	18.5	3.2	12.3	26.1
Very Low	768	19.5	1.9	15.7	23.7	168	20.6	3.6	13.7	29.0
<b>SNAP Participation (Current)</b>										
Yes	2584	17.5	1.0	15.5	19.6	714	17.8	1.7	14.4	21.6
No	5134	16.4	0.7	14.9	17.9	1147	13.1	1.5	10.2	16.6
<b>WIC Participation (Current)</b>										
Yes						440	17.9	2.5	13.0	23.7
No						1507	14.1	1.3	11.6	16.8
	<b>Obesity (including severe obesity)</b>									
<b>Total<sup>1</sup></b>	8089	19.2	0.7	17.8	20.8	1955	13.2	0.7	11.7	14.8
<b>Household Food Security</b>										
Full	4283	15.6	0.8	14.1	17.2	1030	11.6	1.0	9.6	13.8
Marginal	1245	23.5	1.7	20.1	27.1	338	13.9	2.1	9.9	18.6
Low	1457	26.2	1.6	22.9	29.6	336	13.2	2.4	8.8	18.9
Very Low	768	27.0	2.4	22.1	32.3	168	22.6	4.3	14.3	32.9

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>SNAP Participation (Current)</b>										
Yes	2584	25.0	1.3	22.4	27.8	714	14.3	1.4	11.6	17.4
No	5134	17.2	0.8	15.6	18.9	1147	12.5	0.9	10.6	14.5
<b>WIC Participation (Current)</b>										
Yes						440	17.1	2.1	13.0	21.9
No						1507	12.4	1.0	10.0	14.5
<b>Severe Obesity</b>										
<b>Total<sup>1</sup></b>	8089	6.3	0.5	5.4	7.4	1955	2.2	0.4	1.5	3.2
<b>Household Food Security</b>										
Full	4283	4.4	0.5	3.4	5.6	1030	1.1	0.4	0.4	2.4
Marginal	1245	9.0	1.4	6.3	12.4	338	2.1	1.1	0.5	5.5
Low	1457	9.5	1.1	7.4	11.9	336	4.1	1.2	2.1	7.2
Very Low	768	9.7	1.7	6.4	13.8	168	6.9*	2.1	3.2	12.6
<b>SNAP Participation (Current)</b>										
Yes	2584	9.9	0.8	8.3	11.6	714	4.5	1.0	2.6	7.0
No	5134	5.0	0.6	3.9	6.3	1147	1.3	0.4	0.7	2.4
<b>WIC Participation (Current)</b>										
Yes						440	4.3	0.8	2.6	6.6
No						1507	1.8	0.5	0.9	3.1

**Prevalence of overweight, obesity, and severe obesity among children and adolescents ages 2-19, years by age and food security and SNAP and WIC participation: United States, 2015-March 2020 (continued)**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	6-11					12-19				
	<b>Overweight</b>									
<b>Total<sup>1</sup></b>	3033	15.6	0.9	13.8	17.5	3101	18.6	1	16.6	20.6
<b>Household Food Security</b>										
Full	1587	14.4	1.0	12.3	16.6	1666	18.5	1.4	15.6	21.6
Marginal	468	18.6	2.1	14.5	23.4	439	15.5	1.9	11.9	19.7
Low	588	17.6	2.4	12.9	23.1	533	18.9	1.9	15.1	23.2
Very Low	276	16.4	3.0	10.8	23.5	324	21.1	2.6	16.0	26.9
<b>SNAP Participation (Current)</b>										
Yes	1020	16.8	1.7	13.5	20.6	850	17.9	1.5	15.0	21.2
No	1891	15.1	1.0	13.2	17.3	2096	18.5	1.1	16.4	20.8
<b>WIC Participation (Current)</b>										
Yes										
No										
	<b>Obesity (including severe obesity)</b>									
<b>Total<sup>1</sup></b>	3033	19.8	1.1	17.7	22.1	3101	21.5	1.1	19.4	23.8
<b>Household Food Security</b>										
Full	1587	16.8	1.3	14.2	19.6	1666	16.4	1.0	14.4	18.5
Marginal	468	22.2	2.2	17.9	26.9	439	29.9	2.9	24.2	36.1
Low	588	28.0	2.3	23.4	32.9	533	31.1	2.6	25.8	36.7
Very Low	276	21.8	2.8	16.4	28.0	324	32.6	4.0	24.6	41.3
<b>SNAP Participation (Current)</b>										

