Existing and Newly Diagnosed Diabetes among Connecticut Adults

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Abstract

The report — *Existing and Newly Diagnosed Diabetes among Connecticut Adults* — provides estimates of the percent of Connecticut adults with diagnosed diabetes and the age of diabetes diagnosis. The report contains diabetes prevalence estimates for the overall adult population and by social, individual, and demographic factors. Also, the report presents diabetes prevalence and age of diagnosis statistics over time. The purpose of relaying this information is to inform the planning and implementation of diabetes prevention and management activities in Connecticut. This statistical information will be used by the Connecticut Department of Public Health and its partners to implement evidence-based policies and programs that prevent or control type 2 diabetes and its risk factors. The Connecticut Department of Public Health makes this report available to the public to provide the latest data on health trends in the state.

The data source is the Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a survey of adults; therefore, all data in this report are specific to Connecticut residents ages 18 years and older. The survey does not ask respondents to distinguish between type 1 and type 2 diabetes, so all estimates in the report include both types. Prediabetes and gestational diabetes are excluded.

BRFSS data estimate that 10.7% of, or 309,000, Connecticut adults have diagnosed diabetes (includes types 1 and 2). Disparities among population subgroups exist. The prevalence and adjusted odds ratio of diagnosed diabetes increases with decreasing educational attainment. Black and Hispanic Connecticut adults have a higher prevalence and adjusted odds ratio of diagnosed diabetes compared with White adults. Older age, obesity, cardiovascular disease, and physical inactivity are associated with increased risk for diagnosed diabetes. There has been little to no decrease in these disparities over time.

Approximately 7% of Connecticut adults with diabetes are newly diagnosed, or diagnosed within the past year. About 75% of these new diagnoses occur between the ages of 30 and 64 years.

These results highlight the need to concentrate type 2 diabetes prevention and diabetes management efforts in communities with populations at highest risk and to address social and individual factors. Furthermore, promoting the diagnosis of diabetes at younger ages should be emphasized. Early diabetes diagnoses allow for timely treatment thereby minimizing the risk of severe complications.

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Introduction

The report — *Existing and Newly Diagnosed Diabetes among Connecticut Adults* — provides estimates of the percent of Connecticut adults with diagnosed diabetes and the age of diabetes diagnosis. The report contains diabetes prevalence estimates for the overall adult population and by social, individual, and demographic factors. Also, the report presents diabetes prevalence and age of diagnosis statistics over time. The purpose of relaying this information is to inform the planning and implementation of diabetes prevention and management activities in Connecticut. This statistical information will be used by the Connecticut Department of Public Health and its partners to implement evidence-based policies and programs that prevent or control type 2 diabetes and its risk factors. The Connecticut Department of Public Health makes this report available to the public to provide the latest data on health trends in the state.

This report is organized into two parts. The first part is a narrative that describes the findings and includes figures. The second part of the report contains a glossary of key terms, a description of the methodologies used, and detailed data tables.

Notes to Readers

The data source is the Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a survey of adults; therefore, all data in this report are specific to Connecticut residents ages 18 years and older. The survey does not ask respondents to distinguish between type 1 and type 2 diabetes, so all estimates in the report include both types. Prediabetes and gestational diabetes are excluded.

BRFSS data are self-reported and consequently have limitations that are important to consider. Self-reported data rely on the respondents' memory of past events and understanding of the question. Also, self-reported data are subject to any bias of the respondent and the willingness to answer honestly.[1] Specifically related to diabetes, over 3% of United States adults are undiagnosed or unaware that they have diabetes; therefore, the diabetes prevalence provided is this report is likely an underestimate of the true prevalence.[2]

Another limitation of BRFSS is that the data are cross-sectional. This means that the data are collected from individuals at a single point in time. BRFSS data cannot be used to establish causation because the individuals were not followed over time. The data may be used to establish associations between diagnosed diabetes and risk factors.

Throughout this report, all racial groupings (for example, Black or African American, White) exclude persons of Hispanic ethnicity. A Hispanic or Latino/a ethnicity category is included in figures and tables reflecting data separate from race categories. Therefore, the modifier "Non-Hispanic or Latino/a" is assumed. Asian, Pacific Islander, American Indian or Alaskan Native, other race, and multiracial adults are reported as "Non-Hispanic Other Race or Multiracial" due to small numbers and estimates of limited validity.

In this report, the term "limited validity" is used to describe estimates based on very small numbers. This does not mean the responses to survey questions or health events themselves are not valid; it simply reflects a high degree of statistical uncertainty about an estimate.

Prevalence

An estimated 10.7% of Connecticut adults have diagnosed diabetes (includes type 1 and 2 diabetes) [2022 data]. That is equivalent to approximately 309,000 Connecticut adults having diagnosed diabetes. The 2022 prevalence estimate is a 28.9% relative increase from 2013. In contrast to this overall increase, the prevalence of diagnosed diabetes has little year-to-year variation. (Figure 1, Tables 1 and 2)

Figure 1. Diabetes prevalence among Connecticut adults (age 18+ years) from 2013 to 2022, Behavioral Risk Factor Surveillance System (BRFSS)
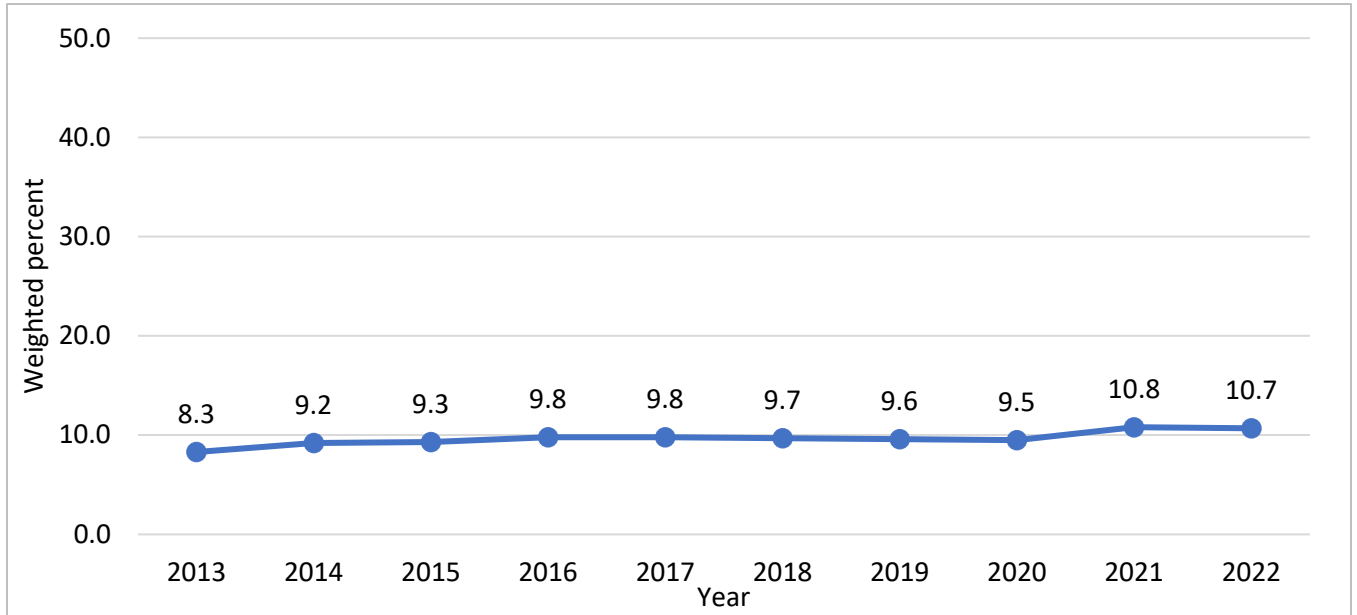
Risk Factors

Several social and individual factors impact the prevalence of diagnosed diabetes, specifically type 2 diabetes. These include age, weight status that is considered obese, physical inactivity, cigarette smoking, and access to food. [3] The prevalence of diagnosed diabetes increases with age — 20.3% of adults aged 65 years and older have diagnosed diabetes compared with 14.0% of those aged 45 to 64 years and 2.8% of those aged 18 to 44 years. The prevalence of diabetes among adults with a weight status categorized as obese is 16.2% compared to 8.1% of adults with a weight status not categorized as obese. The estimated prevalence of diagnosed diabetes among Connecticut adults with no leisure time physical activity is twice that of adults with leisure time physical activity (17.6% versus 8.7%). Also, adults who always or usually do not have money for food have a diagnosed diabetes prevalence that is twice that of adults who sometimes, rarely, or never do not have money for food (21.0% versus 10.4%). While cigarette smoking is considered a risk factor for diabetes, Connecticut adults who are current smokers and those who are not have similar diagnosed diabetes prevalence estimates (12.2% versus 10.7%). Additionally, men and women have similar diagnosed diabetes prevalence estimates (11.6% versus 10.0%). (Figure 2, Table 1)

