



PREDIABETES IN MARYLAND

Prediabetes prevalence in Maryland has been steadily increasing over the past decade. According to Maryland BRFSS data, the percentage of adults diagnosed with prediabetes increased from 10.3% in 2014 to 15.1% in 2022, underscoring the growing need for awareness, screening, and prevention.¹ This surveillance brief examines the prevalence of prediabetes among Maryland adults by age, gender, race/ethnicity, education, income, disability, and physical activity. In 2022, the majority of Maryland adults underwent blood sugar testing, with 63.8% getting tested within the past year, 12.2% in the last two years, and 5.7% in the last three years.¹ However, 9.3% reported never having been tested, underscoring gaps in screening.¹ Expanding testing efforts can help healthcare providers to better identify at-risk individuals and connect them with community resources to help prevent the progression to type 2 diabetes.

BACKGROUND

Prediabetes is a serious condition where blood glucose levels are higher than normal—A1C between 5.7 and 6.4, or Fasting Plasma Glucose between 100 and 125 mg/dL—but not high enough to be diagnosed as diabetes.² People with prediabetes have an increased risk of developing type 2 diabetes, and are at higher risk of developing heart disease and stroke.³ The Centers for Disease Control and Prevention (CDC) National Diabetes Statistics Report estimated that 38% of U.S. adults age 18 and older (48.8% age 65 and older) had prediabetes, based on fasting blood glucose or A1C levels in 2021.⁴ When applied to the Maryland population, this translates to 1.8 million adults age 20 and older adults with prediabetes. According to the CDC, 8 of 10 adults who have prediabetes do not know they have it.⁵ People at risk for type 2 diabetes can prevent or delay the disease by making modest lifestyle changes which include weight loss and physical activity, two factors that improve the body's ability to use and process glucose.⁶ Research has shown that people with prediabetes who participate in a structured lifestyle change program involving at least 150 minutes of physical activity per week and a 5% to 7% loss of body weight can cut their risk of developing type 2 diabetes by 58% (71% for people over 60 years old).⁶ Testing to detect prediabetes and diabetes is recommended for adults of any age who are overweight or obese (BMI \geq 25, or \geq 23 in Asian Americans) and who have one or more additional risk factors for diabetes. For all others, especially those who are overweight, testing should begin at age 45.⁸

