

Preventing Type 2 Diabetes in At-Risk Patients



Help your patients find ways to prevent type 2 diabetes through education, screening and local referral programs.

AMA IN PARTNERSHIP WITH



CME
CREDITS:
0.5

Namratha Kandula, MD, MPH
Director, Physician and Patient
Engagement, Improving Health
Outcomes, AMA

How will this module help me identify prediabetes and prevent the onset of diabetes?

- 1 Provide tools and resources on screening, testing and referral
- 2 Learn from practices that have successfully implemented prediabetes screening and education programs
- 3 Identify evidence-based prevention programs for patient referral
- 4 Get answers to commonly asked questions



Introduction

What is prediabetes?

Prediabetes is a condition in which blood glucose or hemoglobin A1C (HbA1C) levels are higher than normal but not high enough to be classified as diabetes.¹ In the average primary care practice, up to one-third of patients age 18 and above—and up to half age 65 and above—could have prediabetes.¹



86 million
AMERICAN ADULTS
HAVE PREDIABETES

9 OUT OF **10** PEOPLE WITH PREDIABETES
DON'T KNOW THEY HAVE IT

Eighty-six million adults in the United States have prediabetes, but 90 percent of them don't know they have it!¹ Up to 30 percent of people with prediabetes will develop diabetes within five years.^{2,3} Importantly, people with prediabetes also have an increased risk of heart disease and stroke.¹

What can be done to stop progression to diabetes?

Early and intensive lifestyle intervention can prevent or delay diabetes in at-risk patients²⁻¹⁷ and has also demonstrated secondary prevention of microvascular and macrovascular complications. Physicians and their care teams play an important role in diabetes prevention. This diabetes prevention module presents strategies to help physicians and practice staff educate patients about their risk for developing diabetes and refer at-risk patients to an evidence-based diabetes prevention program. This one-page document – [M.A.P. \(Measure, Act, Partner\)](#) – can help you and your team determine roles and responsibilities regarding diabetes prevention and your practice workflow.

[M.A.P. \(Measure, Act, Partner\)](#)
(PDF, 96 KB)

Five steps to help patients prevent diabetes

1. Create awareness

2. Identify patients with prediabetes

3. Educate at-risk patients

4. Refer patients to an evidence-based diabetes prevention program

5. Follow-up on weight loss progress

1

Create awareness

Among patients:

Hang educational posters and distribute informational handouts, such as “Are you at risk for prediabetes?” in exam rooms or in waiting areas.

[Are you at risk for prediabetes?](#)
(PDF, 94 KB)

Among clinicians:

Use this handout to raise awareness among colleagues and clinicians about the evidence-based diabetes prevention program and why it makes sense to screen and refer.

[You can prevent type 2 diabetes](#)
(PDF, 94 KB)

2

Identify patients with prediabetes

The most common blood tests used to identify people with prediabetes include a fasting plasma glucose or hemoglobin A1C (HbA1C).

[ICD and CPT codes for prediabetes and diabetes screening](#)
(PDF, 84 KB)



DIAGNOSTIC TEST ²	NORMAL	PREDIABETES	DIABETES
HbA1C (%)	< 5.7	5.7-6.4	> 6.5
Fasting plasma glucose (mg/dL)	< 100	100-125	> 126

DIAGNOSTIC TEST ²	NORMAL	PREDIABETES	DIABETES
	Encourage patient to maintain a healthy lifestyle.	Refer to diabetes prevention program, provide brochure.	Confirm diagnosis; retest if necessary.
	Continue with exam/consult. Retest within three years of last negative test.	Consider retesting annually to check for diabetes onset.	Counsel patient re: diagnosis. Initiate therapy.

Reprinted with permission from the American Medical Association.¹⁹

You can prospectively identify patients with prediabetes by having patients complete a [diabetes risk assessment](#) before their visit and by arranging for pre-visit lab testing before a planned care appointment (see [pre-visit planning module](#)). This will allow face-to-face engagement with the patient about the results at the visit.