Figure 2. Prevalence of diagnosed diabetes among Connecticut adults (age 18+ years) by social and individual factors, 2022 BRFSS.
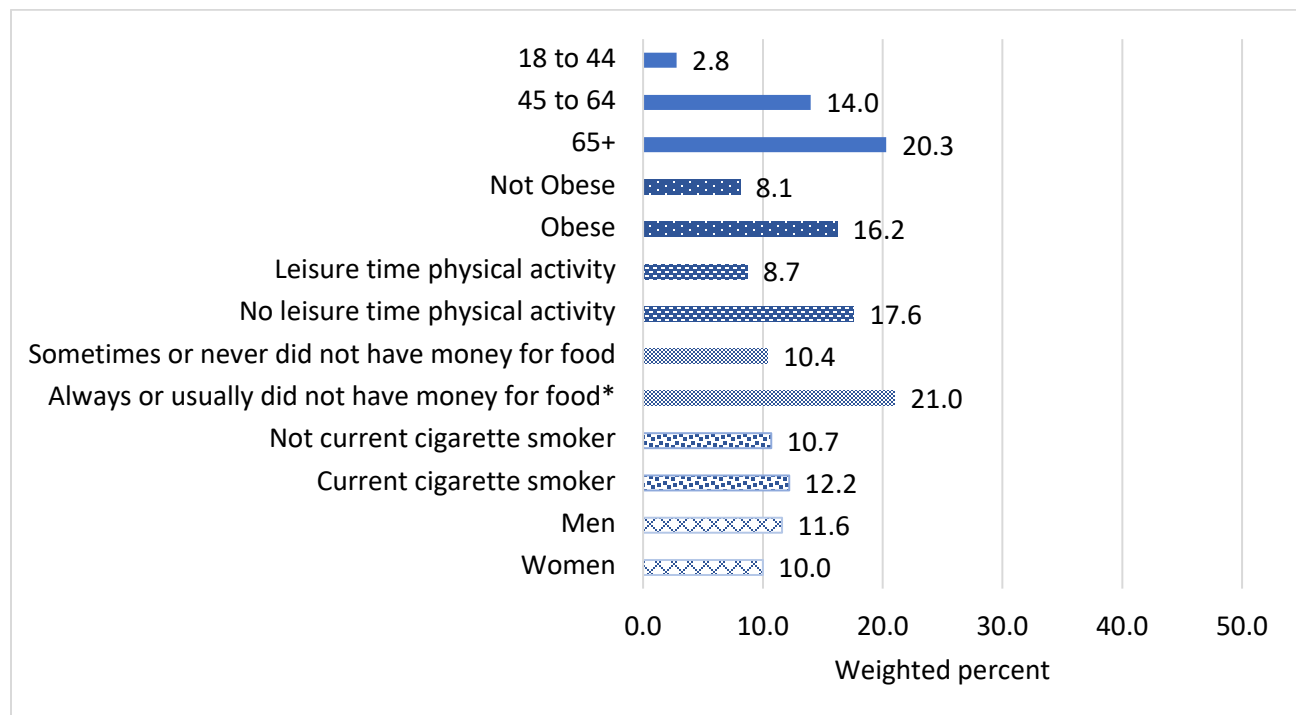
*Estimates may be of limited validity due to a coefficient of variation (CV) between 0.15 and 0.20. inclusive.

Several other population groups have a higher prevalence of type 2 diabetes. These population groups include adults with lower annual household income or educational attainment, adults who are Black or Hispanic, and adults with chronic diseases (e.g., cardiovascular disease). Diagnosed diabetes prevalence increases as annual household income decreases. For example, the prevalence of diagnosed diabetes among adults with annual household incomes of less than $25,000 is 19.3% compared to 7.1% of adults with annual household incomes of $75,000 or more. Similarly, the prevalence of diagnosed diabetes increases with decreasing educational attainment. Adults whose educational attainment is less than high school graduation are 2.6 times as likely to have diagnosed diabetes compared to adults who graduated college (18.0% versus 6.8%). Furthermore, racial and ethnic disparities in diagnosed diabetes prevalence exist. Adults who are Black and those who are Hispanic have a higher prevalence of diagnosed diabetes compared with adults who are White (15.1%, 13.2%, and 9.3%, respectively). Finally, adults who have been diagnosed with a cardiovascular disease have a higher prevalence of diagnosed diabetes compared to those who have not been diagnosed with a cardiovascular disease (32.8% and 8.7%, respectively). (Figure 3, Table 1)

Figure 3. Prevalence of diagnosed diabetes among Connecticut adults (age 18+ years) by demographic factors, 2022 BRFSS.
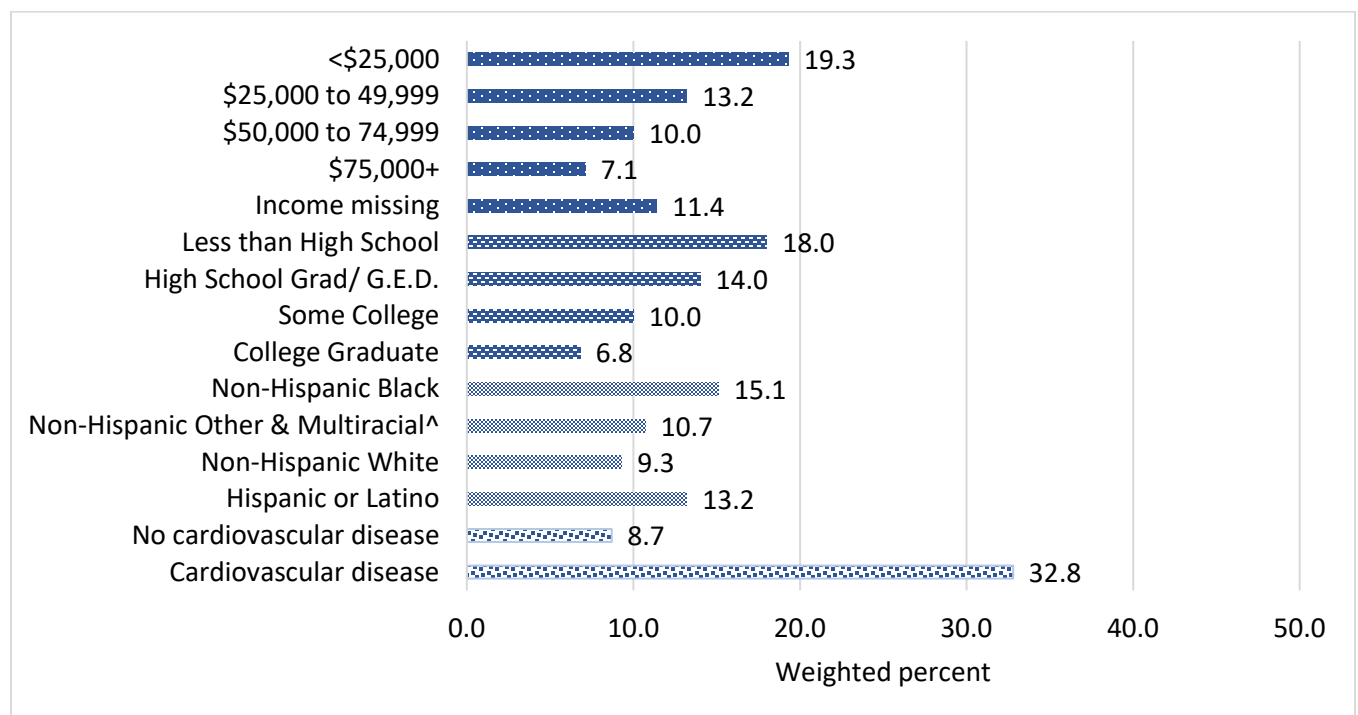

^Estimates are of limited validity due to a CV between 0.201 and 0.30, inclusive - caution should be exercised when interpreting these estimates.