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Yes	1020	25.5	1.6	22.4	28.9	850	31.2	2.3	26.5	36.2
No	1891	17.7	1.3	15.0	20.6	2096	18.8	1.0	16.9	20.9
<b>WIC Participation (Current)</b>										
Yes										
No										
	<b>Severe Obesity</b>									
<b>Total<sup>1</sup></b>	3033	6.3	0.7	4.9	7.8	3101	8.2	0.8	6.7	9.9
<b>Household Food Security</b>										
Full	1587	5.0	1.0	3.2	7.4	1666	5.3	0.7	4.0	7.0
Marginal	468	8.3	1.7	5.2	12.4	439	13.4	2.5	8.8	19.3
Low	588	8.4	1.3	5.9	11.5	533	13.0	1.7	9.7	16.9
Very Low	276	6.4	1.3	3.8	10.0	324	13.2	3.1	7.4	21.0
<b>SNAP Participation (Current)</b>										
Yes	1020	8.5	0.9	6.7	10.6	850	14.4	1.5	11.4	17.9
No	1891	5.2	0.9	3.6	7.3	2096	6.3	0.8	4.9	8.1
<b>WIC Participation (Current)</b>										
Yes										
No										

SNAP is Supplemental Nutrition Assistance Program; WIC is Women Infants and Children supplemental nutrition program.

Overweight is body mass index (BMI) at or above the 85th percentile and below the 95th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts.

Obesity is BMI at or above the 95th percentile. Severe obesity is BMI at or above 120% of the 95th percentile.

Pregnant females and participants with missing BMI data were excluded.

<sup>1</sup>Total includes those with missing household food security, SNAP or WIC participation data.

Sample size is unweighted; Estimates are weighted using examination sample weights.

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >5 and relative confidence interval width >130%.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020.

**Prevalence of overweight, obesity and severe obesity among adults ages 20 years and older: United States, 2015-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	20+					20-39				
	<b>Overweight</b>									
<b>Total<sup>1</sup></b>	13,632	31.7	0.5	30.6	32.8	4,269	27.3	0.8	25.7	29
<b>Household Food Security</b>										
Full	8,005	32.8	0.7	31.4	34.3	2,276	27.8	1.1	25.5	30.1
Marginal	1,828	29.4	1.4	26.5	32.4	659	28.5	2.3	23.9	33.5
Low	1,929	29.6	1.5	26.6	32.7	727	27.1	2.1	23	31.6
Very Low	1,193	26.5	1.6	23.4	29.8	397	22.3	2.2	18	27.1
<b>SNAP Participation (Current)</b>										
Yes	2,800	28.9	1.1	26.7	31.1	1,009	26.9	1.9	23.2	30.9
No	10,063	32.2	0.6	30.9	33.5	3,022	27.5	1.0	25.4	29.6
	<b>Obesity (including severe obesity)</b>									
<b>Total<sup>1</sup></b>	13,632	41.1	0.9	39.2	43	4,269	38.2	1.5	35.2	41.3
<b>Household Food Security</b>										
Full	8,005	39.1	1.1	36.8	41.4	2,276	34.9	2.0	30.9	39.1
Marginal	1,828	46.3	1.9	42.4	50.2	659	44.1	3.4	37.0	51.3
Low	1,929	47.4	1.8	43.8	51.1	727	46.6	2.3	41.9	51.3
Very Low	1,193	47.1	2.2	42.5	51.7	397	44.2	3.7	36.7	52.0
<b>SNAP Participation (Current)</b>										
Yes	2,800	46.4	1.2	44.0	48.8	1,009	46.4	1.7	43.0	49.9
No	10,063	40.4	1.1	38.2	42.5	3,022	36.7	1.8	33	40.6
	<b>Severe Obesity</b>									