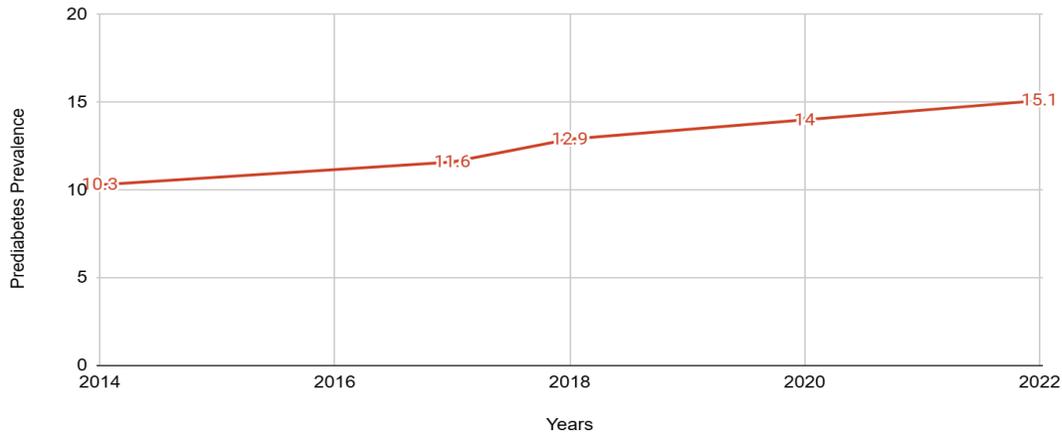
METHODS

The Maryland Behavioral Risk Factor Surveillance System (BRFSS) is a telephone-based health survey of adult Maryland residents that provides statewide prevalence of chronic health conditions, health-related behaviors, use of preventive services, and access to care. It is part of the national BRFSS and is conducted under CDC guidance. Questions related to diabetes testing and prediabetes diagnosis were included in an optional Prediabetes module in the 2014, 2017, 2018, 2020, and 2022 Maryland BRFSS survey. Across all years, respondents were asked: “Have you ever been told by a doctor or other health professional that you have prediabetes or borderline diabetes?” Female respondents who answered “yes” were asked a follow-up question: “Was this only when you were pregnant?” Respondents who reported a diagnosis of diabetes or who indicated their prediabetes diagnosis occurred only during pregnancy were excluded from the prediabetes estimates. In 2022, an additional question was included to capture the timing of the diagnosis: “How long has it been since a doctor or other health professional told you that you have prediabetes or borderline diabetes?” This added detail provides further insight into recent versus earlier diagnoses, which was not captured in previous survey years. Height and weight were self-reported by respondents. Body Mass Index (BMI) is calculated by the CDC using a standard formula. For adults, a BMI of 25.0 to 29.9 is classified as overweight, and a BMI of 30.0 or higher is classified as obese.⁹ Demographics were documented based on self-report. To improve generalizability of the survey data and make statements about the health of Maryland residents, survey data were weighted by the CDC using a statistical procedure called raking to account for demographic differences between the survey sample population and the Maryland state population.

RESULTS

Prediabetes remains a significant public health concern in Maryland, affecting various demographic groups at different rates. In 2022, 15.1% of Maryland adults reported that they had been told by a healthcare provider that they have prediabetes.¹ The percentage was slightly higher among men (15.9%) than women (14.3%).¹ Prediabetes prevalence by race/ethnicity showed disparities, with Black Non-Hispanic (20.5%) and Asian Non-Hispanic (15.9%) adults reporting higher rates of prediabetes than White Non-Hispanic (12.4%) and Hispanic (12.5%) adults.¹ Prediabetes prevalence increased with age, rising from 9.2% among adults aged 25-34 to 24.0% among adults aged 55-64.¹ Among those aged 65 and older, 22.2% reported having prediabetes.¹ Education and income levels also influenced prediabetes prevalence. Adults with some college or technical school education (19.1%) reported higher rates of prediabetes than those who did not graduate high school (11.8%) or completed college (13.6%).¹ Income-based disparities were notable, with individuals earning less than \$15,000 per year reporting the highest prediabetes rate (20.6%), compared to 9.7% among those earning \$200,000 or more.

Trend of Prediabetes Prevalence in Maryland (2014-2022)



Among Maryland residents with one or more disabilities, the reported prediabetes rate was 23.5%, compared to 13.5% among those with no disabilities.¹ Lifestyle factors were also associated with prediabetes prevalence. Those who reported no physical activity (17.5%) had higher rates of prediabetes compared to those who engaged in regular physical activity (14.5%).¹ Geographic variations in prediabetes prevalence were observed across Maryland counties. The highest reported rates were in Charles County (28.7%), Harford County (22.0%), and Prince George’s County (20.6%), while lower prevalence was reported in Allegany County (8.1%), Montgomery County (11.4%), and Washington County (9.3%).¹ A heat map of Maryland counties, using combined age-adjusted data from 2014-2022, provides a visual representation of prediabetes prevalence across the state, identifying regions with higher rates and highlighting areas where increased screening and prevention efforts may be needed (Map 1).