Disparities time trends

The disparities in diagnosed diabetes prevalence by annual household income, educational attainment, and race and ethnicity have not changed much over time. For example, the prevalence of diagnosed diabetes among adults with an annual household income of less than $25,000 averages 2.5 times higher than the lowest annual household income group from 2013 to 2022. This difference increased slightly in 2022. For educational attainment, adults with the lowest level of educational attainment have diagnosed diabetes prevalence three times higher on average than adults with the highest level of educational attainment. Regarding race and ethnicity, diagnosed diabetes prevalence among Black adults averages 1.7 times higher than White adults from 2013 to 2022. The disparities in diagnosed diabetes between Hispanic adults and White or Black adults are inconsistent over time. (Figures 4, 5, and 6; Tables 3, 4, and 5)

Figure 4. Prevalence of diagnosed diabetes among Connecticut adults (age 18+ years) by annual household income from 2013 to 2022, BRFSS.

Figure 5. Prevalence of diagnosed diabetes among Connecticut adults (age 18+ years) by educational attainment from 2013 to 2022, BRFSS.
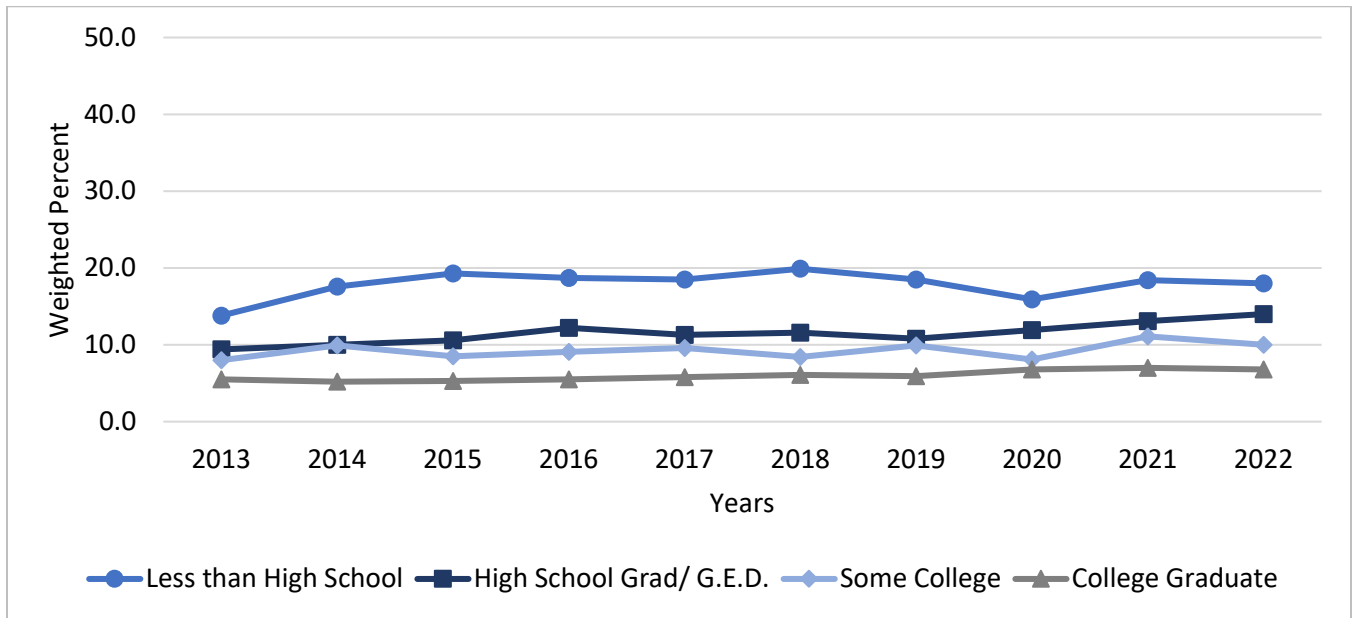
Figure 6. Prevalence of diagnosed diabetes among Connecticut adults (age 18+ years) by race and ethnicity from 2013 to 2022, BRFSS.

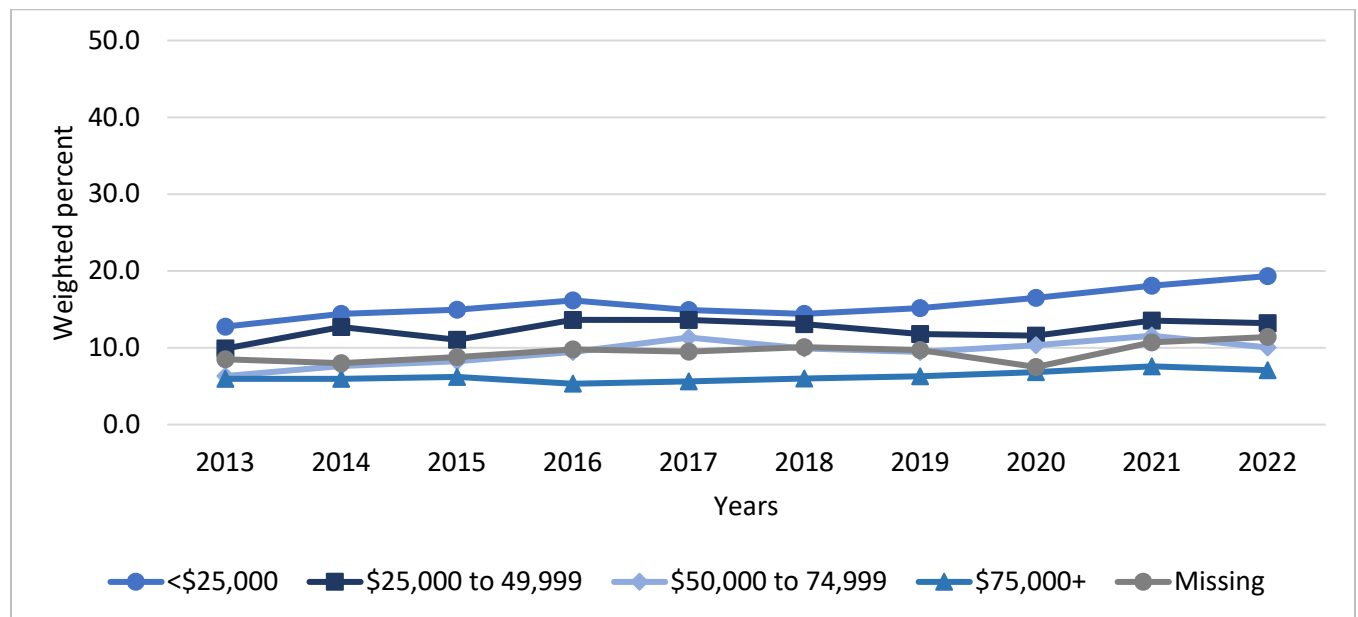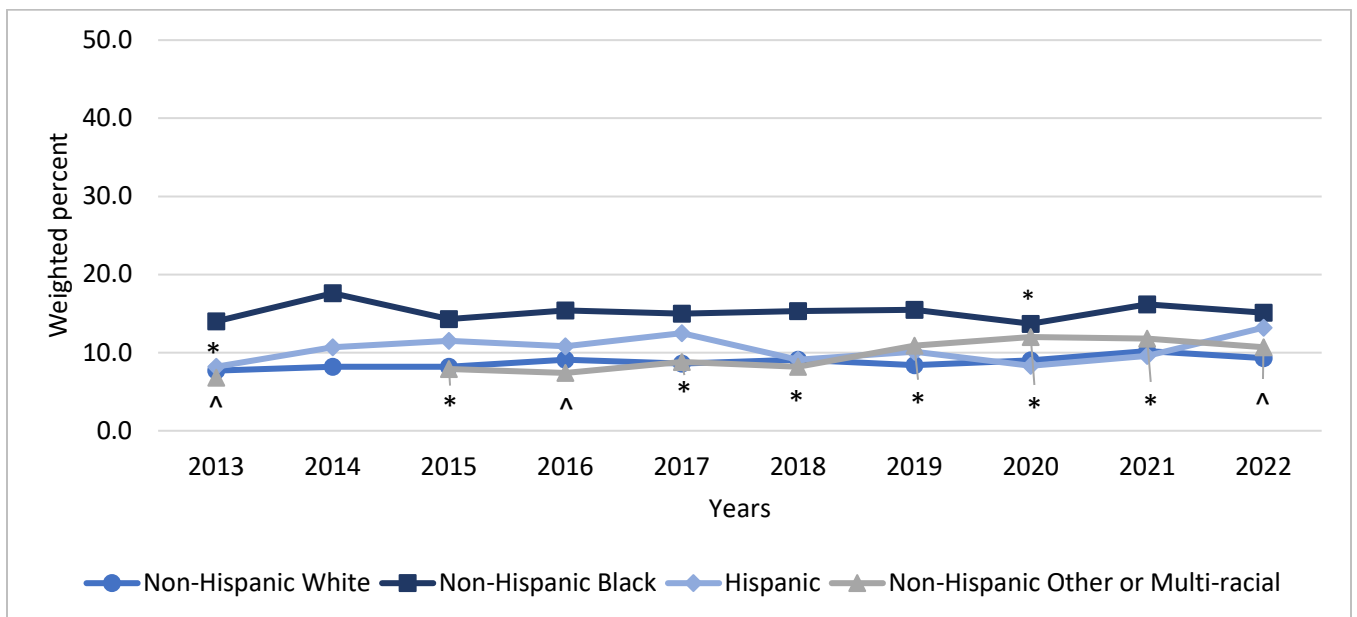*Estimates may be of limited validity due to a coefficient of variation (CV) between 0.15 and 0.20. inclusive. ^Estimates are of limited validity due to a CV between 0.201 and 0.30, inclusive - caution should be exercised when interpreting these estimates. Note: The estimated diagnosed diabetes prevalence for Non-Hispanic Other or Multi-racial in 2014 has a CV greater than 0.30. For this reason, the estimate is suppressed.

