

# BRFSS Brief

Number 2021-20

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual statewide telephone survey of adults developed by the Centers for Disease Control and Prevention and administered by the New York State Department of Health. The BRFSS is designed to provide information on behaviors, risk factors, and utilization of preventive services related to the leading causes of chronic and infectious diseases, disability, injury, and death among the noninstitutionalized, civilian population aged 18 years and older.

## Prevalence of Prediabetes and Testing for High Blood Sugar New York State Adults, 2019

### Introduction and Key Findings

In New York State, diabetes rates have almost tripled over the past two decades, contributing to reductions in quality of life for over 1.4 million New Yorkers, and significant costs to government, employers and private citizens. Unless significant changes are made, the projected number and percent of adults with diagnosed diabetes would increase from 39.7 million (13.9%) in 2030, and to 60.6 million (17.9%) in 2060.<sup>1</sup>

Prediabetes is a condition in which an individual's blood glucose levels are higher than normal, but not high enough to be diagnosed as diabetes. The Centers for Disease Control and Prevention (CDC) estimates that 88 million US adults have prediabetes, but most adults who have prediabetes don't know it.<sup>2</sup> Without intervention, many people with prediabetes will develop type 2 diabetes within 5 years and are also at increased risk of developing heart disease and stroke.<sup>2,3</sup> Fortunately, lifestyle intervention programs aimed at increasing physical activity and producing a 5–7% loss of body weight, and certain pharmacological agents have been demonstrated to prevent or delay the development of diabetes in people with prediabetes.<sup>4,5</sup>

Early detection and treatment of prediabetes are critical and can prevent or delay the onset of type 2 diabetes. Per the American Diabetes Association (ADA), blood glucose testing (also referred to as blood sugar testing) to screen for type 2 diabetes and prediabetes is appropriate for all adults over age 45 and for younger adults who are overweight or obese and who have one or more risk factors, such as hypertension, elevated blood cholesterol or a family history of type 2 diabetes.<sup>6</sup> The Prevention Agenda 2019-2024, New York State's Health Improvement Plan, includes an objective to increase the percentage of adults 45+ who had a test for high blood sugar or diabetes within the past 3 years by 5% from 68.3% (2016) to 71.7% by 2024.

#### Key Findings

An estimated 1.4 million adult New Yorkers (10.5%) have been diagnosed with prediabetes. Adults who have obesity are significantly more likely to report being diagnosed with prediabetes (19.7%) compared to adults who have neither overweight nor obesity (5.9%). Prediabetes is also more common among older adults, Black non-Hispanic adults, adults living with a disability, and adults living in New York City. In addition, the prevalence of prediabetes is higher among adults who were tested for high blood sugar in the past 3 years (15.7%) than among those who were not tested in the past 3 years (3.8%). Younger adults and adults without health insurance coverage are less likely to have had blood sugar testing. Among adults over 45 years in age, 67.2% reporting having a test for high blood sugar or diabetes within the past three years (Figure 3), below the Prevention Agenda 2024 Goal of 71.7%.

### BRFSS Questions – Prediabetes Module

#### Testing for High Blood Sugar

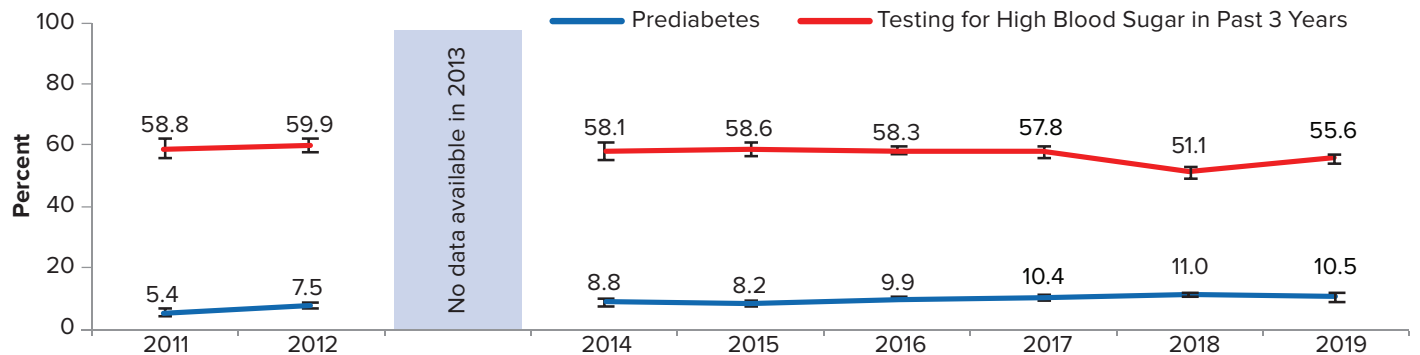
1. Have you had a test for high blood sugar or diabetes within the past three years?

