



DIABETES PREVENTION PROJECT

A NORTH CAROLINA APPROACH

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North Carolina



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Objectives

- **Review epidemiology, screening and diagnosis of diabetes**
- **Explain Diabetes Prevention Program**
- **Identify available community resources for diabetes prevention in North Carolina**

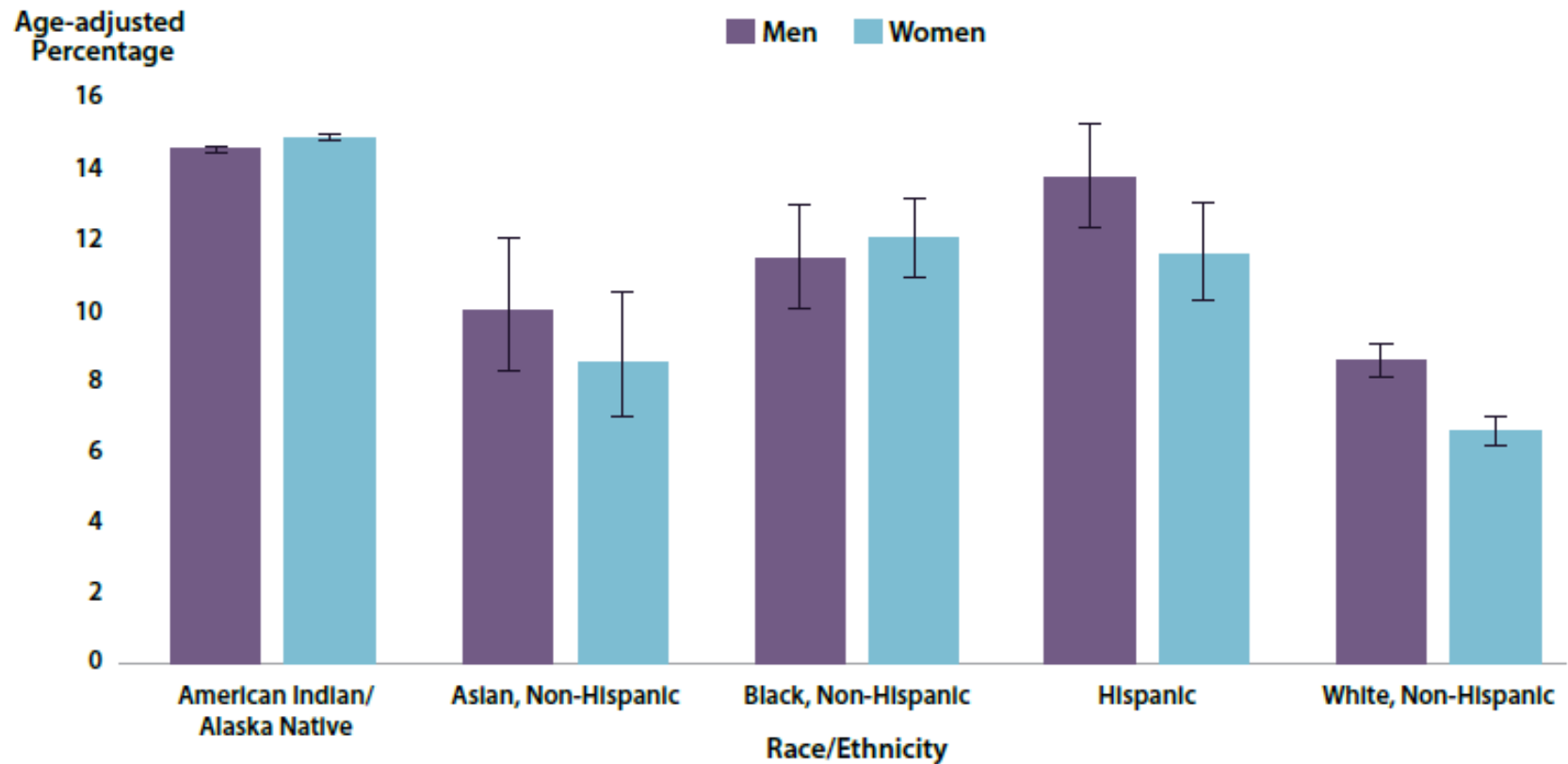


Diabetes Prevalence (2018)

- **Prevalence: 34.2 million Americans, or 10.5% of the population**
 - **Diagnosed: 26.8 million**
 - **Undiagnosed: 7.3 million**
- **Prevalence in seniors (age ≥ 65): 26.8%, or 14.3 million seniors**
- **New cases: 1.5 million Americans are diagnosed with diabetes every year.**



Prevalence of Diabetes 2017-2018



Cost of Diabetes 2007-2017

The Staggering Costs of Diabetes



More than
**30 MILLION
AMERICANS**
have diabetes



Health care costs for
Americans with diabetes
are **2.3x GREATER** than
those without diabetes