Adjusted Risk

Social, individual, and demographic factors interact and, therefore, have a collective impact on diagnosed diabetes prevalence. This interaction is minimized in a multivariable logistic regression model. This type of statistical model produces adjusted odds ratios. These adjusted odds ratios are the risk of diagnosed diabetes for each individual factor while holding all other factors constant. The reference for each factor is the subgroup with the lowest prevalence.

When all the factors are included in a multivariable logistic regression model to produce adjusted odds ratios, the odds of diagnosed diabetes (inclusive of types 1 and 2) decrease for several of the factors. One notable decrease is among the annual household income categories. The odds of diagnosed diabetes among adults with the three lower annual household income categories compared to adults with annual household incomes of $75,000+ decreased to become statistically insignificant. A second notable decrease is among adults who always or usually do not have money for food compared with those who sometimes, rarely, or never do not have money for food. The odds of diagnosed diabetes decreased to become statistically insignificant. A third notable decrease is among adults with a cardiovascular disease compared to those without a cardiovascular disease. The odds of diagnosed diabetes associated with having a cardiovascular was halved.

The odds ratios for each of the racial and ethnic groups increased slightly when adjusted for the other factors. The odds ratio among Black adults increased from 1.7 to 2.5. Similarly, the odds ratio among Hispanic adults increased from 1.5 to 2.2.

The odds ratios for two groups did not change when adjusted. These two groups are men and adults with a weight status categorized as obese.

A primary reason for increases and decreases in odds ratios is that the regression model adjusts for age. As shown previously, as age increases, diabetes prevalence increases. Adjusting for age holds the relationship between age and diabetes constant. This is important for demographic and risk groups that have different age distributions. For example, higher annual household incomes and cardiovascular diseases are associated with older age and, consequently, higher diabetes prevalence. Removing the impact of age decreases the odds of diagnosed diabetes among those groups. The age distributions of Black and Hispanic adults tend to be lower than that of White adults. In this case, adjusting for age results in higher odds ratios for adult who are Black or Hispanic. (Figure 7, Table 6)

Figure 7. Unadjusted and adjusted odds ratios of diagnosed diabetes among Connecticut adults (age 18+ years) by risk factors, 2022 BRFSS.
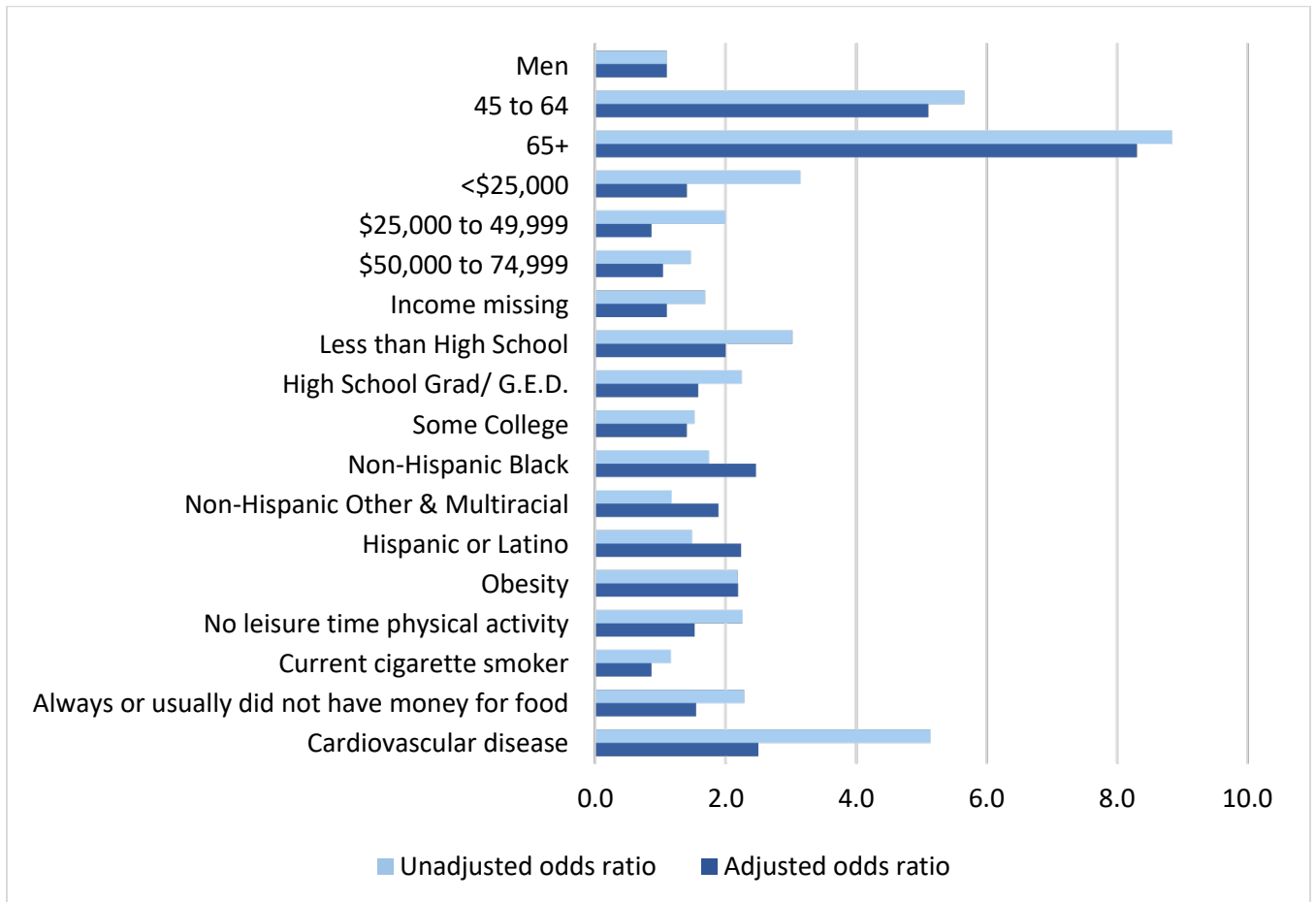
Age of Diagnosis

Approximately 7% of Connecticut adults with diabetes are newly diagnosed, or diagnosed within the past year. The percentage of adults with newly diagnosed diabetes has changed little over time — from 7.2% to 7.0% (2011-2015 data versus 2017-2022 data). Approximately 75% of new diagnoses occur between the ages of 30 and 64 years. The age of diabetes diagnosis has changed little over time. (Figures 8 and 9, Tables 7 and 8)

