PHYSICAL AND METABOLIC CHARACTERISTICS OF PERSONS WITH DIABETES AND PREDIABETES

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SUMMARY

This chapter provides a description of physical and metabolic characteristics of persons with diabetes and prediabetes and is based primarily on data from the National Health and Nutrition Examination Surveys 2005–2010. The 2010 American Diabetes Association guidelines were used to define undiagnosed diabetes and prediabetes. Among participants with diabetes, mean glycosylated hemo-globin (A1c) concentrations were highest in those with diagnosed diabetes treated by insulin or oral diabetes medication (7.4%), followed by undiagnosed diabetes defined by A1c or fasting plasma glucose (6.9%), and lowest among those with untreated diagnosed diabetes (6.3%) and undiagnosed diabetes defined by A1c, fasting plasma glucose, or 2-hour plasma glucose (6.3%). Mean fasting plasma glucose concentrations were highest in those with treated diabetes (153 mg/dL) and undiagnosed diabetes defined by A1c or fasting plasma glucose (149 mg/dL) and generally lower among those with untreated diagnosed diabetes (137 mg/dL) and undiagnosed diabetes defined by A1c, fasting plasma glucose, or 2-hour plasma glucose (130 mg/dL). Mean 2-hour plasma glucose concentrations were higher in those with undiagnosed diabetes (243 mg/dL for A1c and fasting plasma glucose definition; 235 mg/dL for A1c, fasting plasma glucose, and 2-hour plasma glucose definition) than in people with untreated diagnosed diabetes (183 mg/dL; 2-hour plasma glucose was not measured in participants with treated diagnosed diabetes). Participants with prediabetes by definition had lower A1c, fasting plasma glucose, and 2-hour plasma glucose concentrations than those with diabetes, and participants with normal glucose regulation had the lowest concentrations. Mean fasting insulin concentrations were generally higher in people with undiagnosed diabetes than in people with diagnosed diabetes (insulin users were excluded). Participants with prediabetes generally had lower fasting insulin concen-trations than those with undiagnosed diabetes, and those with normal glucose regulation had the lowest fasting insulin concentrations.

The prevalence of family history of diabetes was generally highest among people with diagnosed diabetes (69%), followed by undiag-nosed diabetes (49% for A1c and fasting plasma glucose definition; 45% for A1c, fasting plasma glucose, and 2-hour plasma glucose definition), and was lowest in those with prediabetes (39%) and normal glucose regulation (33%). People with diabetes had higher mean body mass index and systolic blood pressure than people with prediabetes, and those with normal glucose regulation had the lowest means. The relationship between diabetes and cholesterol level differed by age group. Mean levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides were generally higher in people with diabetes age 20–44 years than in people with predi-abetes or normal glucose regulation. Conversely, mean levels of total cholesterol, LDL cholesterol, and triglycerides were generally lower in people with diabetes age 45–64 years than those with prediabetes or normal glucose regulation. The prevalence of C-reactive protein ≥10 mg/L was generally higher among people with diabetes than among people with prediabetes, and people with normal glucose regu-lation generally had the lowest prevalence. Women with diagnosed diabetes had a higher age-standardized mean number of live births than women who had not been diagnosed with diabetes. Individuals with diagnosed diabetes reported a higher prevalence of fair or poor health than those with prediabetes or normal glucose regulation.

INTRODUCTION

This chapter provides a description of physical and metabolic characteristics of adults (age ≥20 years) with diabetes or prediabetes and is based primarily on new analyses of data from the National Health and Nutrition Examination Survey (NHANES) conducted for *Diabetes in America, 3rd edition* (1). The NHANES is an ongoing cross-sectional, stratified, multistage, probability sample of the U.S. civilian, noninstitutionalized population. There were 17,132 participants age ≥20 years in the NHANES 2005–2010. Data were collected during an in-home interview followed by a visit to a mobile examination center.

Data collected during the in-home interview included demographic data, family history of diabetes, self-reported health, parity (among women), and medication use including insulin and oral diabetes medications (non-insulin injected medications were not included). Family history of diabetes was determined with the following question: "Including living and deceased, were any of your close biological, that is, blood relatives including father, mother, sisters or brothers, ever told by a health professional that they had diabetes?" (2). Self-reported health was ascertained by asking the question: "Would you say your health in general is excellent, very good, good, fair, or poor?"

During the visit to the mobile examination center, height and weight were measured, and body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared. Waist circumference was measured at the iliac crest. Systolic and diastolic blood pressure were determined as the average of three measurements. A blood sample was obtained for glycosylated hemoglobin (A1c), lipids, and inflammatory markers (1). A1c was measured using a Tosoh A1c 2.2 Plus Glycohemoglobin Analyzer or a Tosoh G7 Automated HPLC Analyzer, which had reportable ranges of 3.4%–18.8% (14–182 mmol/mol) and 3.0%–19.0% (9–184 mmol/mol), respectively. Total and high-density lipoprotein (HDL) cholesterol were measured in serum using a Roche

Hitachi 717, a Roche Hitachi 912, or a Roche Modular P Chemistry Analyzer. C-reactive protein was quantified using latex-enhanced nephelometry. In the NHANES 1999–2002, fibrinogen was quantified based on the rate of clot formation on a STA-Compact. A random half sample of participants had their blood specimen collected following an 8–24 hour overnight fast (N=8,855), and fasting plasma glucose, fasting insulin, and triglycerides were measured. In analyses of fasting insulin, participants treated with insulin were excluded. Fasting insulin was measured in serum using a two-site immunoenzymometric assay using a Beckman Coulter Biomek 2000 or a Roche Elecsys 2010. Triglycerides were measured in serum using a Roche Hitachi 717, a Roche Hitachi 912, or a Roche Modular P Chemistry Analyzer. Low-density lipoprotein (LDL) cholesterol was estimated using the Friedewald equation (3). Participants who fasted were administered a 75 g glucose oral glucose tolerance test (OGTT), and another blood sample was collected to measure 2-hour plasma glucose. Fasting and 2-hour plasma glucose were measured in plasma by a hexokinase method using a Roche Hitachi 911 Analyzer and Roche Modular P Chemistry Analyzer, which had an analytical measurement range of 2–750 mg/dL (0.11–41.63 mmol/L) in 2005–2006 and 0–750 mg/dL in 2007–2010. The OGTT was completed by 80% of the participants in the morning examination session; exclusion criteria included use of any diabetes medication, not fasting, hemophilia, recent chemotherapy, refusal of OGTT, illness during the test, unsuccessful venipuncture, current pregnancy, not staying for the entire exam, and other miscellaneous reasons.

Although oversampling of non-Mexican American Hispanic groups was only done for the 2007–2010 datasets, the estimates for all Hispanics were based on data for the entire 2005–2010 dataset, as this generally produced more precise estimates (i.e., lower standard errors) than estimates based only on 2007–2010 data. There were 72 participants in the entire

sample who likely had type 1 diabetes (reported a previous diabetes diagnosis before age 30 years, used insulin at the time of the study, and started using insulin within 1 year of diabetes diagnosis) (4). Due to an insufficient number with type 1 diabetes, results are not presented separately for type 1 and type 2 diabetes; people with likely type 1 diabetes were included in analyses of people with diagnosed diabetes. The 2010 American Diabetes Association guidelines were used to define undiagnosed diabetes and prediabetes (5). A clinical definition of diabetes was used, one more likely to be used in medical practice, based on A1c and fasting plasma glucose (A1c ≥6.5% [≥48 mmol/mol] or fasting plasma glucose ≥126 mg/dL [≥6.99 mmol/L]). A more complete second definition was also used based on A1c, fasting plasma glucose, and 2-hour plasma glucose (A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL [≥11.10 mmol/L]). Among people with all three biomarkers measured, prediabetes was defined as being below all diabetes cutpoints and having A1c 5.7%–6.4% (39–46 mmol/mol) or fasting plasma glucose 100–125 mg/dL (5.55–6.94 mmol/L) or 2-hour plasma glucose 140–199 mg/dL (7.77–11.04 mmol/L), and normal glucose was defined as having A1c <5.7%, fasting plasma glucose <100 mg/dL, and 2-hour plasma glucose <140 mg/dL. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. All data were analyzed using appropriate weights for the interview, examination, fasting, and OGTT samples to adjust for unequal probabilities of selection, oversampling, and nonresponse, resulting in estimates representative of the civilian, noninstitutionalized U.S. general population from which the sample was drawn (1).

This chapter presents data related to diabetes in various subgroups defined by age, sex, race/ethnicity, and medicine use. Multivariate or other analyses or speculations as to the causes of these associations are beyond the scope of the chapter.

MEASURES OF GLUCOSE

GLYCOSYLATED HEMOGLOBIN

Among the NHANES 2005–2010 participants with diabetes, mean A1c concentrations were highest in those treated with insulin or oral diabetes medication (7.4% [57 mmol/mol]), followed by undiagnosed diabetes defined by A1c or fasting plasma glucose (6.9% [52 mmol/mol]), and lowest among those with untreated diagnosed diabetes (6.3% [45 mmol/mol]) and undiagnosed diabetes defined by A1c, fasting plasma glucose, or 2-hour plasma glucose (6.3%) (Figure 9.1, Appendix 9.1). By definition, participants with prediabetes (5.6% [38 mmol/mol]) had lower A1c levels than any of the diabetes groups, and those with normal glucose regulation (5.2% [33 mmol/mol]) had the lowest A1c concentrations. The differences in A1c concentrations by diabetes group were largest in the youngest age group (mean range 5.1%–8.1% [32–65 mmol/mol] in people age 20–44 years) and smallest in the oldest age group (mean range 5.3%–7.0% [34–53 mmol/mol] in people age ≥65 years). These patterns by diabetes group and age were consistent when stratified by race/ethnicity (non-Hispanic white, non-Hispanic black, and Mexican American), and concentrations were generally higher among non-Hispanic blacks and Mexican Americans than non-Hispanic whites (Figure 9.2, Appendix 9.1). Similarly, the age-standardized mean A1c among those with diagnosed diabetes was generally higher among non-Hispanic black and Mexican American men and women than non-Hispanic white men and women (Figure 9.3). Among those with diagnosed diabetes, men and women who were treated with insulin or oral diabetes medication generally had higher age-standardized A1c concentrations than men and women who were untreated. Among those with diabetes, age-standardized A1c concentrations were similar for men and women.

Figure 9.4 (and Appendix 9.2) shows percentiles of the A1c distribution stratified by age group among people with undiagnosed diabetes, prediabetes, and normal glucose regulation, but

FIGURE 9.1. Mean A1c, by Diabetes Status and Age, U.S., 2005–2010
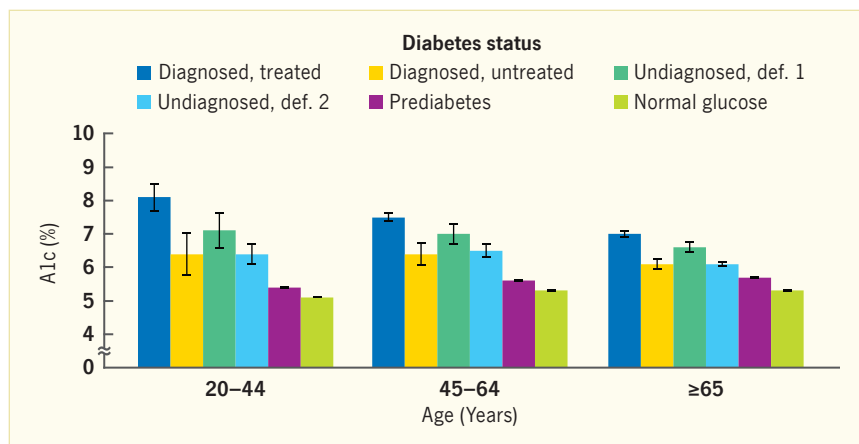
Diagnosed diabetes is based on self-report. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.1 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

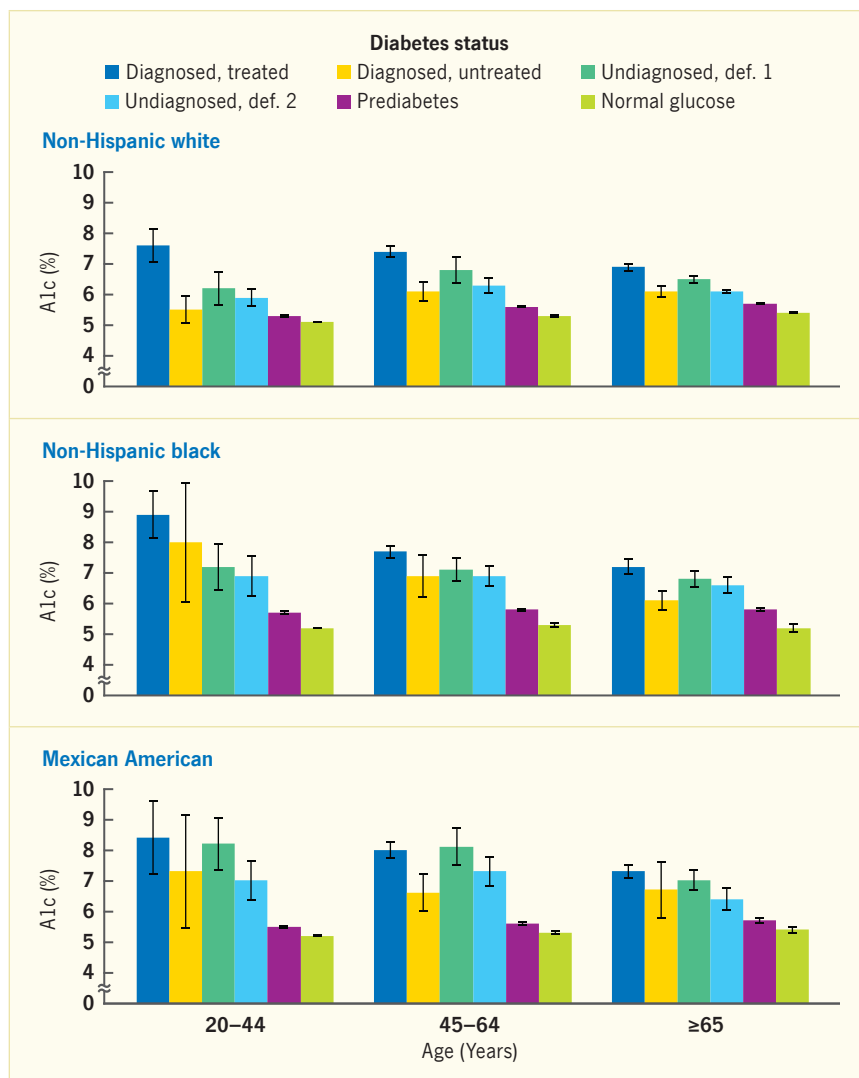**FIGURE 9.2.** Mean A1c, by Diabetes Status, Age, and Race/Ethnicity, U.S., 2005–2010

Diagnosed diabetes is based on self-report. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.1 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

not diagnosed diabetes. Equivalent percentiles were higher in older age groups (50th percentile: 5.2% for 20–44 years, 5.4% [36 mmol/mol] for 45–64 years, 5.6% for ≥65 years), and the difference in A1c concentrations by age was greater at the upper end of the distributions (95th percentile: 5.8% [40 mmol/mol] for 20–44 years, 6.2% [44 mmol/mol] for 45–64 years, 6.5% for ≥65 years). The analogous figure by race/ethnicity for all three age groups shows the percentiles were generally lower for non-Hispanic white compared with non-Hispanic black or Mexican American participants. Additionally, non-Hispanic black compared with Mexican American participants generally had lower A1c concentrations at the low and high ends of the distribution and higher values in the middle of the distribution (Figure 9.5, Appendix 9.2). The distributions were virtually identical for men and women (Figure 9.6, Appendix 9.2).

Among people with diagnosed diabetes, mean A1c was 6.9% for those with a duration of diabetes of <5 years, 7.2% for 5–9 years, 7.6% (60 mmol/mol) for 10–14 years, 7.6% for 15–19 years, and 7.4% for ≥20 years (Table 9.1). People with treated diagnosed diabetes had a higher mean A1c (7.4%; Appendix 9.3) than people with untreated diagnosed diabetes (6.3%; Appendix 9.4).

FASTING PLASMA GLUCOSE

Among the NHANES 2005–2010 participants with diabetes, mean fasting plasma glucose concentrations were highest in those treated with insulin or oral diabetes medication (153 mg/dL [8.49 mmol/L]) and undiagnosed diabetes defined by A1c or fasting plasma glucose (149 mg/dL [8.27 mmol/L]) and generally lower among those with untreated diagnosed diabetes (137 mg/dL [7.60 mmol/L]) and undiagnosed diabetes defined by A1c, fasting plasma glucose, or 2-hour plasma glucose (130 mg/dL [7.22 mmol/L]) (Figure 9.7, Appendix 9.5). By definition, participants with prediabetes (102 mg/dL [5.66 mmol/L]) had lower fasting plasma glucose concentrations than any of the diabetes groups, and those with

FIGURE 9.3. Age-Standardized Mean A1c Among People Age ≥20 Years With Diagnosed Diabetes by Treatment Status, Sex, and Race/Ethnicity, U.S., 2005–2010
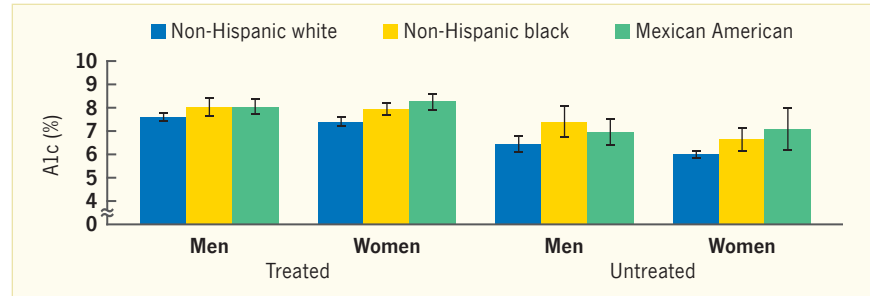
Diabetes is based on self-reported diagnosis. Treated includes insulin and oral medication users. Data are standardized to the National Health Interview Survey 2010 diabetes population using age categories 20–44, 45–64, and ≥65 years. Error bars represent 95% confidence intervals. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.4. Percentiles of A1c in Persons Without Diagnosed Diabetes, by Age, U.S., 2005–2010
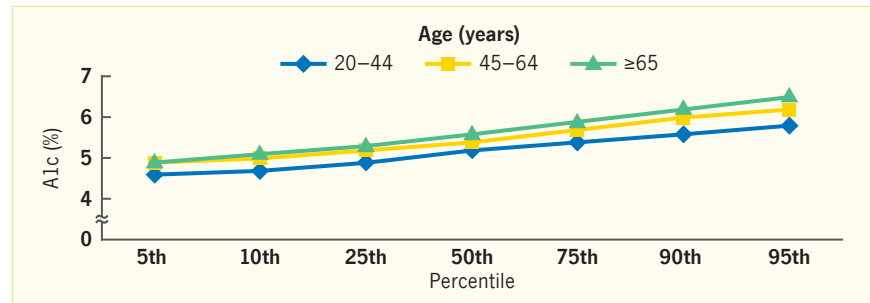
No diagnosed diabetes is based on self-report. See Appendix 9.2 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.5. Percentiles of A1c in Persons Without Diagnosed Diabetes, by Age and Race/Ethnicity, U.S., 2005–2010
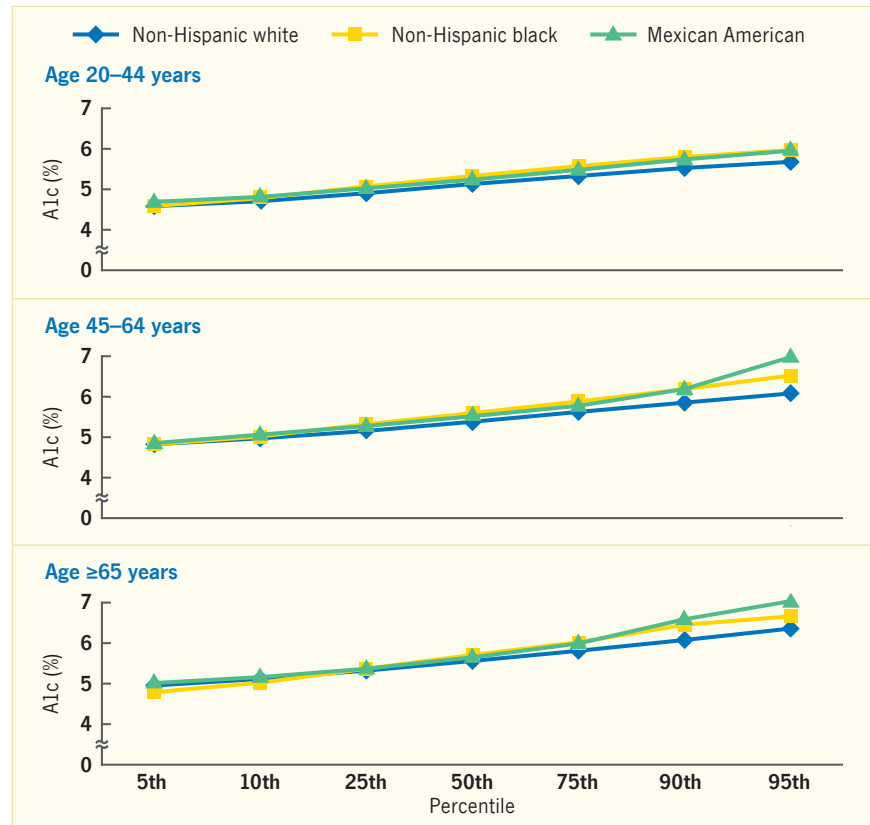
No diagnosed diabetes is based on self-report. See Appendix 9.2 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

normal glucose regulation (90 mg/dL [5.00 mmol/L]) had the lowest fasting plasma glucose concentrations. The difference in fasting plasma glucose concentrations by diabetes group was largest in the youngest age group (mean range 89–177 mg/dL [4.94–9.82 mmol/L] in people age 20–44 years) and smallest in the oldest age group (mean range 91–138 mg/dL [5.05–7.66 mmol/L] in people age ≥65 years). These patterns by diabetes and age were consistent when stratified by race/ethnicity (non-Hispanic white, non-Hispanic black, and Mexican American) (Figure 9.8, Appendix 9.5). Among those with diagnosed diabetes, the age-standardized mean fasting plasma glucose was higher among Mexican American men and women than non-Hispanic white or non-Hispanic black men and women, but most of these differences were not statistically significant (Figure 9.9). Among those with diagnosed diabetes, men and women who were treated with insulin or oral diabetes medication generally had higher age-standardized fasting plasma glucose concentrations than men and women who were untreated. Age-standardized fasting plasma glucose was not statistically significantly different between men and women.

Figure 9.10 (and Appendix 9.6) shows percentiles of the fasting plasma glucose distribution among people without diagnosed diabetes stratified by age. Equivalent percentiles were higher in older age groups (50th percentile: 94 mg/dL [5.22 mmol/L] for 20–44 years, 100 mg/dL for 45–64 years, 103 mg/dL [5.72 mmol/L] for ≥65 years), and the difference by age was greater at the upper end of the distributions (95th percentile: 113 mg/dL [6.27 mmol/L] for 20–44 years, 122 mg/dL [6.77 mmol/L] for 45–64 years, 136 mg/dL [7.55 mmol/L] for ≥65 years). The analogous figure by race/ethnicity for all three age groups showed the percentiles were generally lower for non-Hispanic white and non-Hispanic black participants compared with Mexican American participants (Figure 9.11, Appendix 9.6). The analogous figure by sex showed the percentiles were higher for men than for women (Figure 9.12, Appendix 9.6).

FIGURE 9.6. Percentiles of A1c in Adults Age ≥20 Years Without Diagnosed Diabetes, by Sex, U.S., 2005–2010
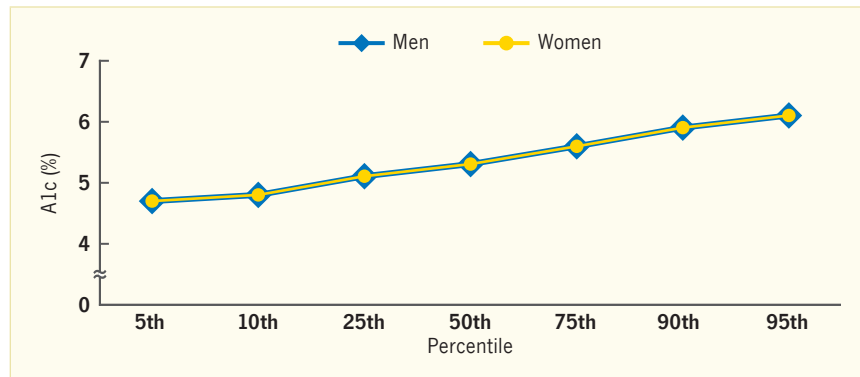

No diagnosed diabetes is based on self-report. See Appendix 9.2 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

TABLE 9.1. Mean A1c, Fasting Glucose, and Fasting Insulin Among Adults Age ≥20 Years With Diagnosed Diabetes, by Duration of Diabetes, U.S., 2005–2010

DIABETES DURATION (YEARS)	MEAN (STANDARD ERROR)		
	A1c (%)	Fasting glucose (mg/dL)	Fasting insulin (μU/mL)*
Overall	7.2 (0.05)	150.4 (3.18)	15.2 (0.52)
<5	6.9 (0.10)	137.4 (3.13)	18.0 (0.82)
5–9	7.2 (0.12)	162.7 (6.83)	15.7 (1.20)
10–14	7.6 (0.12)	161.6 (7.89)	11.6 (1.02)
15–19	7.6 (0.18)	143.6 (8.02)	11.7 (1.47)
≥20	7.4 (0.12)	151.0 (8.64)	10.2 (0.95)

Diabetes diagnosis is based on self-report. A1c, glycosylated hemoglobin.
* Excludes people taking insulin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.7. Mean Fasting Plasma Glucose, by Diabetes Status and Age, U.S., 2005–2010
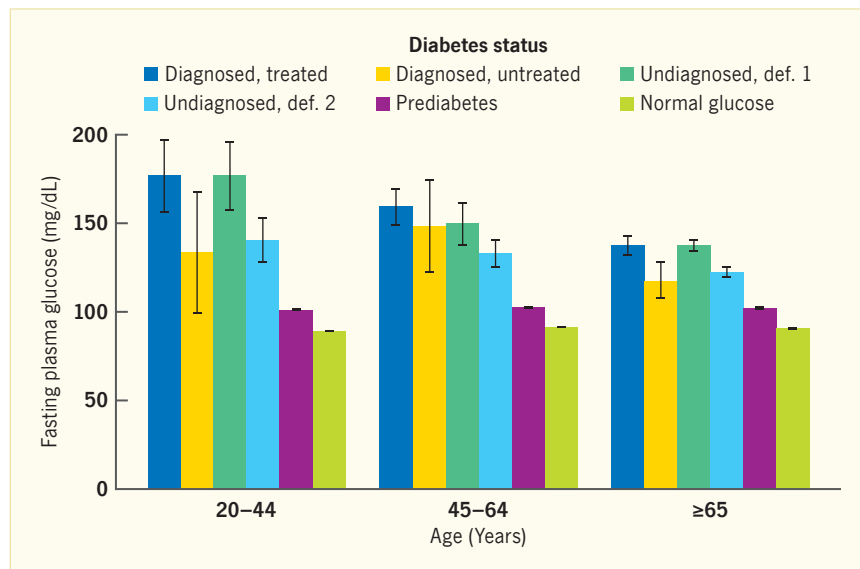
Diagnosed diabetes is based on self-report. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.5 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

Among people with diagnosed diabetes, mean fasting plasma glucose was 137.4 mg/dL (7.63 mmol/L) for those with a duration of diabetes of <5 years, 162.7 mg/dL (9.03 mmol/L) for 5–9 years, 161.6 mg/dL (8.97 mmol/L) for 10–14 years, 143.6 mg/dL (7.97 mmol/L) for 15–19 years, and 151.0 mg/dL (8.38 mmol/L) for ≥20 years (Table 9.1). People with treated diagnosed diabetes had higher mean fasting plasma glucose (153 mg/dL; Appendix 9.7) than people with untreated diagnosed diabetes (137 mg/dL; Appendix 9.8).

2-HOUR PLASMA GLUCOSE

Among the NHANES 2005–2010 participants with diabetes, mean 2-hour plasma glucose concentrations were higher in those with undiagnosed diabetes (243 mg/dL [13.49 mmol/L] for A1c or fasting plasma glucose definition; 235 mg/dL [13.04 mmol/L] for A1c, fasting plasma glucose, or 2-hour plasma glucose definition) than those with untreated diagnosed diabetes (183 mg/dL [10.16 mmol/L]) (Figure 9.13, Appendix 9.9); 2-hour plasma glucose was not measured in participants with treated diagnosed diabetes. By definition, mean 2-hour plasma glucose was lower among people with prediabetes (125 mg/dL) than in people with diabetes and lowest among participants with normal glucose regulation (92 mg/dL [5.11 mmol/L]). This pattern by diabetes was consistent when stratified by race/ethnicity (non-Hispanic white, non-Hispanic black, and Mexican American), and concentrations were generally lower in non-Hispanic black than Mexican American participants (Figure 9.14, Appendix 9.9).

Figure 9.15 (and Appendix 9.10) shows percentiles of the 2-hour plasma glucose distribution among people without diagnosed diabetes stratified by age group. Equivalent percentiles were higher in older age groups (50th percentile: 96 mg/dL [5.33 mmol/L] for 20–44 years, 110 mg/dL [6.11 mmol/L] for 45–64 years, 137 mg/dL for ≥65 years), and the difference by age was greater at the upper end of the distributions (95th percentile: 162 mg/dL [8.99 mmol/L]

FIGURE 9.8. Mean Fasting Plasma Glucose, by Diabetes Status, Age, and Race/Ethnicity, U.S., 2005–2010
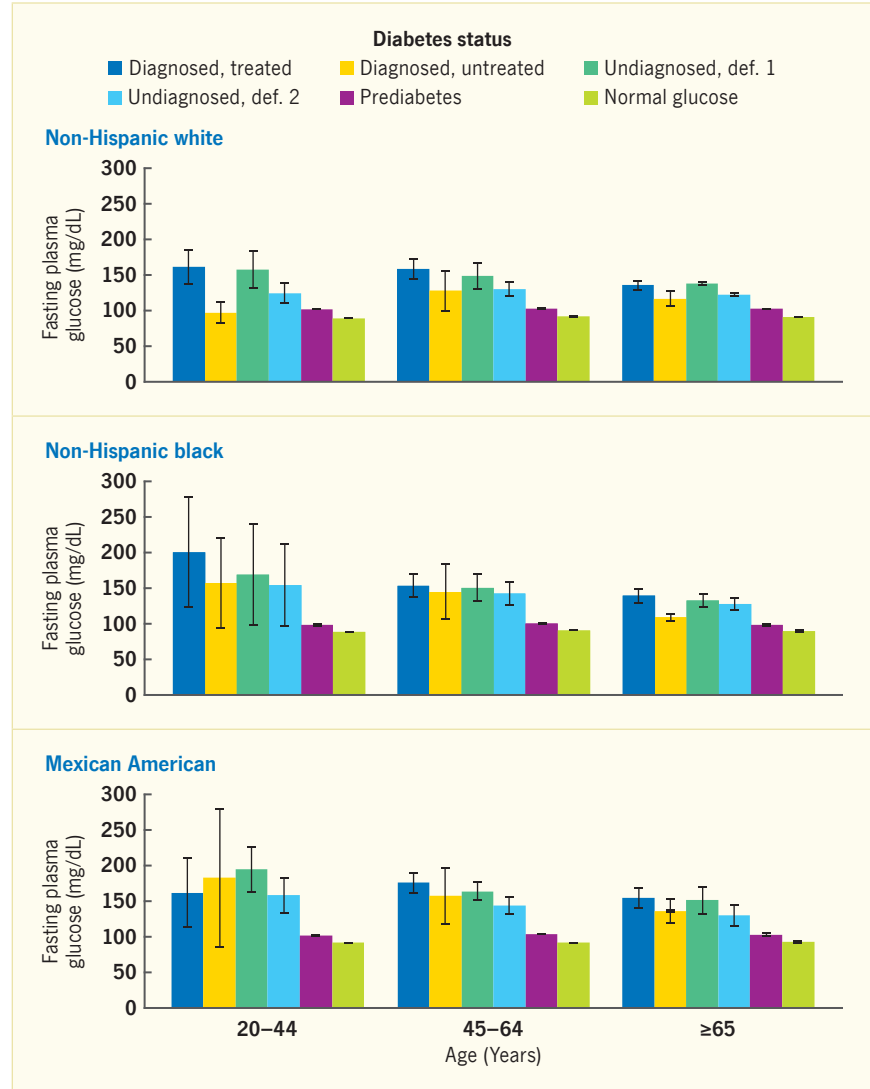
Diagnosed diabetes is based on self-report. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.5 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.9. Age-Standardized Mean Fasting Glucose Among People Age ≥20 Years With Diagnosed Diabetes, by Treatment Status, Sex, and Race/Ethnicity, U.S., 2005–2010
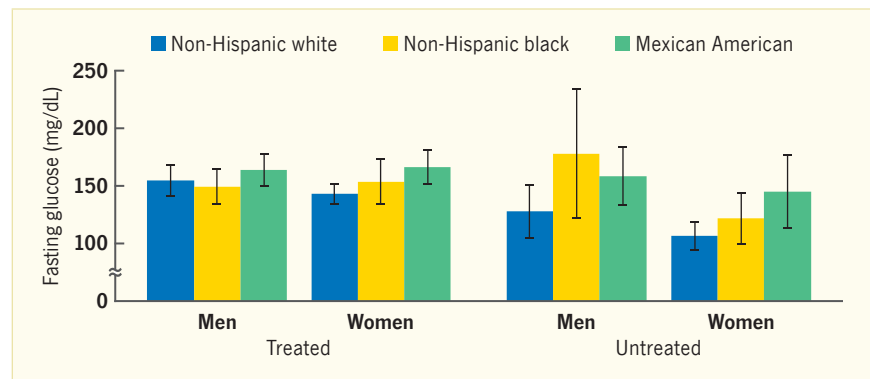
Diabetes is based on self-reported diagnosis. Treated includes insulin and oral medication users. Data are standardized to the National Health Interview Survey 2010 diabetes population using age categories 20–44, 45–64, and ≥65 years. Error bars represent 95% confidence intervals.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

for 20–44 years, 204 mg/dL [11.32 mmol/L] for 45–64 years, 257 mg/dL [14.26 mmol/L] for ≥65 years). The analogous figure by race/ethnicity for all three age groups showed the percentiles were generally lower for non-Hispanic white and non-Hispanic black compared with Mexican American participants, particularly in the upper end of the distribution (Figure 9.16, Appendix 9.10). The analogous figure by sex showed the distributions to be similar for men and women (Figure 9.17, Appendix 9.10).

GLUCOSE IN UNTREATED DIAGNOSED DIABETES

Among people self-reporting a diabetes diagnosis but not taking any diabetes medications, the percent who were above the diabetes cutpoint for each marker was investigated (Table 9.2). There were 29.0% with an A1c ≥6.5%, 32.4% with a fasting plasma glucose ≥126 mg/dL, and 30.2% with a 2-hour plasma glucose ≥200 mg/dL. There were 44.4% who had at least one marker above the diabetes cutpoint. It is unknown whether the 55.6% without any markers above the diabetes cutpoints improved glycemic control since diagnosis, were misdiagnosed with diabetes, or incorrectly reported a diagnosis of diabetes. When the analysis was repeated using the prediabetes cutpoints, 68.3% had an A1c ≥5.7%, 73.5% had a fasting plasma glucose ≥100 mg/dL, 63.2% had a 2-hour plasma glucose ≥140 mg/dL, and 85.6% had at least one marker above the prediabetes cutpoint.