Map 1: Prediabetes Prevalence by County: Age-Adjusted Heat Map (2014–2022)

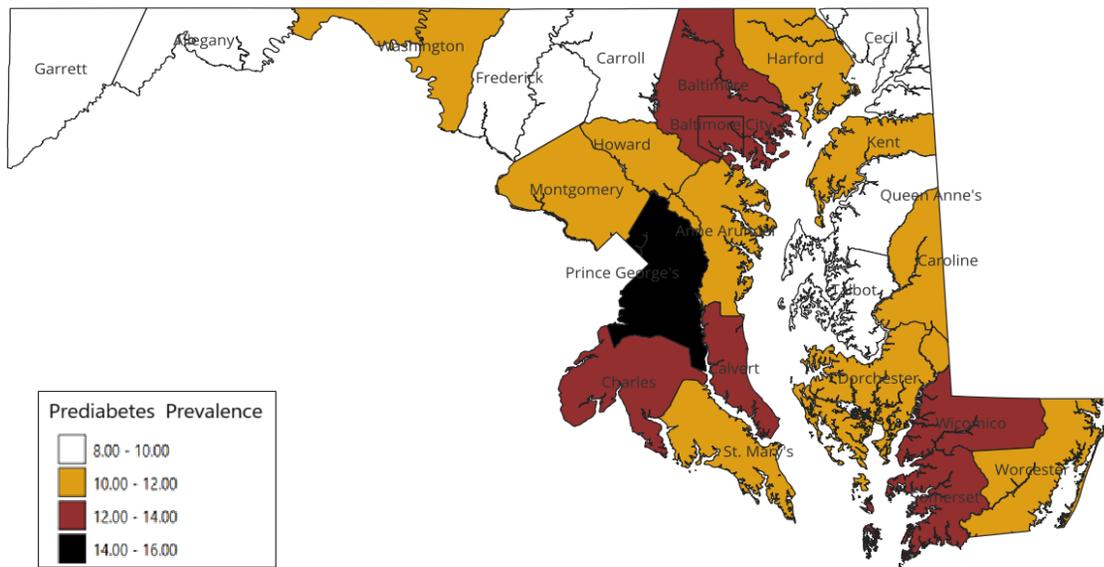


Table 1

| Prediabetes Prevalence (BRFSS 2022) | % | 95% CI |
|--|----------|---------------|
| Statewide | 15.1 | (13.5 - 16.7) |
| Sex | | |
| Male | 15.9 | (13.4 - 18.3) |
| Female | 14.3 | (12.3 - 16.4) |
| Age | | |
| 18-24 | ** | ** |
| 25-34 | 9.2 | (5.5 - 12.9) |
| 35-44 | 9.8 | (6.7 - 12.9) |
| 45-54 | 17.6 | (13.7 - 21.5) |
| 55-64 | 24 | (19.3 - 28.6) |
| 65+ | 22.2 | (18.8 - 25.6) |
| Race | | |
| White Non-Hispanic | 12.4 | (10.6 - 14.2) |
| Black Non-Hispanic | 20.5 | (16.7 - 24.2) |
| Asian Non-Hispanic | 15.9 | (8.6 - 23.2) |
| Hispanic | 12.5 | (7.7 - 17.3) |
| Other | ** | ** |
| Education | | |
| Did not Graduate High School | 11.8 | (7.0 - 16.5) |
| High School Graduate | 14.6 | (11.3 - 18.0) |
| Went to some College/ Technical School | 19.1 | (15.4 - 22.8) |
| College/ Technical School Graduate | 13.6 | (11.4 - 15.7) |
| Income | | |
| Less than \$15,000 | 20.6 | (9.5 - 31.7) |
| \$15,000 to <\$25,000 | 15.7 | (9.8 - 21.7) |
| \$25,000 to <\$35,000 | 20.7 | (13.6 - 27.7) |
| \$35,000 to < \$50,000 | 13.7 | (8.5 - 18.9) |
| \$50,000 to < \$100,000 | 14.5 | (11.4 - 17.7) |
| \$100,000 to <\$200,000 | 17.8 | (14.1 - 21.6) |
| \$200,000+ | 9.7 | (4.8 - 14.6) |
| Disability | | |
| One or more Disabilities | 23.5 | (19.1 - 27.8) |
| No Disability | 13.5 | (11.8 - 15.3) |

| | | |
|----------------------------|------|---------------|
| Physical Activity | | |
| Reported Physical Activity | 14.5 | (12.7 - 16.3) |
| No Physical Activity | 17.5 | (14.0 - 21.0) |

CONCLUSIONS

Based on 2022 Maryland BRFSS data, 15.1% of Maryland adults reported being told by a healthcare provider that they have prediabetes.¹ This is an increase from the 10.5% reported in 2014.¹ This gap suggests that many Maryland adults remain unaware of their prediabetes status, either due to lack of screening or lack of communication about their risk. In addition, disparities in prediabetes prevalence exist among racial/ethnic groups, income levels, and individuals with disabilities, indicating a need for targeted awareness and screening efforts.