Figure 8. Percent of Connecticut adult newly diagnosed with diabetes, 2011-2022 BRFSS
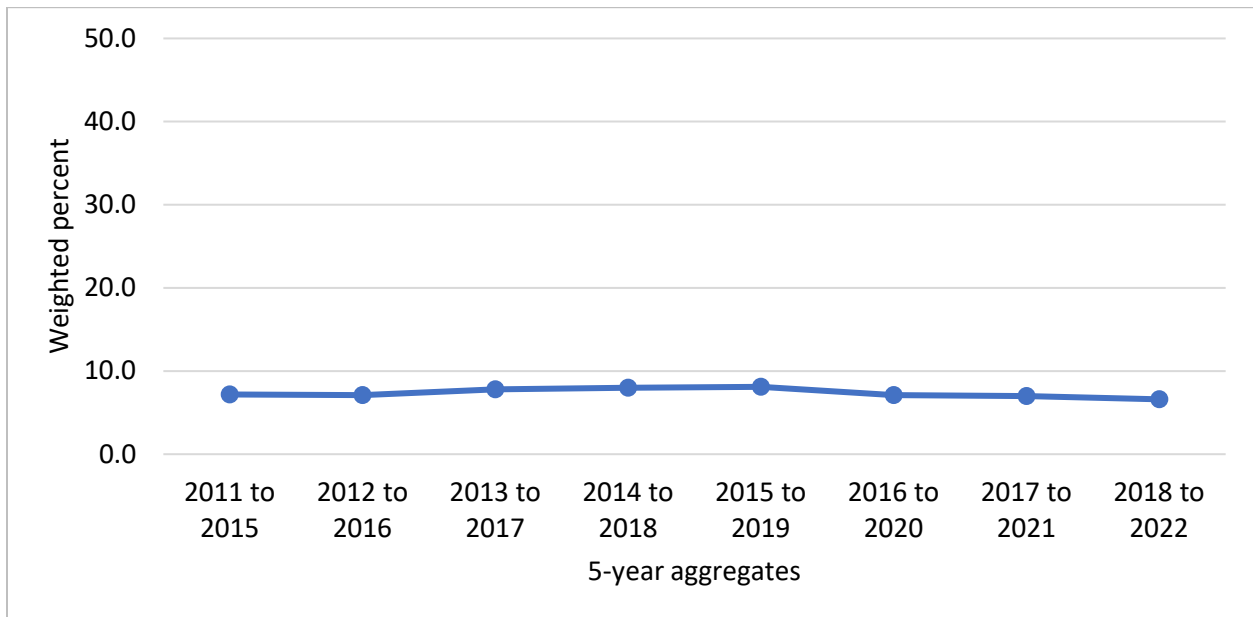
Figure 9. Distribution of age of diabetes diagnosis among Connecticut adult over time, 2011-2022 BRFSS.
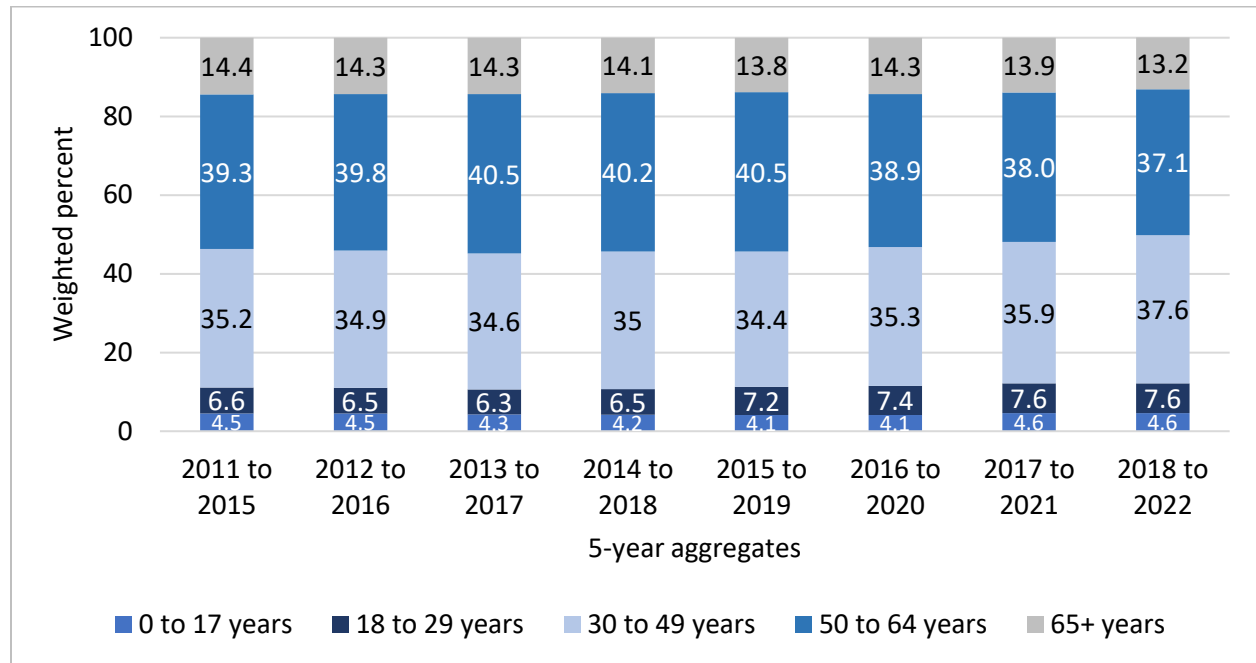
Conclusion

The Connecticut BRFSS data indicate that diagnosed diabetes (inclusive of types 1 and 2) prevalence among adults has not changed much over time. Also, the data indicate that disparities among population subgroups have remained steady. Additionally, the age of diabetes diagnoses has varied little over time. These results highlight the need to concentrate type 2 diabetes prevention and diabetes management efforts in communities with populations at highest risk and to address social and individual factors. Furthermore, because diabetes has serious complications including vision loss, kidney disease, heart attack, and stroke, promoting the diagnosis of diabetes at younger ages should continue. Early diabetes diagnoses allow for timely treatment thereby minimizing the risk of severe complications.[4]

Appendix

Key terms

Coefficient of variation (CV): The ratio of the standard deviation to the mean. The CV is a measure of variability.[5]

Disparities: Differences in disease risk, incidence, prevalence, morbidity, and mortality and other adverse conditions, such as unequal access to quality health care, which exist among specific population groups. Health disparities refer to those avoidable differences in health that result from cumulative social disadvantages.[6]

Multivariable logistic regression: A statistical model used to examine the relationship of a binary outcome (diabetes, for example) with multiple predictors (for example, age, gender, annual household income). The statistic produced is the adjusted odds ratio.[7]

Odds ratio: The comparison of the odds of an outcome occurring between two groups (for example, men compared with women). This comparison is made by dividing the odds of one group by the odds of the other group. Odds are the number of people with an exposure or outcome divided by the number people without the exposure or outcome.[5]

Prevalence: The number of individuals with a given disease at a given point in time divided by the population at risk for that disease at that time.[8]

Methodology

Statistical software

SAS Enterprise Guide 7.1 (64-bit) was used to generate all statistics presented in this report.

Data source

The source of all statistics produced for this report is the Connecticut Behavioral Risk Factor Surveillance System (BRFSS). The Centers for Disease Control and Prevention (CDC) coordinates with all 50 U.S. states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and Palau to administer the annual BRFSS questionnaire. Its purpose is to collect uniform data on a variety of health risk behaviors, chronic diseases and health conditions, and use of preventive services among the non-institutionalized population 18 years of age and older. The BRFSS is telephone-based, and the Connecticut survey is conducted by DPH via a contractor. For more information on the Connecticut BRFSS, visit www.ct.gov/dph/brfss.

BRFSS variables used

Diagnosed diabetes: Adult respondents were asked whether a health professional had ever told them that they had diabetes. Respondents indicating that they have not been told they have diabetes, have prediabetes, or had diabetes only during pregnancy were coded as not having diagnosed diabetes. Adults who answered "refused," "don't know," or had missing values on the diabetes status question were excluded.

Age: Respondents were asked their age. Age was classified into three categories: 18-44, 45-64, and ≥65 years. Adults who answered "refused," "don't know," or had missing values for this question were excluded.

Obesity: Adult respondents provide their height and weight. Height and weight responses were used to calculate body mass index (BMI). BMI is the weight in kilograms divided by the square of height in meters. A BMI of 30 or above is categorized as obese. Adults with missing values for height or weight were excluded.