FIGURE 9.10. Percentiles of Fasting Plasma Glucose in Persons Without Diagnosed Diabetes, by Age, U.S., 2005–2010
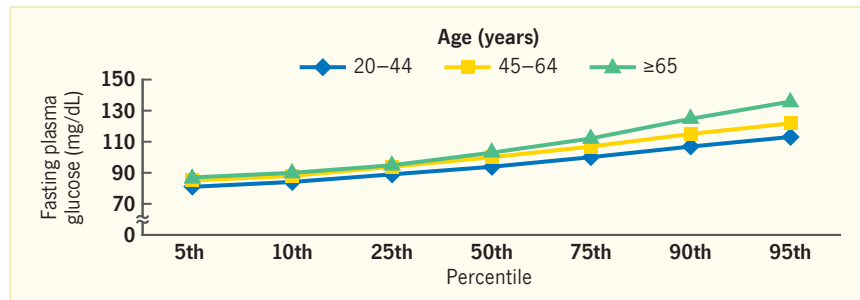
No diagnosed diabetes is based on self-report. See Appendix 9.6 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.11. Percentiles of Fasting Plasma Glucose in Persons Without Diagnosed Diabetes, by Age and Race/Ethnicity, U.S., 2005–2010
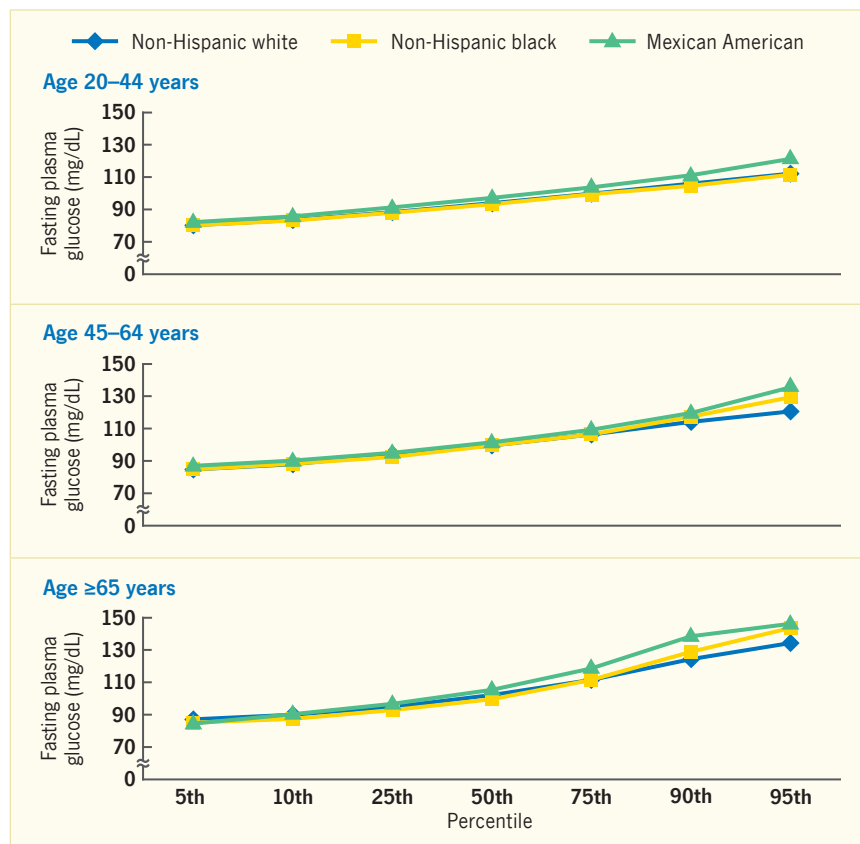
No diagnosed diabetes is based on self-report. See Appendix 9.6 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.12. Percentiles of Fasting Plasma Glucose in Adults Age ≥20 Years Without Diagnosed Diabetes, by Sex, U.S., 2005–2010

No diagnosed diabetes is based on self-report. See Appendix 9.6 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.13. Mean 2-Hour Plasma Glucose, by Diabetes Status and Age, U.S., 2005–2010
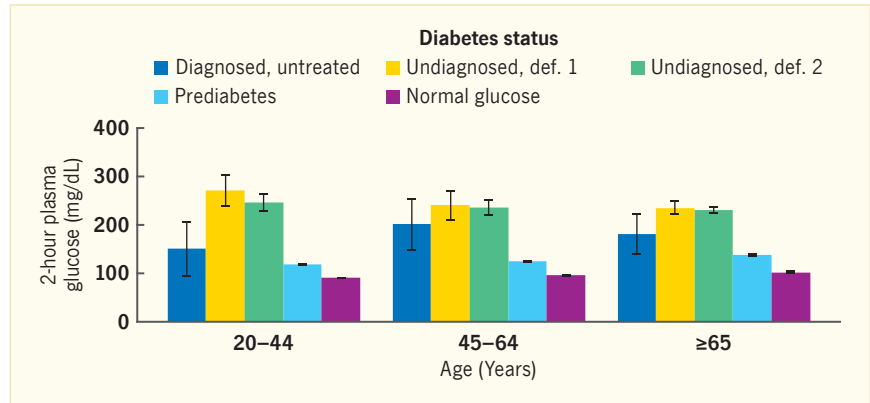
Diagnosed diabetes is based on self-report. Participants taking diabetes medications were not administered an oral glucose tolerance test. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.9 for further details.

SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.14. Mean 2-Hour Plasma Glucose, by Diabetes Status, Age, and Race/Ethnicity, U.S., 2005–2010
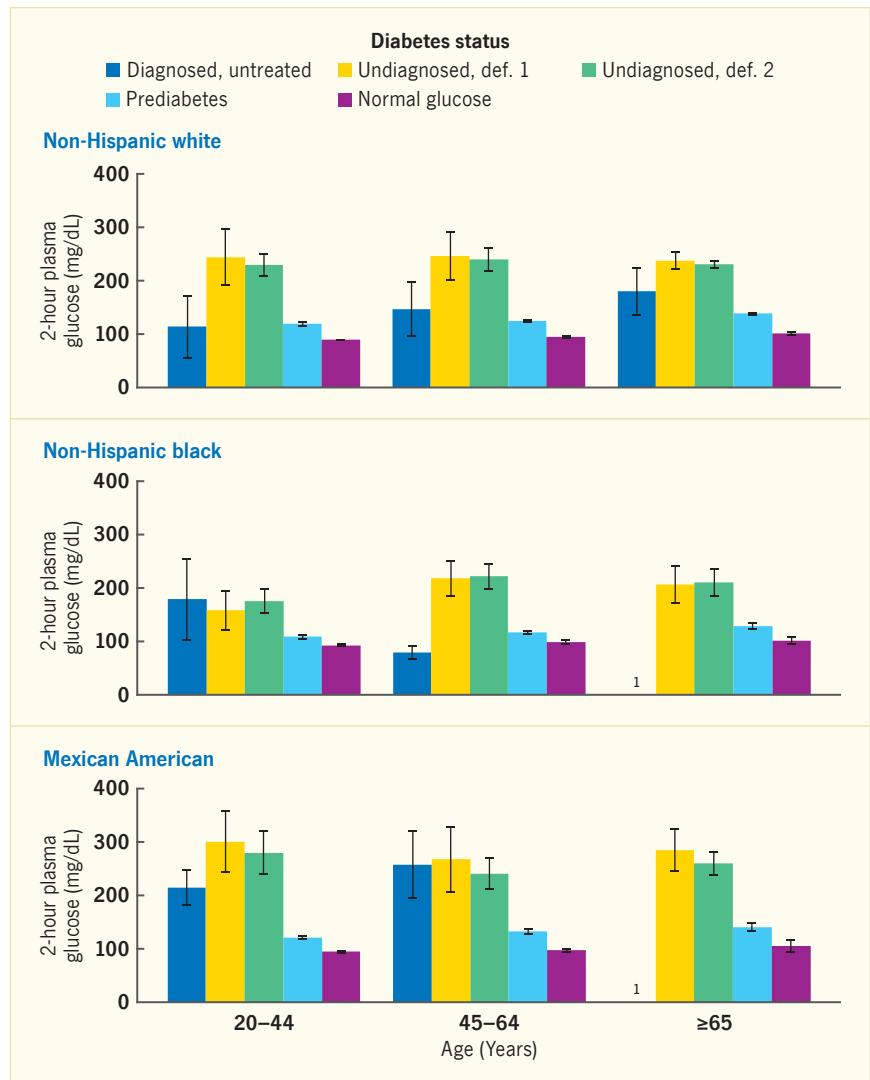
Diagnosed diabetes is based on self-report. Participants taking diabetes medications were not administered an oral glucose tolerance test. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Error bars represent 95% confidence intervals. See Appendix 9.9 for further details.

[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.

SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.15. Percentiles of 2-Hour Plasma Glucose in Persons Without Diagnosed Diabetes, by Age, U.S., 2005–2010
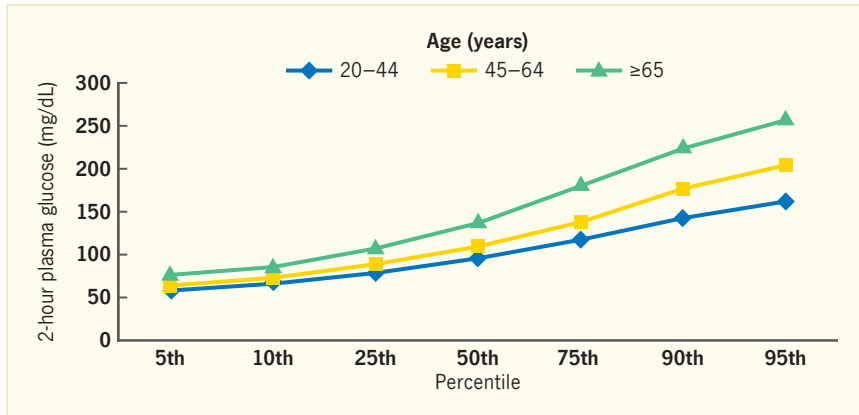
No diagnosed diabetes is based on self-report. See Appendix 9.10 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.16. Percentiles of 2-Hour Plasma Glucose in Persons Without Diagnosed Diabetes, by Age and Race/Ethnicity, U.S., 2005–2010

No diagnosed diabetes is based on self-report. See Appendix 9.10 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.17. Percentiles of 2-Hour Plasma Glucose in Adults Age ≥20 Years Without Diagnosed Diabetes, by Sex, U.S., 2005–2010
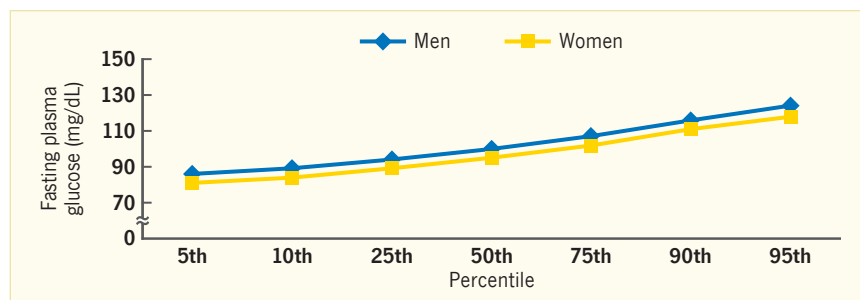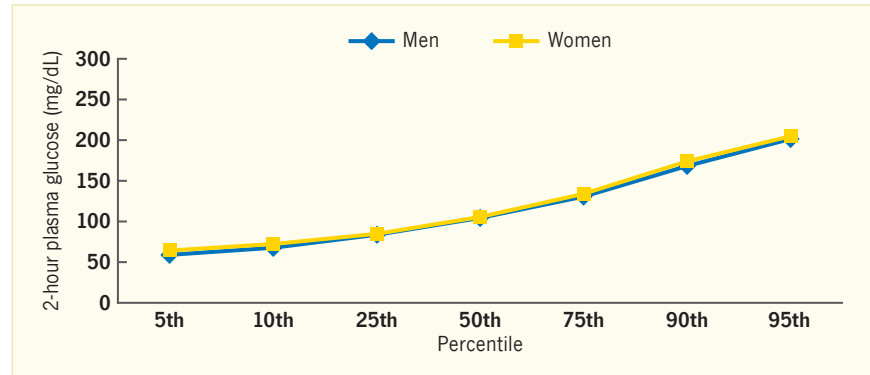

No diagnosed diabetes is based on self-report. See Appendix 9.10 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

TABLE 9.2. Percent of Adults Age ≥20 Years With Untreated Diagnosed Diabetes With A1c, Fasting Plasma Glucose, and 2-Hour Plasma Glucose Above Diabetes and Prediabetes Cutpoints, U.S., 2005–2010

	PERCENT (STANDARD ERROR)	
	Above diabetes cutpoint	Above prediabetes cutpoint
A1c*	29.0 (4.04)	68.3 (4.72)
Fasting plasma glucose†	32.4 (5.03)	73.5 (6.32)
2-hour plasma glucose‡	30.2 (7.12)	63.2 (7.73)
Any of the three	44.4 (5.81)	85.6 (5.25)
None of the three	55.6 (5.81)	14.4 (5.25)[1]

Untreated diagnosed diabetes is based on self-report of a diabetes diagnosis and not taking insulin or oral diabetes medication. A1c, glycosylated hemoglobin.
* ≥6.5% for diabetes and ≥5.7% for prediabetes
† ≥126 mg/dL for diabetes and ≥100 mg/dL for prediabetes
‡ ≥200 mg/dL for diabetes and ≥140 mg/dL for prediabetes
[1] Relative standard error >30%–40%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FASTING INSULIN

Among the NHANES 2005–2010 participants with diabetes, mean fasting insulin concentrations were generally higher in people with undiagnosed diabetes (22 µU/mL [132 pmol/L] for A1c or fasting plasma glucose definition; 18 µU/mL [108 pmol/L] for A1c, fasting plasma glucose, or 2-hour plasma glucose definition) than people with diagnosed diabetes who were treated with oral medications (15 µU/mL [90 pmol/L]) or who were untreated (15 µU/mL) (Figure 9.18, Appendix 9.11); diabetic individuals using insulin were excluded because it affects fasting insulin levels in a variable manner (6). Participants with prediabetes (15 µU/mL) generally had lower fasting insulin concentrations than those with undiagnosed diabetes, and those with normal glucose regulation (9 µU/mL [54 pmol/L]) had the lowest fasting insulin concentrations. Fasting insulin concentrations generally decreased with age. These patterns by diabetes and age were consistent when stratified by race/ethnicity (non-Hispanic white, non-Hispanic black, and Mexican American; Figure 9.19, Appendix 9.11).

Figure 9.20 (and Appendix 9.12) shows percentiles of the fasting insulin distribution among people without diagnosed diabetes stratified by age group. The percentiles were similar across age groups, except the 90th and 95th percentiles were lower for people age ≥65 years (90th percentile: 22 µU/mL; 95th percentile: 27 µU/mL [162 pmol/L]) than for younger age groups (90th percentile: 23 µU/mL [138 pmol/L] for 20–44 years and 24 µU/mL [144 pmol/L] for 45–64 years; 95th percentile: 30 µU/mL [180 pmol/L] for 20–44 years and 29 µU/mL [174 pmol/L] for 45–64 years). The analogous figure by race/ethnicity showed the percentiles were generally lower for non-Hispanic white participants compared with non-Hispanic black or Mexican American participants in the 20–44 and 45–64 years age groups, but not in those age ≥65 years (Figure 9.21, Appendix 9.12). The fasting insulin distribution by sex showed similar percentiles at the lower end of the distribution (e.g.,

FIGURE 9.18. Mean Fasting Insulin, by Diabetes Status and Age, U.S., 2005–2010
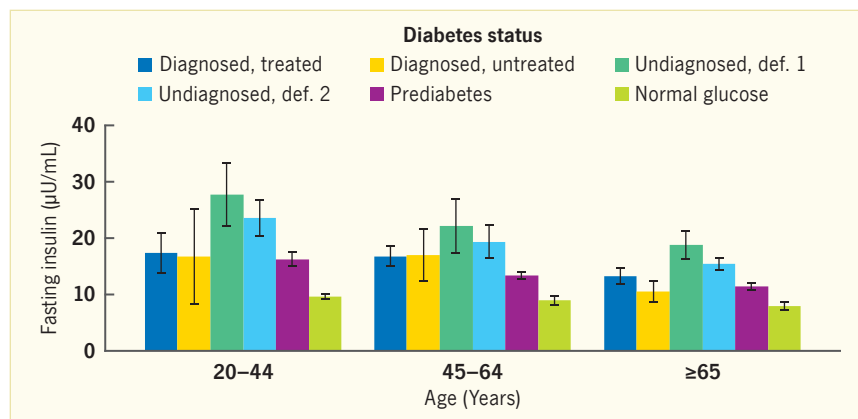
Diagnosed diabetes is based on self-report, and participants reporting taking insulin were excluded. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Error bars represent 95% confidence intervals. See Appendix 9.11 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.19. Mean Fasting Insulin, by Diabetes Status, Age, and Race/Ethnicity, U.S., 2005–2010
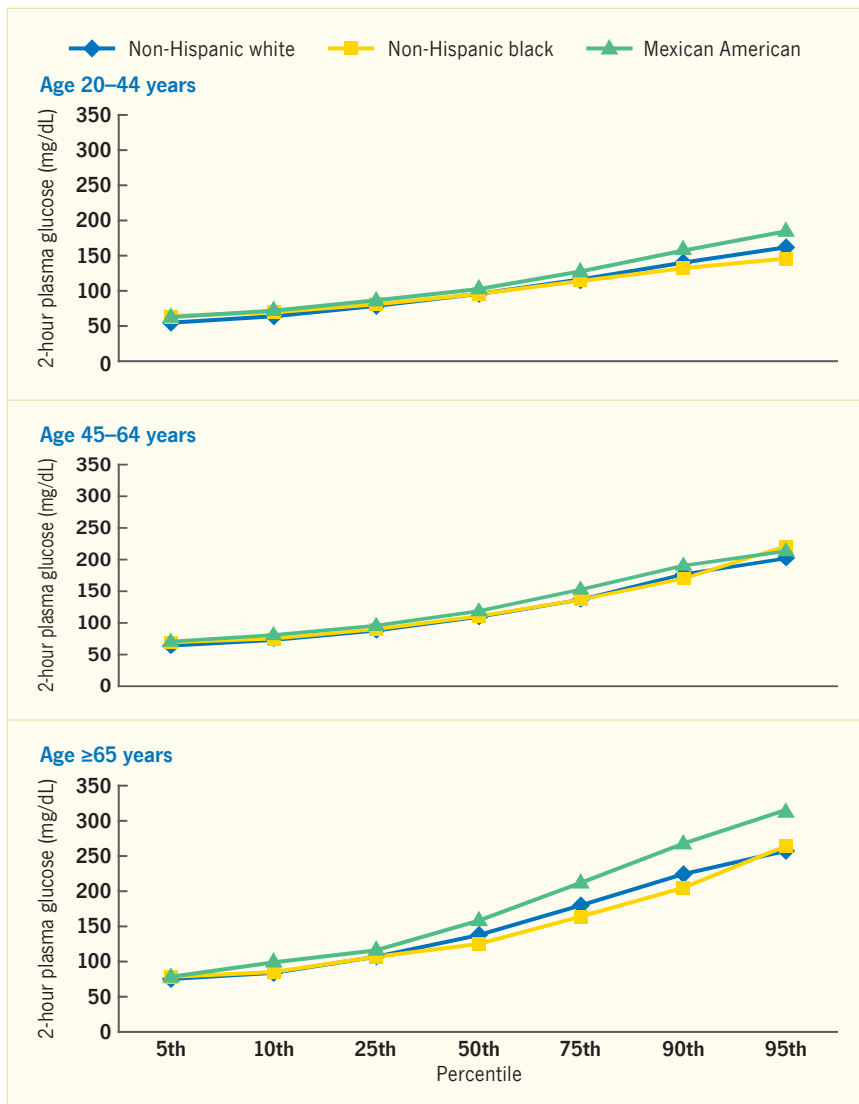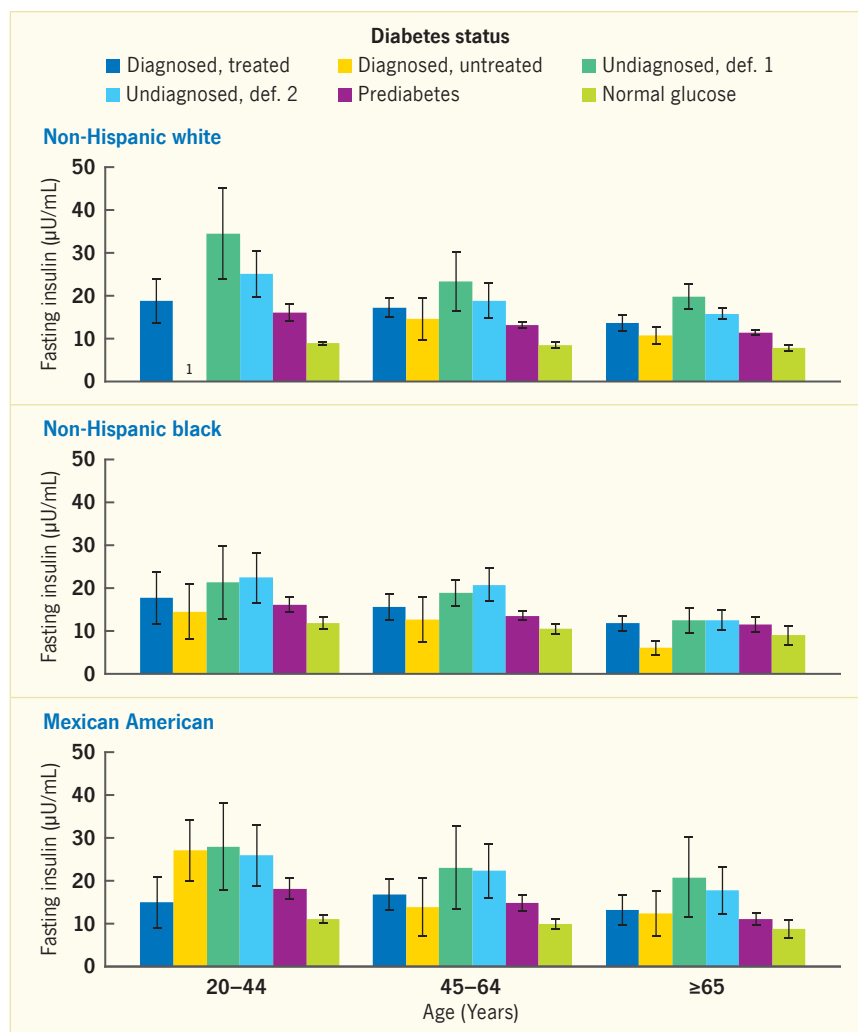

Diagnosed diabetes is based on self-report, and participants reporting taking insulin were excluded. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Error bars represent 95% confidence intervals. See Appendix 9.11 for further details.
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

5th and 10th percentiles) and progressively more separation towards the upper end of the distribution (e.g., 90th and 95th percentiles), where levels were higher in men than women (Figure 9.22, Appendix 9.12).

Among people with diagnosed diabetes (excluding those taking insulin), mean fasting insulin was 18.0 µU/mL for those with a duration of diabetes of <5 years, 15.7 µU/mL (94.2 pmol/L) for 5–9 years, 11.6 µU/mL (69.6 pmol/L) for 10–14 years, 11.7 µU/mL (70.2 pmol/L) for 15–19 years, and 10.2 µU/mL (61.2 pmol/L) for ≥20 years (Table 9.1).

FIGURE 9.20. Percentiles of Fasting Insulin in Persons Without Diagnosed Diabetes, by Age, U.S., 2005–2010

No diagnosed diabetes is based on self-report. See Appendix 9.12 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.21. Percentiles of Fasting Insulin in Persons Without Diagnosed Diabetes, by Age and Race/Ethnicity, U.S., 2005–2010
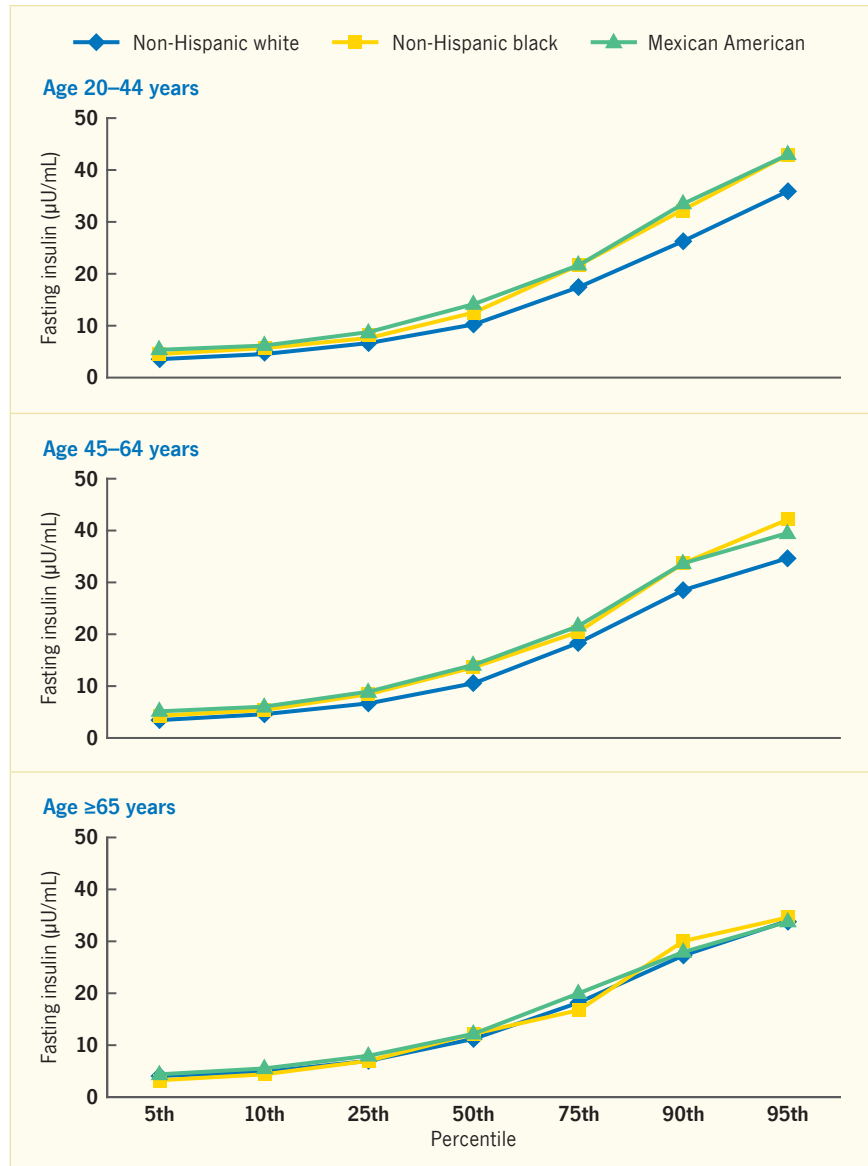
No diagnosed diabetes is based on self-report. See Appendix 9.12 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.22. Percentiles of Fasting Insulin in Adults Age ≥20 Years Without Diagnosed Diabetes, by Sex, U.S., 2005–2010
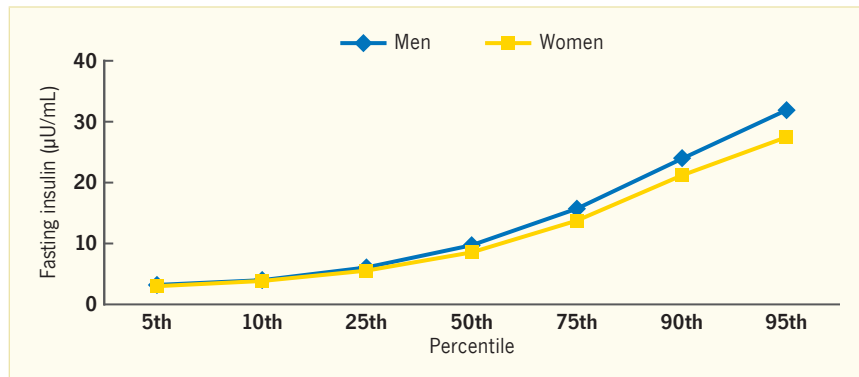
No diagnosed diabetes is based on self-report. See Appendix 9.12 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FAMILY HISTORY OF DIABETES

The prevalence of family history of diabetes was generally highest among people with diagnosed diabetes (69%), followed by undiagnosed diabetes (49% for A1c or fasting plasma glucose definition; 45% for A1c, fasting plasma glucose, or 2-hour plasma glucose definition), and was lowest in those with prediabetes (39%) and normal glucose regulation (33%) (Figure 9.23, Appendix 9.13). The prevalence was generally lower for non-Hispanic white compared with non-Hispanic black and Mexican American participants.

FIGURE 9.23. Percent With a Family History of Diabetes, by Diabetes Status, Age, and Race/Ethnicity, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Family history of diabetes is determined based on the following question: "Including living and deceased, were any of your close biological that is, blood relatives including father, mother, sisters or brothers, ever told by a health professional that they had diabetes?" Error bars represent 95% confidence intervals. See Appendix 9.13 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

BODY MASS INDEX AND WAIST CIRCUMFERENCE

Figure 9.24 (and Appendix 9.14) shows mean BMI by diabetes and age. Within each age group (20–44, 45–64, and ≥65 years), people with diagnosed or undiagnosed diabetes had higher mean BMI than people with prediabetes, and those with normal glucose regulation had the lowest mean BMI. These findings by diabetes were consistent in each race/ethnicity group (Figure 9.25, Appendix 9.14). Among people with diagnosed diabetes, Mexican Americans (31 kg/m²) had a lower BMI than other races/ethnicities (33 kg/m² for non-Hispanic white; 35 kg/m² for non-Hispanic black). Among people with diagnosed or undiagnosed diabetes, 86.4% of men and 84.6% of women were overweight or obese (Figure 9.26, Appendix 9.15).

Within each sex and age group (20–44, 45–64, and ≥65 years), people with diagnosed or undiagnosed diabetes had higher mean waist circumference than those with prediabetes, and those with normal glucose regulation had the lowest mean waist circumference (Figure 9.27, Appendix 9.16). Among men and women with diagnosed diabetes, mean waist circumference was generally lower in older age groups compared with younger age groups (Appendix 9.16) and in Mexican Americans compared with other races/ethnicities (Figure 9.28, Appendix 9.16).

The percent of people with both general obesity (BMI ≥30 kg/m²) and abdominal obesity (waist circumference ≥102 cm for men and ≥88 cm for women) was highest among those with diabetes (44%) and lowest among those with normal glucose regulation (14%) (Figure 9.29, Appendix 9.17). Compared with people in younger age groups with diagnosed diabetes, those age ≥65 years with diagnosed diabetes had a lower percent with general obesity and/or abdominal obesity.

FIGURE 9.24. Mean Body Mass Index, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Body mass index is based on measured height and weight. Error bars represent 95% confidence intervals. See Appendix 9.14 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.25. Mean Body Mass Index Among Adults Age ≥20 Years, by Diabetes Status and Race/Ethnicity, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Body mass index is based on measured height and weight. Error bars represent 95% confidence intervals. See Appendix 9.14 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.26. Percent Distribution of Body Mass Index Among Adults Age ≥20 Years With Diabetes, by Sex, U.S., 2005–2010

Diabetes is based on self-reported diagnosis (treated and untreated) and measured A1c ≥6.5%, fasting plasma glucose ≥126 mg/dL, or 2-hour plasma glucose ≥200 mg/dL. Body mass index is based on measured height and weight. Error bars represent 95% confidence intervals. See Appendix 9.15 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.27. Mean Waist Circumference, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.16 for further details.
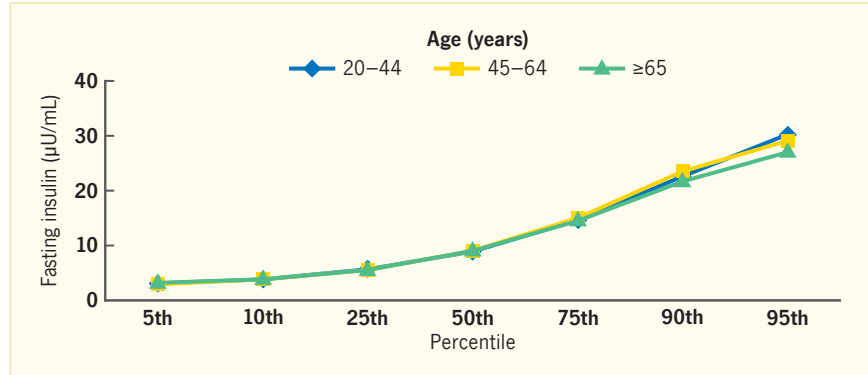SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.28. Mean Waist Circumference Among Adults Age ≥20 Years, by Diabetes Status and Race/Ethnicity, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.16 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.29. Percent With Obesity and Abdominal Obesity, by Diabetes Status and Age, U.S., 2005–2010
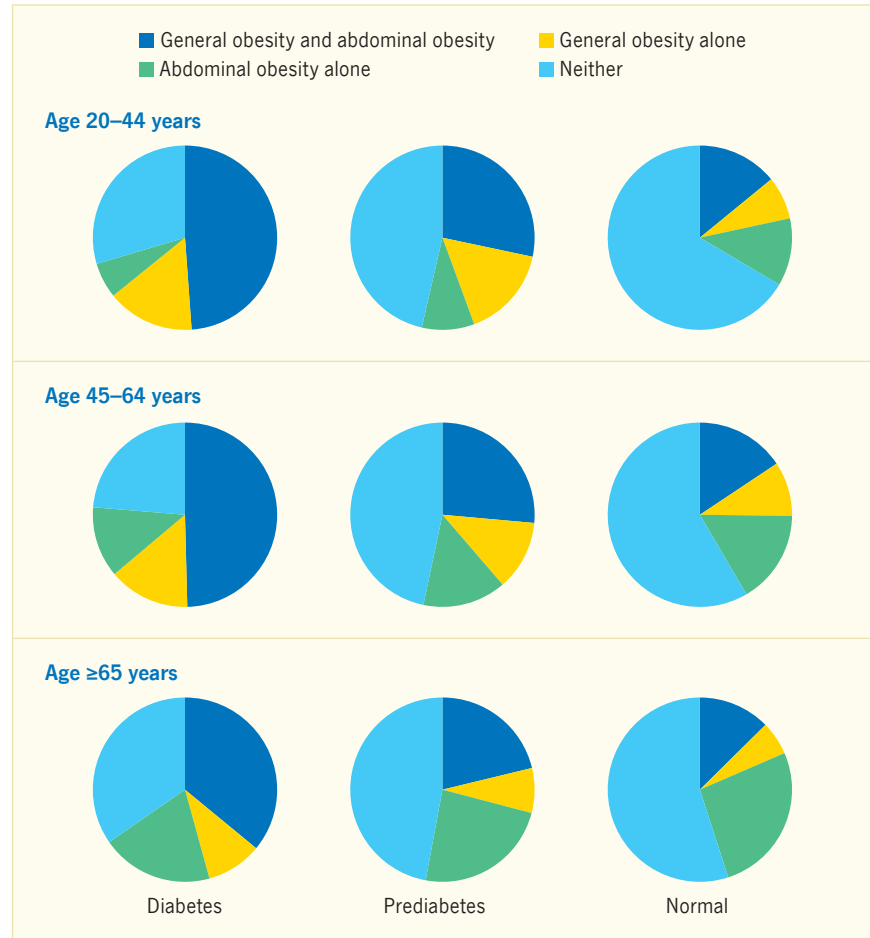
Diabetes is based on self-reported diagnosis (treated and untreated) and measured A1c ≥6.5%, fasting plasma glucose ≥126 mg/dL, or 2-hour plasma glucose ≥200 mg/dL. General obesity is based on measured body mass index ≥30 kg/m². Abdominal obesity is based on measured waist circumference ≥102 cm for men and ≥88 cm for women. See Appendix 9.17 for further details. A1c, glycosylated hemoglobin.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

BLOOD PRESSURE

People with diabetes had higher mean systolic blood pressure (129–130 mmHg for diagnosed diabetes and both definitions of undiagnosed diabetes) than people with prediabetes (122 mmHg), and those with normal glucose regulation (115 mmHg) had the lowest mean systolic blood pressure (Figure 9.30, Appendix 9.18). However, the differences were attenuated among people age ≥65 years. Among people with diagnosed diabetes, mean systolic blood pressure was higher in older age groups, increasing from 122 mmHg in those 20–44 years to 126 mmHg in those 45–64 years and 135 mmHg in those ≥65 years. When stratified by antihypertension medication use, the differences in mean systolic blood pressure by diabetes were attenuated among those taking antihypertensive medications (Figure 9.31, Appendix 9.18). Among people with diagnosed diabetes (133 mmHg), those taking antihypertensive medication had a higher systolic blood pressure than those not taking antihypertensive medication (124 mmHg).

