

PREDIABETES

IN NORTH CAROLINA

Fact Sheet

What is prediabetes?

- Prediabetes is a condition whereby people have higher than normal blood glucose (sugar) levels, but not yet high enough to be diagnosed as diabetes.
- Prediabetes is a precursor of type 2 diabetes, as well as a risk factor for heart disease and stroke. With a lifestyle change program, people with prediabetes can lower their risk of developing type 2 diabetes by as much as 58%.^{1,2}
- Unlike diabetes, prediabetes often has no noticeable symptoms.
- Prediabetes can be developed at any age from childhood and adolescence through adulthood.



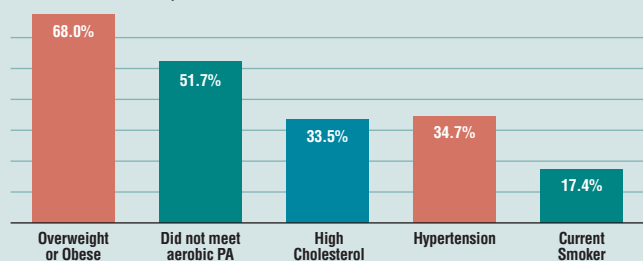
How many people have prediabetes?

- Based on fasting blood glucose or HbA1c level, 34% of US adults (84.1 million people) had prediabetes in 2015. The prevalence jumped to 48% among adults 65 years or older.³
- Nationwide, only about 1 out of every 10 individuals with prediabetes (about 10%) are aware of their condition.^{1,3}
- If the measured national prevalence for prediabetes of 34% is applied to the North Carolina adults, then about 2.4 million North Carolinians may have prediabetes. However, only about 855,000 North Carolinian adults with prediabetes (about 12.1% of the population) reported being told by a health professional that they had this condition.⁴ This suggests that over 1.5 million North Carolinians may have prediabetes but are unaware of their condition.
- According to the Centers for Disease Control and Prevention (CDC) 2016 data, about 145 adults in North Carolina develop diabetes every day;⁵ without intervention people with prediabetes are more likely to develop diabetes.

What are the risk factors for prediabetes?

- The risk factors include older age (45 years and older), a family history of type 2 diabetes (parent, brother or sister) and race/ethnicity (African-Americans, Hispanics and other minority groups), overweight/obesity, physical inactivity, high cholesterol, high blood pressure and smoking.

Figure 1. Prevalence of risk factors for prediabetes, North Carolina, 2017/2018



Data Source: North Carolina State Center for Health Statistics, Behavioral Risk Factor Surveillance System (BRFSS) schs.dph.ncdhs.gov/data/brfss/survey.htm

- Additional risk factors for prediabetes specific to women include: gestational diabetes (abnormal blood sugar during pregnancy), giving birth to a baby who weighed more than 9 pounds and having a history of polycystic ovary syndrome (a common condition characterized by irregular menstrual periods, excess hair growth and obesity).

How is prediabetes diagnosed?

- CDC has a simple screening tool that uses seven questions to assess an individual's risk of prediabetes.⁶ A score of five or higher indicates a high risk for prediabetes, and a confirmatory blood test for prediabetes (Table 1) is recommended.
- Fasting blood glucose, oral glucose tolerance test, and HbA1c are blood tests used to confirm both prediabetes and diabetes as shown in Table 1.
- In North Carolina, only three out of five adults (61%) without a known diagnosis of diabetes have had a blood sugar test within the last three years.⁷

Table 1: Diagnostic test criteria for prediabetes

Test	Normal	Prediabetes	Diabetes
Fasting Blood Glucose (FBG)	less than 100 mg/dl	100 mg/dl to 125 mg/dl	126 mg/dl or higher
Oral Glucose Tolerance Test (OGTT)	less than 140 mg/dl	140 mg/dl to 199 mg/dl	200 mg/dl or higher
HbA1c	less than 5.7%	5.7% to 6.4%	6.5% or higher

Source: American Diabetes Association, Diagnosing Diabetes and Learning About Prediabetes. diabetes.org/diabetes-basics/diagnosis

How is prediabetes treated?