<b>Total<sup>1</sup></b>	13,632	8.5	0.4	7.6	9.4	4,269	9	0.7	7.6	9.4
<b>Household Food Security</b>										
Full	8,005	7.2	0.4	6.4	8.1	2,276	7.3	0.8	5.8	9.1
Marginal	1,828	10.5	1.1	8.4	13.0	659	10.1	1.7	6.9	14.2
Low	1,929	12.0	1.1	9.8	14.5	727	12.8	1.8	9.4	16.9
Very Low	1,193	12.9	1.4	10.2	16.0	397	14.3	2.2	10.2	19.4
<b>SNAP Participation (Current)</b>										
Yes	2,800	12.0	1.2	9.8	14.5	1,009	13.8	1.8	10.3	17.8
No	10,063	7.9	0.4	7	8.7	3,022	8.0	0.8	6.4	9.9

**Prevalence of overweight, obesity and severe obesity among adults ages 20 years and older: United States, 2015-March 2020 (continued)**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age categories (years)</b>	40-59					60+				
	<b>Overweight</b>									
<b>Total<sup>1</sup></b>	4,550	33.1	0.9	31.3	34.9	4,813	35.4	1	33.4	37.5
<b>Household Food Security</b>										
Full	2,621	33.6	1.3	31.1	36.3	3,108	36.8	1.2	34.5	39.3
Marginal	622	30.8	2.6	25.6	36.3	547	29.3	2.5	24.4	34.7
Low	639	32.8	2.1	28.5	37.2	563	29.9	2.4	25.1	35
Very Low	446	31.9	3.4	25.2	39.2	350	25.3	3.2	19.1	32.4
<b>SNAP Participation (Current)</b>										
Yes	935	29.6	2.2	25.3	34.2	856	31.6	2.3	27.0	36.4
No	3,367	33.8	1.1	31.5	36.1	3,674	35.6	1.1	33.4	37.9
	<b>Obesity (including severe obesity)</b>									
<b>Total<sup>1</sup></b>	4,550	43.7	1.4	41	46.5	4,813	41.4	1.2	38.9	43.8
<b>Household Food Security</b>										
Full	2,621	41.8	1.5	38.6	44.9	3,108	40.1	1.4	37.2	43.1
Marginal	622	49.5	3.0	43.4	55.6	547	46.2	2.5	41.1	51.5
Low	639	48.4	3.2	41.9	55.0	563	47.8	2.7	42.2	53.3
Very Low	446	47.7	3.2	41.0	54.4	350	52.2	5.0	41.7	62.6
<b>SNAP Participation (Current)</b>										
Yes	935	47.2	3.3	40.4	54.1	856	44.8	2.8	39.0	50.7
No	3,367	43.0	1.5	40.0	46	3,674	41.4	1.20	39	43.8
	<b>Severe Obesity</b>									
<b>Total<sup>1</sup></b>	4,550	9.9	0.7	8.5	11.3	4,813	6.2	0.4	5.3	7.1



<b>Household Food Security</b>										
Full	2,621	9.0	0.8	7.4	10.8	3,108	5.2	0.5	4.2	6.3
Marginal	622	12.3	2.0	8.5	16.9	547	8.6	1.9	5.1	13.3
Low	639	10.1	1.5	7.2	13.7	563	13.5	2.1	9.6	18.3
Very Low	446	13.5	2.5	8.9	19.4	350	8.7	2.4	4.6	14.8
<b>SNAP Participation (Current)</b>										
Yes	935	11.6	1.3	9.0	14.5	856	9.1	1.2	6.7	11.9
No	3,367	9.4	0.7	8	10.9	3,674	5.9	0.50	4.9	7

SNAP is Supplemental Nutrition Assistance Program.