Diagnosed
diabetes costs
America
**\$327
BILLION**
per year



84 MILLION
Americans have prediabetes



\$1 IN \$7
Health care dollars is spent treating
diabetes and its complications

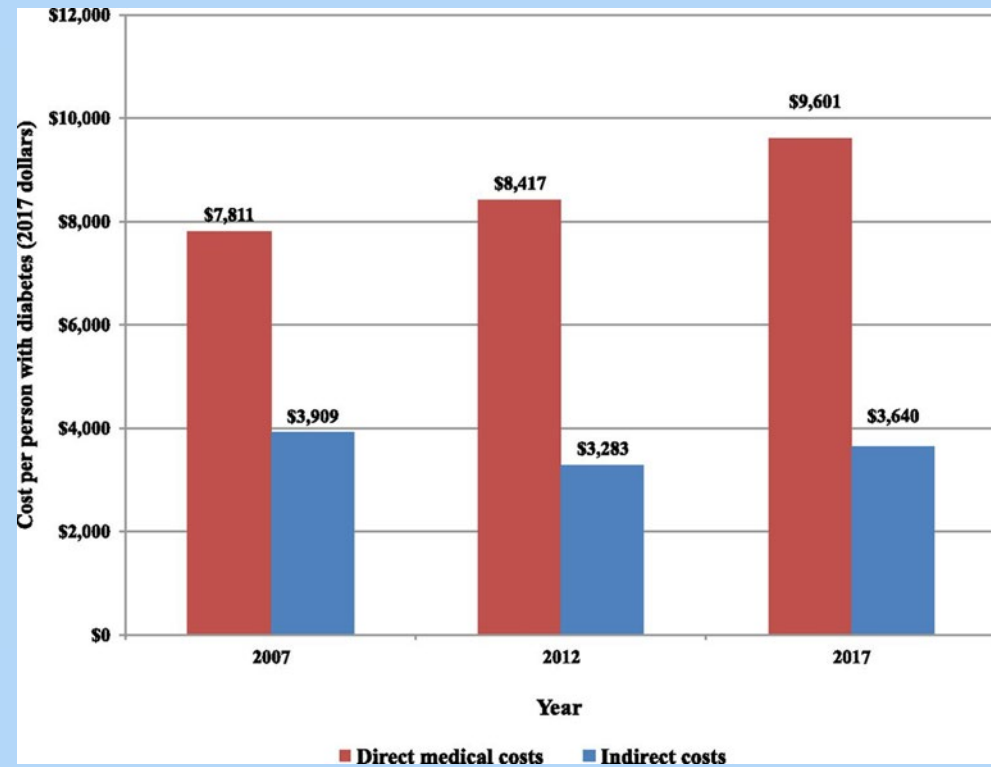


Today, **4,110** Americans will
be diagnosed with diabetes.
Additionally, diabetes will
cause **295** Americans to
undergo an amputation and
137 will enter end-stage
kidney disease treatment.

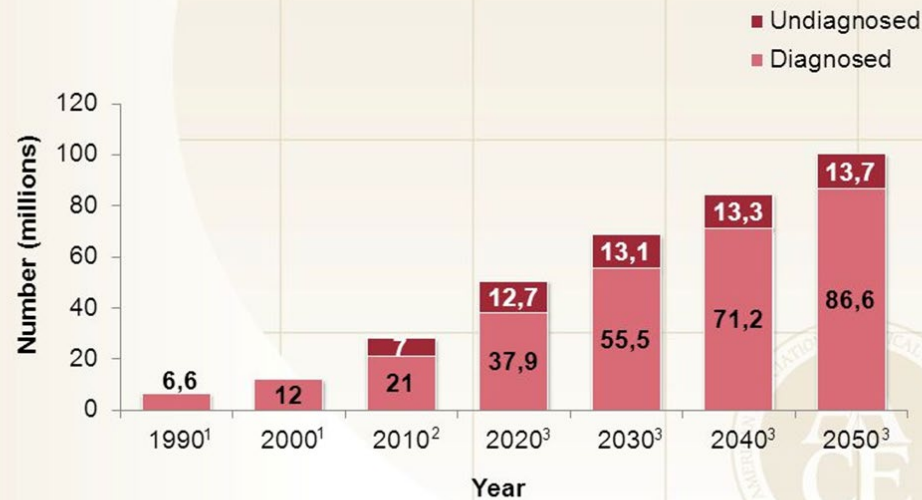
Learn how to fight this costly disease at
diabetes.org/congress