Among people age 20–44 years, those with diabetes (75–76 mmHg for diagnosed diabetes and both definitions of undiagnosed diabetes) had higher mean diastolic blood pressure than people with prediabetes (70 mmHg), and those with normal glucose regulation (67 mmHg) had the lowest mean diastolic blood pressure (Figure 9.32, Appendix 9.19). However, mean diastolic blood pressure did not differ by diabetes among people in older age groups. Among people with diagnosed diabetes, mean diastolic blood pressure was lower in older age groups, decreasing from 75 mmHg in those 20–44 years to 71 mmHg in those 45–64 years and 63 mmHg in those ≥65 years. When stratified by antihypertension medication use, there was no difference in mean diastolic blood pressure by diabetes among those taking antihypertensive medications; among those not taking antihypertensive medications, people with undiagnosed diabetes had higher mean diastolic blood pressure than people with diagnosed diabetes, prediabetes,

FIGURE 9.30. Mean Systolic Blood Pressure, by Diabetes Status and Age, U.S., 2005–2010
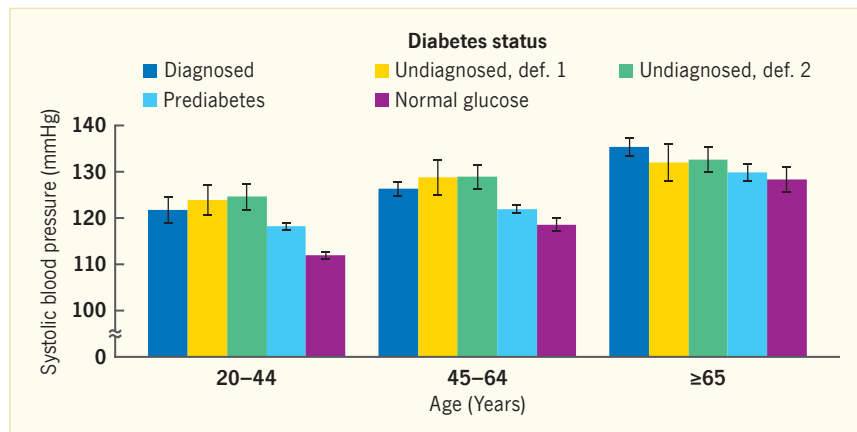
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Blood pressure was measured using a sphygmomanometer. Error bars represent 95% confidence intervals. See Appendix 9.18 for further details.
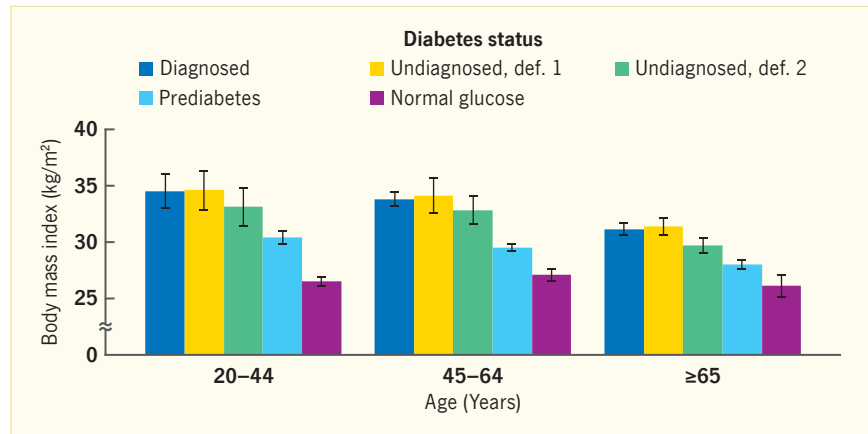SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.31. Mean Systolic Blood Pressure Among Adults Age ≥20 Years, by Diabetes Status and Antihypertensive Treatment, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Blood pressure was measured using a sphygmomanometer. Error bars represent 95% confidence intervals. See Appendix 9.18 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.32. Mean Diastolic Blood Pressure, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction.* Blood pressure was measured using a sphygmomanometer. Error bars represent 95% confidence intervals. See Appendix 9.19 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

or normal glucose regulation (Figure 9.33, Appendix 9.19). Diastolic blood pressure did not differ by antihypertensive medication use among those with diagnosed diabetes but was lower in people treated with antihypertensive medications among those with undiagnosed diabetes.

People with diabetes (62%–70% for diagnosed diabetes and both definitions of undiagnosed diabetes) had a higher prevalence of hypertension (defined as systolic blood pressure ≥140 mmHg, diastolic blood pressure ≥90 mmHg, or use of antihypertensive medication) than people with prediabetes (34%), and those with normal glucose regulation (13%) generally had the lowest prevalence of hypertension (Figure 9.34, Appendix 9.20). The prevalence of hypertension was higher in older age groups among those with and without diabetes.

FIGURE 9.33. Mean Diastolic Blood Pressure Among Adults Age ≥20 Years, by Diabetes Status and Antihypertensive Treatment, U.S., 2005–2010
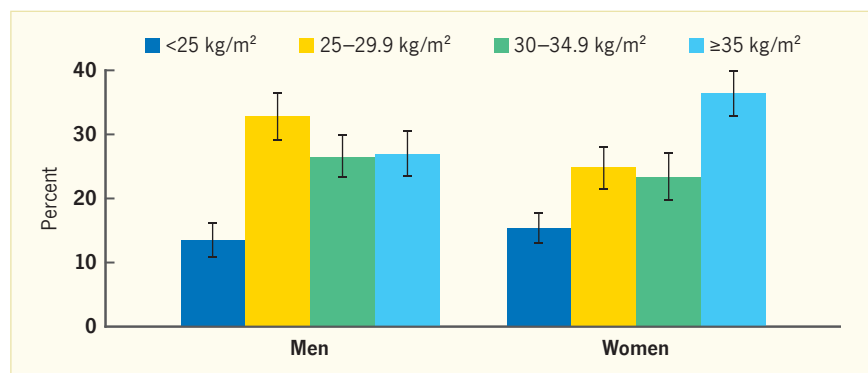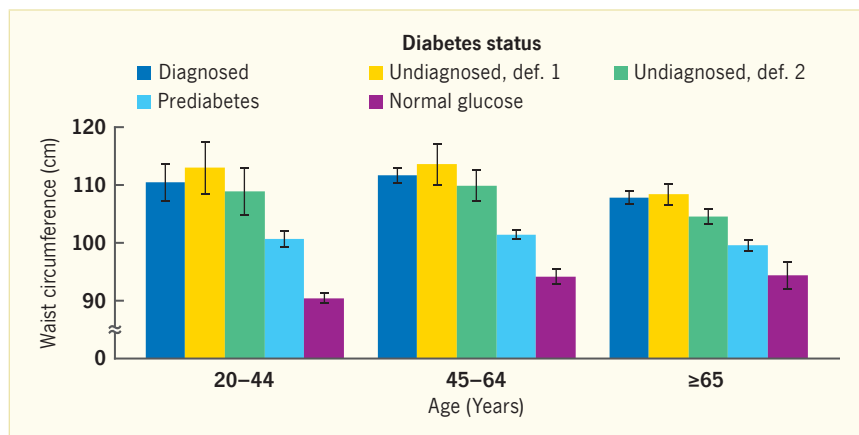

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Blood pressure was measured using a sphygmomanometer. Error bars represent 95% confidence intervals. See Appendix 9.19 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.34. Prevalence of Hypertension, by Diabetes Status and Age, U.S., 2005–2010
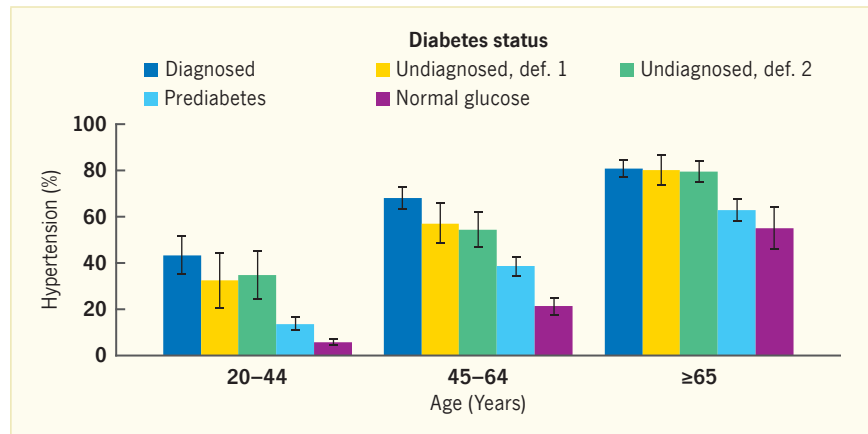
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Hypertension is defined as systolic blood pressure ≥140 mmHg, diastolic blood pressure ≥90 mmHg, or use of antihypertensive medication. Error bars represent 95% confidence intervals. See Appendix 9.20 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

LIPIDS

TOTAL CHOLESTEROL

Among people age 20–44 years, those with undiagnosed diabetes (199 mg/dL [5.15 mmol/L] for A1c or fasting plasma glucose definition; 201 mg/dL [5.21 mmol/L] for A1c, fasting plasma glucose, or 2-hour plasma glucose definition) but not those with diagnosed diabetes (195 mg/dL [5.05 mmol/L]) had higher mean total cholesterol than those with prediabetes (193 mg/dL [5.00 mmol/L]) or normal glucose regulation (185 mg/dL [4.79 mmol/L]) (Figure 9.35, Appendix 9.21). Among people in the age groups 45–64 and ≥65 years, those with diagnosed diabetes generally had lower mean total cholesterol than those with undiagnosed diabetes, prediabetes, or normal glucose regulation. Among those with diagnosed or undiagnosed diabetes, people age ≥65 years had lower mean total cholesterol than people in younger age groups. Persons with diagnosed diabetes generally had lower mean total cholesterol than those in other diabetes categories, among people untreated with lipid-lowering medication (Figure 9.36, Appendix 9.21). Among people with diabetes, individuals who are not treated with lipid-lowering medications had higher mean total cholesterol than individuals treated with lipid-lowering medications. Among people in the age groups 45–64 and ≥65 years, those with diagnosed diabetes generally had a lower prevalence of total cholesterol ≥200 mg/dL (≥5.18 mmol/L) than those with undiagnosed diabetes, prediabetes, or normal glucose regulation (Figure 9.37, Appendix 9.22). In those age 20–44 years, undiagnosed diabetic individuals had a higher prevalence of total cholesterol ≥200 mg/dL than those with diagnosed diabetes, prediabetes, and normal glucose regulation. Among people with diabetes, those age ≥65 years generally had a lower prevalence of total cholesterol ≥200 mg/dL than younger age groups.

HIGH-DENSITY LIPOPROTEIN CHOLESTEROL

People with diabetes (47–51 mg/dL [1.22–1.32 mmol/L] for diagnosed diabetes and both definitions of undiagnosed
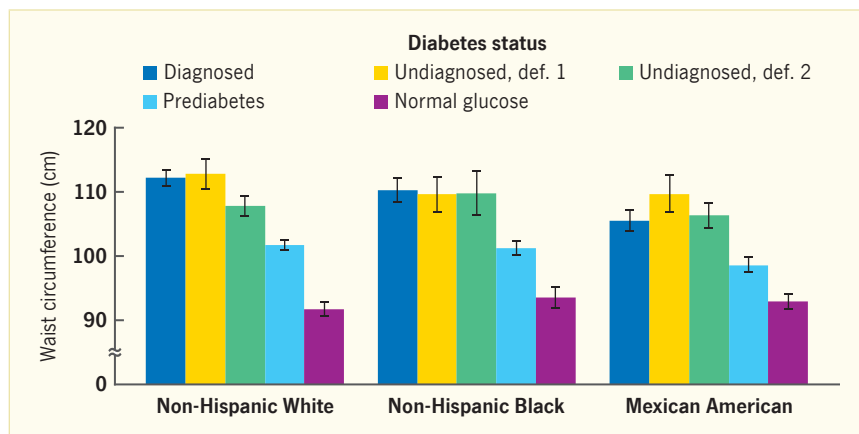
FIGURE 9.35. Mean Total Cholesterol, by Diabetes Status and Age, U.S., 2005–2010
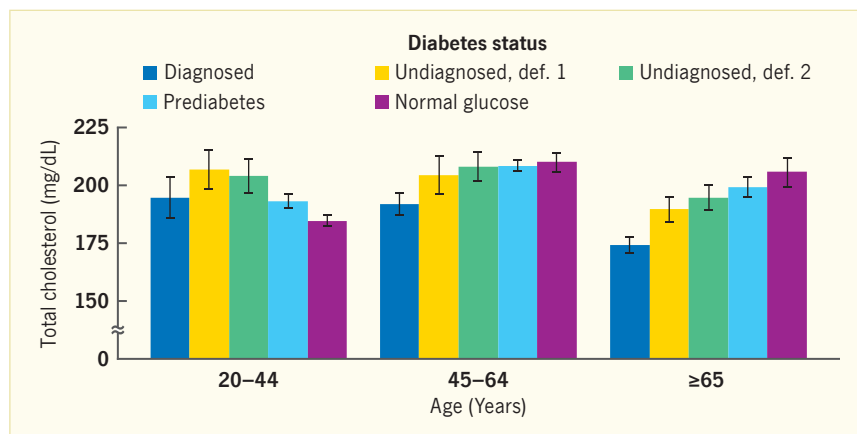
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.21 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.36. Mean Total Cholesterol Among Adults Age ≥20 Years, by Diabetes Status and Lipid-Lowering Medication, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.21 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.37. Prevalence of Total Cholesterol ≥200 mg/dL, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.22 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

diabetes) generally had lower mean HDL cholesterol than people with prediabetes (53 mg/dL [1.37 mmol/L]), and those with normal glucose regulation (57 mg/dL [1.47 mmol/L]) had the highest mean HDL cholesterol (Figure 9.38, Appendix 9.23). Among people with diabetes, those age ≥65 years generally had higher mean HDL cholesterol levels than those in younger age groups. The patterns according to diabetes were similar when stratified by lipid-lowering medication (Figure 9.39, Appendix 9.23). Among participants with diabetes, HDL cholesterol levels were similar according to use of lipid-lowering medicine. The prevalence of low HDL cholesterol (<40 mg/dL [<1.04 mmol/L] in men and <50 mg/dL [<1.30 mmol/L] in women) was generally higher among people with diabetes (36%–42% for diagnosed diabetes and both definitions of undiagnosed diabetes) than people with prediabetes (30%), and it was lowest among people with normal glucose regulation (22%) (Figure 9.40, Appendix 9.24). Among people with diabetes, the prevalence of low HDL cholesterol was generally lower in older age groups.

LOW-DENSITY LIPOPROTEIN CHOLESTEROL

Mean LDL cholesterol was lower in people with diagnosed diabetes age 45–64 years (105 mg/dL [2.72 mmol/L]) and ≥65 years (95 mg/dL [2.46 mmol/L]) than people with undiagnosed diabetes (107–124 mg/dL [2.77–3.21 mmol/L] for both age groups and definitions of undiagnosed diabetes), prediabetes (116–127 mg/dL [3.00–3.29 mmol/L] for both age groups), or normal glucose regulation (119–125 mg/dL [3.08–3.24 mmol/L] for both age groups) (Figure 9.41, Appendix 9.25); this is consistent with treatment guidelines recommending more aggressive lowering of LDL cholesterol among patients with diabetes (7). LDL cholesterol was lower in people with diagnosed diabetes (107 mg/dL) or normal glucose regulation (108 mg/dL [2.80 mmol/L]) age 20–44 years than in people with undiagnosed diabetes (122–124 mg/dL [3.16–3.21 mmol/L] for both definitions) or prediabetes (117 mg/dL [3.03 mmol/L]). People age ≥65 years with diabetes had lower mean LDL
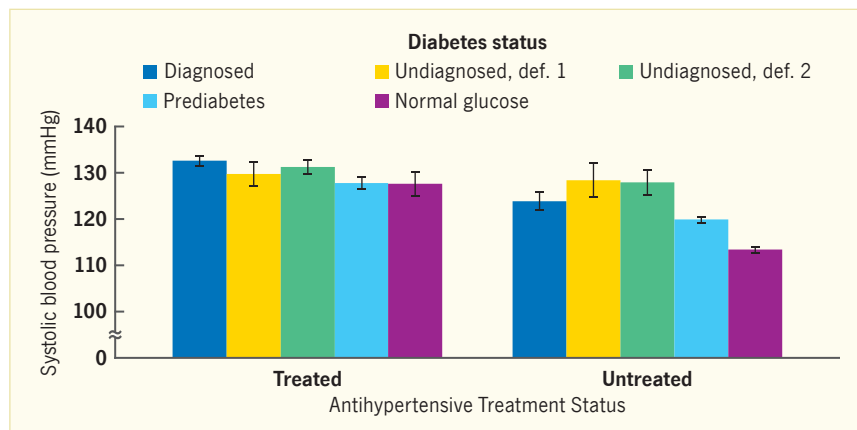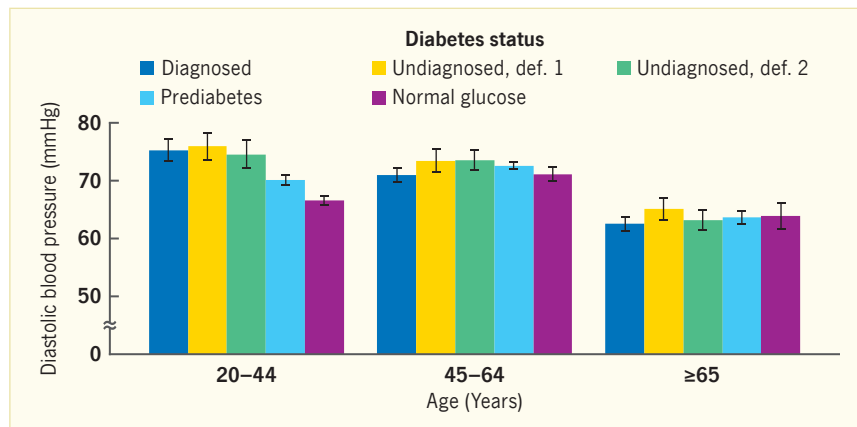
FIGURE 9.38. Mean HDL Cholesterol, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.23 for further details. HDL, high-density lipoprotein.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.39. Mean HDL Cholesterol Among Adults Age ≥20 Years, by Diabetes Status and Lipid-Lowering Medication, U.S., 2005–2010
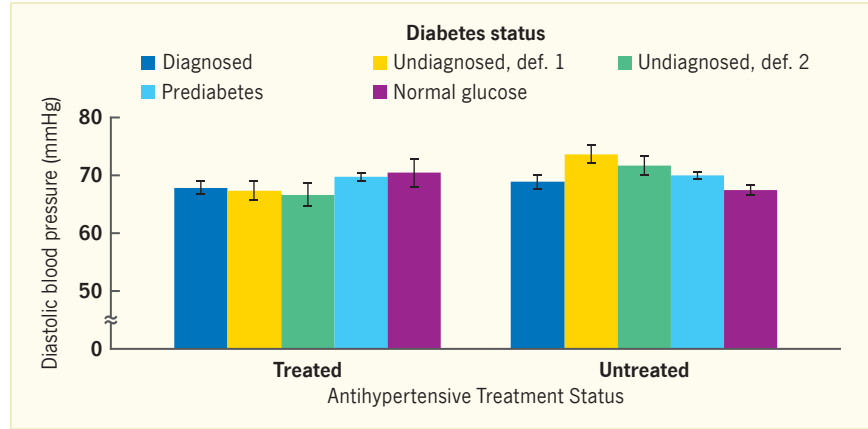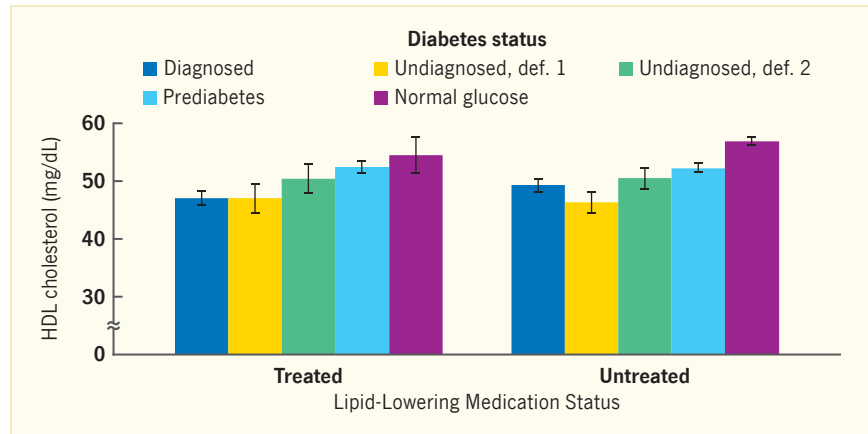

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.23 for further details. HDL, high-density lipoprotein.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.40. Prevalence of HDL Cholesterol <40 mg/dL for Men and <50 mg/dL for Women, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.24 for further details. HDL, high-density lipoprotein.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

cholesterol levels than people in younger age groups with diabetes. Persons with diagnosed diabetes generally had lower mean LDL cholesterol than those in other diabetes categories among people untreated with lipid-lowering medication (Figure 9.42; Appendix 9.25). People with normal glucose regulation had lower LDL cholesterol than people with undiagnosed diabetes or prediabetes among those not treated with lipid-lowering medication, but not among those treated. Among those with diabetes, people treated with lipid-lowering medication had lower mean LDL cholesterol levels than who were not treated. Those with diagnosed diabetes (45%) generally had a lower prevalence of LDL cholesterol ≥100 mg/dL (≥2.59 mmol/L) than those with undiagnosed diabetes (64%–65% for both definitions), prediabetes (73%), or normal glucose regulation (62%) (Figure 9.43, Appendix 9.26). In those age 20–44 years, undiag-nosed diabetic individuals had a higher prevalence of LDL cholesterol ≥100 mg/dL than those in other diabetes categories. Among those with diabetes, people age ≥65 years generally had a lower preva-lence of LDL cholesterol ≥100 mg/dL than younger age groups.

TRIGLYCERIDES

Mean triglycerides were generally higher in people with diabetes (170–183 mg/dL [1.92–2.07 mmol/L] for diag-nosed diabetes and both definitions of undiagnosed diabetes) than people with prediabetes (140 mg/dL [1.58 mmol/L]) or normal glucose regulation (116 mg/dL [1.31 mmol/L]) (Figure 9.44, Appendix 9.27). Among those with diabetes, people age ≥65 years had lower mean triglycerides than people in younger age groups. People with undiagnosed diabetes had higher mean triglycerides than people in other diabetes categories among those not treated with lipid-lowering medication, but not among those treated (Figure 9.45, Appendix 9.27). Among those with diagnosed diabetes, people treated with lipid-lowering medication had higher mean triglycerides than those who were not treated. The prevalence of triglycerides ≥150 mg/dL (≥1.70 mmol/L) was gener-ally higher among people with diabetes

FIGURE 9.41. Mean LDL Cholesterol, by Diabetes Status and Age, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. LDL cholesterol was calculated among participants who fasted, using the Friedewald equation. Error bars represent 95% confidence intervals. See Appendix 9.25 for further details. LDL, low-density lipoprotein.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.42. Mean LDL Cholesterol Among Adults Age ≥20 Years, by Diabetes Status and Lipid-Lowering Medication, U.S., 2005–2010

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. LDL cholesterol was calculated among participants who fasted, using the Friedewald equation. Error bars represent 95% confidence intervals. See Appendix 9.25 for further details. LDL, low-density lipoprotein.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.43. Prevalence of LDL Cholesterol ≥100 mg/dL, by Diabetes Status and Age, U.S., 2005–2010
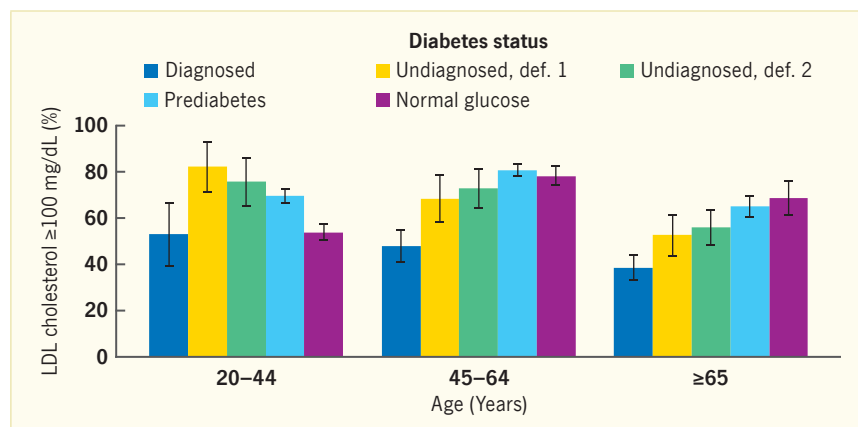
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. LDL cholesterol was calculated among participants who fasted, using the Friedewald equation. Error bars represent 95% confidence intervals. See Appendix 9.26 for further details. LDL, low-density lipoprotein.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

(44%–46% for diagnosed diabetes and both definitions of undiagnosed diabetes) than among people with prediabetes (32%) or normal glucose regulation (20%) (Figure 9.46, Appendix 9.28). Among those with diabetes, the prevalence of triglycerides ≥150 mg/dL did not differ by age group.
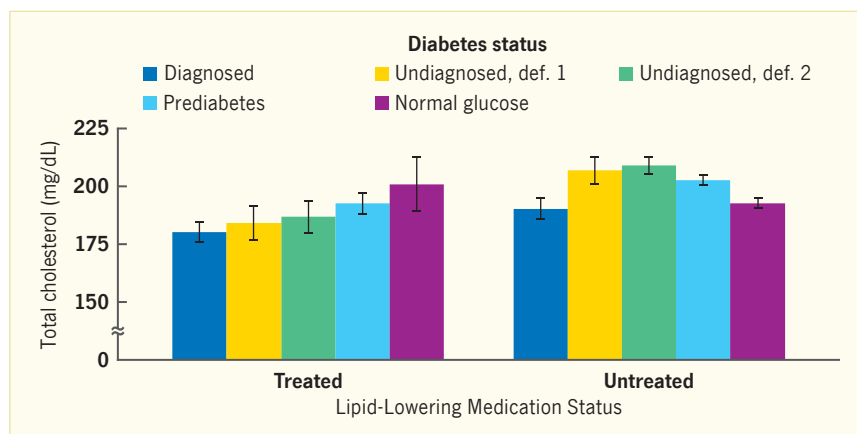
FIGURE 9.44. Mean Triglycerides, by Diabetes Status and Age, U.S., 2005–2010
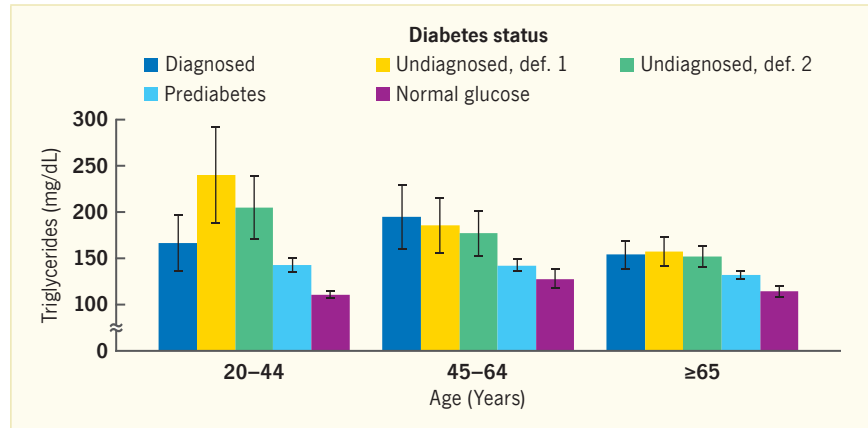
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.27 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.45. Mean Triglycerides Among Adults Age ≥20 Years, by Diabetes Status and Lipid-Lowering Medication, U.S., 2005–2010
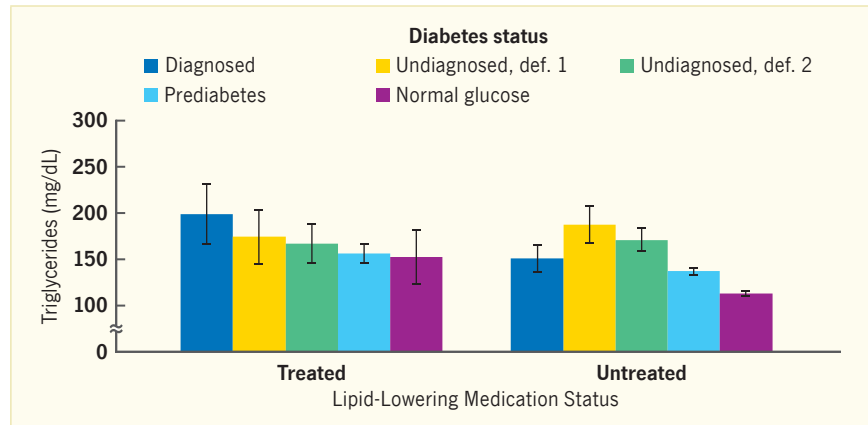
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.27 for further details.
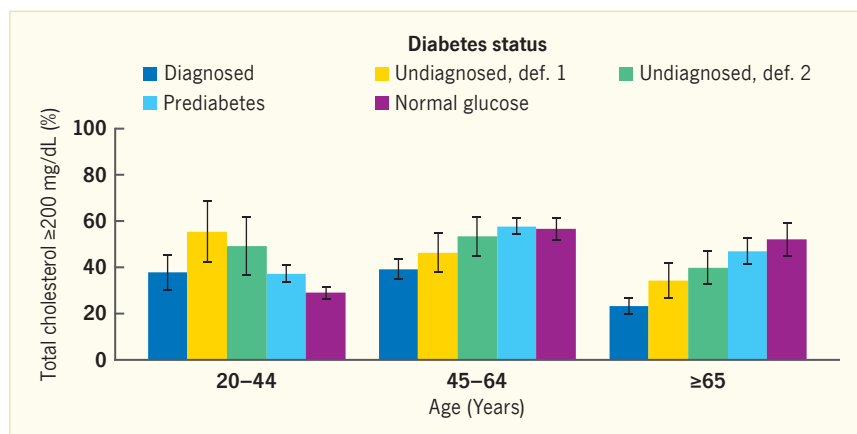SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.46. Prevalence of Triglycerides ≥150 mg/dL, by Diabetes Status and Age, U.S., 2005–2010
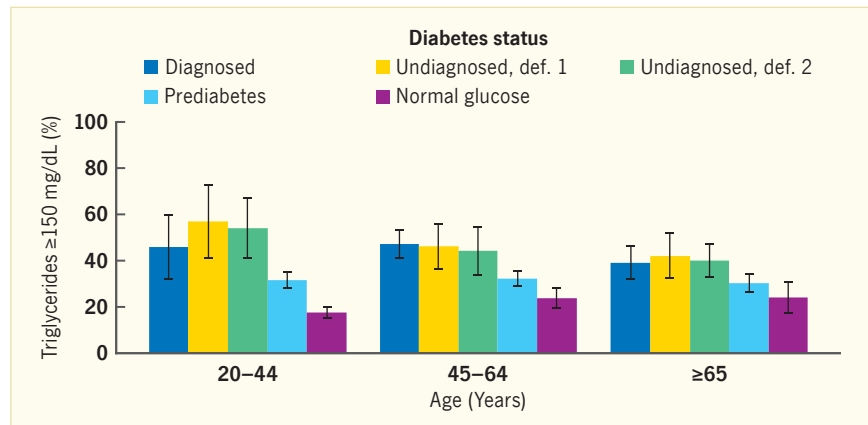
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.28 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

INFLAMMATION MARKERS

The prevalence of C-reactive protein ≥10 mg/L was generally higher among people with diagnosed (16%) or undiagnosed diabetes (20%–21% for both definitions) than among people with prediabetes (11%); people with normal glucose regulation (6%) had the lowest prevalence of C-reactive protein levels ≥10 mg/L (Figure 9.47, Appendix 9.29). A similar pattern was observed when using 2 mg/L as the cutpoint (Appendix 9.30) or mean C-reactive protein (Appendix 9.31).

Fibrinogen was measured in 3,235 participants age ≥40 years in the NHANES 1999–2002. Mean fibrinogen was generally higher in people with diagnosed diabetes than among people with undiagnosed diabetes, prediabetes, and normal glucose regulation, especially in those age ≥65 years (Figure 9.48, Appendix 9.32). A similar pattern was observed with fibrinogen ≥4 g/L (Appendix 9.33).