Overweight is body mass index (BMI) of 25.0–29.9 kg/m<sup>2</sup>. Obesity is BMI at or above 30.0 kg/m<sup>2</sup>. Severe obesity is BMI at or above 40.0 kg/m<sup>2</sup>.

Pregnant females and participants with missing BMI data were excluded.

<sup>1</sup>Total includes those with missing household food security or SNAP participation data.

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015-March 2020.

**Mean body weight, height, waist circumference, and body mass index among adults ages 20 years and older: United States, 2015-March 2020**

	Sample size	Mean	Standard Error	Sample size	Mean	Standard Error	Sample size	Mean	Standard Error	Sample size	Mean	Standard Error
<b>Age categories (years)</b>	20+			20-39			40-59			60+		
	<b>Body weight (kg)</b>											
Total <sup>1</sup>	13,657	83.9	0.5	4,271	83.8	0.8	4,557	86.2	0.7	4,829	81.2	0.5
<b>Household Food Security</b>												
Full	8,017	83.4	0.5	2,277	82.7	1.0	2,625	86.0	0.7	3,115	81.1	0.6
Marginal	1,832	85.5	1.0	659	85.9	1.6	623	87.6	1.5	550	81.1	1.6
Low	1,933	85.1	0.9	728	86.3	1.4	640	84.9	1.4	565	82.5	1.5
Very Low	1,195	86.3	1.2	397	87.0	2.2	447	86.4	1.7	351	84.6	2.4
<b>SNAP Participation (Current)</b>												
Yes	2,805	84.8	0.8	1,010	86.4	1.1	937	85.3	1.2	858	80.9	1.4
No	10,080	83.8	0.5	3,023	83.5	0.9	3,372	86.2	0.6	3,685	81.5	0.5
	<b>Height (cm)</b>											
Total <sup>1</sup>	13,812	167.9	0.1	4,417	169.2	0.2	4,564	168.6	0.2	4,831	165.5	0.3
<b>Household Food Security</b>												
Full	8,088	168.4	0.2	2,339	169.9	0.3	2,630	169.5	0.2	3,119	165.9	0.3
Marginal	1,857	167.0	0.3	688	168.3	0.5	622	167.1	0.7	547	163.8	0.5
Low	1,966	166.2	0.3	756	167.6	0.4	643	165.9	0.5	567	163.4	0.6
Very Low	1,210	167.2	0.4	412	168.4	0.6	447	166.7	0.4	351	165.6	1.1
<b>SNAP Participation (Current)</b>												
Yes	2,856	166.1	0.2	1,059	167.2	0.4	937	166.3	0.4	860	163.6	0.7
No	10,173	168.3	0.1	3,108	169.7	0.2	3,379	169.1	0.2	3,686	165.8	0.3
	<b>Waist circumference (cm)</b>											
Total <sup>1</sup>	13,034	100.5	0.4	4,112	96.4	0.6	4,395	102.1	0.5	4,527	103.5	0.4
<b>Household Food Security</b>												
Full	7,673	100.0	0.5	2,193	95.3	0.8	2,536	101.3	0.5	2,944	103.2	0.5
Marginal	1,746	101.5	0.6	634	97.9	1.0	596	104.4	0.9	516	105.1	1.2
Low	1,844	102.4	0.8	703	100.4	1.1	619	103.2	1.1	522	105.8	1.2
Very Low	1,143	102.3	1.0	386	99.5	1.7	435	103.7	1.4	322	105.8	1.9
<b>SNAP Participation (Current)</b>												