Average Cost of Diabetes 2007-2017



Projected Prevalence of Diabetes in the United States: 1990 to 2050

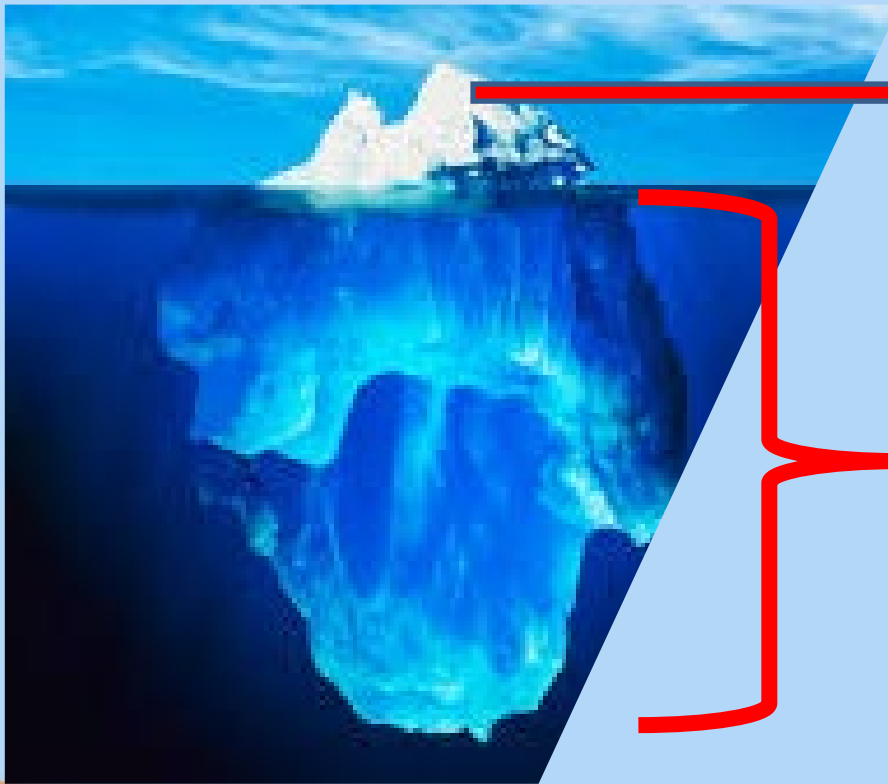


1. National Diabetes Surveillance System. <http://www.cdc.gov/diabetes/statistics/prev/national/figpersons.htm>. 2. CDC. National diabetes fact sheet, 2011. http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf. 3. Boyle JP, et al. *Popul Health Metr*; 2010 Oct 22;8:29.

3



Diabetes – Tip of the iceberg



Diabetes: 34.2 million people have diabetes (10.5% of the US population)

Prediabetes: 88 million adults aged 18 years or older have prediabetes (34.5% of the adult US population)

WHO'S AT RISK

for prediabetes or type 2 diabetes?

You could have prediabetes or type 2 diabetes and not know it—there often aren't any symptoms. That's why it makes sense to know the risk factors:



45+ years old



Physically active less than 3 times/week



Family history of type 2 diabetes



High blood pressure



History of gestational diabetes*



Overweight

*Diabetes during pregnancy. Giving birth to a baby weighing 9+ pounds is also a risk factor.

DID YOU KNOW...

African Americans, Hispanic/Latino Americans, American Indians/Alaska Natives, Pacific Islanders, and some Asian Americans are at higher risk.

If you have any of the risk factors, ask your doctor about getting your blood sugar tested.



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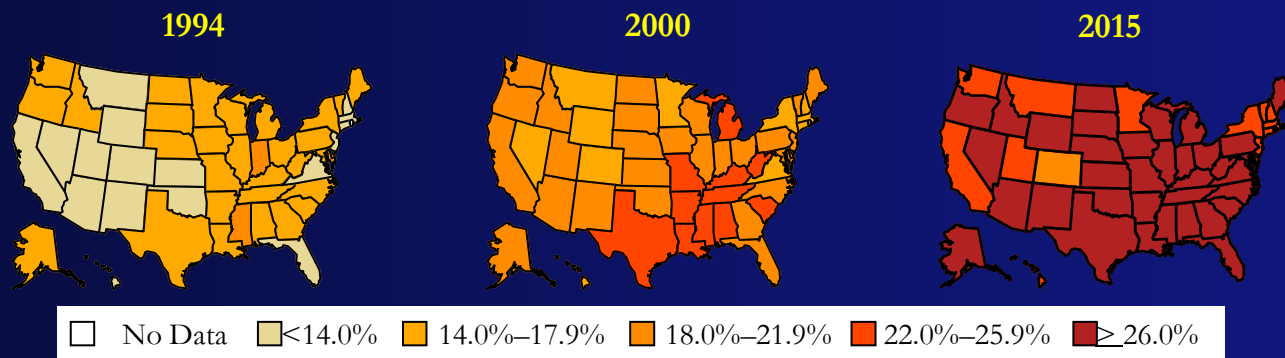


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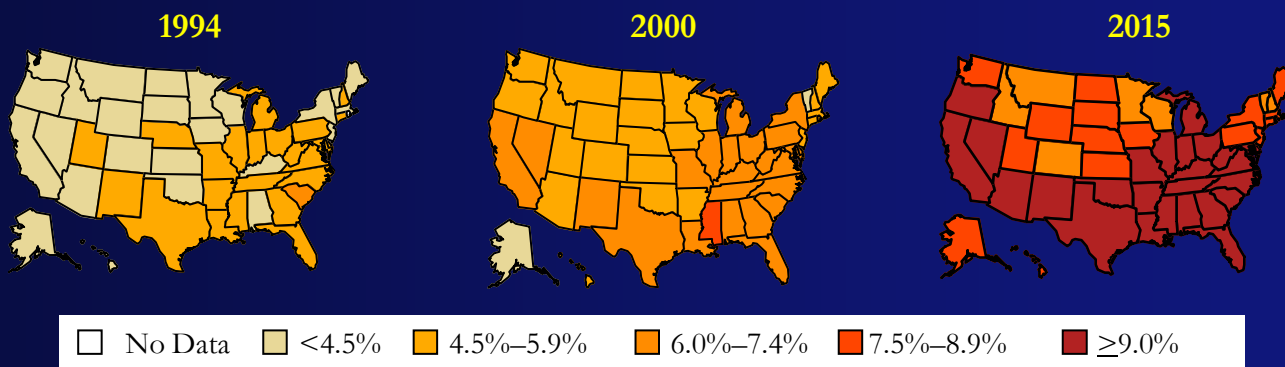
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Age-adjusted Prevalence of Obesity and Diagnosed Diabetes Among US Adults