FIGURE 9.47. Prevalence of C-Reactive Protein ≥10 mg/L, by Diabetes Status and Age, U.S., 2005–2010
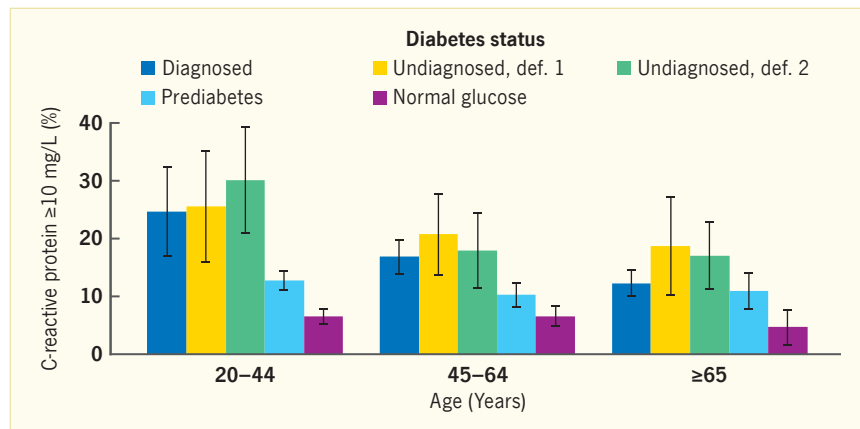
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.29 for further details.
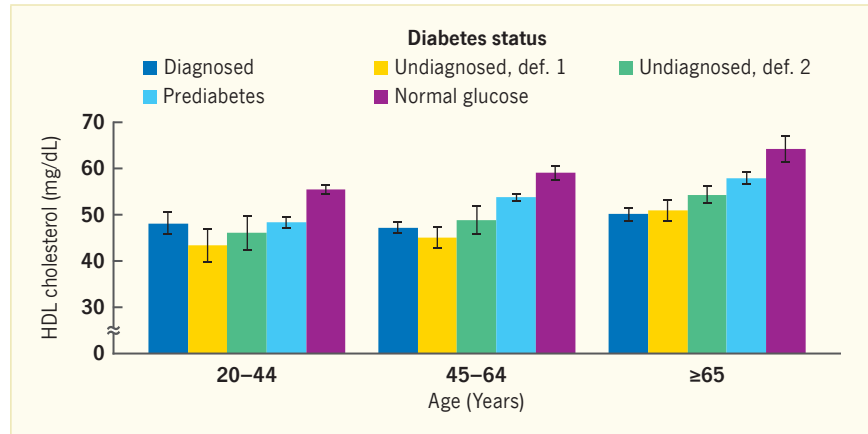SOURCE: National Health and Nutrition Examination Surveys 2005–2010

FIGURE 9.48. Mean Fibrinogen Among Adults Age ≥45 Years, by Diabetes Status and Age, U.S., 1999–2002
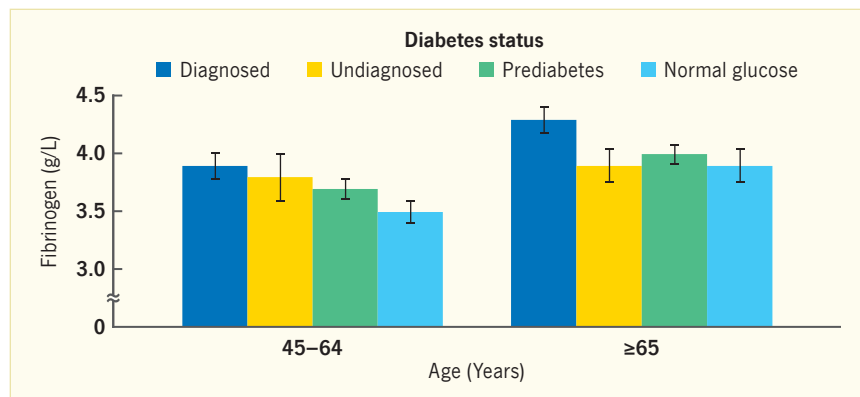
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. 2-hour plasma glucose was not available in 1999–2002. Error bars represent 95% confidence intervals. See Appendix 9.32 for further details.
SOURCE: National Health and Nutrition Examination Surveys 1999–2002

PARITY

Women with diagnosed diabetes (2.3) had a higher age-standardized mean number of live births than women who had not been diagnosed with diabetes (2.0) (Figure 9.49, Appendix 9.34).

FIGURE 9.49. Mean Number of Live Births Among Women, by Diabetes Status and Age, U.S., 2005–2010
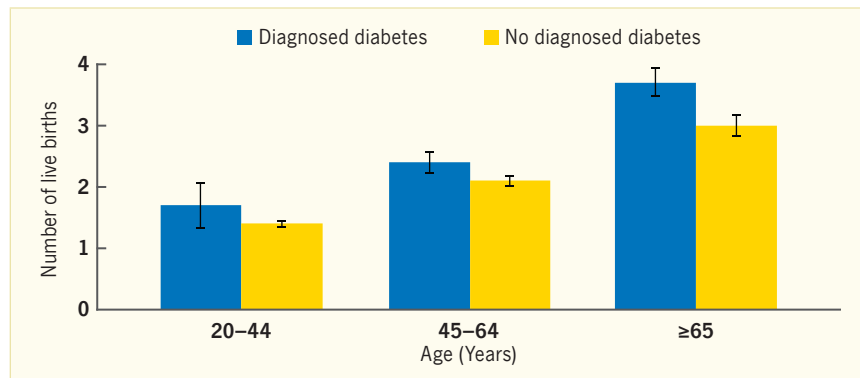
Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. Error bars represent 95% confidence intervals. See Appendix 9.34 for further details.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

SELF-REPORTED HEALTH

Figure 9.50 (and Appendix 9.35) shows the prevalence of self-reported fair or poor health by diabetes and age. The highest prevalence of fair or poor health was in people with diagnosed diabetes (48%), followed by undiagnosed diabetes (26%–30% for both definitions), prediabetes (17%), and then normal glucose regulation (11%).

FIGURE 9.50. Prevalence of Fair or Poor Self-Reported General Health, by Diabetes Status and Age, U.S., 2005–2010
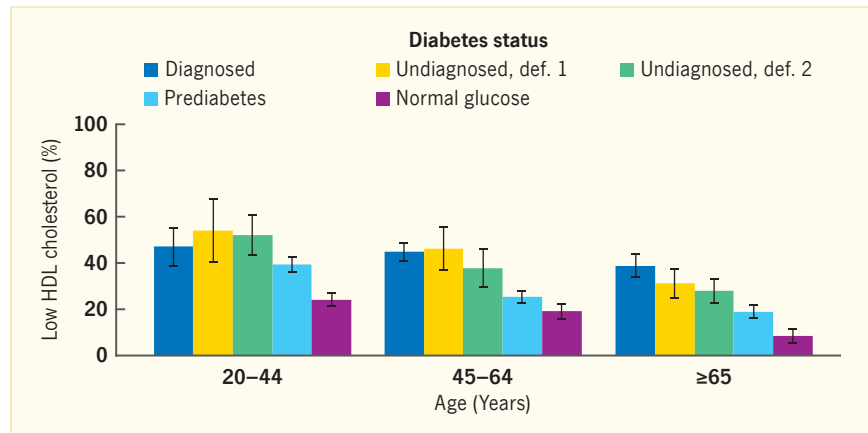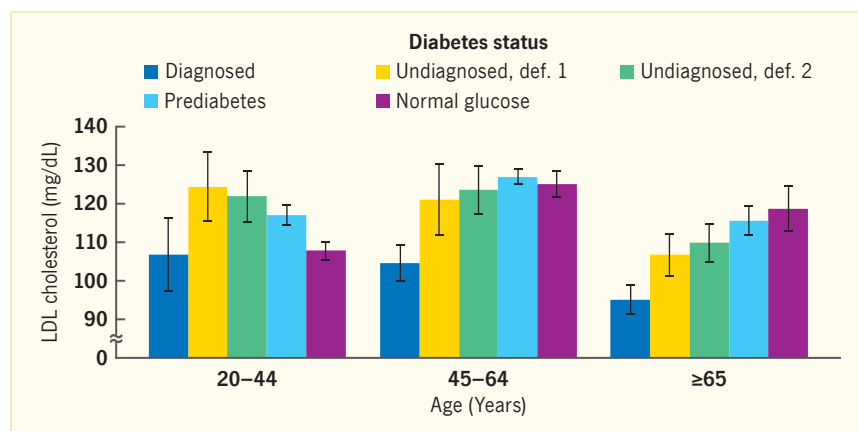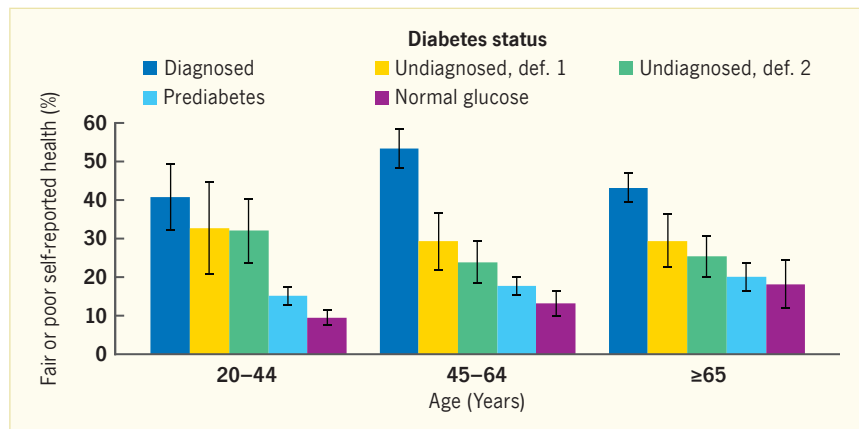

Diagnosed diabetes is based on self-report and includes treated and untreated diabetes. For definitions of undiagnosed diabetes, prediabetes, and normal glucose, see the *Introduction*. Error bars represent 95% confidence intervals. See Appendix 9.35 for further details.
Source: National Health and Nutrition Examination Surveys 2005–2010

LIST OF ABBREVIATIONS

A1c . . . . . . glycosylated hemoglobin
BMI . . . . . . body mass index
HDL . . . . . . high-density lipoprotein
LDL . . . . . . low-density lipoprotein
NHANES . . National Health and Nutrition Examination Survey
OGTT . . . . . oral glucose tolerance test

CONVERSIONS

Conversions for A1c, cholesterol, glucose, insulin, and triglyceride values are provided in *Diabetes in America Appendix 1 Conversions*.

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APPENDICES

APPENDIX 9.1. Mean A1c (%) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)					
	Treated diagnosed diabetes*	Untreated diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	7.4 (0.05)	6.3 (0.12)	6.9 (0.09)	6.3 (0.05)	5.6 (0.01)	5.2 (0.01)
Age (years)						
20–44	8.1 (0.21)	6.4 (0.32)	7.1 (0.27)	6.4 (0.16)	5.4 (0.02)	5.1 (0.01)
45–64	7.5 (0.07)	6.4 (0.17)	7.0 (0.16)	6.5 (0.10)	5.6 (0.02)	5.3 (0.01)
≥65	7.0 (0.05)	6.1 (0.09)	6.6 (0.08)	6.1 (0.04)	5.7 (0.02)	5.3 (0.02)
Sex, age (years)						
Men	7.4 (0.08)	6.5 (0.15)	6.9 (0.12)	6.4 (0.08)	5.5 (0.02)	5.2 (0.01)
20–44	8.2 (0.33)	7.0 (0.52)	7.2 (0.37)	6.5 (0.23)	5.4 (0.03)	5.1 (0.01)
45–64	7.5 (0.10)	6.6 (0.23)	6.9 (0.20)	6.5 (0.16)	5.6 (0.02)	5.2 (0.03)
≥65	7.1 (0.08)	6.1 (0.09)	6.7 (0.13)	6.3 (0.08)	5.6 (0.02)	5.3 (0.03)
Women	7.3 (0.06)	6.2 (0.15)	6.8 (0.11)	6.2 (0.05)	5.6 (0.02)	5.2 (0.01)
20–44	8.1 (0.24)	6.0 (0.33)	7.0 (0.48)	6.2 (0.22)	5.5 (0.03)	5.1 (0.01)
45–64	7.4 (0.09)	6.3 (0.20)	7.3 (0.14)	6.5 (0.09)	5.6 (0.02)	5.3 (0.01)
≥65	6.9 (0.06)	6.2 (0.15)	6.4 (0.11)	6.0 (0.04)	5.7 (0.02)	5.4 (0.02)
Race/ethnicity, sex, age (years)						
Non-Hispanic white	7.2 (0.06)	6.0 (0.10)	6.6 (0.11)	6.1 (0.06)	5.5 (0.02)	5.2 (0.01)
20–44	7.6 (0.28)	5.5 (0.23)	6.2 (0.28)	5.9 (0.15)	5.3 (0.03)	5.1 (0.01)
45–64	7.4 (0.10)	6.1 (0.17)	6.8 (0.22)	6.3 (0.13)	5.6 (0.02)	5.3 (0.02)
≥65	6.9 (0.07)	6.1 (0.10)	6.5 (0.07)	6.1 (0.04)	5.7 (0.02)	5.4 (0.02)
Non-Hispanic white men	7.3 (0.08)	6.2 (0.14)	6.6 (0.15)	6.3 (0.10)	5.5 (0.02)	5.2 (0.02)
20–44	7.7 (0.40)	5.9 (0.50)	6.3 (0.35)	6.0 (0.21)	5.3 (0.03)	5.1 (0.02)
45–64	7.4 (0.14)	6.4 (0.31)	6.8 (0.26)	6.4 (0.20)	5.5 (0.03)	5.2 (0.03)
≥65	7.0 (0.09)	6.0 (0.09)	6.6 (0.10)	6.2 (0.07)	5.6 (0.03)	5.3 (0.03)
Non-Hispanic white women	7.1 (0.10)	5.8 (0.10)	6.5 (0.12)	6.0 (0.05)	5.6 (0.02)	5.2 (0.01)
20–44	7.6 (0.39)	5.3 (0.21)	6.0 (0.50)	5.8 (0.22)	5.4 (0.04)	5.1 (0.02)
45–64	7.3 (0.15)	5.8 (0.12)	7.0 (0.18)	6.2 (0.10)	5.6 (0.03)	5.3 (0.01)
≥65	6.8 (0.09)	6.1 (0.16)	6.3 (0.14)	6.0 (0.05)	5.7 (0.03)	5.4 (0.02)
Non-Hispanic black	7.7 (0.09)	7.0 (0.26)	7.0 (0.14)	6.8 (0.12)	5.7 (0.02)	5.2 (0.01)
20–44	8.9 (0.39)	8.0 (0.97)	7.2 (0.38)	6.9 (0.33)	5.7 (0.03)	5.2 (0.01)
45–64	7.7 (0.11)	6.9 (0.35)	7.1 (0.20)	6.9 (0.17)	5.8 (0.03)	5.3 (0.04)
≥65	7.2 (0.13)	6.1 (0.17)	6.8 (0.14)	6.6 (0.14)	5.8 (0.04)	5.2 (0.08)
Non-Hispanic black men	7.8 (0.21)	7.6 (0.47)	6.9 (0.16)	6.7 (0.14)	5.7 (0.02)	5.3 (0.02)
20–44	9.1 (0.50)	9.0 (1.04)	6.8 (0.34)	6.6 (0.30)	5.7 (0.04)	5.2 (0.02)
45–64	7.6 (0.24)	7.4 (0.52)	6.9 (0.25)	6.8 (0.21)	5.8 (0.03)	5.3 (0.05)
≥65	7.5 (0.23)	6.0 (0.38)	6.8 (0.20)	6.7 (0.16)	5.8 (0.06)	5.2 (0.10)
Non-Hispanic black women	7.6 (0.14)	6.4 (0.26)	7.2 (0.23)	6.8 (0.18)	5.7 (0.02)	5.2 (0.02)
20–44	8.6 (0.57)	6.4 (0.51)	7.8 (0.79)	7.3 (0.62)	5.7 (0.04)	5.2 (0.01)
45–64	7.7 (0.21)	6.6 (0.42)	7.3 (0.33)	6.9 (0.25)	5.7 (0.04)	5.4 (0.04)
≥65	7.0 (0.12)	6.2 (0.23)	6.8 (0.19)	6.4 (0.21)	5.9 (0.04)	5.2 (0.12)
All Hispanic	7.9 (0.15)	6.8 (0.29)	7.6 (0.19)	6.8 (0.13)	5.6 (0.02)	5.2 (0.01)
20–44	9.3 (0.53)	6.7 (0.62)	8.0 (0.39)	7.0 (0.30)	5.5 (0.03)	5.2 (0.02)
45–64	7.8 (0.12)	7.0 (0.29)	7.7 (0.29)	7.0 (0.19)	5.6 (0.03)	5.3 (0.03)
≥65	7.2 (0.10)	6.6 (0.36)	6.9 (0.13)	6.3 (0.14)	5.7 (0.04)	5.4 (0.05)

Appendix 9.1 continues on the next page.

APPENDIX 9.1. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)					
	Treated diagnosed diabetes*	Untreated diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
All Hispanic men	7.7 (0.17)	6.7 (0.29)	7.6 (0.27)	6.9 (0.17)	5.6 (0.03)	5.2 (0.02)
20–44	9.3 (0.71)	6.7 (0.69)	8.3 (0.50)	7.3 (0.35)	5.5 (0.03)	5.2 (0.02)
45–64	7.7 (0.20)	6.9 (0.26)	7.3 (0.34)	6.9 (0.25)	5.7 (0.03)	5.3 (0.03)
≥65	7.1 (0.16)	6.4 (0.22)	6.9 (0.28)	6.4 (0.18)	5.7 (0.04)	5.4 (0.06)
All Hispanic women	8.0 (0.22)	7.0 (0.46)	7.6 (0.16)	6.7 (0.15)	5.6 (0.03)	5.2 (0.02)
20–44	9.4 (0.72)	6.8 (0.94)	7.2 (0.37)	6.4 (0.30)	5.5 (0.05)	5.2 (0.02)
45–64	8.0 (0.17)	7.1 (0.50)	8.4 (0.31)	7.2 (0.26)	5.6 (0.04)	5.2 (0.05)
≥65	7.2 (0.16)	6.9 (0.89)	6.8 (0.19)	6.3 (0.19)	5.7 (0.05)	5.3 (0.07)
Mexican American	7.8 (0.13)	6.9 (0.39)	7.8 (0.18)	7.0 (0.15)	5.5 (0.02)	5.2 (0.01)
20–44	8.4 (0.60)	7.3 (0.92)	8.2 (0.43)	7.0 (0.32)	5.5 (0.03)	5.2 (0.02)
45–64	8.0 (0.14)	6.6 (0.31)	8.1 (0.31)	7.3 (0.24)	5.6 (0.03)	5.3 (0.03)
≥65	7.3 (0.11)	6.7 (0.46)	7.0 (0.17)	6.4 (0.19)	5.7 (0.05)	5.4 (0.06)
Mexican American men	7.8 (0.19)	6.8 (0.39)	7.9 (0.29)	7.1 (0.20)	5.5 (0.03)	5.2 (0.02)
20–44	8.6 (0.73)	6.9 (1.05)	8.5 (0.56)	7.3 (0.37)	5.5 (0.03)	5.2 (0.02)
45–64	7.8 (0.20)	6.8 (0.45)	7.7 (0.43)	7.3 (0.35)	5.6 (0.04)	5.3 (0.03)
≥65	7.3 (0.19)	6.5 (0.35)	7.1 (0.32)	6.5 (0.26)	5.7 (0.07)	5.4 (0.06)
Mexican American women	7.9 (0.17)	7.0 (0.51)	7.7 (0.22)	6.8 (0.20)	5.5 (0.04)	5.2 (0.02)
20–44	8.2 (0.87)	7.7 (1.10)	7.2 (0.48)	6.4 (0.38)	5.5 (0.05)	5.1 (0.02)
45–64	8.2 (0.21)	6.5 (0.33)	8.5 (0.35)	7.4 (0.35)	5.6 (0.04)	5.3 (0.03)
≥65	7.4 (0.16)	6.9 (0.89)	6.9 (0.25)	6.3 (0.25)	5.7 (0.06)	5.2 (0.09)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4%
  or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and
  2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.2. Means and Percentiles of A1c (%) Among Adults Age ≥20 Years Without Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	5.4 (0.01)	4.7 (0.01)	4.8 (0.01)	5.1 (0.01)	5.3 (0.01)	5.6 (0.01)	5.9 (0.01)	6.1 (0.02)
Age (years)								
20–44	5.2 (0.01)	4.6 (0.01)	4.7 (0.01)	4.9 (0.01)	5.2 (0.01)	5.4 (0.01)	5.6 (0.01)	5.8 (0.02)
45–64	5.5 (0.02)	4.9 (0.02)	5.0 (0.02)	5.2 (0.01)	5.4 (0.01)	5.7 (0.01)	6.0 (0.02)	6.2 (0.03)
≥65	5.7 (0.02)	4.9 (0.02)	5.1 (0.01)	5.3 (0.01)	5.6 (0.01)	5.9 (0.02)	6.2 (0.03)	6.5 (0.04)
Sex, age (years)								
Men	5.4 (0.01)	4.7 (0.02)	4.8 (0.01)	5.1 (0.01)	5.3 (0.01)	5.6 (0.01)	5.9 (0.01)	6.1 (0.03)
20–44	5.3 (0.01)	4.6 (0.02)	4.7 (0.01)	5.0 (0.02)	5.2 (0.01)	5.4 (0.01)	5.7 (0.02)	5.8 (0.02)
45–64	5.6 (0.02)	4.8 (0.03)	5.0 (0.02)	5.2 (0.02)	5.4 (0.01)	5.7 (0.01)	6.0 (0.03)	6.3 (0.06)
≥65	5.7 (0.02)	4.9 (0.04)	5.1 (0.03)	5.3 (0.01)	5.6 (0.02)	5.9 (0.02)	6.2 (0.05)	6.6 (0.09)
Women	5.4 (0.01)	4.7 (0.02)	4.8 (0.01)	5.1 (0.01)	5.3 (0.01)	5.6 (0.01)	5.9 (0.02)	6.1 (0.02)
20–44	5.2 (0.01)	4.6 (0.02)	4.7 (0.02)	4.9 (0.01)	5.1 (0.01)	5.4 (0.01)	5.6 (0.01)	5.7 (0.02)
45–64	5.5 (0.02)	4.9 (0.02)	5.0 (0.02)	5.2 (0.01)	5.4 (0.01)	5.7 (0.01)	5.9 (0.03)	6.2 (0.04)
≥65	5.7 (0.02)	5.0 (0.02)	5.1 (0.02)	5.3 (0.02)	5.6 (0.01)	5.8 (0.02)	6.1 (0.03)	6.4 (0.04)
Race/ethnicity, sex, age (years)								
Non-Hispanic white	5.4 (0.01)	4.7 (0.02)	4.8 (0.01)	5.0 (0.01)	5.3 (0.01)	5.6 (0.01)	5.8 (0.02)	6.0 (0.02)
20–44	5.2 (0.01)	4.6 (0.02)	4.7 (0.02)	4.9 (0.01)	5.1 (0.01)	5.3 (0.01)	5.5 (0.01)	5.7 (0.02)
45–64	5.5 (0.02)	4.8 (0.02)	5.0 (0.02)	5.2 (0.02)	5.4 (0.01)	5.6 (0.01)	5.9 (0.02)	6.1 (0.04)
≥65	5.7 (0.02)	4.9 (0.02)	5.1 (0.02)	5.3 (0.01)	5.6 (0.01)	5.8 (0.02)	6.1 (0.03)	6.4 (0.04)

Appendix 9.2 continues on the next page.

APPENDIX 9.2. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Non-Hispanic white men	5.4 (0.02)	4.7 (0.02)	4.8 (0.02)	5.1 (0.02)	5.3 (0.01)	5.6 (0.01)	5.8 (0.02)	6.1 (0.03)
20–44	5.2 (0.02)	4.6 (0.02)	4.7 (0.02)	4.9 (0.02)	5.1 (0.02)	5.3 (0.02)	5.6 (0.02)	5.7 (0.03)
45–64	5.5 (0.03)	4.8 (0.04)	5.0 (0.02)	5.2 (0.02)	5.4 (0.01)	5.6 (0.01)	5.9 (0.04)	6.2 (0.06)
≥65	5.7 (0.02)	4.9 (0.04)	5.1 (0.03)	5.3 (0.01)	5.6 (0.02)	5.8 (0.02)	6.2 (0.05)	6.5 (0.09)
Non-Hispanic white women	5.4 (0.01)	4.7 (0.02)	4.8 (0.01)	5.0 (0.01)	5.3 (0.01)	5.6 (0.01)	5.8 (0.02)	6.0 (0.03)
20–44	5.2 (0.01)	4.6 (0.03)	4.7 (0.02)	4.9 (0.01)	5.1 (0.02)	5.3 (0.01)	5.5 (0.02)	5.7 (0.03)
45–64	5.5 (0.02)	4.9 (0.02)	5.0 (0.02)	5.2 (0.02)	5.4 (0.02)	5.6 (0.02)	5.9 (0.02)	6.1 (0.05)
≥65	5.6 (0.02)	5.0 (0.03)	5.1 (0.02)	5.3 (0.02)	5.6 (0.02)	5.8 (0.03)	6.1 (0.04)	6.3 (0.04)
Non-Hispanic black	5.5 (0.02)	4.7 (0.03)	4.9 (0.02)	5.2 (0.02)	5.5 (0.01)	5.7 (0.02)	6.0 (0.02)	6.3 (0.04)
20–44	5.4 (0.02)	4.6 (0.04)	4.8 (0.02)	5.1 (0.02)	5.3 (0.02)	5.6 (0.02)	5.8 (0.03)	6.0 (0.04)
45–64	5.7 (0.03)	4.8 (0.05)	5.0 (0.03)	5.3 (0.02)	5.6 (0.02)	5.9 (0.02)	6.2 (0.04)	6.5 (0.08)
≥65	5.8 (0.03)	4.8 (0.08)	5.0 (0.06)	5.4 (0.04)	5.7 (0.03)	6.0 (0.04)	6.5 (0.08)	6.7 (0.08)
Non-Hispanic black men	5.6 (0.02)	4.6 (0.05)	4.9 (0.04)	5.2 (0.03)	5.5 (0.02)	5.8 (0.02)	6.1 (0.03)	6.3 (0.05)
20–44	5.4 (0.03)	4.5 (0.05)	4.7 (0.06)	5.1 (0.03)	5.4 (0.03)	5.6 (0.03)	5.9 (0.04)	6.0 (0.04)
45–64	5.7 (0.03)	4.8 (0.07)	5.0 (0.04)	5.4 (0.04)	5.6 (0.02)	5.9 (0.02)	6.2 (0.05)	6.6 (0.18)
≥65	5.8 (0.04)	4.7 (0.11)	4.9 (0.12)	5.4 (0.04)	5.7 (0.04)	6.1 (0.05)	6.5 (0.11)	6.9 (0.12)
Non-Hispanic black women	5.5 (0.02)	4.7 (0.02)	4.9 (0.02)	5.1 (0.02)	5.4 (0.02)	5.7 (0.02)	6.0 (0.03)	6.3 (0.05)
20–44	5.3 (0.03)	4.7 (0.04)	4.8 (0.02)	5.0 (0.03)	5.3 (0.02)	5.5 (0.03)	5.7 (0.04)	5.9 (0.05)
45–64	5.7 (0.04)	4.9 (0.06)	5.1 (0.04)	5.3 (0.03)	5.6 (0.03)	5.9 (0.03)	6.2 (0.05)	6.5 (0.08)
≥65	5.8 (0.03)	4.9 (0.09)	5.1 (0.06)	5.4 (0.05)	5.7 (0.03)	6.0 (0.04)	6.5 (0.09)	6.6 (0.07)
All Hispanic	5.5 (0.02)	4.7 (0.02)	4.8 (0.02)	5.1 (0.01)	5.3 (0.01)	5.6 (0.01)	5.9 (0.02)	6.2 (0.04)
20–44	5.3 (0.02)	4.7 (0.02)	4.8 (0.02)	5.0 (0.01)	5.2 (0.01)	5.5 (0.01)	5.7 (0.02)	5.9 (0.03)
45–64	5.7 (0.03)	4.9 (0.03)	5.0 (0.04)	5.3 (0.02)	5.5 (0.02)	5.8 (0.02)	6.1 (0.05)	6.7 (0.15)
≥65	5.8 (0.05)	5.1 (0.04)	5.2 (0.03)	5.4 (0.03)	5.7 (0.03)	6.0 (0.05)	6.4 (0.10)	6.9 (0.21)
All Hispanic men	5.5 (0.02)	4.7 (0.02)	4.9 (0.02)	5.1 (0.02)	5.4 (0.02)	5.6 (0.02)	5.9 (0.03)	6.2 (0.06)
20–44	5.4 (0.03)	4.7 (0.02)	4.8 (0.02)	5.0 (0.02)	5.3 (0.02)	5.5 (0.01)	5.8 (0.03)	6.0 (0.06)
45–64	5.7 (0.04)	4.9 (0.05)	5.0 (0.04)	5.3 (0.03)	5.5 (0.03)	5.8 (0.03)	6.2 (0.07)	6.7 (0.20)
≥65	5.8 (0.06)	5.0 (0.08)	5.2 (0.06)	5.4 (0.04)	5.6 (0.03)	5.9 (0.06)	6.4 (0.11)	6.8 (0.25)
All Hispanic women	5.4 (0.02)	4.7 (0.03)	4.8 (0.02)	5.0 (0.01)	5.3 (0.01)	5.6 (0.02)	5.9 (0.02)	6.1 (0.05)
20–44	5.3 (0.02)	4.6 (0.03)	4.7 (0.03)	5.0 (0.02)	5.2 (0.02)	5.4 (0.02)	5.7 (0.02)	5.8 (0.04)
45–64	5.7 (0.04)	4.9 (0.05)	5.0 (0.05)	5.3 (0.03)	5.5 (0.03)	5.8 (0.02)	6.1 (0.06)	6.7 (0.18)
≥65	5.9 (0.06)	5.1 (0.03)	5.2 (0.03)	5.4 (0.03)	5.7 (0.05)	6.0 (0.06)	6.4 (0.17)	6.9 (0.25)
Mexican American	5.5 (0.02)	4.7 (0.02)	4.8 (0.02)	5.1 (0.02)	5.3 (0.01)	5.6 (0.02)	5.9 (0.03)	6.2 (0.06)
20–44	5.4 (0.02)	4.7 (0.02)	4.8 (0.02)	5.0 (0.01)	5.2 (0.01)	5.5 (0.01)	5.7 (0.03)	6.0 (0.03)
45–64	5.8 (0.04)	4.9 (0.05)	5.1 (0.03)	5.3 (0.02)	5.5 (0.03)	5.8 (0.02)	6.2 (0.08)	7.0 (0.25)
≥65	5.9 (0.06)	5.0 (0.06)	5.2 (0.04)	5.4 (0.04)	5.7 (0.04)	6.0 (0.08)	6.6 (0.16)	7.1 (0.23)
Mexican American men	5.5 (0.03)	4.8 (0.02)	4.9 (0.02)	5.1 (0.02)	5.4 (0.02)	5.6 (0.02)	5.9 (0.04)	6.2 (0.08)
20–44	5.4 (0.03)	4.8 (0.02)	4.9 (0.02)	5.1 (0.02)	5.3 (0.02)	5.5 (0.02)	5.8 (0.04)	6.0 (0.06)
45–64	5.7 (0.06)	4.8 (0.08)	5.1 (0.05)	5.3 (0.03)	5.6 (0.04)	5.8 (0.03)	6.1 (0.09)	6.7 (0.29)
≥65	5.9 (0.08)	4.9 (0.08)	5.1 (0.07)	5.4 (0.05)	5.6 (0.04)	5.9 (0.09)	6.6 (0.15)	7.0 (0.28)
Mexican American women	5.4 (0.03)	4.7 (0.03)	4.8 (0.03)	5.0 (0.02)	5.3 (0.02)	5.6 (0.03)	5.9 (0.03)	6.2 (0.08)
20–44	5.3 (0.02)	4.6 (0.04)	4.7 (0.03)	5.0 (0.02)	5.2 (0.01)	5.4 (0.02)	5.7 (0.03)	5.9 (0.05)
45–64	5.8 (0.05)	4.9 (0.04)	5.1 (0.04)	5.3 (0.03)	5.5 (0.03)	5.8 (0.03)	6.3 (0.12)	7.2 (0.38)
≥65	5.9 (0.09)	5.1 (0.07)	5.2 (0.04)	5.4 (0.04)	5.7 (0.07)	6.0 (0.10)	6.7 (0.25)	7.2 (0.35)

No diagnosed diabetes is based on self-report. Conversions for A1c values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.3. Means and Percentiles of A1c (%) Among Adults Age ≥20 Years With Treated Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	7.4 (0.05)	5.5 (0.05)	5.7 (0.04)	6.2 (0.04)	6.9 (0.06)	7.9 (0.11)	9.5 (0.14)	10.8 (0.18)
Age (years)								
20–44	8.1 (0.21)	[1]	5.6 (0.16)	6.2 (0.27)	7.5 (0.37)	9.4 (0.39)	11.1 (0.30)	12.1 (0.46)
45–64	7.5 (0.07)	5.6 (0.06)	5.8 (0.06)	6.2 (0.06)	7.0 (0.09)	8.0 (0.17)	9.7 (0.21)	11.1 (0.27)
≥65	7.0 (0.05)	5.5 (0.07)	5.8 (0.04)	6.1 (0.06)	6.8 (0.06)	7.5 (0.06)	8.4 (0.15)	9.3 (0.21)
Sex, age (years)								
Men	7.4 (0.08)	5.5 (0.12)	5.7 (0.05)	6.2 (0.08)	7.0 (0.08)	8.1 (0.18)	9.7 (0.18)	10.8 (0.34)
20–44	8.2 (0.33)	[1]	[1]	6.3 (0.41)	8.0 (0.52)	9.5 (0.41)	10.9 (0.31)	11.3 (0.48)
45–64	7.5 (0.10)	5.5 (0.10)	5.7 (0.08)	6.3 (0.10)	7.0 (0.11)	8.1 (0.23)	9.7 (0.30)	11.4 (0.45)
≥65	7.1 (0.08)	5.5 (0.12)	5.8 (0.03)	6.1 (0.07)	6.8 (0.07)	7.6 (0.14)	8.8 (0.27)	9.7 (0.17)
Women	7.3 (0.06)	5.5 (0.05)	5.8 (0.05)	6.2 (0.04)	6.9 (0.07)	7.7 (0.09)	9.4 (0.21)	10.8 (0.28)
20–44	8.1 (0.24)	5.4 (0.09)	5.5 (0.13)	6.0 (0.27)	7.2 (0.40)	9.3 (0.53)	11.7 (0.51)	[1]
45–64	7.4 (0.09)	5.7 (0.10)	5.9 (0.05)	6.2 (0.06)	7.0 (0.11)	7.9 (0.20)	9.6 (0.41)	11.0 (0.28)
≥65	6.9 (0.06)	5.5 (0.08)	5.7 (0.08)	6.1 (0.08)	6.7 (0.09)	7.4 (0.07)	8.0 (0.16)	8.9 (0.30)
Race/ethnicity, sex, age (years)								
Non-Hispanic white	7.2 (0.06)	5.5 (0.08)	5.7 (0.05)	6.1 (0.06)	6.9 (0.07)	7.7 (0.08)	9.1 (0.14)	9.8 (0.31)
20–44	7.6 (0.28)	[1]	5.5 (0.25)	6.0 (0.29)	7.2 (0.34)	8.6 (0.28)	9.9 (0.50)	[1]
45–64	7.4 (0.10)	5.6 (0.06)	5.8 (0.07)	6.2 (0.08)	7.0 (0.12)	7.8 (0.20)	9.4 (0.34)	10.7 (0.53)
≥65	6.9 (0.07)	5.5 (0.09)	5.8 (0.06)	6.1 (0.07)	6.7 (0.09)	7.4 (0.08)	8.2 (0.18)	9.1 (0.27)
Non-Hispanic white men	7.3 (0.08)	5.5 (0.15)	5.7 (0.07)	6.2 (0.11)	6.9 (0.08)	7.9 (0.19)	9.3 (0.20)	10.3 (0.31)
20–44	7.7 (0.40)	[1]	[1]	6.0 (0.57)	7.4 (0.53)	8.8 (0.66)	[1]	[1]
45–64	7.4 (0.14)	5.6 (0.06)	5.7 (0.10)	6.2 (0.16)	7.0 (0.14)	8.0 (0.26)	9.4 (0.35)	10.8 (0.82)
≥65	7.0 (0.09)	5.5 (0.13)	5.8 (0.04)	6.1 (0.08)	6.8 (0.09)	7.5 (0.18)	8.7 (0.35)	9.6 (0.25)
Non-Hispanic white women	7.1 (0.10)	5.5 (0.07)	5.8 (0.08)	6.1 (0.06)	6.8 (0.12)	7.5 (0.09)	8.7 (0.33)	9.6 (0.45)
20–44	7.6 (0.39)	[1]	[1]	5.9 (0.30)	6.9 (0.44)	8.5 (0.49)	[1]	[1]
45–64	7.3 (0.15)	5.8 (0.11)	5.9 (0.07)	6.2 (0.09)	7.0 (0.19)	7.6 (0.23)	9.4 (0.59)	10.7 (0.54)
≥65	6.8 (0.09)	5.5 (0.10)	5.7 (0.10)	6.1 (0.09)	6.7 (0.13)	7.4 (0.09)	7.8 (0.07)	8.2 (0.32)
Non-Hispanic black	7.7 (0.09)	5.4 (0.07)	5.8 (0.09)	6.2 (0.06)	7.0 (0.11)	8.5 (0.21)	10.8 (0.40)	12.3 (0.29)
20–44	8.9 (0.39)	[1]	5.7 (0.24)	6.3 (0.53)	8.7 (0.73)	10.8 (0.66)	[1]	[1]
45–64	7.7 (0.11)	5.5 (0.12)	5.8 (0.10)	6.2 (0.06)	7.1 (0.11)	8.4 (0.23)	10.6 (0.42)	11.9 (0.39)
≥65	7.2 (0.13)	5.3 (0.12)	5.5 (0.13)	6.2 (0.09)	6.8 (0.11)	7.7 (0.20)	8.9 (0.29)	9.6 (0.74)
Non-Hispanic black men	7.8 (0.21)	5.4 (0.12)	5.6 (0.10)	6.2 (0.10)	7.1 (0.26)	8.8 (0.41)	11.3 (0.59)	12.4 (0.52)
20–44	9.1 (0.50)	[1]	[1]	6.6 (0.74)	9.2 (0.56)	10.8 (0.60)	[1]	[1]
45–64	7.6 (0.24)	5.4 (0.17)	5.6 (0.11)	6.1 (0.12)	6.9 (0.21)	8.3 (0.44)	9.9 (0.78)	12.0 (1.02)
≥65	7.5 (0.23)	5.0 (0.23)	5.5 (0.23)	6.1 (0.10)	6.8 (0.27)	8.1 (0.22)	10.0 (1.00)	12.4 (0.96)
Non-Hispanic black women	7.6 (0.14)	5.4 (0.12)	5.8 (0.12)	6.3 (0.08)	7.0 (0.13)	8.3 (0.30)	10.4 (0.56)	11.9 (0.51)
20–44	8.6 (0.57)	[1]	[1]	5.9 (0.32)	7.1 (0.89)	10.5 (1.06)	[1]	[1]
45–64	7.7 (0.21)	5.5 (0.16)	5.9 (0.15)	6.3 (0.12)	7.1 (0.18)	8.4 (0.35)	10.6 (0.61)	11.8 (0.70)
≥65	7.0 (0.12)	5.3 (0.16)	5.6 (0.15)	6.3 (0.13)	6.8 (0.11)	7.5 (0.17)	8.5 (0.38)	9.1 (0.29)
All Hispanic	7.9 (0.15)	5.5 (0.09)	5.7 (0.10)	6.4 (0.08)	7.2 (0.12)	8.9 (0.33)	10.8 (0.35)	11.8 (0.27)
20–44	9.3 (0.53)	[1]	5.5 (0.48)	7.0 (0.77)	9.7 (0.79)	11.1 (0.36)	11.9 (0.39)	[1]
45–64	7.8 (0.12)	5.5 (0.15)	5.9 (0.19)	6.5 (0.09)	7.3 (0.13)	8.7 (0.25)	10.4 (0.28)	11.2 (0.27)
≥65	7.2 (0.10)	5.6 (0.05)	5.7 (0.08)	6.1 (0.11)	6.7 (0.14)	7.6 (0.15)	9.0 (0.34)	10.2 (0.60)
All Hispanic men	7.7 (0.17)	5.6 (0.14)	5.9 (0.12)	6.5 (0.10)	7.1 (0.19)	8.7 (0.33)	10.2 (0.41)	11.2 (0.44)
20–44	9.3 (0.71)	[1]	[1]	6.6 (0.67)	8.6 (0.98)	11.0 (0.88)	[1]	[1]
45–64	7.7 (0.20)	5.4 (0.31)	6.0 (0.24)	6.5 (0.14)	7.2 (0.25)	8.5 (0.36)	10.1 (0.35)	10.5 (0.39)
≥65	7.1 (0.16)	[1]	5.8 (0.14)	6.2 (0.08)	6.7 (0.20)	7.5 (0.22)	8.9 (0.41)	9.5 (0.52)

Appendix 9.3 continues on the next page.