	Sample size	Mean	Standard Error	Sample size	Mean	Standard Error	Sample size	Mean	Standard Error	Sample size	Mean	Standard Error
Yes	2,655	102.0	0.6	981	100.1	0.9	897	103.5	0.9	777	103.8	0.9
No	9,668	100.3	0.4	2,909	95.9	0.7	3,265	101.7	0.5	3,494	103.6	0.4
	<b>BMI (kg/m<sup>2</sup>)</b>											
Total <sup>1</sup>	13,632	29.6	0.1	4,269	29.1	0.2	4,550	30.2	0.2	4,813	29.6	0.2
<b>Household Food Security</b>												
Full	8,005	29.3	0.2	2,276	28.5	0.3	2,621	29.8	0.2	3,108	29.4	0.2
Marginal	1,828	30.5	0.3	659	30.1	0.5	622	31.2	0.4	547	30.2	0.5
Low	1,929	30.7	0.3	727	30.6	0.4	639	30.8	0.5	563	30.9	0.6
Very Low	1,193	30.8	0.4	397	30.5	0.7	446	31.1	0.6	350	30.7	0.8
<b>SNAP Participation (Current)</b>												
Yes	2,800	30.7	0.2	1,009	30.8	0.3	935	30.8	0.4	856	30.3	0.4
No	10,063	29.5	0.2	3,022	28.8	0.3	3,367	30.0	0.2	3,674	29.5	0.2

SNAP is Supplemental Nutrition Assistance Program.

<sup>1</sup> Total includes those with missing household food security or SNAP participation data.

Pregnant females and participants with missing body measure data were excluded. Pregnant females were retained for height estimates.

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015- March 2020.

**Prevalence of inflammation-adjusted<sup>1</sup> high serum ferritin (>150 ng/mL) among females ages 12-49 years: United States, 2017-March 2020**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All females</b>					
12-19	783	0.08	0.06	0.00	0.62
20-49	1949	2.31	0.36	1.63	3.17
<b>Pregnant and lactating females</b>					
20-44	129	4.72*	1.76	1.77	9.94

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >5 and relative confidence interval width >130%.

Sample size is unweighted; Estimates are weighted using examination sample weights.

<sup>1</sup> Prevalence estimates are based on serum ferritin concentrations that are adjusted for high sensitivity c-reactive protein (hs-CRP) levels. Adjusted using the SAS macro developed by Geng, et.al. See: Computation of BRINDA Adjusted Micronutrient Biomarkers for Inflammation - SAS Macro. Version 1.3. Open Science Framework 2022.

<https://doi.org/10.17605/OSF.IO/BVMGP>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of high serum ferritin concentration (>150 ng/mL) among females ages 12-49 years: United States, 2017-March 2020**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All females</b>					
12-19	783	0.43	0.15	0.10	1.18
20-49	1949	5.59	0.61	4.40	6.99
<b>Pregnant and lactating females</b>					
20-44	129	3.73*	1.75	1.02	9.31

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >5 and relative confidence interval width >130%.

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of serum ferritin concentration deficiency among children ages 1-5 (<12 µg/L) and females ages 12-49 years (<15 µg/L): United States, 2017-March 2020**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All</b>					
1-5	943	4.98	1.01	3.11	7.51
<b>Females</b>					
12-19	783	17.07	1.73	13.63	20.97
20-49	1949	14.20	1.16	11.88	16.77
<b>Pregnant and Lactating Females</b>					
20-44	129	18.2	4.0	10.58	28.22

Sample size is unweighted; Estimates are weighted using examination sample weights.  
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of serum ferritin concentration deficiency among children ages 1-5 (<12 µg/L) and females ages 12-49 years (<15 µg/L): United States, 2017-March 2020**