Obesity (BMI ≥ 30 kg/m²)



Diabetes



CDC's Division of Diabetes Translation. United States Surveillance System available at
<http://www.cdc.gov/diabetes/data>



Prediabetes Risk Test

NATIONAL
DIABETES
PREVENTION
PROGRAM

1. How old are you?

Younger than 40 years (0 points)
40-49 years (1 point)
50-59 years (2 points)
60 years or older (3 points)

Write your score in the boxes below

2. Are you a man or a woman?

Man (1 point) Woman (0 points)

3. If you are a woman, have you ever been diagnosed with gestational diabetes?

Yes (1 point) No (0 points)

4. Do you have a mother, father, sister, or brother with diabetes?

Yes (1 point) No (0 points)

5. Have you ever been diagnosed with high blood pressure?

Yes (1 point) No (0 points)

6. Are you physically active?

Yes (0 points) No (1 point)

7. What is your weight category?

(See chart at right)

Total score:

Height	Weight (lbs.)		
4'10"	119-142	143-190	191+
4'11"	124-147	148-197	198+
5'0"	128-152	153-203	204+
5'1"	132-157	158-210	211+
5'2"	136-163	164-217	218+
5'3"	141-168	169-224	225+
5'4"	145-173	174-231	232+
5'5"	150-179	180-239	240+
5'6"	155-185	186-246	247+
5'7"	159-190	191-254	255+
5'8"	164-196	197-261	262+
5'9"	169-202	203-269	270+
5'10"	174-208	209-277	278+
5'11"	179-214	215-285	286+
6'0"	184-220	221-293	294+
6'1"	189-226	227-301	302+
6'2"	194-232	233-310	311+
6'3"	200-239	240-318	319+
6'4"	205-245	246-327	328+
	1 Point	2 Points	3 Points

You weigh less than the 1 Point column (0 points)

Adapted from Bang et al., Ann Intern Med 100:775-783, 2009. Original algorithm was validated without gestational diabetes as part of the model.

If you scored 5 or higher

You are at increased risk for having prediabetes and are at high risk for type 2 diabetes. However, only your doctor can tell for sure if you have type 2 diabetes or prediabetes, a condition in which blood sugar levels are higher than normal but not high enough yet to be diagnosed as type 2 diabetes. Talk to your doctor to see if additional testing is needed.

If you are African American, Hispanic/Latino American, American Indian/Alaska Native, Asian American, or Pacific Islander, you are at higher risk for prediabetes and type 2 diabetes. Also, if you are Asian American, you are at increased risk for type 2 diabetes at a lower weight (about 15 pounds lower than weights in the 1 Point column). Talk to your doctor to see if you should have your blood sugar tested.

You can reduce your risk for type 2 diabetes

Find out how you can reverse prediabetes and prevent or delay type 2 diabetes through a CDC-recognized lifestyle change program at <https://www.cdc.gov/diabetes/prevention/lifestyle-program>.

Risk Test provided by the American Diabetes Association and the Centers for Disease Control and Prevention.



DO I HAVE PREDIABETES?

More than 1 in 3 American adults have prediabetes, which can lead to type 2 diabetes, and 85% don't know they have it. In North Carolina alone, 34.5% of adults have prediabetes. Find out if you may have prediabetes with just a few quick questions.



Prediabetes is a condition in which blood glucose levels are higher than normal but not high enough to be diagnosed as type 2 diabetes. Having prediabetes can put you at a higher risk for developing type 2 diabetes and other serious health problems. The good news is that prediabetes is treatable and potentially reversible.

STEP 1

Take the prediabetes risk test.

Take the 1-minute prediabetes risk test today by using the QR code or visiting doihavaprediabetes.org/take-the-risk-test/#/.

Access the QR reader by hovering your smart phone's camera over the coded image and click the link that appears.



SCAN ME

STEP 2

What does your score mean?

If you scored 5 or higher, you are at increased risk for having prediabetes or type 2 diabetes. However, only your doctor can tell for sure if you have these conditions. Talk to your doctor to see if additional testing is needed.

If you are diagnosed with prediabetes, there are options to help prevent or delay progression to type 2 diabetes such as the CDC-recognized lifestyle change program that is part of the National Diabetes Prevention Program. This program is designed for your success and is a part of the DiabetesFreeNC initiative to end diabetes in the state. Over the course of a year, you'll work with a lifestyle coach that will teach you how to eat healthy, stay active and manage stress on your journey to a healthier future.

STEP 3

Contact a DiabetesFreeNC team member at (844) 328-0021.

A team member from DiabetesFreeNC can help you learn more about the National Diabetes Prevention Program and answer any questions (M-F, 7am-7pm). They can also help you find a free or low-cost program offered virtually or in-person throughout North Carolina.

For more information about finding a program in North Carolina, visit joinADProgram.org.