The increasing trend in reported prediabetes diagnoses among Maryland adults over the past decade highlights both progress in awareness and continued gaps in detection. In 2014, only 10.3% of Maryland adults reported being told they had prediabetes, but this number has steadily increased to 11.6% in 2017, 12.9% in 2018, 14.0% in 2020, and 15.1% in 2022.¹ While this growth suggests that more individuals are being screened and informed of their risk, it remains significantly lower than expected, reinforcing the need for expanded screening efforts. The data also indicates disparities in awareness based on sex, as men have historically reported lower prediabetes prevalence than women (9.8% vs. 10.7% in 2014; 15.9% vs. 14.3% in 2022), suggesting potential differences in healthcare engagement or screening frequency.¹ Despite the overall increase, the fact that the majority of Maryland adults with prediabetes remain unaware of their condition underscores the importance of integrating prediabetes screening into routine primary care visits and ensuring that individuals receive appropriate counseling about their risk.

Testing and early intervention remain critical, as lifestyle changes, including weight loss and increased physical activity, can significantly reduce the risk of progressing to type 2 diabetes.⁶ The CDC recommends increasing awareness among both the public and healthcare providers to ensure that individuals at risk are being screened, tested, and referred to evidence-based lifestyle change programs like the National Diabetes Prevention Program (DPP).⁷ To help Marylanders assess their risk, an online prediabetes risk quiz is available. Those at risk are encouraged to follow up with their healthcare provider for further screening. The National DPP, a proven year-long lifestyle change program, has been shown to reduce the risk of developing type 2 diabetes by 58% (and 71% for adults aged 60 and older).⁶ Maryland residents can find DPP programs and additional resources at: www.BeHealthyMaryland.org. By enhancing screening efforts, raising awareness, and increasing access to prevention programs, Maryland can reduce the impact of prediabetes and help individuals make lasting lifestyle changes to improve their health.

Resources

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1. Maryland Behavioral Risk Factor Surveillance System, 2014-2022
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 3. Centers for Disease Control and Prevention. The truth about prediabetes. May 15, 2024. <https://www.cdc.gov/diabetes/prevention-type-2/truth-about-prediabetes.html>
 4. Centers for Disease Control and Prevention. Data and research on diabetes and its burden in the U.S. May 15, 2024.. <https://www.cdc.gov/diabetes/php/data-research/index.html>
 5. Centers for Disease Control and Prevention. “Prediabetes: Could it be you?” infographic. May 15, 2024 <https://www.cdc.gov/diabetes/communication-resources/prediabetes-statistics.html#:~:text=About%2098%20million%20American%20adults,diagnosed%20as%20type%20diabetes.>
 6. National Diabetes Prevention Research Study: Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin, Knowler, et al., N. Engl J Med, Feb 7, 2002; 346 (6): 393-403
 7. Centers for Disease Control and Prevention. What is the National DPP? May 15, 2024 <https://www.cdc.gov/diabetes-prevention/programs/what-is-the-national-dpp.html>
 8. American Diabetes Association. Classification and diagnosis of diabetes: Standards of medical care in diabetes—2022. *Diabetes Care*. 2022;45(Suppl 1):S17-S38. https://diabetesjournals.org/care/article/45/Supplement_1/S17/138925/2-Classification-and-Diagnosis-of-Diabetes
 9. Centers for Disease Control and Prevention. About Adult BMI. June 26, 2024 <https://www.cdc.gov/bmi/adult-calculator/index.html>