<b>Age (years)</b>	<b>Sample size</b>	<b>Percent</b>	<b>Standard Error</b>	<b>Lower 95% Confidence Interval</b>	<b>Upper 95% Confidence Interval</b>
<b>All</b>					
1-5	943	4.98	1.01	3.11	7.51
<b>Females</b>					
12-19	783	17.07	1.73	13.63	20.97
20-49	1949	14.20	1.16	11.88	16.77
<b>Pregnant and Lactating Females</b>					
20-44	129	18.2	4.0	10.58	28.22

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of high serum soluble transferrin receptor concentration (>4.4 mg/L) among children ages 1-5 years and females ages 12-49 years: United States, 2017-March 2020**

<b>Age (years)</b>	<b>Sample size</b>	<b>Percent</b>	<b>Standard Error</b>	<b>Lower 95% Confidence Interval</b>	<b>Upper 95% Confidence Interval</b>
<b>All</b>					
1-5	907	17.10	1.50	14.10	20.45
<b>All females</b>					
12-19	778	12.47	1.54	9.46	16.03
20-49	1937	12.36	1.22	9.95	15.10
<b>Pregnant and lactating females</b>					
20-44	129	13.14	3.21	7.22	21.36

Sample size is unweighted; Estimates are weighted using examination sample weights.  
 SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.



**Prevalence of low folate (RBC) concentration (<95 ng/mL) among children, adolescents, and adults ages 1 year and older and pregnant and lactating females ages 20-44 years: United States, 2017-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age (years)</b>					
1-5	514	0.00 †	0.00	0.00	0.72
6-11	674	0.00 †	0.00	0.00	0.55
12-19	1228	0.00 †	0.00	0.00	0.30
20-39	1842	0.04	0.04	0.00	0.28
40-59	1650	0.00 †	0.00	0.00	0.22
60+	1512	0.02	0.02	0.00	0.29
<b>Sex</b>					
Male	3018	0.01	0.01	0.00	0.15
Female	4402	0.02	0.02	0.00	0.13
<b>Pregnant and lactating females age (years)</b>					
20-44	127	0.00 †	0.00	0.00	2.86

† The numerator (number of persons with low folate concentration) was 0.

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of low serum folate concentration (<2 ng/mL) among young children, adolescents, and adults ages 1 year and older and pregnant and lactating females ages 20-44 years: United States, 2017-March 2020**

	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Age (years)</b>					
1-5	497	0.00 †	0.00	0.00	0.74
6-11	660	0.00 †	0.00	0.00	0.56
12-19	1209	0.00 †	0.00	0.00	0.30
20-39	1820	0.00 †	0.00	0.00	0.20
40-59	1640	0.15	0.12	0.01	0.65
60+	1508	0.02	0.02	0.00	0.28
<b>Sex</b>					
Male	2980	0.08	0.08	0.00	0.47
Female	4354	0.02	0.02	0.00	0.12
<b>Pregnant and lactating females age (years)</b>					
20-44	129	0.00 †	0.00	0.00	2.82

† The numerator (number of persons with low serum folate concentration) was 0.

Sample size is unweighted; Estimates are weighted using examination sample weights.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2017-March 2020.

**Prevalence of serum vitamin A deficiency (<20 µg/dL) among children and adolescents ages 6-19 years and female adults ages 20-59 years: United States, 2017-2018**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All</b>					
6-11	821	0.85	0.38	0.24	2.12
12-19	1014	0.34	0.17	0.08	0.93
<b>Females</b>					
20-59	1635	0.23	0.09	0.06	0.6

Sample size is unweighted; Estimates are weighted using examination sample weights.