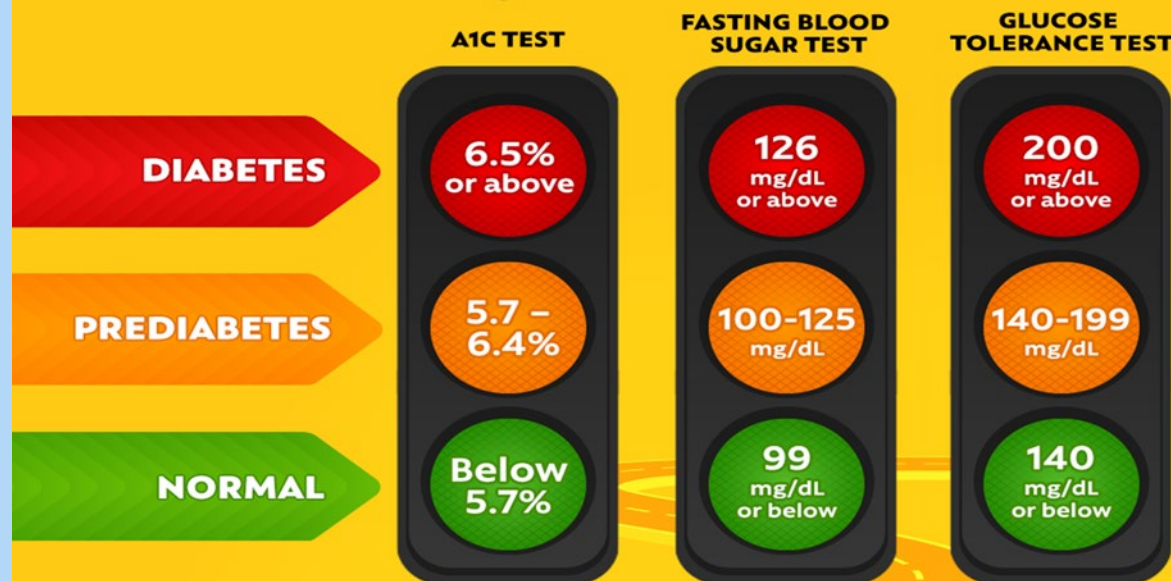
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THE ROAD TO TYPE 2 DIABETES