You can also retrospectively identify patients by setting up a query in your electronic health record (EHR). Use the one-page infographic – Retrospective prediabetes identification – to set up a prediabetes registry using your EHR. Your patients with a BMI > 24 kg/m² (> 22 for Asians) and blood glucose or HbA1C levels in the prediabetes range qualify for an evidence-based diabetes prevention program. (Read on to learn more about referring patients to this program.)*

[Retrospective prediabetes identification](#)

(PDF, 98 KB)



What are the features of a diabetes prevention program?

Diabetes prevention programs emphasize behavior modification, managing stress and peer support. Some of the components are:

What is the evidence behind the diabetes prevention program?

The diabetes prevention program is a lifestyle intervention based on research funded by the National Institutes of Health that showed, among those with prediabetes, a 58 percent reduction in the number of new cases of diabetes overall, and a 71 percent reduction in new cases for those over age 60.² Researchers published the findings of the Diabetes Prevention Program (DPP) study in the February 7, 2002, issue of the *New England Journal of Medicine*. Additional studies²⁻¹⁷ have since been published showing the efficacy of the DPP.

Are diabetes prevention programs covered by insurance?

Currently, there is limited insurance coverage for diabetes prevention programs. However, coverage for diabetes prevention programs continues to grow. To determine if your patient has coverage for a diabetes prevention program, ask the patient to contact his or her insurance carrier.

Does metformin prevent diabetes in at-risk adults?

Pharmacological agents, such as metformin, a-glucosidase inhibitors, orlistat, and thiazolidinediones, have each been shown to decrease incident diabetes to various degrees. Metformin has the strongest evidence base and demonstrated long-term safety for diabetes prevention.²⁰ Although metformin is less effective than lifestyle modification for diabetes prevention, the DPP study²⁻²¹ found that metformin can reduce the risk of developing diabetes by 31 percent over three years. Lifestyle modification with diet and exercise is approximately twice as effective as metformin for preventing diabetes, especially in older patients. Metformin was shown to be most effective in preventing or delaying the development of type 2 diabetes in younger, heavier people with prediabetes. Metformin was also effective for lowering the risk of diabetes in women who have had gestational diabetes. Clinical guidelines recommend that metformin can be considered for diabetes prevention in people younger than 60 years

who are at very high risk for progressing to diabetes, such as women with a history of gestational diabetes or obese individuals.²²

3 Educate patients at risk for diabetes

Focus your education on four key messages:

- Prediabetes is a serious condition: It raises your risk of heart attack and stroke and poses a very high risk of eventually progressing to full-blown diabetes
- Prediabetes is treatable: The good news is that most patients with prediabetes can avoid or delay developing diabetes by losing weight, becoming more active and eating more healthfully
- Evidence-based diabetes prevention programs are available. These programs help people with prediabetes accomplish these healthy changes, lose weight and avoid developing diabetes

LOSING 5-7%  **OF YOUR BODY WEIGHT IS THE GOAL FOR DIABETES PREVENTION***

That is 10-14 pounds for a person who weighs 200 pounds.

Increasing physical activity, eating healthier foods and losing weight are the key steps.

“

To have the diabetes prevention program available is something bigger that you can give them that's clinically proven, and available nationwide, that is just unbelievable.

”

Steven Reed, MD Park Nicollet Primary Care Physician who refers patients to the diabetes prevention program in his community



Q&A

How much does it cost to participate in the diabetes prevention program?

While costs may vary, the average cost per participant is approximately \$400 to \$500 for the yearlong program.

How can I explain prediabetes to patients so they understand?

You might consider saying: “Your blood sugar is higher than normal, but not at a level of diabetes. We call this prediabetes. Prediabetes is serious because it increases your risk of getting type 2 diabetes. Prediabetes can also double your chances of suffering from heart disease or a stroke. The good news is that prediabetes is reversible. There are things you can do now to prevent prediabetes from progressing

to diabetes. Studies show that you can cut your chance of developing diabetes in half by losing XX pounds (5-7 percent of body weight), eating healthier and exercising regularly.”

Use a patient handout, such as “So you have prediabetes...now what?” to help you reinforce these messages.