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

**Prevalence of serum vitamin C deficiency (<11.4 µmol/L) among children, adolescents and adults, ages 6 years and older by sex: United States 2017-2018**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All</b>					
6-11	810	0.48	0.24	0.11	1.3
12-19	998	2.93*	1.06	1.11	6.17
20-39	1463	6.19	1.19	3.89	9.27
40-59	1563	6.98	1.02	4.96	9.49
60+	1906	7.15	1.1	4.98	9.87
<b>Males</b>					
6-11	398	0.51	0.35	0.05	1.96
12-19	505	3.82*	1.39	1.44	8.06
20-39	682	7.24	1.74	3.98	11.93
40-59	730	7.48	1.13	5.25	10.26
60+	965	8.41	1.78	5.00	13.08
<b>Females</b>					
6-11	412	0.45	0.31	0.04	1.76
12-19	493	2.00	0.94	0.52	5.18
20-39	781	5.15	1.22	2.86	8.45
40-59	833	6.50	1.29	4.02	9.86
60+	941	6.10	1.33	3.57	9.63

\*Estimate does not meet the NCHS Data Presentation Standards for Proportions confidence interval width >5 and relative confidence interval width >130%.

Sample size is unweighted; Estimates are weighted using examination sample weights.

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

**Prevalence of season-adjusted<sup>1</sup> vitamin D concentration at risk of deficiency (serum 25-hydroxyvitamin D <30 nmol/L) among children, adolescents and adults ages 1 year and older, by sex and for pregnant and lactating females ages 20-44 years: United States, 2017-2018**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All</b>					
1-5	591	1.34	0.42	0.44	2.23
6-11	820	1.20	0.39	0.38	2.03
12-19	1015	6.79	0.88	4.92	8.66
20-39	1490	7.26	0.77	5.61	8.91
40-59	1576	5.06	0.73	3.51	6.61
60+	1917	2.41	0.58	1.18	3.63
<b>Males</b>					
1-5	290	1.95	0.74	0.39	3.53
6-11	404	0.63	0.17	0.26	1.00
12-19	515	5.60	1.08	3.29	7.90
20-39	693	6.94	0.98	4.85	9.03
40-59	736	4.78	0.84	2.99	6.56
60+	972	1.88	0.47	0.86	2.89
<b>Females</b>					
1-5	301	0.72	0.40	-0.15	1.58
6-11	416	1.82	0.68	0.36	3.27
12-19	500	8.04	1.34	5.19	10.89
20-39	797	7.58	0.90	5.65	9.50
40-59	840	5.33	0.98	3.24	7.42
60+	945	2.85	0.87	0.99	4.71
<b>Pregnant and lactating females</b>					
20-44	85	5.26*	1.78	1.46	9.06

<sup>1</sup> Estimates are adjusted for the six-month time period when the examination was performed - two categories: November 1 through April 30, May 1 through October 31

\* Estimate does not meet the NCHS Data Presentation Standards for Proportions - confidence interval width >5 and relative confidence interval width >130%.

Sample size is unweighted; Estimates are weighted using examination sample weights.

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

**Prevalence of serum vitamin E deficiency (<500 µg/dL) among children, adolescents and adults ages 6 years and older, by sex: United States, 2017-2018**

Age (years)	Sample size	Percent	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>All</b>					
6-11	806	0.17	0.17	0.00	1.07
12-19	988	0.71	0.31	0.21	1.74
20-39	1455	0.00 †	0.00	0.00	0.25
40-59	1541	0.10	0.06	0.01	0.42
60+	1875	0.09	0.05	0.01	0.35
<b>Males</b>					
6-11	398	0.00 †	0.00	0.00	0.92
12-19	496	1.07	0.56	0.22	3.08
20-39	679	0.00 †	0.00	0.00	0.54
40-59	720	0.04	0.04	0.00	0.59
60+	950	0.11	0.06	0.00	0.59
<b>Females</b>					
6-11	408	0.36	0.35	0.01	2.14
12-19	492	0.33	0.27	0.02	1.53
20-39	776	0.00 †	0.00	0.00	0.47
40-59	821	0.16	0.11	0.01	0.74
60+	925	0.07	0.07	0.00	0.53

† The numerator (number of persons with low serum vitamin E deficiency) was 0.

Sample size is unweighted; Estimates are weighted using examination sample weights.

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

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