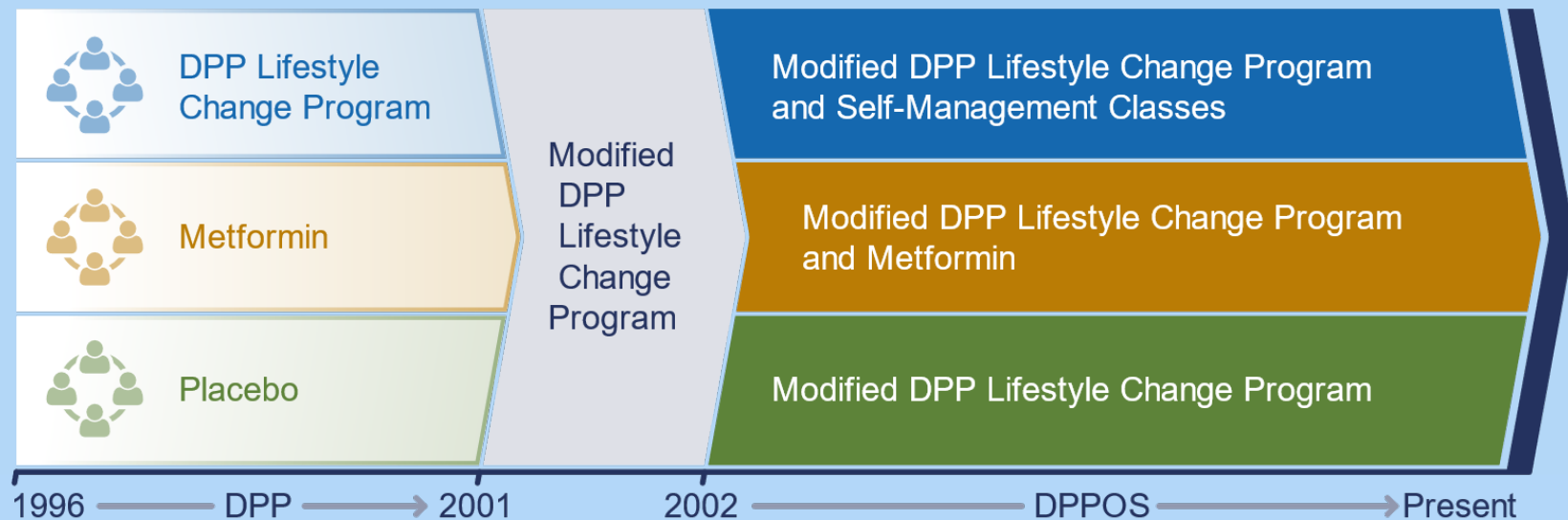


Source: American Diabetes Association

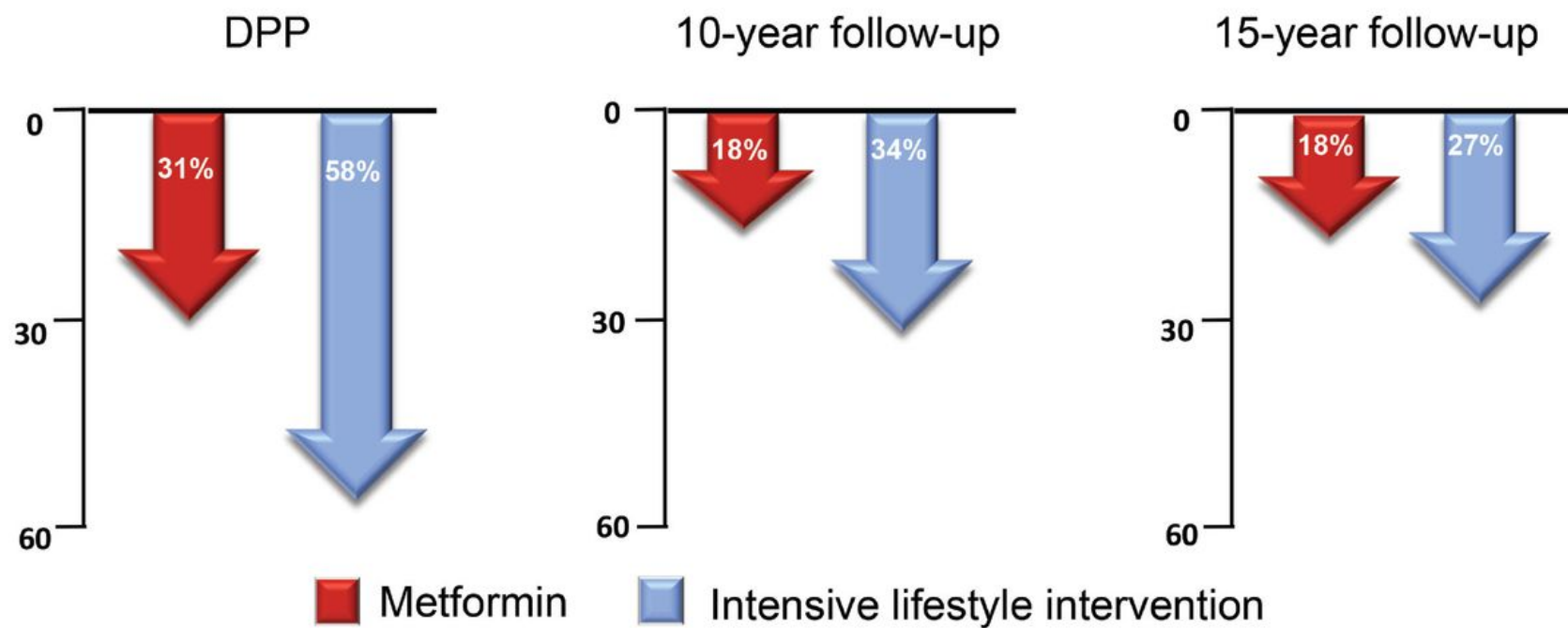


Diabetes Prevention Program (DPP) & DPP Outcomes Study (DPPOS)

DPP & DPPOS Timeline



Diabetes Prevention Program (DPP) & DPP Outcomes Study (DPPOS)





Working Together to Prevent Type 2 Diabetes



The National DPP lifestyle change program helps participants make sustainable, healthy lifestyle changes and achieve weight loss to lower their risk of developing type 2 diabetes.

Core curriculum

Participants attend 16 weekly sessions during the first six months

Follow-up phase

Participants attend one session a month (minimum of 6 sessions)

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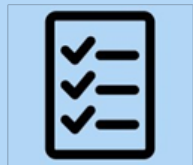
Understanding the National DPP lifestyle change program



Trained lifestyle coaches teach group classes



Programs deliver a CDC-approved curriculum



Emphasis on prevention and empowerment through a personal action plan



Quality assurance through the Centers for Disease Control and Prevention (CDC); programs are required to submit data on participant outcomes

***Key standard for CDC recognition: Average participant body weight loss of 5%.**

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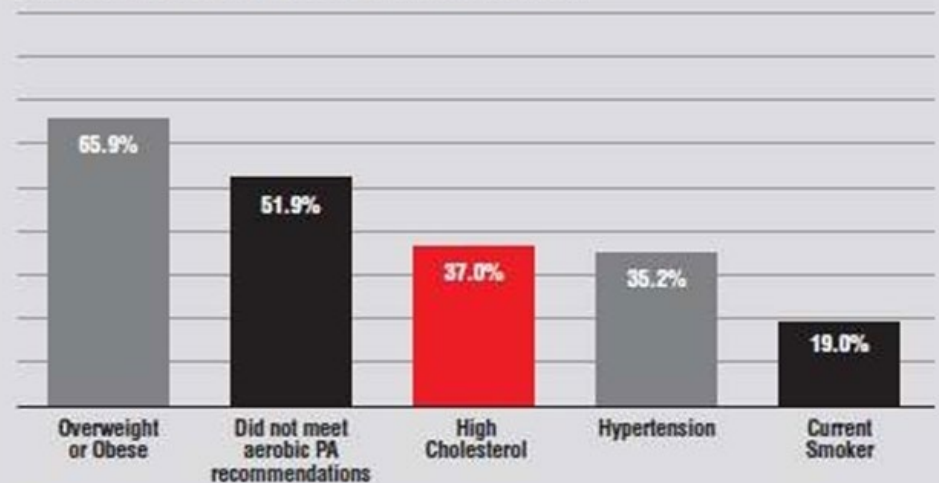
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Over 50% of adults are overweight or obese.

An estimated 2.8 million adults have prediabetes. That's 34.6% of our state population.