[So you have prediabetes...now what?](#)
(PDF, 102 KB)

[What if my patient does not have access to a diabetes prevention program?](#)

While few alternatives have been shown to be as effective, if a patient with prediabetes does not have access to an evidence-based diabetes prevention program, an alternative is to refer the patient for both nutrition and physical activity counseling. Both of these services will generally be covered by insurance for patients with obesity and prediabetes.

4

Refer patients to an evidence-based diabetes prevention program

If the patient is interested and ready to make healthy lifestyle changes, then refer him or her to an [in-person, virtual or online diabetes prevention program](#).

Locate diabetes prevention programs in your community by:

A

Calling 1-800-DIABETES

B

Using the [CDC’s registry](#) to find in-person, virtual or online diabetes prevention programs that are part of the CDC’s National Diabetes Prevention Program

C

Locating a [YMCA diabetes prevention program](#)

The YMCA is the largest U.S. provider of in-person diabetes prevention programs. The YMCA uses the CDC model for diabetes prevention and has been found to be as effective as the original diabetes prevention program when tested in clinical trials.

The AMA and CDC, along with physicians and care teams at multiple physician practices in communities within four states, have developed a step-by-step toolkit on how to screen, test and refer high-risk patients to diabetes prevention programs in their communities. The toolkit includes multiple resources that practices can adapt to best meet their needs. [Prevent Diabetes STAT: Screen, Test, Act - Today™](#).

[Access the toolkit](#)
ZIP, 41.3 MB

“

I believe that physicians, nurse practitioners and physician assistants really need to send their patients so that they can get the benefit of this program. This program works. We saw it in our patients.

”

Miguel Fana, MD Fana Medical Group



“

We don't have all that time to spend with them in classes and teach them about their eating habits and counting calories and sugar, so they actually go spend time with a person in a group session and they can get all that from them.

”

Yolanda Freeman Fana Medical Group Practice Manager



Q&A

How can I get a diabetes prevention program in my community?

Physicians and members of their care teams can advocate for community organizations or their own health system to offer the diabetes prevention program. You may want to speak with the director of your local YMCA, hospital, state health department or other interested community organization about the need to address prediabetes locally and encourage them to offer in-person, virtual or online diabetes prevention programs. It's important that they follow the CDC's evidence-based curriculum, and become a [CDC-recognized](#) provider.

5

Follow-up on weight loss progress

Plan a three- or six-month follow-up with patients to assess their progress towards their weight loss goals and to address barriers to weight loss and a healthy lifestyle.

Q&A

How can I get feedback on my patient from a diabetes prevention program?

Most programs send reports of participant progress to referring clinicians after the eighth and 16th group sessions. In addition, participants in the program complete periodic self-evaluations that referring clinicians can request directly from patients. You can also contact the diabetes prevention program in the area and request to receive information about your patients' participation.



AMA Pearls

Prevention is a team sport

Diabetes prevention is a team sport. This one-page document – [M.A.P. \(Measure, Act, Partner\)](#) – can help you and your team determine roles and responsibilities regarding diabetes prevention and your practice workflow.

Using the EHR to identify patients with prediabetes

You can use blood values you already have recorded in your EHR to identify patients with prediabetes. Use this one-page infographic—[Retrospective prediabetes identification](#)—to set up a prediabetes registry using your EHR.

Receive performance improvement (PI-CME) credits

[Click here](#) to participate in a PI-CME activity on prediabetes screening and treatment for a maximum of 20 *AMA PRA Category 1 Credits™*.



“Check out tools to screen and refer patients with #prediabetes to a #diabetes prevention program. #STEPSforward”

Conclusion

Integrate new diabetes prevention strategies, tools and resources into your practice workflow. Screen and test patients for prediabetes, and refer them to a diabetes prevention program that's part of the CDC's National Diabetes Prevention Program. The learnings in this module can help you create links between your clinic and evidence-based community resources to reduce chronic illness and improve outcomes for your patients.