APPENDIX 9.3. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
All Hispanic women	8.0 (0.22)	5.5 (0.09)	5.7 (0.12)	6.4 (0.13)	7.3 (0.20)	9.3 (0.64)	11.1 (0.40)	12.0 (0.30)
20–44	9.4 (0.72)	[1]	[1]	7.2 (1.27)	[1]	[1]	[1]	[1]
45–64	8.0 (0.17)	5.5 (0.19)	5.8 (0.24)	6.5 (0.14)	7.4 (0.27)	8.9 (0.30)	10.9 (0.36)	11.4 (0.31)
≥65	7.2 (0.16)	5.6 (0.06)	5.7 (0.10)	6.1 (0.17)	6.8 (0.16)	7.6 (0.21)	8.8 (0.61)	10.6 (0.77)
Mexican American	7.8 (0.13)	5.6 (0.10)	5.8 (0.12)	6.5 (0.10)	7.3 (0.11)	8.8 (0.33)	10.8 (0.32)	11.6 (0.21)
20–44	8.4 (0.60)	5.3 (0.34)	5.5 (0.41)	6.3 (0.54)	7.7 (0.75)	10.1 (0.92)	[1]	[1]
45–64	8.0 (0.14)	5.5 (0.22)	6.0 (0.21)	6.7 (0.12)	7.4 (0.19)	9.1 (0.24)	10.7 (0.31)	11.2 (0.27)
≥65	7.3 (0.11)	5.7 (0.06)	5.8 (0.08)	6.2 (0.09)	6.9 (0.16)	7.8 (0.16)	9.0 (0.56)	10.7 (0.72)
Mexican American men	7.8 (0.19)	5.5 (0.17)	5.8 (0.17)	6.5 (0.15)	7.2 (0.14)	8.8 (0.43)	10.2 (0.45)	11.2 (0.48)
20–44	8.6 (0.73)	[1]	[1]	6.2 (0.67)	7.7 (0.95)	[1]	[1]	[1]
45–64	7.8 (0.20)	[1]	5.7 (0.34)	6.6 (0.16)	7.2 (0.18)	8.8 (0.45)	10.1 (0.41)	10.6 (0.43)
≥65	7.3 (0.19)	[1]	[1]	6.2 (0.08)	6.9 (0.22)	7.6 (0.21)	8.7 (0.64)	10.1 (0.89)
Mexican American women	7.9 (0.17)	5.6 (0.13)	5.8 (0.15)	6.5 (0.12)	7.4 (0.20)	8.8 (0.38)	11.0 (0.43)	11.6 (0.19)
20–44	8.2 (0.87)	[1]	[1]	5.9 (0.59)	7.6 (1.24)	[1]	[1]	[1]
45–64	8.2 (0.21)	5.8 (0.20)	6.1 (0.17)	6.6 (0.15)	7.7 (0.34)	9.4 (0.40)	11.0 (0.37)	11.3 (0.28)
≥65	7.4 (0.16)	[1]	5.8 (0.09)	6.2 (0.14)	6.9 (0.21)	7.8 (0.18)	9.0 (0.72)	10.8 (0.83)

Treated diagnosed diabetes is based on self-report. Conversions for A1c values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.4. Means and Percentiles of A1c (%) Among Adults Age ≥20 Years With Untreated Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	6.3 (0.12)	4.7 (0.12)	5.0 (0.16)	5.5 (0.07)	6.0 (0.09)	6.6 (0.15)	7.6 (0.46)	9.4 (0.79)
Age (years)								
20–44	6.4 (0.32)	[1]	4.7 (0.13)	5.1 (0.22)	5.7 (0.26)	6.4 (0.37)	10.6 (1.37)	11.7 (1.25)
45–64	6.4 (0.17)	4.7 (0.23)	5.3 (0.24)	5.5 (0.07)	5.9 (0.13)	6.8 (0.30)	8.3 (0.52)	9.4 (0.60)
≥65	6.1 (0.09)	[1]	[1]	5.7 (0.12)	6.1 (0.10)	6.4 (0.08)	7.0 (0.19)	7.2 (0.17)
Sex								
Men	6.5 (0.15)	4.6 (0.19)	5.0 (0.22)	5.5 (0.09)	6.0 (0.11)	6.8 (0.25)	8.6 (0.71)	10.4 (0.80)
Women	6.2 (0.15)	[1]	5.1 (0.15)	5.5 (0.10)	5.8 (0.13)	6.5 (0.15)	7.3 (0.39)	8.2 (0.55)
Race/ethnicity								
Non-Hispanic white	6.0 (0.10)	[1]	[1]	5.5 (0.12)	5.8 (0.10)	6.3 (0.08)	6.7 (0.18)	7.2 (0.24)
Non-Hispanic black	7.0 (0.26)	5.0 (0.15)	5.2 (0.16)	5.7 (0.11)	6.2 (0.19)	7.3 (0.55)	9.8 (1.05)	11.5 (0.87)
All Hispanic	6.8 (0.29)	4.7 (0.24)	4.9 (0.24)	5.6 (0.16)	6.1 (0.36)	7.5 (0.65)	9.4 (0.96)	[1]
Mexican American	6.9 (0.39)	[1]	5.1 (0.30)	5.6 (0.18)	6.1 (0.34)	7.6 (0.63)	[1]	[1]

Untreated diagnosed diabetes is based on self-report. Conversions for A1c values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.5. Mean Fasting Plasma Glucose (mg/dL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)					
	Treated diagnosed diabetes*	Untreated diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	152.9 (3.31)	136.5 (8.44)	148.7 (2.87)	129.5 (1.92)	102.0 (0.24)	90.0 (0.19)
Age (years)						
20–44	177.3 (10.33)	133.6 (17.11)	176.9 (9.73)	140.8 (6.51)	101.2 (0.39)	89.2 (0.23)
45–64	159.4 (5.29)	148.5 (13.20)	150.1 (6.09)	133.1 (3.87)	102.6 (0.35)	91.5 (0.26)
≥65	137.8 (2.87)	117.8 (5.19)	137.4 (1.74)	122.7 (1.55)	102.2 (0.39)	91.0 (0.35)
Sex, age (years)						
Men	158.3 (4.84)	142.9 (9.27)	150.5 (3.85)	135.8 (3.01)	103.7 (0.26)	91.6 (0.25)
20–44	178.7 (16.01)	145.3 (31.15)	168.4 (11.50)	142.7 (7.84)	102.5 (0.45)	91.2 (0.29)
45–64	166.7 (6.34)	154.8 (12.51)	152.1 (7.21)	140.3 (6.22)	104.3 (0.41)	92.5 (0.44)
≥65	138.3 (2.88)	123.1 (3.90)	140.3 (2.46)	127.6 (2.16)	104.5 (0.60)	92.0 (0.46)
Women	148.2 (3.69)	130.4 (12.87)	145.7 (5.09)	123.0 (2.39)	100.1 (0.39)	88.8 (0.23)
20–44	175.7 (14.72)	123.8 (18.12)	193.9 (21.37)	138.4 (11.98)	99.4 (0.79)	87.6 (0.29)
45–64	152.3 (5.62)	142.7 (22.23)	144.4 (9.70)	122.6 (3.45)	100.5 (0.50)	90.8 (0.33)
≥65	137.4 (4.17)	111.8 (10.04)	134.2 (2.27)	118.9 (1.77)	100.2 (0.47)	90.3 (0.45)
Race/ethnicity, sex, age (years)						
Non-Hispanic white	148.3 (4.58)	116.9 (6.07)	143.6 (4.07)	125.2 (2.35)	102.5 (0.29)	90.0 (0.22)
20–44	161.3 (12.33)	97.3 (7.96)	157.6 (13.46)	124.3 (7.53)	101.7 (0.61)	89.0 (0.28)
45–64	158.1 (7.44)	127.9 (14.31)	148.3 (9.67)	130.1 (5.22)	103.1 (0.41)	91.6 (0.29)
≥65	135.8 (3.67)	116.9 (5.97)	137.7 (1.66)	122.1 (1.56)	102.4 (0.46)	91.0 (0.36)
Non-Hispanic white men	155.5 (7.20)	125.9 (9.59)	145.0 (5.31)	131.4 (4.11)	104.2 (0.33)	91.7 (0.29)
20–44	168.1 (24.43)	88.6 (1.25)	141.9 (6.75)	122.4 (5.76)	102.8 (0.62)	91.1 (0.35)
45–64	166.5 (8.38)	145.7 (24.12)	149.8 (10.44)	138.0 (8.37)	104.9 (0.52)	92.9 (0.50)
≥65	137.1 (4.32)	121.5 (4.11)	140.2 (2.61)	127.4 (2.39)	104.6 (0.70)	92.1 (0.49)
Non-Hispanic white women	141.7 (4.32)	106.9 (6.64)	140.9 (4.84)	118.9 (2.02)	100.6 (0.55)	88.7 (0.28)
20–44	155.3 (9.69)	102.2 (10.58)	175.3 (21.30)	126.0 (11.95)	100.1 (1.34)	87.2 (0.39)
45–64	147.1 (7.85)	104.3 (6.93)	140.5 (16.14)	117.3 (3.55)	100.8 (0.65)	90.7 (0.37)
≥65	135.0 (5.12)	111.1 (12.37)	134.8 (2.42)	118.1 (1.83)	100.6 (0.54)	90.3 (0.46)
Non-Hispanic black	153.9 (7.42)	144.0 (15.47)	147.4 (8.10)	139.3 (6.61)	98.8 (0.44)	89.1 (0.35)
20–44	200.2 (38.83)	156.6 (31.94)	168.4 (35.35)	154.1 (28.85)	98.1 (0.88)	88.6 (0.46)
45–64	153.4 (8.52)	144.7 (19.58)	150.4 (9.93)	142.1 (8.22)	99.7 (0.59)	90.7 (0.46)
≥65	138.9 (5.75)	109.3 (2.90)	132.3 (5.14)	127.2 (4.64)	98.2 (0.93)	89.9 (1.11)
Non-Hispanic black men	152.8 (10.16)	182.1 (29.84)	143.2 (4.45)	137.9 (4.26)	99.4 (0.58)	90.3 (0.51)
20–44	214.1 (37.26)	203.6 (55.48)	128.8 (6.41)	123.9 (6.82)	98.5 (0.94)	90.2 (0.76)
45–64	138.4 (8.39)	170.0 (32.33)	149.8 (7.98)	144.8 (7.49)	99.9 (0.65)	90.7 (1.03)
≥65	139.4 (9.33)	[2]	142.4 (8.70)	136.8 (8.08)	101.1 (1.08)	89.8 (1.52)
Non-Hispanic black women	154.7 (9.16)	127.1 (15.46)	152.5 (17.09)	140.6 (12.35)	98.3 (0.62)	88.3 (0.40)
20–44	169.1 (48.30)	121.8 (11.34)	273.3 (93.18)[1]	213.7 (72.53)[1]	97.6 (1.13)	87.6 (0.50)
45–64	161.4 (12.84)	133.3 (23.84)	151.1 (19.93)	139.4 (14.12)	99.5 (0.94)	90.8 (0.62)
≥65	138.5 (6.79)	109.3 (2.90)	124.1 (4.36)	120.4 (3.66)	96.5 (1.23)	90.0 (1.64)
All Hispanic	173.8 (6.54)	180.2 (20.52)	171.6 (7.96)	144.6 (4.92)	102.3 (0.44)	90.8 (0.28)
20–44	229.6 (21.42)	187.9 (45.42)	190.3 (14.78)	158.5 (11.27)	101.9 (0.64)	90.6 (0.34)
45–64	169.8 (6.19)	185.3 (26.34)	163.6 (10.10)	142.3 (7.01)	102.8 (0.49)	91.6 (0.55)
≥65	151.0 (6.39)	131.6 (8.22)	148.5 (8.07)	126.7 (5.79)	102.7 (1.11)	92.4 (0.88)
All Hispanic men	171.6 (7.08)	165.6 (15.15)	178.8 (10.65)	154.8 (6.84)	104.5 (0.48)	92.2 (0.36)
20–44	202.2 (26.52)	175.0 (52.82)[1]	198.2 (17.20)	167.3 (13.57)	104.4 (0.62)	91.9 (0.41)
45–64	168.7 (9.14)	166.9 (13.01)	164.9 (12.61)	152.9 (10.39)	104.9 (0.98)	93.2 (0.48)
≥65	156.5 (10.34)	137.4 (10.77)	146.3 (15.02)	126.8 (8.54)	103.7 (1.89)	94.1 (1.02)

Appendix 9.5 continues on the next page.

APPENDIX 9.5. (continued)

	MEAN (STANDARD ERROR)					
CHARACTERISTICS	Treated diagnosed diabetes*	Untreated diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
All Hispanic women	175.6 (13.55)	201.2 (40.70)	152.3 (6.94)	127.5 (4.24)	99.8 (0.56)	89.6 (0.39)
20–44	259.2 (44.89)	215.6 (77.06)[1]	146.7 (5.74)	129.0 (3.41)	98.8 (0.99)	89.4 (0.45)
45–64	170.7 (11.23)	209.3 (51.22)	159.4 (15.72)	127.3 (7.03)	100.8 (0.76)	90.3 (0.88)
≥65	147.2 (6.28)	123.5 (13.15)	150.3 (9.62)	126.7 (6.68)	101.8 (1.32)	90.3 (1.08)
Mexican American	167.9 (5.18)	158.9 (18.03)	174.0 (8.44)	146.4 (6.36)	102.4 (0.58)	91.4 (0.31)
20–44	161.6 (24.35)	182.4 (49.44)	194.3 (15.91)	158.5 (12.74)	101.9 (0.82)	91.3 (0.36)
45–64	175.6 (7.63)	157.1 (19.85)	163.6 (6.65)	143.7 (6.29)	103.3 (0.55)	91.8 (0.55)
≥65	154.1 (7.22)	135.8 (8.71)	151.1 (10.03)	129.8 (7.74)	102.6 (1.66)	92.3 (1.14)
Mexican American men	165.2 (8.30)	162.4 (17.37)	182.4 (10.92)	157.5 (8.30)	104.9 (0.55)	93.0 (0.35)
20–44	161.8 (32.01)	140.6 (0.00)	203.3 (18.15)	168.2 (15.05)	104.3 (0.62)	92.9 (0.40)
45–64	168.2 (11.28)	173.2 (27.23)	162.5 (7.47)	153.6 (6.91)	106.6 (1.03)	93.4 (0.51)
≥65	160.0 (10.46)	148.6 (9.77)	149.1 (18.88)	130.5 (13.03)	104.4 (2.29)	92.8 (1.56)
Mexican American women	170.6 (8.84)	155.8 (24.72)	154.6 (8.22)	129.6 (4.97)	99.3 (0.86)	89.8 (0.45)
20–44	161.0 (10.30)	215.6 (77.06)[1]	141.9 (6.20)	125.5 (5.86)	98.7 (1.35)	89.7 (0.50)
45–64	182.7 (13.77)	142.2 (25.51)	166.0 (16.64)	132.7 (8.85)	99.9 (0.89)	90.2 (0.93)
≥65	150.0 (8.97)	123.5 (13.15)	152.6 (11.74)	129.4 (7.92)	101.4 (1.93)	91.7 (1.63)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
[1] Relative standard error >30%–40%
[2] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.6. Means and Percentiles of Fasting Plasma Glucose (mg/dL) Among Adults Age ≥20 Years Without Diagnosed Diabetes, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	100 (0.4)	82 (0.6)	85 (0.5)	91 (0.5)	97 (0.5)	105 (0.5)	114 (0.6)	121 (0.7)
Age (years)								
20–44	96 (0.4)	81 (0.4)	84 (0.3)	89 (0.3)	94 (0.4)	100 (0.3)	107 (0.6)	113 (0.9)
45–64	103 (0.6)	85 (0.6)	88 (0.5)	94 (0.5)	100 (0.5)	107 (0.6)	115 (0.7)	122 (1.5)
≥65	107 (0.6)	87 (0.5)	90 (0.5)	95 (0.5)	103 (0.5)	112 (0.7)	125 (1.7)	136 (2.7)
Sex, age (years)								
Men	103 (0.5)	86 (0.5)	89 (0.5)	94 (0.7)	100 (0.6)	107 (0.6)	116 (0.7)	124 (1.6)
20–44	99 (0.5)	84 (0.6)	87 (0.6)	91 (0.4)	97 (0.4)	103 (0.5)	109 (0.8)	115 (1.0)
45–64	106 (1.0)	88 (0.8)	91 (0.8)	96 (0.5)	103 (0.6)	110 (0.9)	118 (1.7)	129 (2.8)
≥65	109 (0.7)	89 (0.8)	92 (0.6)	98 (0.4)	106 (0.8)	115 (0.9)	129 (2.3)	141 (5.0)
Women	97 (0.4)	81 (0.6)	84 (0.5)	89 (0.6)	95 (0.6)	102 (0.6)	111 (0.8)	118 (1.0)
20–44	93 (0.5)	79 (0.7)	82 (0.5)	86 (0.4)	91 (0.4)	97 (0.5)	104 (0.7)	111 (1.3)
45–64	99 (0.5)	83 (0.8)	86 (0.7)	92 (0.5)	98 (0.6)	104 (0.6)	112 (0.8)	117 (1.2)
≥65	104 (0.8)	86 (0.7)	89 (0.6)	93 (0.6)	101 (0.9)	110 (1.0)	121 (2.4)	132 (3.2)
Race/ethnicity, sex, age (years)								
Non-Hispanic white	100 (0.4)	82 (0.5)	86 (0.4)	91 (0.3)	98 (0.4)	105 (0.4)	114 (0.6)	121 (1.0)
20–44	95 (0.5)	80 (0.6)	83 (0.5)	88 (0.4)	94 (0.5)	100 (0.5)	106 (0.8)	112 (1.2)
45–64	102 (0.8)	85 (0.6)	88 (0.6)	94 (0.6)	100 (0.6)	106 (0.7)	114 (0.8)	121 (2.0)
≥65	106 (0.6)	87 (0.5)	90 (0.5)	95 (0.5)	103 (0.6)	112 (0.8)	125 (2.0)	135 (2.8)

Appendix 9.6 continues on the next page.

APPENDIX 9.6. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Non-Hispanic white men	103 (0.6)	86 (0.5)	89 (0.4)	94 (0.6)	100 (0.4)	107 (0.5)	116 (0.9)	125 (1.8)
20–44	98 (0.5)	84 (0.8)	87 (0.7)	91 (0.5)	97 (0.6)	102 (0.6)	108 (1.2)	114 (1.5)
45–64	106 (1.2)	88 (0.9)	91 (1.1)	97 (0.6)	103 (0.8)	110 (1.2)	117 (1.8)	128 (3.3)
≥65	109 (0.8)	89 (0.9)	92 (0.7)	98 (0.5)	106 (0.9)	115 (1.0)	129 (2.5)	140 (5.6)
Non-Hispanic white women	97 (0.5)	81 (0.4)	84 (0.5)	89 (0.5)	95 (0.4)	102 (0.7)	111 (0.8)	118 (1.3)
20–44	93 (0.6)	78 (0.8)	81 (0.7)	86 (0.5)	91 (0.5)	97 (0.5)	104 (1.3)	111 (1.7)
45–64	99 (0.7)	82 (0.9)	86 (0.8)	92 (0.7)	97 (0.8)	103 (0.8)	111 (1.0)	116 (1.4)
≥65	104 (0.9)	87 (0.8)	89 (0.7)	93 (0.6)	100 (0.9)	109 (1.0)	121 (2.6)	131 (3.7)
Non-Hispanic black	99 (0.7)	82 (0.7)	84 (0.4)	90 (0.4)	96 (0.6)	103 (0.5)	113 (1.2)	120 (1.7)
20–44	95 (0.9)	80 (1.1)	83 (0.6)	88 (0.5)	93 (0.6)	100 (0.8)	105 (0.9)	111 (2.4)
45–64	104 (1.1)	85 (1.5)	88 (1.0)	92 (0.8)	100 (0.8)	107 (0.9)	117 (1.1)	129 (4.5)
≥65	106 (1.6)	85 (1.7)	88 (1.0)	93 (1.6)	100 (1.0)	112 (3.1)	130 (3.9)	145 (5.0)
Non-Hispanic black men	101 (0.9)	84 (1.0)	87 (0.8)	91 (0.5)	97 (0.8)	104 (0.7)	115 (1.7)	124 (3.6)
20–44	97 (0.8)	82 (1.1)	85 (1.0)	90 (0.6)	95 (0.8)	101 (1.0)	109 (2.0)	114 (2.0)
45–64	105 (1.5)	85 (2.9)	89 (1.3)	93 (1.0)	100 (1.2)	108 (1.4)	121 (3.2)	136 (9.2)
≥65	110 (3.0)	87 (3.7)	89 (2.0)	98 (1.8)	102 (1.6)	118 (4.5)	132 (5.7)	147 (11.7)
Non-Hispanic black women	98 (0.9)	80 (1.0)	83 (0.5)	88 (0.5)	94 (0.8)	101 (0.6)	110 (1.6)	118 (1.2)
20–44	94 (1.3)	77 (1.1)	82 (0.8)	86 (0.7)	91 (0.7)	98 (1.0)	103 (1.2)	106 (2.5)
45–64	103 (1.6)	84 (1.6)	88 (1.3)	92 (1.2)	99 (0.9)	106 (1.2)	115 (1.8)	120 (4.7)
≥65	103 (1.3)	83 (2.0)	87 (1.5)	91 (1.5)	99 (1.3)	108 (3.4)	126 (3.6)	138 (4.7)
All Hispanic	102 (0.6)	83 (0.6)	86 (0.5)	92 (0.5)	98 (0.5)	105 (0.6)	115 (1.0)	123 (1.1)
20–44	99 (0.9)	82 (0.9)	86 (0.7)	90 (0.5)	96 (0.6)	103 (0.6)	111 (0.9)	120 (2.1)
45–64	106 (1.0)	86 (1.4)	89 (0.8)	95 (0.5)	101 (0.6)	109 (1.1)	120 (1.4)	134 (6.1)
≥65	110 (1.9)	87 (1.8)	92 (1.5)	98 (0.9)	105 (1.0)	114 (1.7)	128 (5.2)	142 (5.6)
All Hispanic men	105 (0.9)	86 (0.8)	89 (0.6)	94 (0.4)	100 (0.4)	108 (0.7)	119 (1.5)	129 (3.3)
20–44	103 (1.3)	85 (0.9)	88 (1.0)	93 (0.6)	99 (0.5)	106 (0.7)	114 (2.1)	122 (3.4)
45–64	110 (1.9)	90 (1.0)	92 (1.0)	97 (0.9)	103 (1.0)	113 (2.1)	124 (3.3)	141 (8.7)
≥65	110 (2.8)	89 (2.7)	93 (1.9)	98 (1.9)	105 (2.9)	115 (1.3)	124 (5.0)	139 (4.9)
All Hispanic women	98 (0.7)	81 (0.8)	84 (0.8)	89 (0.5)	95 (0.8)	103 (0.7)	111 (1.1)	118 (2.2)
20–44	95 (0.8)	80 (0.8)	83 (0.9)	88 (0.6)	93 (0.8)	99 (1.1)	106 (1.4)	112 (2.6)
45–64	102 (1.1)	83 (1.3)	87 (1.7)	94 (1.1)	99 (0.8)	106 (1.1)	114 (1.5)	121 (2.4)
≥65	110 (1.9)	86 (2.0)	91 (1.9)	97 (1.7)	105 (1.3)	112 (2.5)	130 (6.6)	146 (7.1)
Mexican American	103 (0.8)	83 (1.0)	87 (0.7)	92 (0.6)	99 (0.4)	106 (0.7)	116 (1.4)	125 (2.4)
20–44	101 (1.1)	82 (1.2)	86 (0.7)	91 (0.6)	97 (0.7)	104 (0.7)	111 (1.3)	122 (3.0)
45–64	106 (1.1)	87 (1.4)	90 (1.1)	95 (0.6)	101 (0.8)	109 (1.5)	120 (1.6)	135 (9.9)
≥65	113 (3.0)	85 (2.1)	91 (2.3)	97 (1.2)	106 (2.4)	119 (2.8)	139 (5.9)	147 (19.6)
Mexican American men	106 (1.2)	87 (1.1)	91 (0.8)	95 (0.6)	100 (0.5)	108 (0.8)	119 (1.8)	131 (3.8)
20–44	105 (1.8)	86 (1.1)	90 (0.9)	94 (0.6)	99 (0.4)	107 (1.0)	114 (2.8)	124 (5.3)
45–64	110 (1.9)	90 (1.4)	94 (0.9)	97 (1.1)	103 (1.4)	113 (2.1)	124 (3.4)	147 (11.6)
≥65	114 (4.9)	[1]	91 (2.7)	97 (1.7)	109 (3.4)	119 (3.3)	135 (4.8)	[1]
Mexican American women	98 (0.9)	81 (1.0)	84 (1.1)	89 (0.8)	95 (0.9)	103 (0.9)	112 (1.8)	120 (2.6)
20–44	95 (1.0)	80 (1.2)	82 (1.2)	88 (0.8)	93 (1.0)	100 (1.2)	107 (2.0)	114 (2.9)
45–64	103 (1.5)	84 (1.9)	88 (1.5)	94 (1.2)	99 (0.9)	106 (0.8)	115 (1.8)	121 (14.2)
≥65	113 (3.3)	[1]	89 (2.3)	97 (1.7)	105 (2.3)	118 (3.9)	141 (7.6)	150 (19.7)

Diagnosed diabetes is based on self-report. Conversions for glucose values are provided in *Diabetes in America Appendix 1 Conversions.*
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.7. Means and Percentiles of Fasting Glucose (mg/dL) Among Adults Age ≥20 Years With Treated Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	153 (3.3)	88 (2.8)	95 (1.4)	112 (2.3)	136 (3.6)	173 (5.0)	240 (10.7)	278 (15.3)
Age (years)								
20–44	177 (10.3)	46 (17.0)[1]	97 (18.6)	120 (8.7)	143 (14.7)	217 (22.1)	311 (23.9)	328 (26.0)
45–64	159 (5.3)	90 (3.2)	96 (1.6)	109 (3.2)	140 (6.8)	183 (12.0)	256 (12.5)	284 (19.3)
≥65	138 (2.9)	84 (2.6)	91 (3.0)	113 (2.8)	129 (2.3)	153 (3.8)	182 (5.6)	202 (11.9)
Sex, age (years)								
Men	158 (4.8)	83 (4.6)	94 (3.5)	115 (3.3)	140 (5.3)	185 (11.3)	256 (10.2)	278 (10.5)
20–44	179 (16.0)	[2]	56 (18.8)[1]	116 (20.9)	142 (24.0)	244 (34.5)	297 (18.2)	[2]
45–64	167 (6.3)	89 (5.8)	98 (4.1)	117 (4.8)	149 (9.9)	203 (14.6)	260 (8.7)	277 (20.1)
≥65	138 (2.9)	83 (3.9)	90 (4.4)	110 (3.2)	129 (3.6)	154 (5.1)	187 (7.0)	201 (15.6)
Women	148 (3.7)	90 (3.1)	95 (1.9)	111 (2.8)	133 (3.6)	163 (4.5)	210 (11.3)	261 (24.9)
20–44	176 (14.7)	[2]	101 (7.7)	119 (8.4)	142 (17.8)	201 (23.9)	251 (31.5)	[2]
45–64	152 (5.6)	90 (4.7)	95 (2.0)	106 (3.8)	137 (6.2)	169 (6.6)	230 (24.7)	309 (29.6)
≥65	137 (4.2)	84 (4.0)	93 (4.0)	114 (4.1)	129 (3.2)	152 (4.8)	180 (7.6)	203 (13.0)
Race/ethnicity, sex, age (years)								
Non-Hispanic white	148 (4.6)	84 (3.6)	94 (2.0)	114 (2.9)	133 (4.2)	167 (6.1)	215 (12.9)	255 (19.4)
20–44	161 (12.3)	[2]	[2]	121 (11.2)	142 (19.0)	206 (18.7)	228 (15.8)	[2]
45–64	158 (7.4)	88 (6.9)	95 (3.5)	112 (4.4)	140 (9.2)	179 (12.1)	245 (19.8)	276 (27.8)
≥65	136 (3.7)	83 (3.3)	91 (4.2)	111 (3.7)	129 (1.9)	152 (4.9)	178 (6.9)	199 (11.1)
Non-Hispanic white men	156 (7.2)	[2]	91 (6.1)	117 (4.4)	140 (6.6)	178 (11.8)	244 (15.5)	266 (15.1)
20–44	168 (24.4)	[2]	[2]	[2]	143 (27.8)	221 (27.4)	[2]	[2]
45–64	166 (8.4)	[2]	98 (5.1)	118 (5.7)	151 (10.4)	185 (14.6)	258 (16.3)	[2]
≥65	137 (4.3)	82 (5.5)	89 (4.0)	109 (7.9)	132 (4.2)	154 (6.3)	187 (8.6)	200 (17.0)
Non-Hispanic white women	142 (4.3)	89 (4.3)	95 (2.7)	113 (3.3)	129 (3.6)	159 (6.2)	198 (7.4)	210 (14.7)
20–44	155 (9.7)	[2]	[2]	[2]	141 (16.3)	[2]	[2]	[2]
45–64	147 (7.9)	[2]	94 (8.4)	105 (4.9)	127 (10.4)	163 (6.9)	206 (27.2)	[2]
≥65	135 (5.1)	84 (6.4)	95 (4.9)	114 (4.3)	127 (2.1)	149 (7.3)	178 (5.3)	183 (12.0)
Non-Hispanic black	154 (7.4)	87 (3.2)	92 (2.1)	107 (3.0)	136 (4.7)	174 (7.0)	230 (29.8)	312 (40.5)
20–44	200 (38.8)	[2]	[2]	112 (11.2)	133 (50.7)[1]	273 (60.8)	[2]	[2]
45–64	153 (8.5)	89 (5.8)	93 (2.2)	105 (4.2)	133 (6.6)	174 (6.8)	225 (28.8)	293 (36.3)
≥65	139 (5.8)	78 (4.9)	86 (6.6)	108 (6.9)	137 (6.4)	153 (7.0)	182 (12.8)	223 (13.8)
Non-Hispanic black men	153 (10.2)	88 (3.7)	91 (3.0)	106 (4.4)	124 (6.6)	176 (14.5)	254 (33.9)	[2]
20–44	214 (37.3)	[2]	[2]	[2]	160 (49.1)[1]	[2]	[2]	[2]
45–64	138 (8.4)	[2]	89 (3.6)	99 (5.9)	116 (5.7)	168 (16.1)	210 (17.7)	244 (17.3)
≥65	139 (9.3)	[2]	85 (8.8)	106 (5.3)	127 (8.8)	152 (8.7)	178 (17.1)	[2]
Non-Hispanic black women	155 (9.2)	82 (6.6)	93 (3.6)	109 (5.2)	140 (4.8)	172 (7.8)	225 (28.5)	290 (43.9)
20–44	169 (48.3)	[2]	[2]	[2]	[2]	[2]	[2]	[2]
45–64	161 (12.8)	85 (8.6)	96 (5.8)	107 (6.8)	142 (7.7)	174 (17.2)	242 (31.6)	[2]
≥65	139 (6.8)	[2]	83 (8.9)	110 (9.9)	141 (7.0)	153 (8.2)	188 (16.3)	[2]
All Hispanic	174 (6.5)	91 (4.1)	98 (2.7)	119 (4.2)	148 (4.5)	218 (16.9)	297 (19.6)	329 (13.8)
20–44	230 (21.4)	[2]	[2]	133 (37.8)	251 (44.2)	312 (19.2)	[2]	[2]
45–64	170 (6.2)	95 (7.1)	97 (3.6)	117 (5.0)	145 (6.3)	215 (12.0)	260 (12.8)	301 (14.8)
≥65	151 (6.4)	94 (4.2)	101 (3.4)	117 (5.0)	143 (6.7)	160 (10.0)	210 (19.7)	251 (23.1)
All Hispanic men	172 (7.1)	[2]	105 (7.2)	121 (5.0)	154 (10.0)	213 (16.9)	273 (14.1)	296 (12.8)
20–44	202 (26.5)	[2]	[2]	[2]	186 (43.6)	[2]	[2]	[2]
45–64	169 (9.1)	[2]	106 (10.0)	123 (7.5)	151 (12.7)	205 (18.8)	[2]	[2]
≥65	156 (10.3)	[2]	101 (6.3)	115 (4.8)	130 (11.6)	185 (13.4)	225 (19.0)	[2]

Appendix 9.7 continues on the next page.