#### Prediabetes

1. Have you ever been told by a doctor or other health professional that you have prediabetes or borderline diabetes?  
[If “yes” and respondent is female, ask: “Was this only when you were pregnant?”]

**NOTE:** These questions are only asked of those **not** responding “Yes” to having ever been diagnosed with diabetes.

**Figure 1. Prevalence of Prediabetes\* and Testing for High Blood Sugar\*\* among NYS Adults, BRFSS 2011-2019**



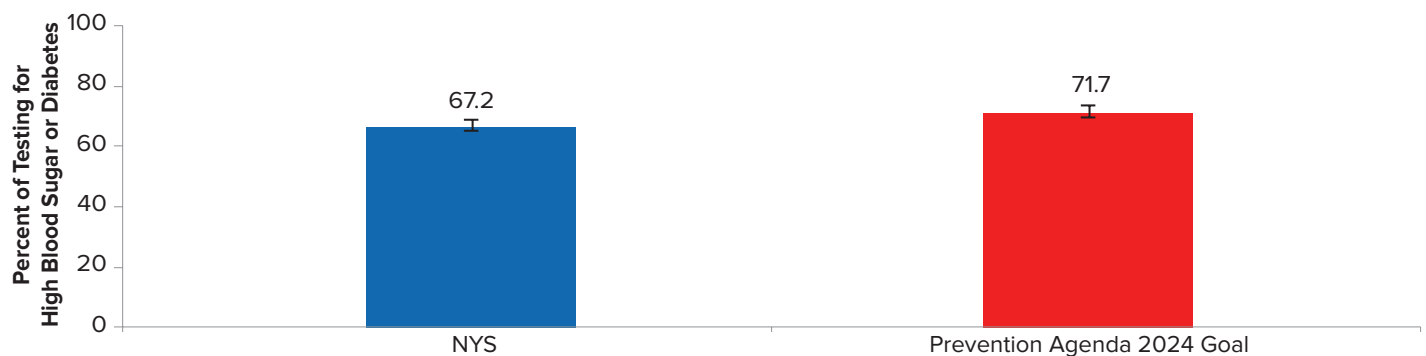
\*Does not include reported gestational prediabetes.  
 \*\*Tested in the past 3 years.  
 Note: Error bars represent 95% confidence intervals.

**Figure 2. Prevalence of Prediabetes\* among People Tested for High Blood Sugar\*\*, BRFSS 2019**



\*Does not include reported gestational prediabetes.  
 \*\*Tested in the past 3 years.  
 Note: Error bars represent 95% confidence intervals.

**Figure 3. Percentage of Adults Aged 45+ Years Who Had a Test for High Blood Sugar or Diabetes within the Past Three Years, BRFSS 2019**



\*Does not include reported gestational prediabetes.  
 \*\*Tested in the past 3 years.  
 Note: Error bars represent 95% confidence intervals.