Leisure time physical activity: Respondents were asked if during the past month, other than their regular job, they participated in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise. Respondents answering "yes" were considered to have leisure time physical activity. Adults who answered "refused," "don't know," or had missing values for this question were excluded.

Money for food: Respondents were asked, "During the past 12 months how often did the food that you bought not last, and you didn't have money to get more?" Respondents answering "always" or "usually" were grouped together. Respondents answering "sometimes," "rarely," or "never" were grouped together. Adults who answered "refused," "don't know," or had missing values for this question were excluded.

Cigarette smoking status: Adults are categorized as current cigarette smokers if they indicate that they have smoked at least 100 cigarettes in their lifetime and currently smoke on at least some days. Adults who answered "refused," "don't know," or had missing values for these questions were excluded.

Gender: Respondents were asked, "Are you male or female?" Respondents answering "nonbinary" were excluded from this analysis due to the very small number of responses. Adults who answered "refused," "don't know," or had missing values for this question were excluded.

Annual household income: Adults were asked about their annual household income from all sources through a series of ten questions. Annual household income was classified into five categories: <$25,000; $25,000-$49,999; $50,000-$74,999; $75,000+; and missing. A missing category was created due to the large number of missing responses to the income questions.

Educational attainment: Respondents were asked, "What is the highest grade or year of school you completed?" If they answered, "never attended school or only attended kindergarten", "grades 1 through 8", or "grades 9 through 11" they were categorized as "less than high school graduate". If they answered, "grade 12 or G.E.D." then they were categorized as "high school graduate or G.E.D.". If they answered, "college 1 year to 3 years" then they were categorized as "some college". If they answered, " college 4 years or more" then they were categorized as "college graduate". Adults who answered "refused," "don't know," or had missing values for this question were excluded.

Race and ethnicity: Race and ethnicity are derived from several survey questions. Respondents who reported they are of Hispanic origin or were imputed to be of Hispanic origin were categorized as "Hispanic". Those respondents indicating that there were not of Hispanic origin were categorized as not Hispanic and by the race for which they identify: "non-Hispanic Black," "non-Hispanic Other Race or Multiracial," and "non-Hispanic White".

Cardiovascular disease: Respondents are asked to answer three separate questions related to cardiovascular disease. "Has a doctor, nurse, or other health professional ever told you that you had any of the following?" "Ever told that you had a heart attack also called a myocardial infarction?" "(Ever told you had) angina or coronary heart disease?" "(Ever told you had) a stroke?" Respondents

answering "yes" to at least one of the questions are categorized as having a cardiovascular disease. Respondents answering "no" to all three of the questions are categorized as not having a cardiovascular disease. Adults who answered "refused," "don't know," or had missing values were excluded.

Newly diagnosed diabetes: Respondents indicating that they were told by a health professional that they had diabetes, excluding those only told during pregnancy, were asked at what age they were diagnosed. Diabetes duration was defined as current age minus age at diagnosis. Adults with diabetes duration of zero years were classified as having been diagnosed with diabetes within the last year. In addition, half of adult respondents with diabetes duration of one year were classified as having been diagnosed with diabetes within the last year.[9]

Age at diabetes diagnosis: Respondents indicating that they were told by a health professional that they had diabetes, excluding those only told during pregnancy, were asked at what age they were diagnosed. Diabetes duration was defined as current age minus age at diagnosis. Age at diagnosis was classified into five categories: 0–17, 18–29, 30–49, 50–64, and ≥65 years.

Calculations

Diagnosed diabetes prevalence

The frequency and percentages of diagnosed diabetes were calculated using the weighted number of respondents who had been told they have diabetes, divided by the weighted survey sample size that represents the civilian, noninstitutionalized, household adult population of Connecticut. Proc Surveyfreq was used to produce the frequencies, percentages, confidence intervals, standard errors, and coefficients of variation. This SAS survey procedure accounts for the survey weight, sampling units, and strata.

Unadjusted odds ratios

To calculate unadjusted odds ratios, binary, or dummy, variables were created for each category of each risk or demographic group. The new binary variable was equal to 1 to indicate the presence of the category or 0 to indicate the absence of the category. For example, the gender variable has response options of 1 for male and 2 for female. The new binary variable for male equals 1 if the original gender variable is 1 and 0 if not. Similarly, the new binary variable for female equals 1 if the original gender variable is 2 and 0 if not. The unadjusted odds ratio calculation included individual risk or demographic dummy variables as the predictor variables and diagnosed diabetes as the outcome variable. The reference group was the group with the lowest diagnosed diabetes prevalence for that risk or demographic group. The reference group's binary variable was not included on the right side of the model. Proc Surveylogistic was used to calculate the unadjusted odds ratios, 95% confidence intervals, and p-values. This SAS survey procedure accounts for the survey weight, sampling units, and strata.

Adjusted odds ratios

Multivariate logistic regression was used to adjust the risk of diagnosed diabetes by the demographic variables. Diagnosed diabetes was the outcome variable. The same binary, or dummy, variables from the unadjusted odds ratios were used as predictor variables. The reference group for each predictor category with the lowest diagnosed diabetes prevalence. The adjusted model controlled for all the following predictor variable categories: gender, age, race and ethnicity, annual household income, educational attainment, weight status, physical activity, cigarette smoking status, money for food, and cardiovascular disease. Proc Surveylogistic was used to calculate the adjusted odds ratios, 95% confidence intervals, and p-values. This SAS survey procedure accounts for the survey weight, sampling units, and strata.

Percentage of newly diagnosed diabetes

To calculate the percentage of new cases, the weighted number of respondents who were diagnosed with diabetes within the last year (numerator) was divided by the weighted estimate of the Connecticut population aged 18 years and older (denominator). The analysis was limited to adults with diagnosed diabetes. Adults who had been diagnosed with diabetes for more than one year and adults who answered "refused," "don't know," or had missing values on the diabetes status question were excluded from the denominator. Five years of data were aggregated to ensure a large enough sample size for reliable estimates. Proc Surveyfreq was used to produce the frequencies, percentages, confidence intervals, standard errors, and coefficients of variation. This SAS survey procedure accounts for the survey weight, sampling units, and strata.

Proportion of age at diagnosis of diabetes

The proportion and number in each diabetes diagnosis age category were estimated for the Connecticut adult population with diagnosed diabetes by dividing the weighted number of responses for each age category divided by the weighted adult population for each category. The analysis was limited to adults with diagnosed diabetes. Adults with missing responses or responses of "refused" or "don't know" were excluded. Five years of data were aggregated to ensure a large enough sample size for reliable estimates. Proc Surveyfreq was used to produce the frequencies, percentages, confidence intervals, standard errors, and coefficients of variation. This SAS survey procedure accounts for the survey weight, sampling units, and strata.

Detailed data tables

Table 1. Diagnosed diabetes prevalence among Connecticut adults, overall and by demographic characteristics, 2022 BRFSS

Demographic Category		N	Weighted N	Percent	SE	LCL	UCL	CV
	All adults	1,112	309,000	10.7	0.5	9.7	11.7	0.048
Gender	Male	612	161,000	11.6	0.7	10.2	12.9	0.059
	Female	500	148,000	10.0	0.8	8.5	11.4	0.076
Race and Ethnicity	Non-Hispanic Black	116	43,000	15.1	1.8	11.5	18.7	0.120
	Non-Hispanic Other Race & Multiracial	44	27,000	10.7^	2.8	5.2	16.2	0.263
	Non-Hispanic White	724	164,000	9.3	0.5	8.2	10.3	0.057
	Hispanic or Latino/a	176	61,000	13.2	1.4	10.4	16.0	0.108
Age (years)	18 to 44	97	34,000	2.8	0.4	2.0	3.6	0.138
	45 to 64	448	127,000	14.0	0.9	12.2	15.8	0.066
	65+	538	137,000	20.3	1.5	17.4	23.2	0.072
Educational attainment	Less than high school	106	49,000	18.0	2.4	13.4	22.6	0.131
	High school grad/ G.E.D.	300	109,000	14.0	1.3	11.5	16.6	0.093
	Some College	269	75,000	10.0	0.8	8.3	11.6	0.085
	College Graduate	427	71,000	6.8	0.4	5.9	7.6	0.065
Annual household income	<$25,000	192	55,000	19.3	2.1	15.2	23.5	0.110
	$25K to 49,999	209	56,000	13.2	1.5	10.3	16.1	0.113
	$50K to 74,999	121	29,000	10.0	1.2	7.7	12.3	0.118
	$75,000+	294	74,000	7.1	0.6	5.9	8.2	0.082
	Missing	296	95,000	11.4	1.1	9.2	13.6	0.099
Weight status	Obese	484	118,000	16.2	1.0	14.3	18.2	0.062
	Not obese	457	135,000	8.1	0.7	6.8	9.5	0.084
Leisure Time Physical Activity	No	446	117,000	17.6	1.3	15	20.2	0.075
	Yes	664	192,000	8.7	0.5	7.6	9.7	0.061
Current Cigarette Smoking Status	Current smoker	112	31,000	12.2	1.7	8.9	15.5	0.139
	Not current smoker	873	243,00	10.7	0.6	9.5	11.9	0.056
Money available for food	Always or usually did not have money for food	65	19,00	21.0*	3.8	13.4	28.5	0.183
	Sometimes or never did not have money for food	837	229,00	10.4	0.6	9.3	11.6	0.056
	Yes CVD	270	76,00	32.8	3.0	26.9	38.7	0.092