STEPS in practice

1 Preventing Type 2 Diabetes in Brooklyn Park, MN: A Case Study

Improving Health Outcomes: Blood Pressure

2 Preventing Type 2 Diabetes in St. Petersburg, FL: A Case Study

Improving Health Outcomes: Blood Pressure

Learning Objectives:

At the end of this activity, you will be able to:

1. Define the medical condition of prediabetes
2. Identify five steps to help at-risk patients prevent diabetes
3. List strategies for educating patients about their risk for developing diabetes
4. Identify evidence-based prevention programs for patient referral

Introduction:

Many physicians now spend less time delivering direct patient care. This is primarily due to increasing administrative responsibilities that are a result of regulatory pressures along with evolving payment and care delivery models. In the average primary care practice, up to one-third of patients age 18 and above – and up to half age 65 and above – could be at risk for prediabetes. Physicians and their care teams play an important role in diabetes prevention.

Release Date:

June 2015

End Date:

June 2019

Accreditation Statement:

The American Medical Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Article Information

AMA CME Accreditation Information

Designation Statement: The American Medical Association designates this enduring material activity for a maximum of .50 AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience: This activity is designed to meet the educational needs of practicing physicians and their care teams.

***Disclaimer:** These BMI levels reflect eligibility for the National DPP as noted in the CDC Diabetes Prevention Recognition Program Standards and Operating Procedures. The American Diabetes Association (ADA) encourages screening for diabetes at a BMI of > 23 for Asian Americans and > 25 for non-Asian Americans, and some programs may use the ADA screening criteria for program eligibility. Please check with your diabetes prevention program provider for their specific BMI eligibility requirements.

Statement of Competency: This activity is designed to address the following ABMS/ACGME competencies: practice-based learning and improvement, interpersonal and communications skills, professionalism, systems-based practice, interdisciplinary teamwork, quality improvement and informatics.

Planning Committee:

- Rita LePard – CME Program Committee, AMA
- Ellie Rajcevic, MPA – Practice Development Advisor, Professional Satisfaction and Practice Sustainability, AMA
- Sam Reynolds, MBA – Director, Professional Satisfaction and Practice Sustainability, AMA
- Christine Sinsky, MD – Vice President, Professional Satisfaction, American Medical Association and Internist, Medical Associates Clinic and Health Plans, Dubuque, IA
- Krystal White, MBA – Program Administrator, Professional Satisfaction and Practice Sustainability, AMA

Author Affiliations:

- Namratha Kandula, MD, MPH**, Director, Physician and Patient Engagement, Improving Health Outcomes, AMA

Faculty:

- Shahid A. Choudhry, PhD**, Senior Program Manager, Physician and Patient Engagement, Improving Health Outcomes, AMA; **Omar Hasan, MBBS, MPH**, Vice President, Improving Health Outcomes, AMA; **Christopher Holliday, PhD, MPH**, Director, Population Health, Improving Health Outcomes, AMA; **Namratha Kandula, MD, MPH**, Director, Physician and Patient Engagement, Improving Health Outcomes, AMA; **Mavis Prall, MSJ, MS**, Director, Information and Engagement, Improving Health Outcomes, AMA; **Vanessa Salcedo, MPH**, Research Associate, Population Health, Improving Health Outcomes, AMA; **Janet Williams, MA**, Senior Program Manager, Population Health, Improving Health Outcomes, AMA; **Matthew K. Wynia, MD, MPH**, Director, Physician and Patient Engagement, Improving Health Outcomes, AMA

About the Professional Satisfaction, Practice Sustainability Group: The AMA Professional Satisfaction and Practice Sustainability group has been tasked with developing and promoting innovative strategies that create sustainable practices.

Leveraging findings from the 2013 AMA/RAND Health study, “Factors affecting physician professional satisfaction and their implications for patient care, health systems and health policy,” and other research sources, the group developed a series of practice transformation strategies. Each has the potential to reduce or eliminate inefficiency in broader office-based physician practices and improve health outcomes, increase operational productivity and reduce health care costs.

Renewal: 02/22/2016

Disclosure Statement:

The content of this activity does not relate to any product or services of a commercial interest as defined by the ACCME; therefore, neither the planners nor the faculty have relevant financial relationships to disclose.