APPENDIX 9.7. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
All Hispanic women	176 (13.6)	90 (3.8)	97 (2.7)	115 (6.3)	146 (7.0)	223 (37.3)	313 (25.8)	329 (22.7)
20–44	259 (44.9)	[2]	[2]	[2]	[2]	[2]	[2]	[2]
45–64	171 (11.2)	94 (4.3)	97 (2.8)	108 (6.8)	135 (11.4)	228 (25.9)	291 (20.2)	308 (24.7)
≥65	147 (6.3)	[2]	100 (6.4)	119 (9.4)	145 (6.6)	154 (3.6)	182 (23.7)	246 (31.4)
Mexican American	168 (5.2)	91 (11.8)	101 (3.9)	119 (4.5)	147 (4.7)	209 (13.3)	260 (10.8)	297 (17.2)
20–44	162 (24.4)	[2]	[2]	[2]	137 (22.7)	[2]	[2]	[2]
45–64	176 (7.6)	[2]	101 (5.5)	121 (5.1)	149 (9.6)	222 (13.4)	265 (13.2)	304 (18.1)
≥65	154 (7.2)	93 (5.7)	101 (4.2)	113 (4.5)	141 (7.1)	175 (11.6)	221 (18.8)	256 (24.4)
Mexican American men	165 (8.3)	[2]	104 (16.5)	119 (5.1)	148 (9.9)	205 (20.5)	257 (16.4)	[2]
20–44	162 (32.0)	[2]	[2]	[2]	132 (43.8)[1]	[2]	[2]	[2]
45–64	168 (11.3)	[2]	[2]	120 (10.3)	149 (15.7)	211 (22.3)	[2]	[2]
≥65	160 (10.5)	[2]	[2]	121 (4.6)	142 (13.3)	184 (12.7)	[2]	[2]
Mexican American women	171 (8.8)	94 (4.6)	98 (3.5)	118 (5.6)	146 (7.4)	211 (24.7)	260 (20.1)	300 (23.0)
20–44	161 (10.3)	[2]	[2]	[2]	[2]	[2]	[2]	[2]
45–64	183 (13.8)	93 (9.8)	96 (7.4)	120 (8.1)	149 (21.3)	238 (26.4)	297 (23.2)	314 (24.8)
≥65	150 (9.0)	[2]	98 (4.9)	107 (6.5)	141 (6.6)	156 (13.3)	212 (25.9)	[2]

Treated diagnosed diabetes is based on self-report. Conversions for glucose values are provided in *Diabetes in America Appendix 1 Conversions*.
[1] Relative standard error >30%–40%
[2] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.8. Means and Percentiles of Fasting Glucose (mg/dL) Among Adults Age ≥20 Years With Untreated Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	137 (8.4)	79 (4.8)	86 (4.4)	98 (5.4)	115 (3.1)	140 (12.4)	225 (36.5)	286 (41.8)
Age (years)								
20–44	134 (17.1)	[1]	79 (5.1)	86 (6.4)	104 (8.7)	125 (26.3)	[1]	[1]
45–64	148 (13.2)	[1]	87 (4.8)	98 (5.6)	116 (7.9)	159 (26.5)	275 (40.4)	307 (33.4)
≥65	118 (5.2)	[1]	[1]	102 (6.4)	114 (3.0)	129 (8.6)	152 (8.1)	157 (7.7)
Sex								
Men	143 (9.3)	85 (5.6)	88 (7.1)	112 (5.9)	119 (3.8)	153 (17.1)	228 (32.3)	280 (30.7)
Women	130 (12.9)	[1]	79 (5.5)	94 (5.7)	104 (6.0)	125 (11.2)	186 (49.4)	322 (48.4)
Race/ethnicity								
Non-Hispanic white	117 (6.1)	[1]	[1]	94 (6.7)	113 (5.4)	120 (5.4)	148 (13.7)	[1]
Non-Hispanic black	144 (15.5)	[1]	[1]	99 (9.8)	116 (9.8)	151 (37.3)	272 (35.7)	[1]
All Hispanic	180 (20.5)	[1]	100 (3.1)	108 (6.2)	148 (17.9)	[1]	[1]	[1]
Mexican American	159 (18.0)	[1]	[1]	107 (9.4)	136 (16.6)	179 (24.0)	[1]	[1]

Untreated diagnosed diabetes is based on self-report. Conversions for glucose values are provided in *Diabetes in America Appendix 1 Conversions*.
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.9. Mean 2-Hour Plasma Glucose (mg/dL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Untreated diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	182.7 (16.52)	242.9 (8.53)	235.2 (4.31)	125.1 (0.93)	92.4 (0.52)
Age (years)					
20–44	150.3 (28.34)	270.7 (16.83)	246.8 (9.38)	118.2 (1.42)	90.2 (0.59)
45–64	201.2 (26.92)	240.8 (15.56)	236.3 (8.49)	124.3 (1.53)	95.4 (1.00)
≥65	181.0 (21.06)	234.9 (7.47)	230.2 (3.78)	137.8 (1.62)	101.3 (1.70)
Sex, age (years)					
Men	195.8 (23.21)	244.1 (11.18)	236.8 (7.26)	119.1 (1.26)	91.4 (0.92)
20–44	159.4 (52.94)[1]	266.7 (23.34)	246.9 (15.63)	109.5 (1.61)	89.6 (1.07)
45–64	227.5 (35.97)	243.0 (17.03)	238.8 (12.07)	120.3 (1.98)	93.6 (1.66)
≥65	176.3 (15.56)	234.5 (10.67)	229.7 (6.58)	136.1 (1.91)	101.6 (2.44)
Women	168.6 (23.85)	240.8 (9.79)	233.6 (3.45)	132.1 (1.19)	93.2 (0.66)
20–44	141.7 (26.27)	279.7 (34.14)	246.5 (13.42)	130.4 (1.98)	90.7 (0.83)
45–64	175.1 (38.33)	233.9 (18.66)	232.7 (6.83)	129.1 (2.10)	96.6 (1.25)
≥65	187.8 (42.80)	235.2 (10.39)	230.6 (4.60)	139.2 (2.31)	101.1 (2.14)
Race/ethnicity, sex, age (years)					
Non-Hispanic white	151.2 (14.79)	241.0 (11.93)	233.5 (5.41)	126.4 (1.17)	92.1 (0.62)
20–44	113.9 (29.27)	243.8 (26.72)	229.5 (10.89)	118.7 (2.01)	89.4 (0.77)
45–64	146.7 (25.66)	245.8 (22.73)	239.4 (11.47)	124.4 (1.95)	94.8 (1.27)
≥65	180.0 (22.60)	236.8 (8.29)	230.5 (4.05)	138.3 (1.74)	101.0 (1.93)
Non-Hispanic white men	152.5 (19.44)	239.8 (16.11)	233.0 (9.94)	120.3 (1.64)	91.3 (1.22)
20–44	68.9 (8.66)	240.9 (32.55)	220.1 (14.92)	109.0 (2.05)	89.4 (1.55)
45–64	173.5 (35.46)	241.6 (24.60)	238.4 (17.00)	120.5 (2.52)	93.3 (1.88)
≥65	172.6 (15.74)	237.5 (12.38)	230.7 (7.62)	136.4 (2.22)	100.8 (2.87)
Non-Hispanic white women	149.7 (23.26)	243.2 (11.84)	234.1 (3.51)	133.7 (1.54)	92.6 (0.80)
20–44	139.0 (33.66)	246.9 (38.51)	237.3 (12.68)	133.6 (2.91)	89.4 (1.10)
45–64	103.9 (1.13)	265.8 (32.18)	241.0 (7.95)	129.5 (2.78)	95.8 (1.63)
≥65	191.7 (49.17)	236.1 (11.48)	230.3 (4.74)	139.9 (2.65)	101.1 (2.30)
Non-Hispanic black	115.3 (17.12)	207.0 (12.55)	211.9 (9.16)	114.5 (1.73)	94.3 (1.36)
20–44	178.8 (38.18)	158.0 (18.51)	175.9 (11.91)	108.5 (2.32)	92.7 (1.61)
45–64	79.2 (6.64)	217.6 (17.02)	221.6 (12.63)	116.3 (2.34)	98.9 (2.16)
≥65	[2]	206.1 (17.49)	210.2 (13.05)	128.6 (3.33)	101.4 (4.21)
Non-Hispanic black men	[2]	211.7 (16.58)	212.5 (13.74)	110.5 (2.20)	92.5 (1.97)
20–44	[2]	158.0 (18.51)	168.5 (18.52)	104.4 (2.94)	91.3 (2.75)
45–64	[2]	227.3 (24.21)	226.3 (20.35)	112.1 (3.41)	93.9 (3.46)
≥65	[2]	218.3 (26.62)	218.2 (21.44)	134.8 (4.55)	104.1 (5.80)
Non-Hispanic black women	94.1 (11.07)	201.1 (14.40)	211.2 (10.42)	118.4 (2.22)	95.5 (1.44)
20–44	[2]	[2]	[2]	113.4 (2.77)	93.5 (1.36)
45–64	79.2 (6.64)	203.4 (20.37)	216.4 (15.62)	120.4 (3.44)	102.0 (2.92)
≥65	[2]	198.7 (20.05)	205.7 (14.68)	125.0 (4.21)	98.5 (5.38)
All Hispanic	263.7 (32.19)	282.4 (16.83)	260.0 (9.68)	126.1 (1.30)	93.4 (0.95)
20–44	225.8 (70.25)[1]	296.5 (26.24)	276.2 (18.77)	121.5 (1.92)	92.0 (1.14)
45–64	276.8 (30.74)	264.5 (29.98)	242.6 (15.54)	130.6 (2.14)	99.0 (1.76)
≥65	252.9 (8.91)	273.2 (15.31)	253.1 (7.85)	137.8 (5.10)	109.0 (4.58)

Appendix 9.9 continues on the next page.

APPENDIX 9.9. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Untreated diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
All Hispanic men	255.7 (43.11)	280.0 (21.78)	265.4 (14.83)	119.7 (1.60)	91.3 (1.52)
20–44	235.2 (85.64)[1]	302.8 (32.14)	284.9 (24.33)	114.8 (2.36)	90.2 (1.78)
45–64	266.0 (39.79)	258.5 (33.85)	248.0 (24.74)	124.3 (3.35)	95.0 (2.37)
≥65	242.9 (0.00)	240.1 (28.33)	239.2 (12.44)	137.3 (7.63)	112.9 (6.23)
All Hispanic women	278.3 (40.86)	291.0 (13.86)	250.1 (4.88)	133.4 (2.10)	95.5 (1.26)
20–44	181.9 (0.00)	259.9 (25.55)	246.4 (13.01)	130.3 (3.35)	93.9 (1.58)
45–64	292.2 (42.49)	301.2 (39.64)	234.7 (10.36)	136.8 (2.89)	102.2 (2.04)
≥65	269.9 (0.00)	309.9 (28.42)	267.3 (13.48)	138.3 (6.50)	104.2 (5.83)
Mexican American	243.5 (18.78)	289.6 (17.95)	264.9 (11.73)	125.5 (1.66)	94.8 (1.18)
20–44	214.3 (16.79)	300.2 (28.82)	279.7 (20.75)	121.0 (2.26)	94.2 (1.37)
45–64	257.2 (31.27)	267.5 (31.00)	240.0 (14.89)	132.0 (2.62)	97.0 (2.17)
≥65	[2]	285.0 (19.96)	260.1 (11.65)	140.0 (4.70)	104.9 (5.66)
Mexican American men	250.1 (30.04)	284.0 (24.83)	269.6 (18.51)	117.7 (1.92)	93.0 (1.78)
20–44	[2]	306.2 (35.83)	288.7 (27.03)	113.3 (2.37)	92.2 (2.02)
45–64	262.5 (55.82)	247.3 (34.05)	237.3 (23.98)	126.9 (3.85)	95.8 (3.16)
≥65	[2]	248.7 (36.22)	241.5 (18.70)	128.4 (7.62)	105.2 (7.18)
Mexican American women	236.9 (27.30)	308.1 (21.67)	257.0 (7.30)	135.0 (3.09)	96.8 (1.40)
20–44	[2]	263.5 (36.96)	248.3 (17.27)	131.9 (4.25)	96.4 (1.49)
45–64	252.5 (32.30)	336.7 (26.65)	242.5 (15.43)	137.3 (4.21)	98.2 (2.31)
≥65	[2]	326.3 (35.80)	276.2 (17.61)	147.7 (5.48)	104.6 (9.78)

Participants taking diabetes medications were not administered an oral glucose tolerance test. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Untreated diagnosed diabetes is based on self-report.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
[1] Relative standard error >30%–40%
[2] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.10. Means and Percentiles of 2-Hour Plasma Glucose (mg/dL) Among Adults Age ≥20 Years Without Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	116 (1.0)	62 (0.9)	70 (0.9)	85 (0.8)	105 (1.0)	133 (1.4)	172 (2.5)	203 (3.8)
Age (years)								
20–44	102 (1.0)	58 (1.1)	66 (1.0)	79 (0.6)	96 (1.1)	117 (1.5)	142 (2.3)	162 (2.6)
45–64	120 (1.6)	64 (1.3)	73 (1.3)	89 (1.3)	110 (1.3)	138 (2.6)	177 (3.4)	204 (7.2)
≥65	148 (2.5)	76 (2.0)	85 (2.3)	107 (2.3)	137 (2.7)	180 (3.4)	224 (4.4)	257 (7.8)
Sex, age (years)								
Men	115 (1.5)	59 (1.4)	68 (1.6)	84 (1.2)	104 (1.1)	131 (1.8)	169 (3.1)	202 (5.8)
20–44	101 (1.2)	54 (1.5)	63 (1.9)	78 (1.2)	95 (1.4)	116 (2.1)	139 (1.9)	159 (3.1)
45–64	121 (2.5)	63 (2.1)	72 (1.9)	89 (1.7)	110 (2.2)	138 (4.2)	178 (3.2)	212 (11.7)
≥65	148 (3.4)	73 (4.0)	86 (3.4)	108 (3.0)	137 (3.1)	176 (4.6)	222 (10.7)	261 (10.8)
Women	117 (0.9)	64 (0.9)	72 (1.1)	85 (1.0)	106 (1.0)	134 (1.4)	174 (3.0)	205 (4.6)
20–44	104 (1.4)	60 (1.3)	67 (1.3)	80 (1.1)	97 (1.6)	118 (1.4)	147 (2.8)	168 (3.5)
45–64	120 (1.9)	66 (1.8)	75 (1.9)	90 (1.8)	110 (1.6)	137 (2.7)	173 (4.7)	199 (8.5)
≥65	149 (2.9)	76 (1.4)	84 (2.4)	106 (3.0)	136 (3.3)	181 (4.1)	224 (5.3)	253 (10.9)

Appendix 9.10 continues on the next page.

APPENDIX 9.10. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Race/ethnicity, sex, age (years)								
Non-Hispanic white	116 (1.4)	61 (1.1)	69 (1.0)	84 (1.0)	105 (1.3)	134 (2.0)	176 (3.0)	209 (5.2)
20–44	100 (1.2)	55 (1.9)	63 (1.5)	78 (0.9)	95 (1.4)	116 (1.9)	141 (3.3)	161 (3.4)
45–64	119 (2.1)	64 (1.3)	72 (1.8)	88 (1.5)	109 (1.4)	136 (3.0)	176 (4.3)	202 (9.6)
≥65	148 (2.8)	75 (2.1)	84 (2.3)	106 (2.4)	137 (3.1)	180 (4.3)	224 (4.6)	257 (9.0)
Non-Hispanic white men	115 (1.9)	58 (2.0)	68 (2.0)	84 (1.5)	104 (1.4)	132 (2.4)	172 (3.8)	203 (6.5)
20–44	99 (1.7)	52 (2.2)	60 (2.9)	78 (1.6)	94 (1.9)	113 (2.7)	136 (3.2)	159 (4.3)
45–64	121 (3.0)	63 (2.3)	71 (2.7)	88 (1.9)	108 (2.7)	138 (5.0)	178 (3.5)	209 (13.2)
≥65	148 (3.9)	73 (4.6)	86 (4.2)	107 (3.5)	138 (3.2)	175 (6.0)	222 (12.9)	261 (12.0)
Non-Hispanic white women	117 (1.4)	63 (1.2)	71 (1.5)	84 (1.2)	107 (1.3)	135 (2.2)	177 (4.1)	212 (5.9)
20–44	102 (1.7)	58 (2.4)	65 (1.4)	78 (1.6)	96 (2.4)	118 (2.0)	147 (4.3)	166 (5.2)
45–64	118 (2.4)	65 (2.0)	73 (2.4)	88 (2.7)	109 (1.7)	136 (2.9)	166 (6.0)	198 (11.1)
≥65	149 (3.2)	76 (1.7)	83 (2.4)	105 (3.5)	136 (4.0)	181 (5.1)	225 (4.4)	250 (11.9)
Non-Hispanic black	111 (1.5)	66 (1.3)	72 (1.2)	85 (1.6)	103 (1.6)	125 (1.9)	156 (3.0)	181 (6.1)
20–44	100 (1.7)	64 (1.3)	70 (1.7)	81 (1.8)	96 (1.7)	114 (2.5)	132 (3.1)	146 (3.2)
45–64	122 (2.5)	69 (2.0)	75 (2.3)	90 (3.1)	111 (1.8)	137 (4.6)	170 (6.2)	222 (15.9)
≥65	142 (3.8)	78 (3.4)	85 (2.9)	106 (4.3)	125 (3.2)	164 (9.7)	204 (13.6)	264 (22.0)
Non-Hispanic black men	110 (2.4)	61 (1.9)	67 (1.7)	81 (2.2)	102 (2.2)	125 (2.7)	157 (4.5)	181 (10.0)
20–44	99 (2.7)	59 (2.6)	65 (2.0)	77 (2.8)	95 (2.9)	117 (3.8)	139 (4.9)	151 (4.0)
45–64	120 (4.1)	65 (3.4)	71 (2.4)	86 (4.5)	110 (3.0)	132 (6.3)	170 (11.9)	227 (21.5)
≥65	144 (6.8)	75 (6.8)	83 (7.0)	110 (6.8)	132 (4.5)	168 (10.7)	197 (13.5)	228 (22.1)
Non-Hispanic black women	112 (1.8)	71 (1.8)	77 (1.5)	87 (1.8)	103 (1.8)	125 (2.6)	154 (4.3)	181 (8.5)
20–44	100 (1.6)	69 (2.1)	75 (1.8)	83 (1.7)	96 (1.6)	111 (2.4)	129 (3.0)	140 (4.7)
45–64	123 (3.9)	71 (2.9)	78 (2.3)	93 (2.6)	111 (4.1)	140 (5.8)	169 (9.5)	211 (19.5)
≥65	140 (5.5)	[1]	85 (2.7)	105 (5.6)	123 (5.2)	157 (13.5)	203 (20.0)	268 (24.0)
All Hispanic	119 (1.8)	63 (1.5)	72 (1.4)	86 (1.3)	107 (2.0)	134 (1.8)	172 (3.3)	209 (7.8)
20–44	110 (2.1)	61 (1.3)	69 (1.8)	82 (1.7)	100 (1.6)	125 (2.5)	152 (3.4)	176 (9.2)
45–64	130 (2.3)	73 (2.5)	80 (2.1)	97 (2.0)	120 (2.2)	149 (3.2)	190 (4.7)	217 (6.6)
≥65	162 (6.1)	78 (7.4)	91 (7.0)	112 (4.2)	155 (8.1)	186 (9.7)	244 (12.4)	285 (17.7)
All Hispanic men	118 (2.1)	61 (1.2)	69 (2.3)	84 (1.8)	105 (2.3)	132 (1.9)	170 (6.6)	220 (14.2)
20–44	111 (2.9)	60 (1.5)	66 (2.3)	80 (1.8)	98 (2.2)	124 (2.8)	150 (4.6)	189 (24.0)
45–64	129 (3.5)	63 (4.9)	77 (2.3)	94 (2.7)	114 (2.7)	146 (4.7)	189 (10.4)	220 (18.4)
≥65	159 (6.8)	79 (12.0)	86 (5.8)	112 (6.5)	158 (11.3)	188 (9.7)	240 (12.6)	261 (17.7)
All Hispanic women	119 (2.3)	67 (2.9)	75 (2.0)	89 (2.4)	109 (2.2)	138 (3.5)	173 (4.2)	196 (7.2)
20–44	109 (2.4)	63 (3.5)	71 (2.1)	85 (2.6)	102 (2.2)	126 (4.5)	154 (4.8)	175 (5.9)
45–64	132 (3.8)	74 (2.6)	83 (2.1)	101 (2.9)	123 (2.4)	153 (5.8)	190 (7.3)	213 (8.0)
≥65	164 (8.1)	[1]	[1]	112 (8.3)	151 (8.7)	181 (11.2)	252 (20.0)	299 (26.2)
Mexican American	121 (2.7)	64 (2.3)	74 (1.6)	88 (1.3)	107 (1.6)	136 (3.1)	176 (5.9)	213 (11.0)
20–44	114 (3.2)	62 (2.2)	72 (2.2)	86 (2.0)	103 (2.1)	127 (2.9)	157 (6.2)	184 (15.0)
45–64	129 (2.8)	71 (3.9)	80 (2.7)	96 (2.2)	118 (2.7)	153 (4.2)	190 (3.6)	213 (6.7)
≥65	175 (8.0)	78 (10.6)	99 (7.2)	116 (6.4)	159 (6.4)	212 (15.3)	268 (17.6)	316 (33.9)
Mexican American men	119 (3.2)	61 (2.2)	72 (2.5)	86 (1.7)	106 (2.2)	132 (2.7)	167 (10.4)	222 (21.6)
20–44	114 (4.3)	61 (2.3)	68 (2.5)	82 (1.9)	100 (2.5)	125 (3.1)	151 (10.0)	210 (32.5)
45–64	124 (3.5)	62 (6.8)	76 (5.5)	93 (2.8)	114 (3.1)	144 (6.0)	180 (6.5)	201 (8.1)
≥65	164 (9.8)	[1]	82 (13.1)	107 (4.6)	147 (11.3)	210 (17.8)	242 (25.4)	[1]
Mexican American women	123 (3.1)	70 (2.3)	77 (2.1)	93 (2.6)	110 (2.7)	142 (5.0)	181 (6.6)	203 (9.3)
20–44	113 (3.0)	69 (3.7)	75 (2.5)	89 (2.4)	105 (2.7)	129 (4.9)	159 (6.9)	181 (7.4)
45–64	134 (5.1)	73 (2.7)	82 (2.9)	98 (3.8)	120 (3.2)	160 (8.8)	194 (6.6)	216 (13.3)
≥65	184 (10.9)	[1]	[1]	129 (10.0)	165 (7.1)	213 (17.8)	291 (29.2)	320 (34.1)

No diagnosed diabetes is based on self-report. Conversions for glucose values are provided in *Diabetes in America Appendix 1 Conversions*.
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.11. Mean Fasting Insulin (µU/mL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)					
	Diagnosed diabetes, oral meds only*	Diagnosed diabetes, no meds*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	15.4 (0.58)	15.0 (1.50)	21.6 (1.33)	18.3 (0.71)	14.0 (0.30)	9.3 (0.25)
Age (years)						
20–44	17.4 (1.81)	16.8 (4.23)	27.8 (2.85)	23.6 (1.67)	16.3 (0.65)	9.6 (0.26)
45–64	16.8 (0.93)	17.0 (2.37)	22.2 (2.41)	19.4 (1.49)	13.4 (0.36)	9.0 (0.46)
≥65	13.3 (0.75)	10.5 (0.96)	18.8 (1.28)	15.4 (0.62)	11.4 (0.36)	7.9 (0.39)
Sex, age (years)						
Men	16.0 (0.88)	14.5 (1.08)	21.6 (1.61)	19.2 (1.09)	14.3 (0.47)	9.9 (0.36)
20–44	16.1 (1.79)	13.5 (5.16)[1]	26.8 (4.01)	22.9 (2.53)	16.5 (0.99)	10.0 (0.35)
45–64	18.5 (1.46)	16.4 (1.54)	23.3 (3.03)	21.0 (2.29)	13.6 (0.47)	10.1 (0.77)
≥65	12.7 (0.77)	12.2 (1.43)	16.7 (1.41)	15.3 (0.78)	11.7 (0.59)	8.8 (0.64)
Women	14.8 (0.81)	15.5 (2.69)	21.6 (1.47)	17.3 (0.85)	13.5 (0.34)	8.8 (0.26)
20–44	18.5 (2.88)	19.7 (5.89)	29.6 (3.13)	24.6 (2.65)	15.9 (0.92)	9.2 (0.30)
45–64	15.2 (1.02)	17.6 (4.24)	18.8 (2.33)	17.2 (1.61)	13.2 (0.48)	8.2 (0.40)
≥65	13.7 (1.15)	8.6 (0.96)	20.9 (1.67)	15.5 (0.85)	11.1 (0.43)	7.3 (0.45)
Race/ethnicity, sex, age (years)						
Non-Hispanic white	15.6 (0.73)	12.5 (1.71)	22.6 (1.86)	18.0 (0.93)	13.6 (0.39)	8.7 (0.27)
20–44	18.8 (2.61)	[3]	34.6 (5.34)	25.1 (2.72)	16.1 (1.01)	8.9 (0.31)
45–64	17.3 (1.17)	14.6 (2.50)	23.4 (3.51)	18.9 (2.10)	13.2 (0.46)	8.5 (0.44)
≥65	13.6 (0.98)	10.7 (1.09)	19.8 (1.50)	15.8 (0.70)	11.4 (0.42)	7.8 (0.42)
Non-Hispanic white men	15.9 (1.12)	12.8 (1.53)	21.8 (2.29)	18.9 (1.39)	14.2 (0.56)	9.5 (0.37)
20–44	15.1 (3.38)	4.6 (0.41)	32.0 (9.44)	23.2 (4.53)	16.6 (1.48)	9.6 (0.48)
45–64	18.6 (1.83)	16.8 (1.82)	24.4 (4.08)	21.3 (2.94)	13.5 (0.60)	9.4 (0.58)
≥65	12.7 (1.05)	12.1 (1.54)	16.9 (1.51)	15.4 (0.83)	11.9 (0.67)	9.0 (0.77)
Non-Hispanic white women	15.3 (1.09)	12.1 (3.09)	24.1 (1.99)	17.0 (1.06)	12.9 (0.44)	8.1 (0.30)
20–44	20.8 (3.50)	[3]	37.6 (2.21)	27.0 (3.79)	15.3 (1.32)	8.4 (0.37)
45–64	15.6 (1.29)	11.6 (4.32)[1]	18.4 (4.99)	15.0 (2.06)	12.9 (0.67)	7.8 (0.49)
≥65	14.1 (1.44)	8.9 (1.17)	23.0 (2.00)	16.0 (0.92)	11.0 (0.48)	7.2 (0.46)
Non-Hispanic black	14.7 (1.09)	12.5 (1.97)	17.2 (1.14)	18.4 (1.22)	14.4 (0.46)	11.5 (0.59)
20–44	17.8 (3.11)	14.5 (3.23)	21.4 (4.28)	22.5 (2.97)	16.2 (0.93)	11.9 (0.74)
45–64	15.6 (1.59)	12.7 (2.66)	18.9 (1.55)	20.8 (2.02)	13.5 (0.61)	10.5 (0.66)
≥65	11.8 (0.95)	6.1 (0.93)	12.5 (1.55)	12.5 (1.24)	11.5 (0.94)	9.0 (1.21)
Non-Hispanic black men	13.6 (1.50)	14.0 (3.16)	18.7 (1.99)	19.0 (1.93)	12.7 (0.70)	10.6 (0.73)
20–44	17.8 (2.55)	7.3 (2.06)	23.6 (5.95)	21.0 (5.14)	14.1 (1.27)	11.3 (1.01)
45–64	12.9 (2.29)	17.7 (3.81)	18.9 (2.52)	20.4 (2.66)	11.7 (0.73)	8.8 (0.69)
≥65	12.2 (1.92)	[3]	14.4 (2.54)	14.7 (2.17)	11.3 (1.29)	8.5 (1.47)
Non-Hispanic black women	15.6 (1.44)	11.8 (2.42)	15.3 (1.61)	17.8 (1.98)	16.1 (0.78)	12.1 (0.67)
20–44	18.0 (5.25)	19.7 (1.20)	15.4 (1.00)	25.3 (7.51)	18.7 (1.46)	12.4 (0.78)
45–64	17.3 (2.01)	10.5 (3.26)[1]	18.9 (2.86)	21.3 (2.82)	15.4 (0.97)	11.6 (1.02)
≥65	11.5 (0.75)	6.1 (0.93)	11.0 (1.26)	10.9 (1.25)	11.6 (1.33)	9.4 (2.06)
All Hispanic	16.1 (1.09)	21.6 (3.97)	22.8 (2.04)	21.0 (1.51)	16.1 (0.77)	10.6 (0.33)
20–44	12.9 (2.72)	24.8 (4.38)	25.2 (3.95)	24.0 (2.85)	17.8 (1.09)	10.8 (0.38)
45–64	18.8 (1.73)	22.2 (5.38)	21.9 (3.45)	21.5 (2.29)	14.7 (0.82)	10.0 (0.56)
≥65	13.5 (1.10)	11.7 (2.34)	19.7 (3.96)	15.9 (2.13)	10.8 (0.62)	9.4 (1.30)

Appendix 9.11 continues on the next page.

APPENDIX 9.11. (continued)

	MEAN (STANDARD ERROR)					
CHARACTERISTICS	Diagnosed diabetes, oral meds only*	Diagnosed diabetes, no meds*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
All Hispanic men	18.7 (1.71)	17.6 (1.95)	24.2 (2.67)	21.8 (2.20)	16.4 (1.09)	10.7 (0.53)
20–44	13.5 (2.93)	26.1 (6.12)	25.3 (4.54)	23.6 (3.60)	18.4 (1.60)	10.8 (0.61)
45–64	22.5 (2.63)	15.5 (3.24)	24.0 (4.15)	21.8 (3.38)	14.5 (1.20)	10.2 (0.67)
≥65	14.8 (1.28)	13.3 (3.51)	21.1 (8.14)[1]	17.6 (4.22)	9.4 (1.09)	8.9 (2.00)
All Hispanic women	14.3 (1.26)	27.4 (7.71)	18.9 (2.42)	19.7 (1.45)	15.7 (0.82)	10.6 (0.38)
20–44	12.4 (4.09)[1]	22.0 (1.50)	24.8 (4.81)	25.3 (2.66)	17.0 (1.25)	10.8 (0.44)
45–64	16.0 (1.95)	31.0 (9.32)[1]	14.0 (4.10)	21.1 (2.62)	15.0 (1.05)	9.9 (0.90)
≥65	12.5 (1.45)	9.4 (2.25)	18.6 (2.79)	14.2 (1.96)	12.0 (0.74)	10.0 (1.34)
Mexican American	15.6 (1.27)	16.5 (2.74)	24.6 (2.63)	22.7 (1.91)	16.7 (0.87)	10.8 (0.48)
20–44	15.0 (3.02)	27.1 (3.58)	27.9 (5.12)	25.9 (3.59)	18.1 (1.29)	11.1 (0.54)
45–64	16.8 (1.86)	13.9 (3.39)	23.0 (4.85)	22.3 (3.20)	14.8 (0.99)	9.9 (0.68)
≥65	13.2 (1.80)	12.4 (2.68)	20.8 (4.71)	17.7 (2.82)	11.1 (0.82)	8.8 (1.11)
Mexican American men	17.6 (2.10)	16.7 (4.07)	27.0 (3.51)	24.3 (2.99)	17.2 (1.38)	10.8 (0.79)
20–44	11.9 (3.38)	[3]	28.2 (5.76)	25.3 (4.52)	18.5 (1.89)	10.9 (0.90)
45–64	20.0 (3.14)	11.5 (3.74)[1]	26.7 (6.08)	24.7 (5.09)	15.1 (1.69)	10.4 (0.71)
≥65	15.1 (2.34)	15.6 (4.16)	23.8 (10.24)[2]	21.1 (6.31)	10.3 (1.05)	9.1 (1.33)
Mexican American women	13.9 (1.48)	16.3 (3.47)	18.7 (2.96)	20.0 (1.67)	16.1 (1.16)	10.9 (0.41)
20–44	20.4 (6.28)[1]	22.0 (1.50)	26.3 (6.39)	27.7 (3.11)	17.7 (1.72)	11.2 (0.49)
45–64	14.2 (2.05)	16.1 (5.29)[1]	13.5 (4.73)[1]	19.6 (2.76)	14.5 (1.21)	9.4 (1.05)
≥65	11.9 (2.24)	9.4 (2.25)	18.4 (2.54)	14.9 (2.17)	11.6 (0.94)	8.3 (1.61)

Conversions for A1c, glucose, and insulin values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
[1] Relative standard error >30%–40%
[2] Relative standard error >40%–50%
[3] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.12. Means and Percentiles of Fasting Insulin (µU/mL) Among Adults Age ≥20 Years Without Diagnosed Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Overall	11.8 (0.19)	3.0 (0.08)	3.9 (0.09)	5.7 (0.13)	9.0 (0.15)	14.7 (0.22)	22.8 (0.49)	29.4 (0.67)
Age (years)								
20–44	11.9 (0.24)	3.1 (0.12)	3.9 (0.10)	5.7 (0.14)	8.9 (0.19)	14.6 (0.33)	22.5 (0.65)	30.3 (1.26)
45–64	11.9 (0.29)	2.9 (0.13)	3.8 (0.15)	5.6 (0.19)	9.0 (0.28)	15.1 (0.36)	23.5 (0.82)	29.1 (0.94)
≥65	11.4 (0.29)	3.2 (0.13)	3.9 (0.15)	5.6 (0.20)	9.1 (0.26)	14.5 (0.45)	21.8 (0.90)	27.0 (1.21)
Sex, age (years)								
Men	12.7 (0.29)	3.1 (0.09)	4.0 (0.13)	6.0 (0.17)	9.6 (0.24)	15.7 (0.32)	23.9 (0.57)	31.8 (1.22)
20–44	12.7 (0.45)	2.9 (0.15)	3.9 (0.20)	6.0 (0.23)	9.5 (0.31)	15.4 (0.46)	23.9 (1.02)	33.2 (2.26)
45–64	13.0 (0.45)	3.1 (0.15)	4.1 (0.21)	6.0 (0.25)	10.0 (0.40)	16.6 (0.65)	24.4 (1.28)	31.5 (2.03)
≥65	11.8 (0.38)	3.2 (0.17)	4.0 (0.15)	5.9 (0.26)	9.3 (0.36)	14.7 (0.52)	22.0 (1.13)	28.6 (1.57)
Women	11.0 (0.22)	2.9 (0.16)	3.8 (0.11)	5.5 (0.13)	8.5 (0.18)	13.8 (0.36)	21.1 (0.57)	27.4 (0.85)
20–44	11.2 (0.33)	3.2 (0.20)	3.9 (0.13)	5.6 (0.17)	8.5 (0.21)	13.4 (0.42)	21.0 (0.79)	27.6 (1.56)
45–64	10.9 (0.34)	2.7 (0.17)	3.6 (0.24)	5.4 (0.25)	8.2 (0.37)	13.8 (0.60)	21.2 (0.92)	27.4 (0.79)
≥65	11.0 (0.37)	3.2 (0.23)	3.9 (0.20)	5.5 (0.21)	9.0 (0.36)	14.0 (0.75)	20.3 (1.09)	25.5 (1.54)