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Demographic Category		N	Weighted N	Percent	SE	LCL	UCL	CV
Ever told had a heart attack, stroke, or CHD	No CVD	819	226,000	8.7	0.5	7.8	9.6	0.053

Abbreviations: N = unweighted frequency; SE = standard error; LCL = lower 95% confidence level; UCL = Upper 95% confidence level; CV = coefficient of variation; CHD = coronary heart disease; CVD = cardiovascular disease
Notes: Weighted frequencies are rounded to the nearest thousand. Percent is the weighted percent.

Table 2. Diagnosed diabetes prevalence among Connecticut adults over time, 2013-2022 BRFSS

Year	Unweighted Frequency	Weighted Frequency	Weighted Percent	Standard Error	Lower 95% Confidence Level	Upper 95% Confidence Level	CV
2013	833	234,000	8.3	0.3966	7.5	9.1	0.048
2014	880	261,000	9.2	0.4135	8.4	10.0	0.045
2015	1,388	262,000	9.3	0.3475	8.6	9.9	0.038
2017	1,327	278,000	9.8	0.3551	9.1	10.5	0.036
2018	1,258	275,000	9.7	0.3649	9.0	10.4	0.038
2019	1,068	272,000	9.6	0.3777	8.8	10.3	0.040
2020	1,001	268,000	9.5	0.4515	8.6	10.3	0.048
2021	917	312,000	10.8	0.4866	9.9	11.8	0.045
2022	1,112	309,000	10.7	0.5137	9.7	11.7	0.048

Abbreviation: CV = coefficient of variation

Table 3. Diagnosed diabetes prevalence among Connecticut adults by annual household income over time, 2013-2022 BRFSS

Year	<$25,000 Weighted percent (95% CI) CV	$25,000 to 49,999 Weighted percent (95% CI) CV	$50,000 to 74,999 Weighted percent (95% CI) CV	$75,000+ Weighted percent (95% CI) CV	Missing Weighted percent (95% CI) CV
2013	12.8 (10.6-14.9) 0.088	9. 9 (7.9-11.9) 0.102	6.3 (4.7-7.9) 0.131	6.0 (4.8-7.1) 0.101	8.5 (6.4-10.6) 0.125
2014	14.4 (12.1-16.7) 0.082	12.7 (10.3-15.0) 0.095	7.6 (5.7-9.6) 0.129	6.0 (4.8-7.1) 0.099	8.0 (6.2-9.6) 0.111
2015	15.0 (13.0-16.9) 0.068	11.1 (9.3-12.8) 0.083	8.2 (6.4-10.0) 0.111	6.2 (5.2-7.2) 0.086	8.8 (7.4-10.2717) 0.084
2016	16.2 (13.9-18.5) 0.073	13.6 (11.5-15.7) 0.079	9.5 (7.6-11.3) 0.101	5.3 (4.6-6.1) 0.073	9.8 (8.2-11.4) 0.082
2017	14.9(12.6-17.2) 0.079	13.6 (11.4-15.8) 0.083	11.3 (9.0-13.7) 0.107	5.6 (4.8-6.4) 0.071	9.5 (7.9-11.1) 0.085
2018	14.4 (12.2-16.7) 0.080	13.1 (10.9-15.2) 0.083	9.9 (7.9-11.9) 0.101	6.0 (5.2-6.8) 0.069	10.1 (8.4-11.9) 0.089
2019	15.2 (12.8-17.6) 0.081	11.8 (9.7-13.9) 0.091	9.5 (7.3-11.6) 0.115	6.3 (5.3-7.3) 0.081	9.7 (8.1-11.3) 0.084
2020	16.5 (13.4-19.6) 0.095	11.6 (9.1-14.0) 0.110	10.3 (7.7-12.9) 0.129	6.8 (5.6-8.0) 0.091	7.5 (5.8-9.2) 0.117
2021	18.1 (13.8-22.3) 0.120	13.5 (11.1-16.0) 0.093	11.6 (8.6-14.6) 0.1338	7.6 (6.3-8.9) 0.085	10.7 (8.8-12.6) 0.088
2022	19.3 (15.2-23.5) 0.110	13.2 (10.3-16.1) 0.114	10.0 (7.7-12.3) 0.118	7.1 (5.9-8.2) 0.082	11.4 (9.2-13.6) 0.099

Abbreviations: CI = 95% confidence interval; CV = coefficient of variation

Table 4. Diagnosed diabetes prevalence among Connecticut adults by educational attainment over time, 2013-2022 BRFSS

Year	Less than high school Weighted percent (95% CI) CV	High school grad/G.E.D. Weighted percent (95% CI) CV	Some college Weighted percent (95% CI) CV	College graduate Weighted percent (95% CI) CV
2013	13.8 (10.3-17.4) 0.131	9.4 (7.9-10.9) 0.081	8.0 (6.6-9.5) 0.094	5.5 (4.6-6.4) 0.083
2014	17.6 (14.0-21.2) 0.106	10.0 (8.4-11.6) 0.080	9.9 (8.1-11.6) 0.090	5.2 (4.5-6.0) 0.077
2015	19.3 (15.8-22.7) 0.091	10.6 (9.3-12.0) 0.065	8.5 (7.3-9.8) 0.074	5.3 (4.6-6.0) 0.067
2016	18.7 (15.0-22.4) 0.102	12.2 (10.8-13.7) 0.060	9.1 (7.9-10.2) 0.067	5.5 (4.8-6.2) 0.063
2017	18.5 (14.6-22.5) 0.109	11.3 (10.0-12.7) 0.061	9.6 (8.3-10.9) 0.069	5.8 (5.1-6.6) 0.063
2018	19.9 (15.9-24.0) 0.104	11.6 (10.2-13.1) 0.063	8.4 (7.2-9.6) 0.071	6.1 (5.3-6.8) 0.062
2019	18.5 (14.5-22.4) 0.109	10.8 (9.3-12.3) 0.070	9.9 (8.4-11.3) 0.074	5.9 (5.1-6.7) 0.067
2020	15.9 (11.6-20.2) 0.139	11.9 (10.0-13.8) 0.082	8.1 (6.6-9.6) 0.093	6.8 (5.7-7.9) 0.083
2021	18.4 (13.2-23.6) 0.143	13.1 (11.1-15.2) 0.081	11.1 (9.4-12.8) 0.079	7.0 (6.0-7.9) 0.071
2022	18.0 (13.4-22.6) 0.131	14.0 (11.5-16.6) 0.093	10.0 (8.3-11.6) 0.085	6.8 (5.9-7.6) 0.065

Abbreviations: CI = 95% confidence interval; CV = coefficient of variation

Table 5. Diagnosed diabetes prevalence among Connecticut adults by race and ethnicity over time, 2013-2022 BRFSS