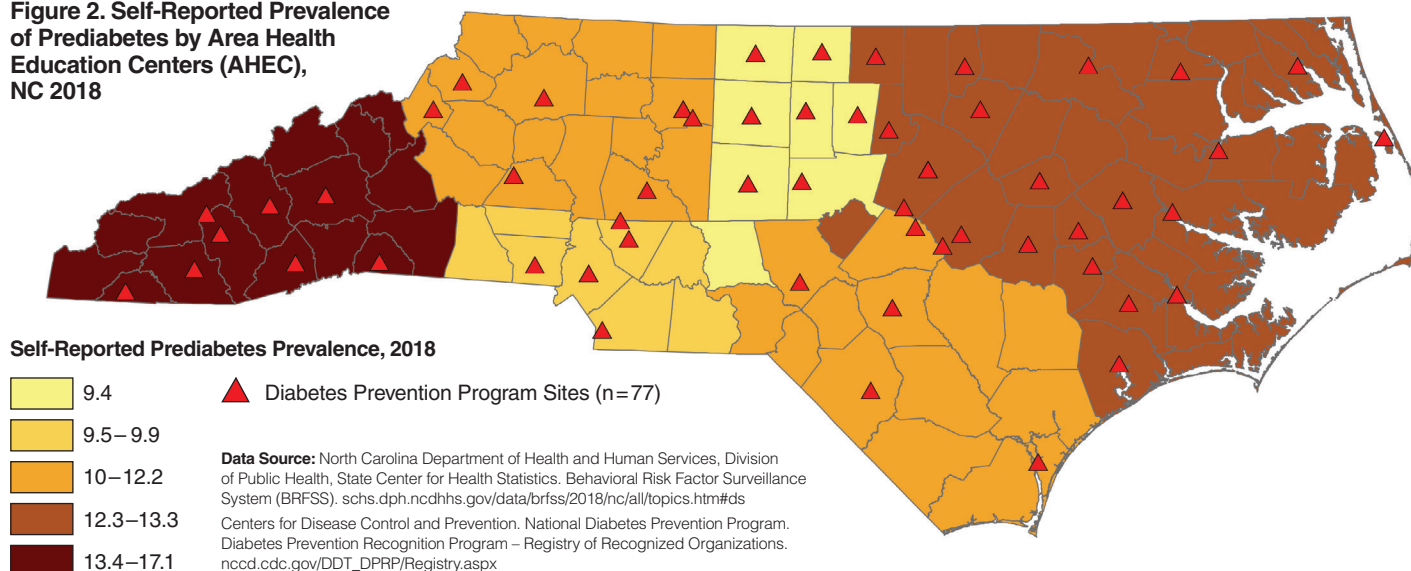
- Once an individual is diagnosed with prediabetes, the main goal of treatment is to delay or prevent progression to type 2 diabetes.
- Losing a modest amount of weight (5% to 7% of total body weight) through healthy eating and moderate physical activity with the help of a lifestyle change program, such as the CDC-recognized National Diabetes Prevention Program, has been proven to be the most effective way of delaying or preventing progression from prediabetes to type 2 diabetes.¹
 - For more information, visit DiabetesFreeNC.com or call the North Carolina Diabetes Prevention Program Navigator at 844-328-0021.
- Metformin, a drug used to control blood sugar, has also been shown to be somewhat effective in delaying or preventing progression from prediabetes to type 2 diabetes, but it is not as effective as lifestyle change.²

How is prediabetes prevented?

For individuals who do not have prediabetes, prevention can be achieved by addressing the following modifiable risk factors:

- Preventing overweight/obesity through regular physical activity and healthy eating. For general information on physical activity and healthy eating please visit esmmweighless.com.
- Preventing and/or controlling high cholesterol and high blood pressure through lifestyle change and medications if necessary.
- Avoiding tobacco products and secondhand smoke for non-smokers and quitting for current smokers. For general information about smoking and how to get help quitting please visit: quitlinenc.com or call 1-800-QUIT-NOW.

Figure 2. Self-Reported Prevalence of Prediabetes by Area Health Education Centers (AHEC), NC 2018



REFERENCES

1. National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation. Prediabetes. Accessed at cdc.gov/diabetes/basics/prediabetes.html on December 10, 2019.
2. Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002;346(6):393-403.
3. Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2017. Estimates of Diabetes and Its Burden in the United States. Accessed at cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf on December 10, 2019.
4. North Carolina Department of Health and Human Services, Division of Public Health, State Center for Health Statistics. Behavioral Risk Factor Surveillance System (BRFSS). Accessed at schs.dph.ncdhhs.gov/data/brfss/2018/nc/all/prediab.html on December 10, 2019. The 2018 estimates of the NC population were obtained from: schs.dph.ncdhhs.gov/interactive/query/population/nchspop.cfm.
5. Centers for Disease Control and Prevention. National Diabetes Prevention Program. Diabetes Data and Statistics. Accessed at gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html on December 10, 2019.
6. Centers for Disease Control and Prevention. National Diabetes Prevention Program. Prediabetes Risk Test. Accessed at cdc.gov/prediabetes/takethetest on December 10, 2019.
7. North Carolina Department of Health and Human Services, Division of Public Health, State Center for Health Statistics. Behavioral Risk Factor Surveillance System (BRFSS). Accessed at schs.dph.ncdhhs.gov/data/brfss/2018/nc/all/PDIABTST.html on December 10, 2019.