APPENDIX 9.12. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)	PERCENTILES (STANDARD ERROR)						
		5th	10th	25th	50th	75th	90th	95th
Race/ethnicity, sex, age (years)								
Non-Hispanic white	11.3 (0.23)	2.9 (0.10)	3.7 (0.11)	5.4 (0.14)	8.5 (0.20)	14.3 (0.30)	21.3 (0.63)	27.9 (0.89)
20–44	11.3 (0.32)	2.8 (0.15)	3.6 (0.13)	5.3 (0.16)	8.2 (0.24)	13.9 (0.48)	20.9 (0.75)	28.8 (1.95)
45–64	11.4 (0.37)	2.7 (0.13)	3.6 (0.20)	5.4 (0.23)	8.5 (0.33)	14.6 (0.51)	22.8 (0.96)	27.7 (1.19)
≥65	11.4 (0.33)	3.2 (0.15)	3.9 (0.17)	5.6 (0.22)	9.0 (0.30)	14.5 (0.54)	21.9 (1.00)	27.2 (1.28)
Non-Hispanic white men	12.4 (0.32)	3.0 (0.10)	3.9 (0.15)	5.9 (0.20)	9.3 (0.24)	15.5 (0.38)	23.6 (0.71)	31.4 (1.62)
20–44	12.4 (0.60)	2.7 (0.16)	3.5 (0.24)	5.7 (0.29)	9.1 (0.41)	15.2 (0.51)	22.8 (1.59)	33.3 (3.15)
45–64	12.6 (0.46)	3.1 (0.20)	4.0 (0.22)	6.0 (0.29)	9.7 (0.40)	16.5 (0.77)	24.0 (1.38)	30.5 (2.54)
≥65	12.0 (0.44)	3.4 (0.16)	4.1 (0.16)	6.0 (0.32)	9.3 (0.41)	14.9 (0.54)	22.5 (1.24)	30.0 (1.95)
Non-Hispanic white women	10.4 (0.27)	2.7 (0.16)	3.5 (0.13)	5.1 (0.14)	7.9 (0.20)	12.7 (0.44)	20.0 (0.67)	25.4 (0.96)
20–44	10.3 (0.41)	2.9 (0.23)	3.7 (0.15)	5.1 (0.19)	7.8 (0.22)	12.1 (0.60)	19.3 (1.05)	25.0 (1.73)
45–64	10.1 (0.46)	2.6 (0.21)	3.2 (0.27)	5.0 (0.28)	7.6 (0.34)	12.8 (0.90)	20.3 (1.43)	25.8 (1.43)
≥65	10.9 (0.40)	3.1 (0.24)	3.8 (0.19)	5.2 (0.23)	8.6 (0.45)	13.9 (0.87)	20.3 (1.17)	25.3 (1.65)
Non-Hispanic black	13.2 (0.37)	3.5 (0.18)	4.4 (0.16)	6.3 (0.17)	10.2 (0.41)	16.7 (0.61)	26.0 (0.86)	33.7 (1.06)
20–44	13.3 (0.53)	3.6 (0.20)	4.5 (0.19)	6.2 (0.20)	10.0 (0.63)	17.4 (0.66)	25.9 (1.54)	34.3 (1.37)
45–64	13.4 (0.45)	3.4 (0.31)	4.4 (0.21)	6.8 (0.33)	11.0 (0.43)	16.4 (0.77)	26.9 (1.62)	33.6 (1.94)
≥65	11.5 (0.64)	2.5 (0.40)	3.5 (0.49)	5.6 (0.45)	9.8 (0.67)	13.4 (0.72)	24.1 (2.08)	27.7 (2.61)
Non-Hispanic black men	12.2 (0.56)	3.0 (0.24)	3.9 (0.20)	5.6 (0.25)	9.0 (0.43)	15.3 (0.68)	25.1 (1.59)	33.4 (2.63)
20–44	12.6 (0.78)	3.2 (0.30)	3.9 (0.25)	5.6 (0.26)	8.6 (0.73)	16.1 (1.03)	25.8 (1.95)	33.5 (4.36)
45–64	11.8 (0.67)	2.9 (0.36)	4.0 (0.40)	5.7 (0.40)	9.3 (0.54)	14.2 (0.67)	24.4 (3.50)	32.6 (3.19)
≥65	11.8 (1.26)	2.3 (0.44)	3.3 (0.61)	5.0 (0.83)	9.9 (1.25)	15.7 (1.92)	22.7 (2.52)	27.1 (5.34)
Non-Hispanic black women	14.0 (0.46)	4.0 (0.23)	5.1 (0.21)	7.1 (0.24)	11.4 (0.40)	17.9 (0.55)	26.6 (1.52)	33.9 (1.77)
20–44	14.0 (0.61)	4.1 (0.34)	5.1 (0.24)	6.9 (0.38)	11.2 (0.86)	18.2 (0.66)	25.7 (2.16)	35.0 (1.97)
45–64	14.7 (0.62)	4.0 (0.49)	5.6 (0.59)	7.8 (0.44)	11.9 (0.63)	18.4 (1.14)	27.4 (2.01)	33.6 (2.99)
≥65	11.2 (0.78)	3.1 (0.77)	3.6 (0.49)	6.0 (0.56)	9.8 (0.92)	12.9 (0.53)	22.2 (3.07)	27.1 (3.53)
All Hispanic	13.7 (0.46)	3.9 (0.21)	4.9 (0.18)	6.9 (0.19)	10.8 (0.29)	16.8 (0.64)	25.5 (0.99)	32.4 (1.18)
20–44	13.9 (0.55)	3.9 (0.23)	4.9 (0.19)	6.9 (0.24)	10.8 (0.30)	16.9 (0.71)	25.9 (1.26)	33.0 (1.36)
45–64	13.8 (0.62)	4.1 (0.52)	5.0 (0.32)	7.0 (0.40)	11.0 (0.66)	18.2 (1.16)	26.6 (1.39)	31.6 (1.43)
≥65	12.0 (0.72)	2.9 (0.42)	3.9 (0.61)	6.2 (0.38)	9.8 (0.74)	14.7 (0.61)	19.6 (1.67)	25.7 (2.54)
All Hispanic men	14.1 (0.59)	3.8 (0.30)	4.7 (0.22)	6.8 (0.27)	11.0 (0.44)	17.3 (0.91)	26.3 (1.17)	32.6 (1.93)
20–44	14.3 (0.74)	3.8 (0.35)	4.7 (0.22)	6.9 (0.40)	11.2 (0.45)	17.4 (1.07)	26.4 (1.90)	33.2 (3.08)
45–64	14.1 (0.93)	4.2 (0.34)	5.2 (0.31)	7.0 (0.55)	11.5 (0.95)	18.6 (1.28)	27.1 (1.72)	29.2 (2.19)
≥65	11.3 (1.10)	2.5 (0.45)	2.9 (0.65)	5.4 (0.67)	8.9 (1.09)	12.9 (1.28)	19.5 (1.54)	23.6 (2.42)
All Hispanic women	13.3 (0.53)	4.1 (0.27)	5.1 (0.20)	6.9 (0.25)	10.7 (0.36)	16.3 (0.72)	24.8 (1.49)	31.8 (1.56)
20–44	13.3 (0.64)	4.3 (0.32)	5.2 (0.23)	6.9 (0.33)	10.7 (0.38)	16.3 (0.78)	24.2 (1.80)	31.5 (1.85)
45–64	13.5 (0.68)	3.6 (0.50)	4.5 (0.59)	7.0 (0.49)	10.5 (0.61)	17.3 (1.45)	26.1 (1.44)	33.3 (2.41)
≥65	12.7 (0.76)	4.4 (0.46)	5.2 (0.49)	7.0 (0.57)	11.3 (1.29)	15.4 (0.66)	19.8 (2.73)	27.1 (3.62)
Mexican American	14.3 (0.50)	4.1 (0.18)	4.9 (0.15)	7.1 (0.23)	11.3 (0.33)	17.3 (0.68)	26.6 (1.10)	33.6 (1.28)
20–44	14.5 (0.63)	4.2 (0.23)	5.0 (0.17)	7.1 (0.28)	11.4 (0.36)	17.4 (0.84)	26.8 (1.50)	34.3 (1.94)
45–64	13.8 (0.78)	4.1 (0.27)	4.8 (0.28)	7.1 (0.43)	11.3 (0.87)	17.3 (1.20)	26.9 (1.73)	31.5 (1.70)
≥65	13.4 (1.27)	3.5 (0.54)	4.5 (0.51)	6.3 (0.50)	9.7 (0.93)	15.9 (1.43)	22.4 (1.93)	27.1 (2.94)
Mexican American men	14.7 (0.73)	4.0 (0.26)	4.8 (0.24)	7.1 (0.36)	11.4 (0.57)	17.9 (1.13)	27.2 (1.59)	33.5 (2.57)
20–44	14.9 (0.92)	3.8 (0.31)	4.7 (0.27)	7.0 (0.45)	11.4 (0.57)	17.9 (1.48)	26.9 (2.21)	34.3 (3.82)
45–64	14.4 (1.28)	4.3 (0.33)	5.1 (0.35)	7.6 (0.70)	11.7 (1.08)	17.8 (1.92)	27.6 (2.72)	30.0 (3.42)
≥65	13.5 (2.34)	3.0 (0.69)	4.9 (0.73)	6.2 (0.54)	9.2 (1.35)	14.4 (2.00)	20.1 (2.23)	23.5 (3.25)
Mexican American women	13.9 (0.60)	4.2 (0.20)	5.0 (0.17)	7.0 (0.28)	11.3 (0.35)	16.9 (0.72)	26.1 (1.78)	33.6 (2.09)
20–44	14.1 (0.72)	4.6 (0.28)	5.3 (0.18)	7.1 (0.40)	11.3 (0.42)	16.9 (0.80)	26.0 (2.05)	34.1 (3.01)
45–64	13.3 (0.78)	3.8 (0.42)	4.4 (0.35)	6.8 (0.58)	10.8 (0.89)	16.8 (1.35)	25.9 (2.15)	31.8 (2.58)
≥65	13.4 (1.30)	[1]	4.5 (0.47)	6.5 (0.60)	11.5 (1.25)	16.0 (1.68)	25.8 (3.34)	29.3 (3.58)

No diagnosed diabetes is based on self-report. Conversions for insulin values are provided in *Diabetes in America Appendix 1 Conversions*.
[1] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.13. Percent of Adults Age ≥20 Years With a Family History of Diabetes, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	68.6 (1.49)	49.0 (2.80)	45.0 (1.98)	39.0 (1.22)	32.6 (1.38)
Age (years)					
20–44	77.0 (3.63)	61.9 (6.41)	55.1 (5.30)	40.5 (1.59)	32.6 (1.55)
45–64	72.7 (2.57)	51.9 (5.89)	51.0 (4.31)	41.9 (2.01)	35.5 (2.46)
≥65	60.8 (2.39)	40.0 (4.07)	35.4 (2.73)	30.1 (1.55)	20.9 (3.66)
Sex, age (years)					
Men	66.5 (2.12)	46.9 (3.83)	41.7 (3.12)	37.2 (1.43)	30.4 (1.85)
20–44	71.7 (5.22)	65.7 (7.40)	57.8 (7.16)	36.7 (2.22)	30.2 (2.15)
45–64	68.9 (3.67)	48.6 (6.55)	45.0 (5.34)	42.7 (2.36)	34.1 (3.85)
≥65	61.4 (3.17)	34.5 (6.09)	29.6 (4.42)	24.9 (2.50)	16.9 (4.82)
Women	70.5 (1.77)	52.1 (4.06)	48.4 (3.58)	41.2 (1.88)	34.2 (1.85)
20–44	81.7 (4.00)	55.1 (9.64)	51.7 (9.60)	46.7 (2.74)	34.3 (2.21)
45–64	76.5 (2.69)	58.5 (7.04)	58.3 (6.54)	41.0 (3.49)	36.5 (3.12)
≥65	60.2 (2.86)	46.1 (6.05)	40.2 (4.49)	34.3 (2.36)	23.3 (4.33)
Race/ethnicity, age (years)					
Non-Hispanic white	65.3 (2.17)	45.1 (3.48)	42.1 (2.45)	37.6 (1.49)	29.6 (1.74)
20–44	73.1 (6.03)	65.9 (9.99)	56.4 (8.62)	40.5 (2.50)	28.0 (2.18)
45–64	69.8 (4.17)	47.0 (7.22)	48.7 (5.39)	40.1 (2.32)	35.3 (2.85)
≥65	59.2 (2.91)	38.7 (4.97)†	33.5 (3.21)‡	29.3 (1.85)	20.1 (3.87)
Non-Hispanic black	76.6 (1.88)	60.9 (3.61)	59.5 (3.81)	43.7 (2.51)	43.8 (3.09)
20–44	76.0 (5.69)	66.3 (7.72)	63.4 (10.73)	40.6 (4.60)	42.1 (3.87)
45–64	82.3 (2.38)	67.5 (5.21)	59.9 (5.13)	48.3 (4.21)	51.9 (5.61)
≥65	67.0 (3.25)	42.3 (8.44)	55.8 (8.03)	37.4 (5.37)	32.1 (9.15)
All Hispanic	73.8 (1.91)	54.0 (4.43)	48.1 (3.86)	41.8 (2.77)	40.5 (2.33)
20–44	90.2 (3.56)	53.1 (8.34)	47.8 (6.42)	41.0 (3.14)	40.9 (2.60)
45–64	72.5 (2.56)	59.2 (5.44)	55.1 (5.35)	46.6 (4.07)	38.7 (4.57)
≥65	63.0 (3.68)	46.0 (6.71)	38.0 (6.78)	32.0 (5.18)	36.5 (12.52)[1]
Mexican American	73.3 (2.07)	62.7 (4.45)	54.2 (4.35)	44.4 (3.16)	43.0 (2.45)
20–44	88.1 (4.98)	62.5 (8.64)	52.0 (6.93)	43.8 (3.66)	43.2 (3.17)
45–64	73.6 (2.25)	72.0 (5.42)	64.8 (6.72)	48.1 (4.30)	43.1 (5.68)
≥65	61.9 (4.05)	47.3 (7.73)	43.5 (7.01)	32.6 (7.05)	30.2 (12.05)[1]

Family history of diabetes was determined based on the following question: "Including living and deceased, were any of your close biological that is, blood relatives including father, mother, sisters or brothers, ever told by a health professional that they had diabetes?" Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.

* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.

† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.

‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.

[1] Relative standard error >30%–40%

SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.14. Mean Body Mass Index (kg/m²) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	32.8 (0.25)	33.1 (0.45)	31.5 (0.33)	29.6 (0.16)	26.6 (0.18)
Age (years)					
20–44	34.5 (0.77)	34.6 (0.88)	33.1 (0.84)	30.4 (0.32)	26.5 (0.22)
45–64	33.8 (0.34)	34.1 (0.80)	32.8 (0.64)	29.5 (0.20)	27.1 (0.30)
≥65	31.1 (0.29)	31.4 (0.42)	29.7 (0.36)	28.0 (0.24)	26.1 (0.51)
Sex, age (years)					
Men	31.8 (0.32)	32.2 (0.59)	31.4 (0.45)	29.1 (0.19)	26.8 (0.21)
20–44	31.8 (0.81)	33.1 (1.30)	32.1 (1.05)	29.5 (0.34)	26.8 (0.24)
45–64	32.8 (0.43)	32.8 (1.04)	32.4 (0.89)	29.2 (0.26)	27.0 (0.34)
≥65	30.6 (0.42)	30.9 (0.62)	29.8 (0.46)	27.8 (0.31)	26.1 (0.67)
Women	33.7 (0.31)	34.5 (0.53)	31.7 (0.51)	30.1 (0.29)	26.5 (0.23)
20–44	37.0 (1.03)	36.9 (1.24)	34.4 (1.80)	31.9 (0.55)	26.2 (0.32)
45–64	34.8 (0.53)	36.8 (0.77)	33.4 (0.83)	29.9 (0.38)	27.2 (0.37)
≥65	31.5 (0.41)	31.9 (0.79)	29.6 (0.61)	28.1 (0.32)	26.1 (0.59)
Race/ethnicity, sex, age (years)					
Non-Hispanic white	33.2 (0.34)	33.0 (0.57)	31.2 (0.43)	29.5 (0.18)	26.4 (0.24)
20–44	34.3 (0.99)	33.3 (1.52)	32.3 (1.41)	30.7 (0.46)	26.1 (0.27)
45–64	34.8 (0.56)	34.4 (1.03)	32.8 (0.84)	29.4 (0.25)	27.0 (0.38)
≥65	31.3 (0.38)	31.6 (0.47)	29.7 (0.42)	28.1 (0.26)	26.2 (0.56)
Non-Hispanic white men	32.1 (0.42)	32.3 (0.73)	31.4 (0.54)	29.4 (0.21)	26.7 (0.27)
20–44	30.2 (1.10)	31.5 (2.09)	31.3 (1.63)	30.1 (0.49)	26.5 (0.30)
45–64	33.7 (0.60)	33.4 (1.28)	32.9 (1.09)	29.3 (0.30)	27.1 (0.39)
≥65	30.9 (0.55)	31.0 (0.72)	29.9 (0.52)	28.1 (0.29)	26.4 (0.75)
Non-Hispanic white women	34.3 (0.43)	34.3 (0.64)	31.0 (0.63)	29.7 (0.33)	26.2 (0.31)
20–44	38.0 (1.26)	36.1 (1.98)	33.3 (2.71)	31.8 (0.81)	25.8 (0.42)
45–64	36.1 (0.92)	36.9 (1.04)	32.5 (1.13)	29.5 (0.47)	26.9 (0.47)
≥65	31.7 (0.51)	32.3 (1.01)	29.5 (0.74)	28.1 (0.37)	26.0 (0.63)
Non-Hispanic black	34.5 (0.43)	34.1 (0.79)	34.1 (0.92)	31.2 (0.36)	28.7 (0.35)
20–44	38.1 (1.63)	36.9 (1.42)	36.7 (1.80)	32.1 (0.60)	28.5 (0.51)
45–64	34.8 (0.68)	34.4 (1.15)	34.2 (1.32)	30.9 (0.63)	30.1 (0.71)
≥65	32.0 (0.53)	31.2 (0.89)	31.9 (0.58)	28.4 (0.55)	26.9 (1.13)
Non-Hispanic black men	33.2 (0.51)	32.0 (0.96)	31.6 (0.91)	28.9 (0.52)	27.4 (0.48)
20–44	37.7 (2.11)	35.5 (2.40)	32.7 (2.67)	29.7 (0.96)	27.6 (0.65)
45–64	33.1 (0.56)	31.4 (1.47)	31.4 (1.37)	28.5 (0.38)	27.1 (0.87)
≥65	30.3 (0.56)	30.8 (0.98)	31.0 (0.73)	26.3 (0.61)	25.8 (1.53)
Non-Hispanic black women	35.4 (0.60)	36.2 (1.13)	36.2 (1.37)	33.5 (0.54)	29.6 (0.44)
20–44	38.6 (2.06)	38.4 (2.10)	40.7 (2.31)	35.0 (0.89)	29.0 (0.62)
45–64	36.1 (0.95)	38.1 (1.73)	36.7 (2.05)	33.1 (1.00)	32.0 (0.95)
≥65	33.1 (0.78)	31.5 (1.42)	32.5 (0.93)	29.7 (0.89)	28.1 (1.52)
All Hispanic	31.4 (0.36)	33.3 (0.60)	32.2 (0.46)	29.5 (0.23)	27.3 (0.21)
20–44	32.9 (1.01)	34.7 (1.22)	33.6 (0.94)	29.5 (0.31)	27.4 (0.26)
45–64	31.6 (0.40)	33.1 (0.88)	32.6 (0.75)	29.7 (0.45)	27.1 (0.43)
≥65	29.8 (0.41)	30.8 (1.07)	29.4 (0.96)	28.2 (0.45)	25.6 (0.98)
All Hispanic men	30.4 (0.39)	32.9 (0.86)	31.9 (0.66)	28.8 (0.29)	27.5 (0.30)
20–44	29.7 (0.97)	34.4 (1.60)	33.1 (1.18)	28.9 (0.42)	27.6 (0.36)
45–64	31.0 (0.54)	31.7 (1.02)	31.2 (0.87)	28.9 (0.32)	27.1 (0.44)
≥65	29.7 (0.48)	31.6 (1.67)	30.2 (1.37)	28.1 (0.73)	24.3 (1.27)

Appendix 9.14 continues on the next page.

APPENDIX 9.14. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
All Hispanic women	32.2 (0.53)	33.8 (0.87)	32.5 (0.67)	30.3 (0.42)	27.2 (0.35)
20–44	35.1 (1.24)	35.6 (1.48)	34.7 (1.44)	30.5 (0.60)	27.2 (0.42)
45–64	32.3 (0.65)	35.3 (1.64)	34.0 (1.12)	30.5 (0.76)	27.1 (0.64)
≥65	29.9 (0.65)	30.3 (1.37)	28.8 (1.18)	28.3 (0.56)	27.1 (1.30)
Mexican American	31.4 (0.34)	33.5 (0.60)	32.3 (0.48)	29.5 (0.23)	27.2 (0.27)
20–44	33.1 (1.13)	34.7 (1.04)	33.3 (0.90)	29.5 (0.36)	27.3 (0.31)
45–64	31.5 (0.48)	32.9 (0.78)	32.7 (0.79)	29.6 (0.42)	27.2 (0.54)
≥65	30.1 (0.43)	32.1 (1.25)	30.0 (1.23)	28.5 (0.58)	25.2 (1.03)
Mexican American men	30.2 (0.48)	33.1 (0.93)	32.2 (0.72)	28.8 (0.37)	27.1 (0.41)
20–44	28.9 (1.20)	34.5 (1.27)	32.9 (1.10)	28.7 (0.48)	27.2 (0.48)
45–64	30.7 (0.61)	31.7 (1.29)	31.3 (1.17)	29.0 (0.48)	26.9 (0.45)
≥65	30.0 (0.58)	32.1 (1.74)	31.2 (1.50)	29.1 (1.02)	24.3 (1.03)
Mexican American women	32.5 (0.48)	34.0 (1.19)	32.5 (0.86)	30.4 (0.47)	27.3 (0.46)
20–44	37.0 (1.25)	35.4 (1.92)	34.3 (1.62)	30.7 (0.74)	27.3 (0.54)
45–64	32.5 (0.72)	34.4 (1.36)	33.9 (1.02)	30.4 (0.63)	27.5 (0.87)
≥65	30.2 (0.76)	32.1 (1.97)	29.1 (1.50)	28.1 (0.84)	26.3 (1.90)

Body mass index is based on measured height and weight. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.15. Percent Distribution of Body Mass Index Among Adults Age ≥20 Years With Diabetes, by Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)			
	Body mass index (kg/m²)			
	<25	25–29.9	30–34.9	≥35
Overall	14.5 (0.93)	28.7 (1.37)	25.0 (1.02)	31.8 (1.36)
Age (years)				
20–44	14.3 (2.74)	21.5 (2.74)	21.2 (2.95)	43.0 (3.20)
45–64	11.2 (1.67)	24.7 (2.14)	26.8 (2.22)	37.3 (2.27)
≥65	18.1 (1.38)	35.8 (1.59)	24.5 (1.49)	21.6 (1.50)
Sex, age (years)				
Men	13.6 (1.36)	32.8 (1.83)	26.6 (1.66)	27.0 (1.79)
20–44	16.4 (4.28)	30.0 (3.95)	22.8 (5.90)	30.8 (4.12)
45–64	11.6 (2.53)	26.6 (3.11)	28.7 (2.86)	33.1 (3.13)
≥65	14.8 (1.50)	41.6 (2.16)	25.7 (1.97)	17.9 (1.85)
Women	15.4 (1.22)	24.8 (1.66)	23.4 (1.86)	36.4 (1.77)
20–44	12.1 (3.95)[1]	12.4 (2.67)	19.5 (3.90)	56.0 (5.41)
45–64	10.8 (2.20)	22.5 (2.28)	24.7 (2.94)	42.0 (3.33)
≥65	20.8 (2.25)	31.1 (2.80)	23.5 (2.25)	24.6 (2.07)
Race/ethnicity, sex, age (years)				
Non-Hispanic white	14.4 (1.41)	28.1 (1.70)	25.1 (1.38)	32.4 (1.63)
20–44	18.3 (4.78)	16.6 (3.88)	21.7 (5.82)	43.4 (4.92)
45–64	10.1 (2.64)	21.1 (3.33)	26.7 (3.20)	42.1 (3.15)
≥65	16.9 (1.69)	37.1 (1.92)	24.7 (1.65)	21.3 (1.85)

Appendix 9.15 continues on the next page.

APPENDIX 9.15. (continued)

CHARACTERISTICS	PERCENT (STANDARD ERROR)			
	Body mass index (kg/m²)			
	<25	25–29.9	30–34.9	≥35
Non-Hispanic white men	12.8 (1.88)	31.5 (2.28)	27.9 (2.58)	27.8 (2.20)
20–44	21.6 (7.65)[1]	27.4 (6.15)	27.0 (11.14)[2]	24.0 (6.21)
45–64	9.8 (3.77)[1]	22.0 (4.21)	30.0 (4.09)	38.2 (3.96)
≥65	13.1 (1.57)	42.5 (2.52)	26.0 (2.50)	18.4 (2.20)
Non-Hispanic white women	16.0 (1.99)	24.6 (2.38)	22.2 (2.49)	37.2 (2.32)
20–44	15.0 (6.09)[2]	[3]	16.4 (5.98)[1]	62.7 (7.27)
45–64	10.4 (3.80)[1]	20.0 (3.74)	22.5 (4.54)	47.1 (5.58)[2]
≥65	20.1 (2.91)	32.5 (3.64)	23.6 (2.64)	23.8 (2.56)
Non-Hispanic black	11.2 (1.57)	24.8 (1.91)	26.2 (2.07)	37.8 (2.65)
20–44	[3]	22.4 (6.27)	17.3 (4.83)	54.5 (5.96)
45–64	11.0 (2.16)	24.7 (2.43)	27.4 (2.64)	36.9 (3.78)
≥65	14.7 (2.15)	26.4 (2.58)	28.9 (3.45)	30.0 (2.86)
Non-Hispanic black men	14.2 (2.51)	31.6 (3.08)	23.3 (2.69)	30.9 (3.17)
20–44	[3]	26.8 (9.45)[1]	11.3 (4.92)[2]	50.7 (9.58)
45–64	15.0 (4.04)	30.4 (4.42)	25.3 (3.48)	29.3 (3.51)
≥65	14.9 (3.11)	37.3 (3.68)	28.5 (4.48)	19.3 (3.47)
Non-Hispanic black women	8.9 (1.76)	19.7 (2.76)	28.3 (3.10)	43.1 (3.23)
20–44	[3]	17.8 (7.73)[2]	23.7 (8.33)[1]	58.5 (10.14)
45–64	7.9 (2.21)	20.3 (4.14)	29.1 (3.54)	42.7 (5.02)
≥65	14.6 (3.14)	19.5 (3.65)	29.1 (5.37)	36.8 (3.93)
All Hispanic	11.4 (1.32)	34.0 (2.53)	27.8 (1.93)	26.8 (2.01)
20–44	7.3 (2.90)[1]	31.3 (4.18)	25.2 (3.75)	36.2 (4.62)
45–64	9.5 (1.70)	32.6 (3.64)	32.0 (2.70)	25.9 (3.03)
≥65	19.1 (2.90)	39.3 (3.79)	23.4 (2.29)	18.2 (2.86)
All Hispanic men	11.6 (1.94)	38.4 (3.23)	26.3 (2.76)	23.7 (2.86)
20–44	8.3 (3.54)[2]	38.2 (6.22)	20.2 (5.13)	33.3 (5.91)
45–64	12.0 (2.54)	37.5 (4.26)	29.7 (3.51)	20.8 (3.53)
≥65	16.0 (5.61)[1]	40.9 (5.05)	28.1 (3.65)	15.0 (5.43)[1]
All Hispanic women	11.1 (1.93)	29.3 (3.63)	29.5 (2.06)	30.1 (3.00)
20–44	[3]	21.4 (8.53)[1]	32.4 (6.74)	40.3 (7.49)
45–64	6.9 (2.40)[1]	27.3 (4.58)	34.4 (3.69)	31.4 (4.21)
≥65	21.3 (4.11)	38.2 (5.26)	20.0 (2.67)	20.5 (3.64)
Mexican American	11.1 (1.42)	31.5 (2.58)	29.9 (2.04)	27.5 (2.25)
20–44	6.4 (2.84)[2]	31.3 (4.81)	28.9 (4.65)	33.4 (4.98)
45–64	9.5 (2.02)	29.4 (3.22)	33.9 (2.67)	27.2 (3.07)
≥65	19.4 (3.09)	35.4 (4.58)	24.1 (2.74)	21.1 (3.98)
Mexican American men	11.1 (1.92)	37.6 (3.45)	25.9 (2.90)	25.4 (3.82)
20–44	10.0 (4.46)[2]	37.0 (7.10)	20.2 (5.83)	32.8 (6.57)
45–64	13.5 (3.06)	36.2 (3.56)	27.7 (3.27)	22.6 (4.21)
≥65	7.8 (2.65)[1]	42.3 (6.94)	32.4 (5.46)	17.5 (8.25)[2]
Mexican American women	11.1 (2.11)	25.0 (3.21)	34.2 (2.44)	29.7 (2.79)
20–44	[3]	21.2 (9.02)[2]	44.4 (11.04)	34.4 (7.27)
45–64	5.5 (2.39)[2]	22.7 (4.72)	40.0 (4.64)	31.8 (4.73)
≥65	26.8 (4.74)	30.9 (5.56)	18.8 (3.05)	23.5 (4.65)

Body mass index is based on measured height and weight. Diabetes is based on self-reported diagnosis and measured A1c ≥6.5%, fasting plasma glucose ≥126 mg/dL, or 2-hour plasma glucose ≥200 mg/dL. Conversions for glucose and A1c values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
[1] Relative standard error >30%–40%
[2] Relative standard error >40%–50%
[3] Estimate is too unreliable to present; ≤1 case or relative standard error >50%.
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.16. Mean Waist Circumference (cm) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	110.0 (0.53)	111.6 (1.07)	107.5 (0.71)	100.8 (0.38)	91.7 (0.46)
Age (years)					
20–44	110.5 (1.65)	113.0 (2.25)	108.9 (2.07)	100.7 (0.79)	90.5 (0.51)
45–64	111.7 (0.72)	113.6 (1.83)	109.9 (1.40)	101.5 (0.47)	94.2 (0.73)
≥65	107.8 (0.61)	108.4 (1.01)	104.6 (0.74)	99.6 (0.54)	94.4 (1.22)
Sex, age (years)					
Men	111.7 (0.86)	112.3 (1.44)	110.2 (1.10)	102.6 (0.59)	95.4 (0.59)
20–44	106.2 (2.25)	111.3 (3.22)	108.6 (2.79)	100.6 (0.94)	93.9 (0.67)
45–64	113.7 (1.06)	113.2 (2.45)	112.2 (2.12)	104.0 (0.68)	98.3 (0.85)
≥65	111.4 (0.89)	111.4 (1.43)	108.7 (1.17)	103.9 (0.85)	98.9 (1.99)
Women	108.5 (0.71)	110.5 (1.19)	104.5 (1.00)	98.7 (0.61)	89.2 (0.58)
20–44	114.3 (2.13)	115.9 (2.95)	109.4 (3.97)	100.8 (1.20)	87.9 (0.74)
45–64	109.8 (1.00)	114.5 (1.64)	106.9 (1.67)	98.6 (0.89)	91.4 (0.86)
≥65	104.7 (0.87)	104.8 (2.05)	101.0 (1.33)	96.0 (0.63)	91.7 (1.28)
Race/ethnicity, sex, age (years)					
Non-Hispanic white	112.2 (0.68)	112.8 (1.23)	107.8 (0.86)	101.7 (0.46)	91.7 (0.59)
20–44	111.2 (2.37)	112.1 (4.03)	108.4 (3.46)	102.4 (1.07)	90.2 (0.65)
45–64	115.9 (1.01)	115.9 (2.16)	111.1 (1.76)	102.1 (0.65)	94.1 (0.92)
≥65	109.2 (0.72)	109.7 (1.15)	105.0 (0.89)	100.0 (0.56)	94.4 (1.34)
Non-Hispanic white men	113.7 (1.13)	113.6 (1.69)	111.5 (1.25)	104.3 (0.67)	96.0 (0.73)
20–44	104.0 (3.08)	109.4 (5.58)	108.6 (4.48)	103.2 (1.31)	94.1 (0.86)
45–64	117.3 (1.51)	115.5 (2.94)	114.4 (2.54)	105.0 (0.78)	99.1 (0.88)
≥65	112.8 (1.12)	112.3 (1.66)	109.5 (1.29)	105.1 (0.76)	100.0 (2.21)
Non-Hispanic white women	110.8 (0.95)	111.4 (1.62)	103.8 (1.26)	98.4 (0.76)	88.8 (0.74)
20–44	117.7 (3.12)	116.2 (5.33)	108.2 (5.82)	101.0 (1.82)	87.4 (0.98)
45–64	114.2 (1.58)	117.1 (2.15)	106.3 (2.17)	98.5 (1.17)	90.8 (1.09)
≥65	105.7 (1.05)	106.4 (2.74)	101.1 (1.69)	95.8 (0.71)	91.5 (1.36)
Non-Hispanic black	110.3 (0.98)	109.6 (1.43)	109.8 (1.77)	101.2 (0.60)	93.5 (0.85)
20–44	116.7 (3.27)	114.4 (3.01)	114.2 (4.11)	101.6 (1.39)	92.1 (1.19)
45–64	110.4 (1.48)	109.5 (2.10)	109.0 (2.49)	101.5 (1.08)	98.3 (1.48)
≥65	107.0 (1.03)	105.6 (2.17)	108.1 (1.70)	98.4 (1.23)	95.2 (2.83)
Non-Hispanic black men	111.6 (1.13)	108.5 (2.17)	107.6 (2.20)	98.4 (1.18)	92.9 (1.19)
20–44	115.1 (3.73)	111.5 (5.42)	105.8 (5.92)	96.9 (2.28)	92.2 (1.56)
45–64	111.8 (1.54)	106.4 (3.26)	106.6 (3.05)	100.2 (1.04)	95.2 (2.23)
≥65	108.9 (1.33)	111.2 (2.28)	111.9 (1.81)	97.6 (1.87)	94.1 (4.51)
Non-Hispanic black women	109.4 (1.15)	110.6 (2.16)	111.7 (2.98)	103.9 (0.92)	93.9 (0.97)
20–44	118.5 (4.29)	117.9 (4.03)	123.8 (5.59)	107.0 (2.01)	92.1 (1.31)
45–64	109.4 (1.87)	113.2 (2.72)	111.1 (4.08)	102.6 (1.62)	100.3 (1.84)
≥65	105.8 (1.48)	101.6 (2.90)	105.7 (2.82)	98.9 (1.72)	96.5 (3.80)
All Hispanic	105.0 (0.83)	109.2 (1.50)	106.1 (1.04)	98.6 (0.57)	92.8 (0.52)
20–44	104.8 (1.96)	113.2 (3.15)	109.4 (2.28)	97.8 (0.76)	92.5 (0.64)
45–64	105.8 (0.94)	108.2 (1.80)	106.3 (1.50)	99.6 (0.88)	94.1 (1.04)
≥65	103.4 (1.10)	103.2 (1.63)	100.4 (1.89)	99.9 (1.20)	93.4 (2.83)
All Hispanic men	106.5 (0.99)	110.3 (2.09)	107.7 (1.60)	99.1 (0.75)	95.8 (0.79)
20–44	102.3 (2.38)	113.6 (3.92)	109.7 (2.77)	98.0 (1.04)	95.7 (0.95)
45–64	107.5 (1.22)	107.5 (2.10)	106.6 (1.87)	100.7 (0.69)	96.7 (1.07)
≥65	107.2 (1.54)	107.0 (2.15)	104.2 (2.25)	103.0 (2.00)	92.7 (3.99)

Appendix 9.16 continues on the next page.