Year	Non-Hispanic Black Weighted percent (95% CI) CV	Non-Hispanic Other or Multiracial Weighted percent (95% CI) CV	Non-Hispanic White Weighted percent (95% CI) CV	Hispanic Weighted percent (95% CI) CV
2013	14.0 (10.4-17.6) 0.133	6.8^ (3.7-9.9) 0.233	7.7 (6.9-8.6) 0.055	8.2* (5.6-10.7) 0.158
2014	17.6 (13.6-21.7) 0.117	# # 0.304	8.2 (7.3-9.1) 0.054	10.7 (8.2-13.3) 0.122
2015	14.3 (11.1-17.5) 0.116	7.9* (5.2-10.6) 0.173	8.2 (7.5-8.9) 0.044	11.5 (9.2-13.9) 0.104
2016	15.4 (12.2-18.7) 0.108	7.4^ (4.3-10.5) 0.211	9.1 (8.4-9.8) 0.040	10.8 (8.4-13.1) 0.110
2017	15.0 (11.8-18.1) 0.108	8.8* (6.0-11.7) 0.165	8.6 (7.8-9.3) 0.043	12.5 (9.9-15.1) 0.107
2018	15.3 (11.9-18.7) 0.112	8.2* (5.3-11.2) 0.184	9.1 (8.4-9.9) 0.043	9.1 (6.9-11.2) 0.119
2019	15.5 (12.3-18.8) 0.107	10.9* (7.6-14.2) 0.155	8.4 (7.6-9.1) 0.046	10.1 (7.8-12.5) 0.120
2020	13.7* (9.7-17.8) 0.151	12* (7.5-16.4) 0.189	9.0 (7.9-10.0) 0.057	8.3 (6.3-10.3) 0.125
2021	16.2 (11.9-20.6) 0.137	11.8* (7.6-16.0) 0.182	10.2 (9.2-11.3) 0.054	9.6 (7.4-11.8) 0.117
2022	15.1 (11.5-18.7) 0.121	10.7^ (5.2-16.2) 0.263	9.3 (8.2-10.3) 0.058	13.2 (10.4-16.0) 0.108

Abbreviations: CI = 95% confidence interval; CV = coefficient of variation
*Estimates may be of limited validity due to a coefficient of variation (CV) between 0.15 and 0 .20 inclusive.
^Estimates are of limited validity due to a CV between 0.201 and 0.30, inclusive - caution should be exercised when interpreting these estimates.

Table 6. Unadjusted and adjusted odds of having diagnosed diabetes, Connecticut adults, 2022 BRFSS

Demographic Category	Unadjusted odds ratio (95% CI)	p-value for unadjusted odds ratio	Adjusted odds ratio (95% CI)	p-value for adjusted odds ratio
Male	1.1 (0.9-1.5)	0.1167	1.1 (0.9-1.5)	0.3681
Female	Reference	-	Reference	-
18 to 44	Reference	-	Reference	-
45 to 64	5.7 (4.1-7.8)	<0.0001	5.1 (3.3-7.9)	<.0001
65+	8.8 (6.4-12.3)	<0.0001	8.4 (5.2-13.6)	<.0001
<$25,000	3.1 (2.3-4.3)	<0.0001	1.4 (0.9-2.2)	0.1055
$25K to 49,999	2.0 (1.5-2.7)	<0.0001	0.9 (0.6-1.3)	0.5434
$50K to 74,999	1.5 (1.1-2.0)	0.0162	1.0 (0.7-1.5)	0.8097
$75,000+	Reference	-	Reference	-
Income missing	1.7 (1.3-2.2)	0.0002	1.2 (0.8-1.7)	0.4548
Less than high school	3.0 (2.1-4.3)	<0.0001	2.0 (1.2-3.4)	0.0066
High school grad/ G.E.D.	2.2 (1.7-2.9)	<0.0001	1.6 (1.1-2.2)	0.0107
Some college	1.5 (1.2-1.9)	0.0003	1.4 (1.0-1.9)	0.026
College graduate	Reference	-	Reference	-
Non-Hispanic Black	1.7 (1.3-2.4)	0.0003	2.5 (1.6-3.8)	<.0001
Non-Hispanic Other Race & Multiracial	1.2 (0.7-2.1)	0.5960	1.9 (0.9-3.9)	0.0742
Non-Hispanic White	Reference	-	Reference	-
Hispanic or Latino/a	1.5 (1.1-2.0)	0.0045	2.2 (1.5-3.3)	<.0001
Obese	2.2 (1.7-2.8)	<0.0001	2.2 (1.7-2.8)	<.0001
Not obese	Reference	-	Reference	-
No leisure time physical activity	2.3 (1.8-2.8)	<0.0001	1.5 (1.2-2.0)	0.0023
Leisure time physical activity	Reference	-	Reference	-
Current cigarette smoker	1.2 (0.8-1.6)	0.3825	0.9 (0.6-1.2)	0.43

Demographic Category	Unadjusted odds ratio (95% CI)	p-value for unadjusted odds ratio	Adjusted odds ratio (95% CI)	p-value for adjusted odds ratio
Not current cigarette smoker	Reference	-	Reference	-
Always or usually did not have money for food	2.3 (1.4-3.7)	0.0006	1.5 (0.9-2.7)	0.1311
Sometimes rarely, or never did not have money for food				
Cardiovascular disease	5.1 (3.8-6.9)	<0.0001	2.5 (1.8-3.4)	<.0001
No cardiovascular disease	Reference	-	Reference	-

Abbreviation: CI = 95% confidence interval

Table 7. Newly diagnosed diabetes prevalence among Connecticut adults over time, 2013-2022 BRFSS

Year Group	Unweighted Frequency	Weighted Frequency	Weighted Percent	Standard Error	LCL	UCL	CV
2011 to 2015	375	17,000	7.2	0.5	6.2	8.3	0.0732
2012 to 2016	412	17,000	7.1	0.5	6.1	8.1	0.0700
2013 to 2017	447	18,000	7.8	0.5	6.7	8.8	0.0676
2014 to 2018	493	20,000	8.0	0.5	7.0	9.0	0.0636
2015 to 2019	517	20,000	8.1	0.5	7.1	9.1	0.0619
2016 to 2020	471	17,000	7.1	0.5	6.2	8.0	0.0650
2017 to 2021	434	18,000	7.0	0.5	6.1	8.0	0.0682
2018 to 2022	425	17,000	6.6	0.5	5.6	7.5	0.0755

Abbreviations: LCL = lower 95% confidence level; UCL = Upper 95% confidence level; CV = coefficient of variation

Table 8. Age of diabetes diagnosis among Connecticut adults over time (five-year aggregates), 2011-2022 BRFSS

Years	0 to 17 years Weighted percent (95% CI) CV	18 to 29 years Weighted percent (95% CI) CV	30 to 49 years Weighted percent (95% CI) CV	50 to 64 years Weighted percent (95% CI) CV	65+ years Weighted percent (95% CI) CV
2011 to 2015	4.5 (3.5-5.5) 0.113	6.6 (5.2-7.9) 0.103	35.2 (33.1-37.3) 0.030	39.3 (37.3-41.3) 0.026	14.4 (13.1-15.6) 0.045
2012 to 2016	4.5 (3.5-5.4) 0.107	6.5 (5.3-7.8) 0.098	34.9 (33-36.8) 36.8	39.8 (37.9-41.7) 0.024	14.3 (13.1-15.5) 0.042
2013 to 2017	4.3 (3.3-5.2) 0.110	6.3 (5.1-7.4) 0.093	34.6 (32.8-36.4) 0.027	40.5 (38.7-42.3) 0.023	14.3 (13.1-15.5) 0.043
2014 to 2018	4.2 (3.3-5.1) 0.106	6.5 (5.4-7.6) 0.085	35 (33.2-36.7) 0.025	40.2 (38.5-42) 0.022	14.1 (12.9-15.3) 0.043
2015 to 2019	4.1 (3.2-5) 0.108	7.2 (6.1-8.3) 0.079	34.4 (32.7-36.1) 0.025	40.5 (38.8-42.2) 0.079	13.8 (12.6-14.9) 0.043
2016 to 2020	4.1 (3.2-4.9) 0.112	7.4 (6.3-8.5) 0.078	35.3 (33.5-37.1) 0.026	38.9 (37.1-40.6) 0.023	14.3 (13.1-15.6) 0.045
2017 to 2021	4.6 (3.6-5.6) 0.114	7.6 (6.4-8.7) 0.078	35.9 (34-37.8) 0.027	38 (36.1-39.8) 0.025	13.9 (12.6-15.3) 0.050
2018 to 2022	4.6 (3.6-5.6) 0.114	7.6 (6.4-8.7) 0.076	37.6 (35.5-39.7) 0.028	37.1 (35.1-39.1) 0.027	13.2 (11.8-14.5) 0.054

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