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



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

National DPP referral options in NC



<http://ourcommunityhealthinitiative.org/diabetesfreenc/>



<https://nccare360.org/>



<https://diabetesfreenc.com/>

DIRECT REFERRAL

***Availability of referral options may vary depending on your location and organization.**

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Bi-directional feedback loop ensures continuity



Referral to a DPP provider:
Patient's name, contact information, lab values, etc.



Feedback on the patient's status:
Enrollment, attendance, progress, program completion.

American Medical Association (AMA) resources



Having prediabetes means you are at increased risk for developing serious health problems such as type 2 diabetes, stroke and heart disease.

You could have prediabetes if you:

- Are 40 years of age or older
- Have a BMI that is categorized as overweight or obese
- Have a history of gestational diabetes
- Have a family history of type 2 diabetes
- Have certain medical conditions like high blood pressure
- Have a sedentary lifestyle

The good news is that prediabetes is treatable and you can take steps to lower your risk of type 2 diabetes.

Get tested for prediabetes—talk with your doctor today.



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AMA
AMERICAN MEDICAL ASSOCIATION

U.S. Diabetes Prevention Program Study and Diabetes Prevention Program Outcomes Study

The U.S. Diabetes Prevention Program (DPP) study was initiated in 1996 as a randomized controlled clinical trial with the objective of determining whether lifestyle intervention or pharmacotherapy would prevent or delay the progression to type 2 diabetes in adults at high risk of developing the disease. The follow-up study, the Diabetes Prevention Program Outcomes Study (DPPOS), was initiated in 2002 to measure the long-term effects of interventions used in the DPP study on the development of type 2 diabetes and associated complications. The participants of the DPPOS included 88 percent of eligible DPP participants.

For more information on the original DPP study and DPPOS, visit the National Institute of Diabetes and Digestive and Kidney Diseases website: <https://www.niddk.nih.gov/health/topics/diabetes/prevention/program-outcomes-study/>

U.S. Diabetes Prevention Program Study

A NIH-funded randomized, controlled clinical trial that compared the effectiveness of a lifestyle intervention program versus pharmacotherapy in the prevention or delay of progression to type 2 diabetes.

- Multi-center study of 3,234 adults with prediabetes

Fifty-five percent of study participants were members of a minority group (African American, Hispanic, Asian, Pacific Islander and American Indian).

Study participants also included those over the age of 60, women with a history of gestational diabetes and adults with a first-degree relative with prediabetes.

- Participants received one of three interventions:

Individual structured intensive behavioral counseling with the goal of lowering body weight by 7 percent through a low-fat diet and increased physical activity.

Pharmacotherapy with metformin twice daily plus standard advice on diet and exercise.

Placebo plus standard advice on diet and exercise.

- At an average follow-up of three years, the structured intensive behavioral counseling intervention reduced the incidence of diabetes by 58 percent compared with placebo.

Effects were similar in men and women and in all racial and ethnic groups.

- Among adults 60 years and older, the incidence reduction was even greater at 71 percent.

Pharmacotherapy with metformin reduced the incidence of diabetes by 31 percent compared to placebo during the same time frame.

Translated to approximately one case of diabetes prevented per 100 persons treated for three years with the lifestyle change intervention.

- Estimated cumulative incidence of diabetes at three years was 28.8 percent, 21.7 percent, and 14.4 percent in the placebo, metformin and lifestyle intervention groups.

Source: NIH. American Medical Association. U.S. Diabetes Prevention Program Study & Outcomes Study. <https://www.niddk.nih.gov/health/topics/diabetes/prevention/program-outcomes-study/>

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1



What is prediabetes?

Prediabetes is a condition in which blood glucose levels are higher than normal but not high enough to be diagnosed as type 2 diabetes.

1 in 3 adults in the U.S. has prediabetes

Why does prediabetes matter to me?

If you have prediabetes, you have a greater risk of developing type 2 diabetes, as well as other medical conditions.

I feel fine, though.

Certain risk factors can increase your chances of having prediabetes.

How do I find out if I have prediabetes?

Prediabetes is diagnosed through a blood test. Your doctor can tell you more and order the test for you.

Get tested for prediabetes—talk with your doctor today.

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Practical AMA resources to prevent type 2 diabetes while earning CME

The American Medical Association offers **diabetes prevention** continuing medical education activities on our [AMA e360™](https://www.ama-assn.org) platform. Please note that two of the activities—“Pre diabetes performance improvement CME” and “Study: Mass India performance improvement CME”—can be used to meet **maintenance of certification** requirements for 21 different specialty boards (additional details below).

Preventing type 2 diabetes in at-risk patients

<https://www.ama-assn.org/e360/diabetes-prevention/0000000000000000>

Designed to improve the care for patients with prediabetes, this continuing medical education module includes material on identifying and managing patients at risk for diabetes. It also offers:

- Opportunities to learn from practices that have successfully implemented prediabetes screening and education programs
- Information on evidence-based prevention programs for patient release
- Answers to commonly asked questions



This activity is one of the **AMA's STEPS Forward™** practice improvement educational modules, which deliver best practices from the field and empower practices to identify areas of opportunity for improvement, set meaningful and achievable goals, and implement transformative changes designed to increase operational efficiencies, elevate clinical team engagement and improve patient care.

Diabetes prevention activities that align with maintenance of certification requirements

The following two activities can be used toward maintenance of certification (MOC) requirements for 21 specialty medical boards that are in the American Board of Medical Specialties Multi-Specialty Portfolio Program.