## Prediabetes and Testing for High Blood Sugar<sup>a</sup> among New York State Adults: 2019 BRFSS

	Prediabetes		Testing for High Blood Sugar	
	% <sup>b</sup>	95% CI <sup>b</sup>	% <sup>b</sup>	95% CI <sup>b</sup>
<b>Total New York State (NYS) [n=14,232]</b>	10.5	9.8 - 11.3	55.6	54.3 - 57.0
<b>Sex</b>				
Male	10.4	9.2 - 11.5	52.4	50.4 - 54.4
Female	10.7	9.6 - 11.7	58.6	56.7 - 60.4
<b>Age (years)</b>				
18-24	3.5	2.0 - 5.1	31.2	26.8 - 35.5
25-34	4.9	3.4 - 6.3	42.2	38.7 - 45.6
35-44	8.1	6.2 - 10.1	52.4	48.9 - 56.0
45-54	13.8	11.6 - 16.1	63.2	60.2 - 66.3
55-64	15.8	13.6 - 18.1	69.4	66.7 - 72.1
65+	15.0	13.4 - 16.7	68.6	66.2 - 70.9
<b>Race/ethnicity</b>				
White, non-Hispanic	8.5	7.7 - 9.3	57.8	56.1 - 59.4
Black, non-Hispanic	18.0	15.1 - 20.9	56.5	52.4 - 60.6
Hispanic	11.2	9.3 - 13.2	56.6	53.2 - 60.0
Other, non-Hispanic	11.6	8.4 - 14.9	43.1	37.9 - 48.3
<b>Annual household income</b>				
<\$25,000	12.1	10.2 - 14.0	54.4	51.3 - 57.6
\$25,000-\$49,999	11.4	9.3 - 13.5	54.1	50.7 - 57.6
\$50,000 and greater	10.2	9.0 - 11.3	59.7	57.6 - 61.9
Missing <sup>c</sup>	9.4	7.7 - 11.0	51.0	47.9 - 54.0
<b>Educational attainment</b>				
Less than high school	10.7	7.9 - 13.4	54.2	49.6 - 58.7
High school or GED	11.1	9.5 - 12.7	49.7	47.0 - 52.5
Some post-high school	11.3	9.8 - 12.9	57.4	54.7 - 60.2
College graduate	9.5	8.4 - 10.6	59.6	57.6 - 61.6
<b>Body Mass Index (BMI) category</b>				
Neither overweight nor obese	5.9	4.9 - 7.0	49.3	46.9 - 51.7
Overweight	10.2	8.8 - 11.6	57.3	54.9 - 59.7
Obese	19.7	17.6 - 21.9	65.5	62.8 - 68.1
<b>Health care coverage type</b>				
Private	10.2	9.1 - 11.3	58.4	56.4 - 60.3
Medicare	14.8	12.9 - 16.8	63.6	60.8 - 66.5
Medicaid	11.3	9.0 - 13.7	56.6	52.7 - 60.5
Other insurance <sup>d</sup>	11.2	7.6 - 14.7	55.2	49.2 - 61.3
Not insured	6.8	4.9 - 8.7	38.9	34.8 - 43.0
<b>Disability status<sup>e</sup></b>				
Yes	16.8	14.8 - 18.8	60.3	57.5 - 63.1
No	8.7	7.9 - 9.6	54.7	53.0 - 56.4
<b>Region</b>				
New York City (NYC)	12.2	10.8 - 13.7	55.3	52.9 - 57.7
NYS exclusive of NYC	9.3	8.5 - 10.2	55.9	54.3 - 57.5

<sup>a</sup> Does not include reported gestational prediabetes; tested for high blood sugar in the past 3 years.

<sup>b</sup> % = weighted percentage; CI = confidence interval.

<sup>c</sup> "Missing" category included because more than 10% of the sample did not report income.

<sup>d</sup> includes TRICARE, VA/Military, and Indian Health Services.

<sup>e</sup> All respondents who reported at least one type of disability (cognitive, mobility, vision, self-care, independent living or deafness).

## References

1. Lin, J., Thompson, T.J., Cheng, Y.J. et al. Projection of the future diabetes burden in the United States through 2060. *Population Health Metrics* 16, 9 (2018). Available at: <https://doi.org/10.1186/s12963-018-0166-4>
2. Centers for Disease Control and Prevention. Prevalence of Prediabetes Among Adults. 2018 US Census Bureau data. Available at: <https://www.cdc.gov/diabetes/data/statistics-report/prevalence-of-prediabetes.html> Accessed June 9, 2021.
3. Centers for Disease Control and Prevention. Diabetes 2019 Report Card. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2019. Available at: <https://www.cdc.gov/diabetes/prevention/about-prediabetes.html> Accessed June 9, 2021.
4. Tuomilehto J, Lindstrom J, Eriksson J, et al; Finnish Diabetes Prevention Study Group. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med.* 2001; 344:1343–1350. Available at: <http://www.nejm.org/doi/full/10.1056/NEJM200105033441801>
5. Knowler WC, Barrett-Conner E, Fowler SE, et al; Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002; 346:393–403. Available at: <http://www.nejm.org/doi/full/10.1056/NEJMoa012512>
6. American Diabetes Association. Classification of Diabetes: Standards of Medical Care in Diabetes - 2021. *Diabetes Care* 2021;44(Suppl. 1):S15–S33. Available at: [https://care.diabetesjournals.org/content/diacare/44/Supplement\\_1/S15.full.pdf](https://care.diabetesjournals.org/content/diacare/44/Supplement_1/S15.full.pdf) Accessed September 16, 2021.

## Program Contributions

New York State Department of Health  
Bureau of Chronic Disease Evaluation and Research  
Bureau of Community Chronic Disease Prevention

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