

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.



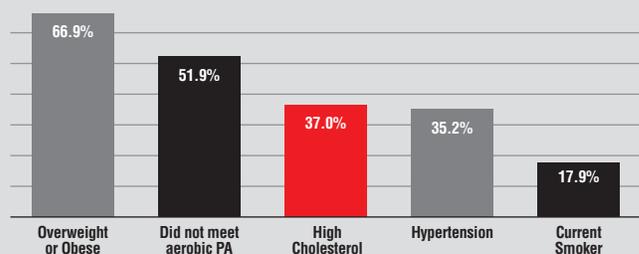
How many people have prediabetes?

- Based on fasting glucose or A1c level, 34% of US adults (84.1 million people) had prediabetes in 2015.³ The prevalence jumps 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 almost 2.7 million North Carolinians may have prediabetes. However, only about 782,000 North Carolinians (about 10.1% of the population) report having been diagnosed with prediabetes by a health professional.⁴ This suggests that nearly 2 million North Carolinians may have prediabetes but are unaware of their condition.
- According to data from the Centers for Disease Control and Prevention (CDC), about 166 adult North Carolinians 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 blood cholesterol, high blood pressure and smoking.

Figure 1. Prevalence of risk factors for prediabetes, North Carolina, 2015/2016



Data Source: North Carolina State Center for Health Statistics. Behavioral Risk Factor Surveillance System (BRFSS) schs.state.nc.us/data/brfss/survey.htm

- Additional risk factors for prediabetes specific to women include: gestational diabetes (abnormal blood sugar during pregnancy), having a baby who weighs over 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 paper screening tool that uses seven questions to assess an individual's risk of prediabetes.⁵ A score of nine or above on the screening test indicates a high risk for prediabetes, and a confirmatory blood test for prediabetes (Table 1) is recommended.
- Fasting Blood Glucose (FBG), Oral Glucose Tolerance Test (OGTT) and Glycated Hemoglobin (HbA1c) are blood tests used to confirm both prediabetes and diabetes as shown in Table 1.
- In North Carolina, only three out of every five adults (61%) without a known diagnosis of diabetes have had a blood sugar test within the last three years.⁶

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 (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. 2016. diabetes.org/diabetes-basics/diagnosis

How can prediabetes be treated?

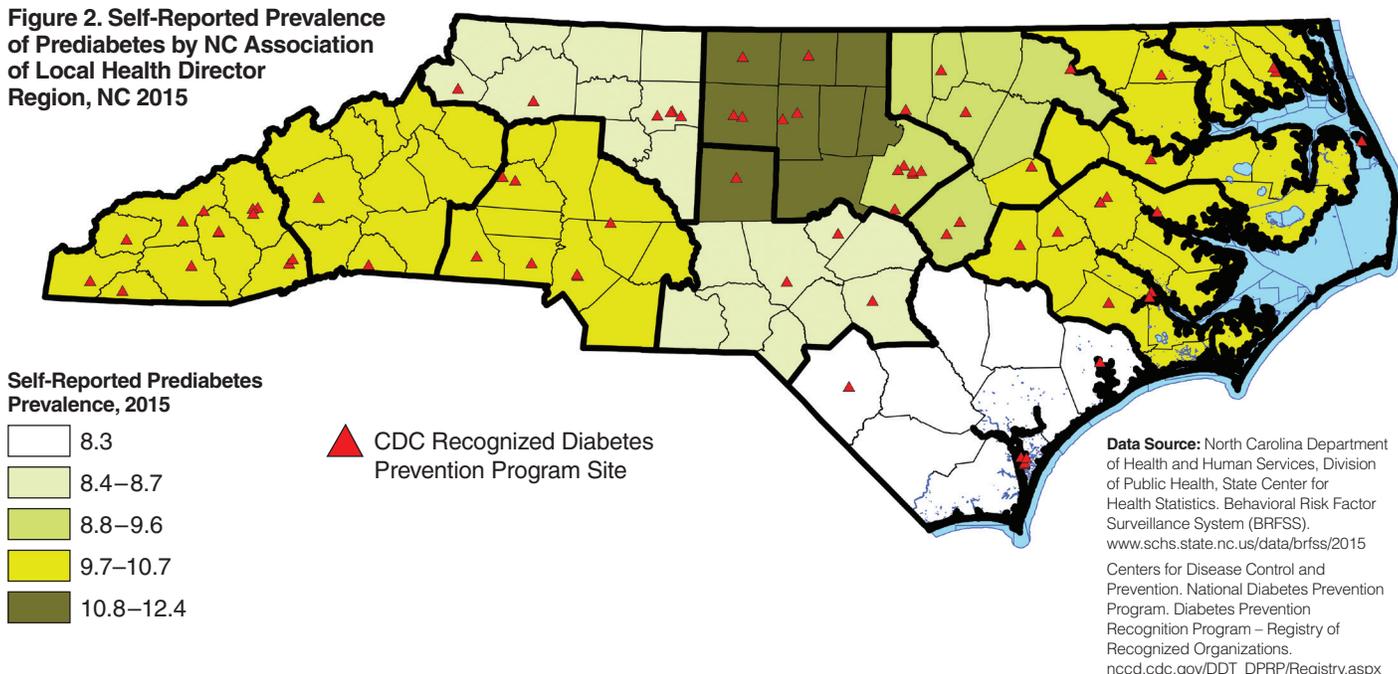
- Once an individual is diagnosed with prediabetes, the main goal of treatment is to delay or prevent progression to type 2 diabetes.
- Losing a modest amount of weight (5% to 7% of total body weight) through healthy diet and moderate physical activity (such as brisk walking 30 minutes a day, five days a week) within the context of an intensive lifestyle intervention program, like the CDC's Diabetes Prevention Program or similar programs, has been proven to be the most effective way of delaying or preventing progression from prediabetes to type 2 diabetes.²
- Metformin, a drug used for the treatment of diabetes, has also been shown to be effective in delaying or preventing progression from prediabetes to type 2 diabetes, but it is not as effective as lifestyle modification.²

How can prediabetes be 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 blood cholesterol and high blood pressure through lifestyle modification 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 NC Association of Local Health Director Region, NC 2015



REFERENCES

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