The AMA's participation in the portfolio program provides a streamlined approach for physicians and physician assistants to earn Improvement in Medical Practice (Part IV) credit. Please note that the amount of MOC Part IV credit awarded is member board dependent.

To be eligible for MOC Part IV credit for other activity listed below, the American Board of Medical Specialties requires the completion of two cycles through the implementation (B) and the measurement (C) stages. By completing these stages twice, participants can capture and compare how actions and outcomes shift.

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1

[amapreventdiabetes.org](https://www.ama-assn.org/preventdiabetes.org)

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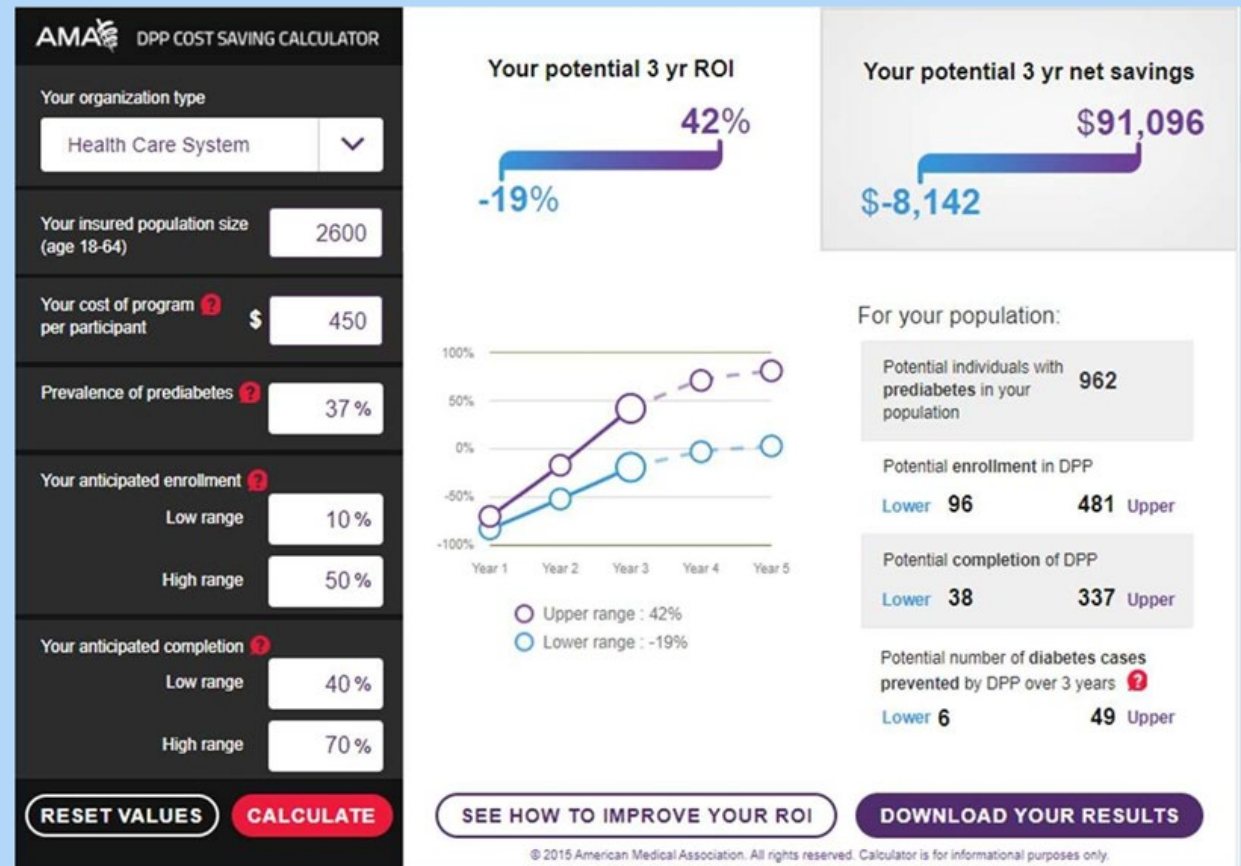
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AMA resource: Return on Investment (ROI) calculator

Estimate the medical cost savings of prioritizing diabetes prevention for your patients with prediabetes.

<https://ama-roi-calculator.appspot.com/>



North Carolina is taking a stand against diabetes

Join us

DIABETESFREE NC

- American Medical Association
- North Carolina Medical Society
- Centers for Disease Control and Prevention
- BlueCross BlueShield of North Carolina
- NC Division of Public Health
- North Carolina State University
- NC Department of Health and Human Services
- North Carolina Academy of Family Physicians
- University of North Carolina (UNC) School of Medicine
- University of North Carolina Asheville
- Wake Forest Baptist Medical Center
- ECU Brody School of Medicine
- LabCorp
- NC Alliance of YMCAs
- NC Community Health Center Assn
- NC Diabetes Advisory Council
- NC Division of Aging
- NC Division of Health Benefits
- NC Healthcare Association
- NC Office of Minority Health
- NC State Health Plan
- UnitedHealthcare

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DIABETESFREENC. "NC Diabetes Prevention Program Advisory Council."
www.diabetesfreenc.com/nc-dp-advisorycommittee/

Thank you!



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