APPENDIX 9.16. (continued)

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
All Hispanic women	103.7 (1.15)	107.4 (1.68)	103.9 (1.33)	97.9 (0.91)	90.2 (0.77)
20–44	106.5 (2.48)	112.1 (3.26)	108.8 (3.35)	97.7 (1.24)	89.8 (0.90)
45–64	104.1 (1.51)	109.4 (3.59)	105.9 (2.36)	98.5 (1.59)	92.2 (1.48)
≥65	100.8 (1.39)	100.7 (2.54)	98.0 (2.60)	97.0 (1.58)	94.2 (3.90)
Mexican American	105.5 (0.87)	109.7 (1.47)	106.3 (1.02)	98.6 (0.62)	92.9 (0.61)
20–44	106.2 (2.48)	113.4 (2.89)	108.7 (2.23)	98.0 (0.85)	92.6 (0.73)
45–64	105.9 (1.01)	108.2 (1.76)	106.6 (1.60)	99.7 (0.81)	94.1 (1.17)
≥65	104.1 (0.94)	105.3 (2.01)	101.5 (2.48)	100.9 (1.13)	93.4 (3.38)
Mexican American men	105.9 (1.16)	111.0 (2.19)	108.3 (1.67)	98.9 (0.95)	95.2 (1.12)
20–44	100.8 (2.83)	114.2 (3.19)	109.3 (2.60)	97.9 (1.22)	95.1 (1.30)
45–64	106.7 (1.25)	107.3 (2.78)	106.9 (2.54)	100.9 (0.93)	96.0 (1.12)
≥65	108.0 (1.45)	107.8 (1.98)	107.0 (2.14)	105.6 (2.17)	95.5 (3.30)
Mexican American women	105.2 (1.18)	107.7 (2.05)	103.8 (1.54)	98.2 (1.01)	90.7 (1.00)
20–44	111.6 (2.78)	110.6 (3.76)	106.9 (3.20)	98.2 (1.56)	90.4 (1.21)
45–64	105.1 (1.70)	109.2 (3.10)	106.3 (2.15)	98.4 (1.28)	92.4 (1.81)
≥65	101.7 (1.42)	103.5 (3.14)	98.2 (3.22)	97.4 (1.83)	90.8 (5.82)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4%
  or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and
  2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.17. Percent of Adults Age ≥20 Years With Obesity and Abdominal Obesity, by Diabetes Status and Age, U.S., 2005–2010

AGE (YEARS)	PERCENT (STANDARD ERROR)		
	Diabetes	Prediabetes	Normal
Overall			
General obesity* and abdominal obesity†	44.0 (1.27)	26.1 (0.94)	14.4 (0.81)
General obesity only	12.6 (0.69)	12.9 (0.81)	8.0 (0.66)
Abdominal obesity only	14.3 (0.97)	14.4 (0.78)	14.0 (0.88)
Neither	29.1 (1.38)	46.7 (1.21)	63.6 (1.61)
20–44			
General obesity and abdominal obesity	48.9 (3.97)	28.3 (1.75)	14.1 (1.09)
General obesity only	15.3 (2.57)	16.1 (1.73)	7.5 (0.87)
Abdominal obesity only	6.2 (1.18)	9.2 (1.15)	11.9 (1.14)
Neither	29.6 (3.35)	46.4 (2.28)	66.5 (1.94)
45–64			
General obesity and abdominal obesity	49.6 (2.17)	26.4 (1.55)	15.7 (1.66)
General obesity only	14.3 (1.45)	12.3 (1.13)	9.6 (1.28)
Abdominal obesity only	12.4 (1.53)	14.6 (1.33)	16.4 (1.70)
Neither	23.7 (2.50)	46.7 (1.72)	58.4 (2.22)
≥65			
General obesity and abdominal obesity	36.0 (1.40)	21.2 (1.55)	12.6 (2.46)
General obesity only	9.8 (0.86)	7.9 (1.19)	5.9 (1.60)
Abdominal obesity only	19.6 (1.68)	23.8 (1.98)	26.5 (3.36)
Neither	34.6 (1.62)	47.1 (2.00)	55.0 (4.66)

Diabetes status is based on self-reported diagnosis and measured A1c ≥6.5%, fasting plasma glucose ≥126 mg/dL, and 2-hour plasma glucose ≥200 mg/dL. Prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* General obesity is based on measured weight and height (body mass index ≥30 kg/m²).
† Abdominal obesity is based on measured waist circumference (≥102 cm for men and ≥88 cm for women).
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.18. Mean Systolic Blood Pressure (mmHg) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, Race/Ethnicity, and Antihypertensive Medication, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	129.3 (0.65)	129.2 (1.22)	129.8 (0.86)	122.1 (0.40)	114.8 (0.44)
Age (years)					
20–44	121.8 (1.45)	123.9 (1.69)	124.6 (1.46)	118.2 (0.50)	111.9 (0.39)
45–64	126.3 (0.86)	128.8 (1.98)	128.9 (1.34)	121.9 (0.55)	118.6 (0.75)
≥65	135.4 (1.06)	132.0 (2.03)	132.7 (1.40)	129.9 (1.00)	128.3 (1.45)
Sex					
Men	127.5 (0.90)	129.5 (1.35)	130.0 (1.21)	123.0 (0.55)	117.8 (0.48)
Women	131.0 (0.82)	128.8 (1.77)	129.6 (1.40)	120.9 (0.56)	112.6 (0.55)
Race/ethnicity					
Non-Hispanic white	129.1 (0.89)	128.3 (1.62)	129.3 (1.10)	122.3 (0.45)	114.8 (0.55)
Non-Hispanic black	131.8 (0.93)	133.1 (2.11)	132.1 (1.98)	125.9 (1.02)	119.3 (0.70)
All Hispanic	128.7 (1.42)	130.1 (1.73)	131.4 (1.48)	118.6 (0.48)	112.7 (0.70)
Mexican American	129.3 (1.67)	130.4 (1.81)	131.8 (1.55)	118.6 (0.49)	112.5 (0.67)
Antihypertensive medication					
Yes	132.8 (0.66)	129.9 (1.36)	131.5 (0.85)	128.0 (0.75)	127.8 (1.38)
No	124.0 (1.05)	128.6 (1.85)	128.2 (1.43)	120.0 (0.42)	113.5 (0.41)

Blood pressure was measured using a sphygmomanometer. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.19. Mean Diastolic Blood Pressure (mmHg) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, Race/Ethnicity, and Antihypertensive Medication, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	68.2 (0.55)	70.7 (0.62)	69.4 (0.66)	70.0 (0.30)	67.7 (0.48)
Age (years)					
20–44	75.3 (1.01)	76.0 (1.21)	74.6 (1.25)	70.2 (0.48)	66.6 (0.46)
45–64	71.0 (0.65)	73.5 (1.04)	73.6 (0.93)	72.6 (0.35)	71.2 (0.66)
≥65	62.6 (0.65)	65.1 (1.01)	63.2 (0.92)	63.7 (0.61)	63.9 (1.22)
Sex					
Men	70.0 (0.66)	72.6 (0.82)	72.1 (0.84)	71.4 (0.35)	68.8 (0.46)
Women	66.7 (0.69)	67.8 (1.04)	66.4 (0.92)	68.2 (0.39)	66.9 (0.56)
Race/ethnicity					
Non-Hispanic white	67.0 (0.70)	69.9 (0.76)	68.8 (0.85)	69.8 (0.35)	67.8 (0.57)
Non-Hispanic black	70.6 (0.79)	74.4 (1.34)	73.1 (1.08)	71.9 (0.53)	68.9 (0.78)
All Hispanic	70.2 (0.63)	72.5 (1.13)	70.4 (1.02)	69.2 (0.59)	65.8 (0.71)
Mexican American	69.2 (0.87)	72.5 (1.22)	70.0 (1.25)	69.2 (0.65)	66.6 (0.74)
Antihypertensive medication					
Yes	67.9 (0.64)	67.4 (0.86)	66.7 (1.03)	69.8 (0.44)	70.5 (1.25)
No	68.9 (0.71)	73.7 (0.83)	71.7 (0.83)	70.0 (0.36)	67.5 (0.47)

Blood pressure was measured using a sphygmomanometer. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.20. Percent of Adults Age ≥20 Years With Hypertension, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	69.6 (1.66)	61.7 (2.66)	61.8 (2.48)	33.8 (1.30)	13.2 (0.95)
Age (years)					
20–44	43.1 (4.23)	32.3 (6.01)	34.7 (5.39)	13.5 (1.55)	5.7 (0.72)
45–64	68.1 (2.45)	57.0 (4.41)	54.4 (3.98)	38.5 (2.15)	21.2 (2.01)
≥65	80.8 (1.90)	80.2 (3.37)	79.6 (2.39)	62.7 (2.42)	55.0 (4.63)
Sex					
Men	66.1 (2.77)	55.7 (3.67)	57.5 (2.91)	31.5 (1.72)	13.6 (1.56)
Women	72.9 (1.80)	71.1 (3.34)	66.5 (3.05)	36.7 (1.40)	12.9 (0.93)
Race/ethnicity					
Non-Hispanic white	70.2 (2.24)	65.0 (3.21)	64.8 (2.89)	36.1 (1.71)	13.8 (1.23)
Non-Hispanic black	81.5 (1.81)	63.5 (5.63)	60.8 (6.26)	42.5 (2.07)	16.1 (1.70)
All Hispanic	57.3 (3.38)	46.7 (5.48)	50.1 (4.21)	17.4 (1.42)	6.9 (1.09)
Mexican American	58.5 (4.16)	48.6 (6.00)	49.6 (4.36)	14.4 (1.60)	5.0 (1.26)

Hypertension is defined as systolic blood pressure ≥140 mmHg, diastolic blood pressure ≥90 mmHg, or use of antihypertensive medication. Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.21. Mean Total Cholesterol (mg/dL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	185.4 (1.58)	199.3 (2.04)	201.6 (1.79)	200.9 (0.99)	193.0 (1.17)
Age (years)					
20–44	194.8 (4.47)	206.9 (4.19)	204.2 (3.81)	193.1 (1.65)	184.7 (1.33)
45–64	191.9 (2.41)	204.6 (4.14)	208.2 (3.31)	208.6 (1.28)	210.2 (2.22)
≥65	174.3 (1.95)	189.7 (2.80)	194.7 (2.85)	199.4 (2.24)	205.9 (3.26)
Sex					
Men	177.7 (1.94)	194.7 (2.47)	195.8 (2.27)	196.3 (1.08)	193.4 (1.65)
Women	192.6 (2.24)	206.4 (3.95)	207.9 (2.91)	206.6 (1.58)	192.7 (1.41)
Race/ethnicity					
Non-Hispanic white	181.0 (2.04)	195.2 (2.77)	200.5 (2.42)	202.0 (1.32)	194.4 (1.49)
Non-Hispanic black	189.3 (2.15)	205.7 (3.50)	203.5 (3.56)	195.3 (1.86)	187.5 (2.04)
All Hispanic	196.1 (2.92)	209.4 (4.40)	205.0 (3.74)	201.0 (1.33)	191.4 (2.21)
Mexican American	196.2 (2.88)	207.8 (5.50)	205.5 (5.04)	201.0 (1.56)	189.5 (2.14)
Lipid-lowering medication					
Yes	180.3 (2.30)	184.3 (3.78)	186.9 (3.60)	192.7 (2.48)	201.1 (5.95)
No	190.4 (2.30)	207.0 (2.99)	209.2 (1.99)	202.7 (1.21)	192.9 (1.15)

Conversions for A1c, cholesterol, and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.22. Percent of Adults Age ≥20 Years With Total Cholesterol ≥200 mg/dL, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	32.8 (1.52)	43.3 (2.85)	46.8 (2.75)	48.0 (1.32)	38.1 (1.32)
Age (years)					
20–44	37.9 (3.89)	55.5 (6.65)	49.3 (6.34)	37.4 (2.07)	29.0 (1.46)
45–64	39.3 (2.32)	46.4 (4.26)	53.6 (4.34)	57.7 (1.85)	56.7 (2.49)
≥65	23.3 (1.84)	34.3 (3.83)	39.8 (3.66)	47.1 (2.98)	52.2 (3.69)
Sex					
Men	27.5 (2.08)	38.5 (2.97)	40.9 (3.28)	43.3 (1.45)	38.7 (1.93)
Women	37.7 (2.01)	50.9 (4.52)	53.3 (3.78)	53.7 (2.07)	37.6 (1.65)
Race/ethnicity					
Non-Hispanic white	28.9 (2.07)	37.7 (3.83)	45.1 (3.54)	48.8 (1.80)	38.8 (1.65)
Non-Hispanic black	39.1 (2.39)	53.8 (3.76)	51.1 (4.27)	44.0 (2.55)	36.2 (2.64)
All Hispanic	41.6 (2.81)	56.9 (4.81)	51.4 (4.33)	51.1 (2.18)	38.9 (1.97)
Mexican American	41.8 (2.68)	56.8 (5.58)	53.4 (5.28)	52.5 (2.35)	37.6 (2.14)
Lipid-lowering medication					
Yes	29.4 (2.41)	24.8 (3.65)	29.0 (4.47)	33.4 (2.31)	39.0 (4.64)
No	36.0 (2.24)	51.9 (3.60)	55.6 (3.07)	51.1 (1.45)	38.6 (1.36)

Conversions for A1c, cholesterol, and glucose values are provided in *Diabetes in America Appendix 1 Conversions.* A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.23. Mean HDL Cholesterol (mg/dL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	48.6 (0.53)	47.1 (0.78)	50.8 (0.70)	52.6 (0.36)	57.1 (0.42)
Age (years)					
20–44	48.2 (1.26)	43.5 (1.88)	46.1 (1.89)	48.4 (0.68)	55.5 (0.53)
45–64	47.3 (0.65)	45.1 (1.18)	48.9 (1.57)	53.8 (0.49)	59.1 (0.80)
≥65	50.2 (0.76)	51.0 (1.18)	54.4 (0.99)	58.0 (0.72)	64.3 (1.44)
Sex					
Men	45.1 (0.50)	43.9 (0.94)	45.8 (0.79)	48.2 (0.49)	50.4 (0.51)
Women	51.9 (0.82)	52.2 (1.41)	56.2 (1.43)	58.0 (0.56)	61.7 (0.56)
Race/ethnicity					
Non-Hispanic white	47.7 (0.72)	47.3 (1.03)	51.4 (0.92)	52.7 (0.46)	57.5 (0.47)
Non-Hispanic black	52.5 (0.87)	51.2 (1.70)	53.4 (2.85)	56.6 (0.74)	58.7 (1.00)
All Hispanic	48.1 (0.74)	44.3 (1.14)	46.9 (1.54)	49.8 (0.52)	53.7 (0.70)
Mexican American	48.1 (0.92)	43.0 (1.40)	46.5 (2.07)	49.6 (0.69)	54.4 (0.91)
Lipid-lowering medication					
Yes	47.3 (0.67)	47.3 (1.30)	50.7 (1.31)	52.8 (0.58)	54.9 (1.62)
No	49.6 (0.62)	46.6 (0.94)	50.8 (0.99)	52.6 (0.43)	57.3 (0.42)

Conversions for A1c, cholesterol, and glucose values are provided in *Diabetes in America Appendix 1 Conversions.* A1c, glycosylated hemoglobin; HDL, high-density lipoprotein.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.24. Percent With HDL Cholesterol <40 mg/dL for Men and <50 mg/dL for Women, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	43.0 (1.85)	42.0 (2.73)	36.1 (2.09)	29.6 (0.93)	21.9 (1.20)
Age (years)					
20–44	47.3 (4.28)	54.2 (6.94)	52.3 (4.42)	39.5 (1.79)	24.3 (1.59)
45–64	45.1 (2.13)	46.4 (4.74)	37.9 (4.18)	25.5 (1.44)	19.2 (1.89)
≥65	39.0 (2.65)	31.3 (3.31)	28.0 (2.68)	19.1 (1.61)	8.6 (1.73)
Sex					
Men	35.9 (2.33)	37.8 (3.65)	31.0 (2.90)	27.5 (1.54)	21.4 (1.53)
Women	49.6 (2.64)	48.4 (4.17)	41.6 (3.20)	32.1 (1.46)	22.2 (1.58)
Race/ethnicity					
Non-Hispanic white	46.2 (2.69)	40.4 (3.78)	34.2 (2.79)	29.3 (1.20)	21.4 (1.43)
Non-Hispanic black	31.0 (2.70)	36.2 (4.75)	32.3 (5.13)	22.2 (2.40)	19.6 (2.56)
All Hispanic	43.6 (2.09)	49.5 (4.22)	46.9 (3.34)	35.0 (1.63)	26.1 (2.83)
Mexican American	43.1 (2.48)	52.9 (5.05)	50.7 (3.77)	34.4 (1.97)	26.9 (3.69)
Lipid-lowering medication					
Yes	48.7 (2.62)	30.9 (5.63)	28.7 (5.11)	23.3 (1.82)	20.4 (4.61)
No	38.2 (2.09)	48.6 (2.81)	40.1 (2.04)	30.6 (1.12)	21.6 (1.29)

Conversions for A1c, cholesterol, and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin; HDL, high-density lipoprotein.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.25. Mean LDL Cholesterol (mg/dL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	101.0 (1.31)	115.3 (2.19)	116.9 (1.82)	121.0 (0.84)	113.5 (0.95)
Age (years)					
20–44	106.7 (4.79)	124.4 (4.55)	121.9 (3.32)	117.0 (1.38)	107.8 (1.22)
45–64	104.6 (2.42)	121.0 (4.61)	123.6 (3.19)	126.9 (1.04)	125.0 (1.74)
≥65	95.1 (1.99)	106.7 (2.74)	109.9 (2.56)	115.6 (1.95)	118.6 (2.99)
Sex					
Men	97.3 (2.18)	112.3 (2.68)	114.2 (2.17)	119.9 (0.90)	116.8 (1.35)
Women	104.3 (1.75)	119.9 (3.64)	119.8 (2.86)	122.3 (1.40)	111.1 (1.12)
Race/ethnicity					
Non-Hispanic white	97.2 (1.79)	110.6 (2.92)	115.0 (2.42)	121.4 (1.11)	114.0 (1.19)
Non-Hispanic black	109.1 (2.37)	127.9 (5.13)	125.0 (5.12)	117.3 (1.95)	110.7 (1.84)
All Hispanic	109.1 (3.31)	119.5 (5.12)	116.1 (3.41)	122.8 (1.15)	115.1 (1.96)
Mexican American	108.2 (3.12)	112.6 (5.47)	112.5 (4.18)	122.4 (1.37)	113.3 (1.93)
Lipid-lowering medication					
Yes	96.7 (2.31)	103.6 (4.51)	104.1 (3.72)	109.4 (2.15)	112.7 (4.84)
No	104.6 (2.27)	121.9 (2.84)	123.7 (1.94)	123.4 (0.96)	113.8 (0.98)

LDL cholesterol was calculated among participants who fasted, using the Friedewald equation. Conversions for A1c, cholesterol, and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin; LDL, low-density lipoprotein.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.26. Percent of Adults Age ≥20 Years With LDL Cholesterol ≥100 mg/dL, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	44.7 (2.10)	63.7 (3.11)	65.4 (2.80)	73.4 (1.12)	61.8 (1.41)
Age (years)					
20–44	52.9 (6.95)	82.2 (5.52)	75.7 (5.26)	69.6 (1.62)	53.8 (1.83)
45–64	47.8 (3.60)	68.2 (5.18)	72.9 (4.30)	80.6 (1.47)	78.2 (2.16)
≥65	38.4 (2.81)	52.5 (4.60)	55.8 (3.95)	65.0 (2.34)	68.7 (3.73)
Sex					
Men	38.1 (2.79)	59.2 (3.51)	61.5 (3.03)	72.3 (1.44)	67.1 (2.14)
Women	50.5 (2.67)	70.4 (4.55)	69.5 (3.85)	74.7 (1.58)	58.0 (1.81)
Race/ethnicity					
Non-Hispanic white	38.1 (3.03)	59.6 (4.18)	64.2 (3.82)	73.8 (1.49)	61.9 (1.71)
Non-Hispanic black	57.6 (3.90)	75.9 (4.43)	73.7 (4.55)	69.2 (2.10)	57.3 (2.63)
All Hispanic	60.0 (3.77)	65.3 (5.66)	60.9 (3.63)	76.0 (1.51)	65.6 (2.22)
Mexican American	58.9 (3.37)	58.6 (5.81)	57.3 (4.43)	75.9 (1.47)	64.0 (2.45)
Lipid-lowering medication					
Yes	37.4 (3.15)	47.1 (7.57)	47.2 (6.11)	56.2 (2.60)	58.4 (6.36)
No	51.4 (3.18)	72.5 (3.81)	74.3 (2.59)	77.0 (1.22)	62.4 (1.44)

LDL cholesterol was calculated among participants who fasted, using the Friedewald equation. Conversions for A1c, cholesterol, and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin; LDL, low-density lipoprotein.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.27. Mean Triglycerides (mg/dL) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	174.4 (9.38)	182.7 (8.23)	169.9 (5.97)	140.0 (2.15)	115.6 (2.00)
Age (years)					
20–44	166.1 (15.18)	239.1 (26.08)	204.2 (17.03)	142.3 (4.21)	110.5 (2.47)
45–64	194.3 (17.38)	185.3 (15.02)	176.5 (12.18)	141.7 (3.57)	127.3 (5.49)
≥65	153.5 (7.79)	157.2 (8.15)†	151.4 (5.95)	131.8 (2.61)	114.5 (3.59)
Sex					
Men	166.3 (9.65)	190.5 (10.93)	177.8 (8.85)	145.8 (3.45)	135.7 (3.67)
Women	181.6 (15.36)	170.1 (12.59)	161.2 (8.56)	132.7 (2.28)	100.9 (2.33)
Race/ethnicity					
Non-Hispanic white	178.4 (14.18)	173.0 (9.48)	162.6 (6.98)	144.4 (2.46)	117.3 (2.75)
Non-Hispanic black	130.1 (9.30)	136.8 (8.91)	133.7 (8.22)	104.4 (3.36)	93.5 (5.87)
All Hispanic	197.2 (12.06)	278.1 (31.81)	244.0 (23.17)	149.5 (5.40)	116.6 (3.14)
Mexican American	182.3 (10.89)	286.7 (37.42)	249.6 (26.95)	148.8 (5.25)	113.9 (3.80)
Lipid-lowering medication					
Yes	198.9 (16.50)	174.4 (14.83)	167.4 (10.91)	156.2 (5.34)	152.4 (14.68)
No	150.9 (7.72)	187.8 (10.32)	171.1 (6.65)	137.1 (2.55)	113.4 (1.89)

Conversions for A1c, glucose, and triglyceride values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.28. Percent of Adults Age ≥20 Years With Triglycerides ≥150 mg/dL, by Diabetes Status, Age, Sex, Race/Ethnicity, and Lipid-Lowering Medication, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	43.8 (2.35)	46.4 (3.07)	44.1 (2.70)	31.7 (1.01)	19.8 (0.93)
Age (years)					
20–44	45.9 (7.09)	57.0 (7.93)	54.0 (6.63)	31.7 (1.87)	17.5 (1.34)
45–64	47.2 (3.09)	46.2 (5.00)	44.3 (5.27)	32.4 (1.72)	23.8 (2.24)
≥65	39.1 (3.78)	42.2 (4.97)	40.1 (3.73)	30.4 (1.99)	24.1 (3.40)
Sex					
Men	40.2 (2.90)	46.8 (3.65)	43.6 (3.02)	32.9 (1.39)	27.9 (1.71)
Women	47.0 (3.15)	45.8 (5.07)	44.7 (4.38)	30.3 (1.45)	13.8 (1.10)
Race/ethnicity					
Non-Hispanic white	46.0 (3.49)	43.7 (3.65)	43.0 (3.20)	33.4 (1.20)	20.6 (1.23)
Non-Hispanic black	24.3 (3.63)	33.2 (6.47)	30.7 (6.03)	15.9 (2.12)	9.5 (1.40)
All Hispanic	53.5 (3.68)	65.6 (4.44)	57.4 (3.44)	35.6 (1.70)	22.5 (2.06)
Mexican American	50.7 (5.36)	65.9 (5.81)	58.4 (3.85)	36.9 (2.53)	20.2 (2.41)
Lipid-lowering medication					
Yes	47.5 (2.70)	45.1 (4.73)	43.3 (4.37)	39.0 (2.43)	33.3 (4.21)
No	39.5 (3.43)	46.6 (3.92)	44.1 (3.15)	30.3 (1.15)	19.0 (1.03)

Conversions for A1c, glucose, and triglyceride values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.29. Percent of Adults Age ≥20 Years With C-Reactive Protein ≥10 mg/L, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	16.2 (1.14)	20.8 (2.39)	19.7 (2.09)	11.3 (0.50)	6.4 (0.62)
Age (years)					
20–44	24.7 (3.84)	25.6 (4.81)	30.1 (4.60)	12.8 (0.87)	6.5 (0.72)
45–64	16.9 (1.51)	20.8 (3.54)	18.0 (3.27)	10.3 (1.11)	6.6 (0.95)
≥65	12.3 (1.21)	18.7 (4.27)	17.1 (2.92)	10.9 (1.62)	4.7 (1.58)[1]
Sex					
Men	12.1 (1.36)	12.9 (2.28)	12.2 (1.99)	7.1 (0.71)	4.5 (0.88)
Women	20.0 (1.60)	33.1 (4.97)	27.8 (3.79)	16.6 (1.25)	7.8 (0.85)
Race/ethnicity					
Non-Hispanic white	16.8 (1.61)	20.1 (3.17)	19.4 (2.67)	11.1 (0.76)	6.3 (0.90)
Non-Hispanic black	18.6 (2.16)	28.9 (4.02)	26.4 (3.50)	14.8 (1.74)	9.8 (1.57)
All Hispanic	14.2 (1.54)	19.6 (3.78)	18.0 (3.16)	12.0 (1.03)	5.7 (0.95)
Mexican American	16.1 (2.01)	16.3 (3.43)	16.1 (3.25)	14.1 (1.36)	6.3 (1.30)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
[1] Relative standard error >30%–40%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.30. Percent of Adults Age ≥20 Years With C-Reactive Protein ≥2 mg/L, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	PERCENT (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	58.6 (1.74)	66.9 (3.01)	65.1 (2.61)	49.7 (1.32)	36.2 (1.10)
Age (years)					
20–44	63.0 (4.47)	73.7 (7.15)	68.1 (6.62)	50.4 (2.41)	33.9 (1.30)
45–64	62.8 (2.35)	67.0 (5.16)	66.8 (4.66)	48.6 (1.72)	40.7 (2.53)
≥65	52.1 (2.52)	63.9 (3.48)	62.3 (3.55)	50.6 (2.36)	40.9 (3.86)
Sex					
Men	49.6 (2.13)	58.6 (4.32)	55.8 (3.91)	42.4 (1.60)	31.2 (1.66)
Women	66.9 (2.34)	79.8 (3.18)	75.1 (2.90)	58.6 (1.95)	39.7 (1.60)
Race/ethnicity					
Non-Hispanic white	58.3 (2.24)	65.5 (4.04)	64.8 (3.34)	49.6 (1.73)	35.0 (1.43)
Non-Hispanic black	67.8 (2.22)	69.7 (4.76)	68.5 (4.19)	53.5 (2.47)	47.4 (2.58)
All Hispanic	59.0 (3.39)	70.5 (4.39)	66.3 (3.85)	50.4 (1.97)	40.3 (2.35)
Mexican American	55.9 (4.10)	74.7 (4.09)	69.5 (4.09)	51.4 (2.04)	38.1 (2.40)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.31. Mean C-Reactive Protein (mg/L) Among Adults Age ≥20 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

CHARACTERISTICS	MEAN (STANDARD ERROR)				
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	5.5 (0.26)	7.7 (0.81)	7.2 (0.65)	4.4 (0.15)	3.0 (0.16)
Age (years)					
20–44	7.2 (0.84)	10.7 (3.35)[1]	9.9 (2.09)	4.5 (0.22)	2.9 (0.15)
45–64	5.9 (0.34)	7.5 (0.99)	6.7 (0.83)	4.1 (0.26)	3.5 (0.50)
≥65	4.4 (0.25)	6.6 (0.82)	6.6 (0.74)	4.7 (0.46)	3.2 (0.37)
Sex					
Men	4.4 (0.28)	6.2 (0.82)	6.2 (0.76)	3.6 (0.24)	2.7 (0.29)
Women	6.4 (0.31)	10.1 (1.68)	8.3 (1.07)	5.2 (0.22)	3.3 (0.15)
Race/ethnicity					
Non-Hispanic white	5.4 (0.37)	7.8 (1.13)	7.3 (0.85)	4.4 (0.20)	3.0 (0.22)
Non-Hispanic black	6.7 (0.43)	9.2 (0.98)	8.3 (0.78)	5.1 (0.38)	3.9 (0.30)
All Hispanic	5.3 (0.37)	6.5 (0.71)	6.0 (0.60)	4.3 (0.27)	3.0 (0.23)
Mexican American	5.6 (0.48)	6.3 (0.69)	6.1 (0.66)	4.4 (0.27)	3.0 (0.30)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
[1] Relative standard error >30%–40%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.32. Mean Fibrinogen (g/L) Among Adults Age ≥40 Years, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 1999–2002

CHARACTERISTICS	MEAN (STANDARD ERROR)			
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Prediabetes†	Normal glucose†
Overall	4.0 (0.05)	3.8 (0.06)	3.8 (0.04)	3.5 (0.04)
Age (years)				
40–44	3.6 (0.15)	3.8 (0.45)	3.6 (0.14)	3.3 (0.06)
45–64	3.9 (0.06)	3.8 (0.11)	3.7 (0.04)	3.5 (0.05)
≥65	4.3 (0.06)	3.9 (0.07)	4.0 (0.04)	3.9 (0.08)
Sex				
Men	3.9 (0.08)	3.7 (0.09)	3.7 (0.04)	3.4 (0.05)
Women	4.2 (0.07)	4.1 (0.10)	4.0 (0.06)	3.6 (0.04)
Race/ethnicity				
Non-Hispanic white	4.0 (0.07)	3.8 (0.07)	3.8 (0.04)	3.5 (0.04)
Non-Hispanic black	4.3 (0.08)	4.4 (0.23)	4.0 (0.08)	3.7 (0.05)
All Hispanic	3.9 (0.07)	3.8 (0.12)	3.9 (0.10)	3.6 (0.09)
Mexican American	4.0 (0.07)	3.6 (0.12)	3.7 (0.04)	3.6 (0.07)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL (2-hour plasma glucose was not available in 1999–2002).
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 1999–2002

APPENDIX 9.33. Percent of Adults Age ≥40 Years With Fibrinogen ≥4 g/L, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 1999–2002

CHARACTERISTICS	PERCENT (STANDARD ERROR)			
	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Prediabetes†	Normal glucose†
Overall	43.1 (2.15)	41.2 (3.98)	34.2 (2.50)	23.8 (1.93)
Age (years)				
40–44	26.1 (7.07)	38.2 (15.44)[1]	22.6 (5.94)	17.6 (3.07)
45–64	37.3 (2.95)	38.2 (6.47)	30.8 (3.44)	22.4 (2.61)
≥65	53.7 (3.26)	45.8 (5.52)	44.5 (2.84)	36.2 (4.01)
Sex				
Men	35.4 (3.71)	34.3 (4.91)	24.9 (2.57)	20.5 (2.21)
Women	51.3 (3.82)	51.4 (5.23)	45.2 (3.47)	25.9 (2.20)
Race/ethnicity				
Non-Hispanic white	42.5 (3.22)	40.4 (4.95)	33.2 (2.88)	21.9 (1.96)
Non-Hispanic black	58.7 (4.12)	52.6 (6.23)	45.6 (4.42)	33.9 (2.56)
All Hispanic	38.8 (3.08)	34.9 (7.41)	34.4 (4.25)	30.4 (4.45)
Mexican American	47.2 (3.69)	26.7 (5.87)	30.7 (3.52)	26.1 (3.91)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL (2-hour plasma glucose was not available in 1999–2002).
[1] Relative standard error >40%–50%
SOURCE: National Health and Nutrition Examination Surveys 1999–2002

APPENDIX 9.34. Age-Standardized Mean Number of Live Births Among Women Age ≥20 Years, by Diabetes Status, Age, and Race/Ethnicity, U.S., 2005–2010

	MEAN (STANDARD ERROR)	
CHARACTERISTICS	Diabetes*	No diabetes*
Overall	2.3 (0.10)	2.0 (0.04)
Age (years)		
20–44	1.7 (0.19)	1.4 (0.03)
45–64	2.4 (0.09)	2.1 (0.05)
≥65	3.7 (0.12)	3.0 (0.09)
Race/ethnicity		
Non-Hispanic white	2.0 (0.16)	1.8 (0.06)
Non-Hispanic black	2.6 (0.14)	2.1 (0.10)
All Hispanic	3.3 (0.15)	2.8 (0.10)
Mexican American	3.8 (0.19)	2.9 (0.10)

Data are standardized to the National Health Interview Survey 2010 population of women, using age categories 20–44, 45–64, and ≥65 years.
* Diabetes status is based on self-report and includes treated and untreated diabetes.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010

APPENDIX 9.35. Percent of Adults Age ≥20 Years With Fair or Poor Self-Reported General Health, by Diabetes Status, Age, Sex, and Race/Ethnicity, U.S., 2005–2010

	PERCENT (STANDARD ERROR)				
CHARACTERISTICS	Diagnosed diabetes*	Undiagnosed diabetes (definition 1)†	Undiagnosed diabetes (definition 2)‡	Prediabetes‡	Normal glucose‡
Overall	47.5 (1.69)	29.9 (2.30)	26.0 (1.54)	17.2 (0.81)	11.0 (0.77)
Age (years)					
20–44	40.7 (4.31)	32.7 (6.03)	32.0 (4.26)	15.1 (1.20)	9.5 (1.00)
45–64	53.3 (2.62)	29.3 (3.77)	23.9 (2.83)	17.7 (1.29)	13.1 (1.68)
≥65	43.2 (1.96)	29.4 (3.50)	25.4 (2.71)	20.0 (1.94)	18.2 (3.20)
Sex					
Men	41.2 (2.03)	28.1 (3.01)	27.8 (2.68)	14.8 (0.98)	12.0 (1.25)
Women	53.2 (1.91)	32.7 (4.12)	24.1 (2.77)	20.1 (1.36)	10.4 (0.98)
Race/ethnicity					
Non-Hispanic white	41.0 (2.49)	24.9 (2.99)	20.5 (1.90)	13.6 (1.04)	9.5 (0.96)
Non-Hispanic black	55.2 (2.87)	40.0 (5.87)	41.6 (6.17)	25.6 (1.79)	13.5 (1.74)
All Hispanic	61.5 (3.20)	43.3 (4.45)	42.4 (3.67)	27.5 (1.54)	20.4 (1.86)
Mexican American	67.5 (3.63)	46.7 (5.87)	44.3 (4.95)	29.4 (2.13)	21.4 (2.15)

Conversions for A1c and glucose values are provided in *Diabetes in America Appendix 1 Conversions*. A1c, glycosylated hemoglobin.
* Diagnosed diabetes is based on self-report and includes treated and untreated diabetes.
† Undiagnosed diabetes definition 1 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL.
‡ Undiagnosed diabetes definition 2 is based on A1c ≥6.5% or fasting plasma glucose ≥126 mg/dL or 2-hour plasma glucose ≥200 mg/dL; prediabetes is based on A1c 5.7%–6.4% or fasting plasma glucose 100–125 mg/dL or 2-hour plasma glucose 140–199 mg/dL; and normal glucose is based on A1c <5.7% and fasting plasma glucose <100 mg/dL and 2-hour plasma glucose <140 mg/dL.
All relative standard errors ≤30%
SOURCE: National Health and Nutrition Examination Surveys 2005–2010