References

1. Centers for Disease Control and Prevention. National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014. Atlanta, GA; 2014. <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>
2. Knowler WC, Barrett-Connor 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.
3. 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**:1343–50.
4. Holman RR, Paul SK, Bethel MA, Matthews DR, Neil HAW. 10-year follow-up of intensive glucose control in type 2 diabetes. *N Engl J Med.* 2008;**359**:1577-89. doi: [10.1056/NEJMoa0806470](https://doi.org/10.1056/NEJMoa0806470).
5. Nathan DM, Cleary PA, Backlund JY, et al. Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC) Study Research Group. Intensive diabetes treatment and cardiovascular disease in patients with type 1 diabetes. *N Engl J Med.* 2005;**353**(25):2643–53.
6. The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med.* 1993;**329**(14):977–86.
7. UK Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet.* 1998;**352**(9131):837–53.
8. Herman WH, Hoerger TJ, Brandle M, et al; Diabetes Prevention Program Research Group. The cost-effectiveness of lifestyle modification or metformin in preventing type 2 diabetes in adults with impaired glucose tolerance. *Ann Intern Med.* 2005;**142**:323–32.
9. Ratner R, Goldberg R, Haffner S, et al; Diabetes Prevention Program Research Group. Impact of intensive lifestyle and metformin therapy on cardiovascular disease risk factors in the Diabetes Prevention Program. *Diabetes Care.* 2005;**28**:888–94.
10. Jiang L, Manson SM, Beals J, et al; Special Diabetes Program for Indians Diabetes Prevention Demonstration Project. Translating the Diabetes Prevention Program into American Indian and Alaska Native communities: results from the Special Diabetes Program for Indians Diabetes Prevention demonstration project. *Diabetes Care.* 2013;**36**(7):2027-34. doi: [10.2337/dc12-1250](https://doi.org/10.2337/dc12-1250).
11. Gerstein HC, Santaguida P, Raina P, et al. Annual incidence and relative risk of diabetes in people with various categories of dysglycemia: a systematic overview and meta-analysis of prospective studies. *Diabetes Res Clin Pract.* 2007;**78**(3):305-12.
12. Ackermann RT, Finch EA, Brizendine E, Zhou H, Marrero DG. Translating the Diabetes Prevention Program into the community. The DEPLOY Pilot Study. *Am J Prev Med.* 2008;**35**(4):357-63.
13. Knowler WC, Fowler SE, Hamman RF, et al; Diabetes Prevention Program Research Group. 10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study. *Lancet.* 2009;**374**(9702):1677-86.
14. Whittemore R. A systematic review of the translational research on the Diabetes Prevention Program. *Transl Behav Med.* 2011;**1**(3):480-91. doi: [10.1007/s13142-011-0062-y](https://doi.org/10.1007/s13142-011-0062-y).
15. Johnson M, Jones R, Freeman C, et al. Can diabetes prevention programmes be translated effectively into real-world settings and still deliver improved outcomes? A synthesis of evidence. *Diabet Med.* 2013;**30**(1):3-15.

16. Ma J, Yank V, Xiao L, et al. Translating the Diabetes Prevention Program lifestyle intervention for weight loss into primary care: a randomized trial. *JAMA Intern Med.* 2013;**173**(2):113-21.
17. Albright AL, Gregg EW. Preventing type 2 diabetes in communities across the U.S.: the National Diabetes Prevention Program. *Am J Prev Med.* 2013;**44**(4 Suppl 4):S346-51.
18. PCMH recognition via Standard 4: Self-Care Support, B. Provide Referrals to Community Resources (3 points), NCQA Facilitating PCMH Recognition, 2011.
19. American Medical Association. PREVENTING TYPE 2 DIABETES: A guide to refer patients to the YMCA's Diabetes Prevention Program. Chicago, IL: Improving Health Outcomes, American Medical Association; 2014.
20. Diabetes Prevention Program Research Group. Long-term safety, tolerability, and weight loss associated with metformin in the Diabetes Prevention Program Outcomes Study. *Diabetes Care.* 2012;**35**:731-7.
21. Lilly M, Godwin M. Treating prediabetes with metformin. *Can Fam Physician.* 2009;**55**:363-9.
22. American Diabetes Association. Prevention or delay of type 2 diabetes. In: Standards of Medical Care in Diabetes. *Diabetes Care.* 2015;**38**(Suppl. 1):S31-S32. doi: [10.2337/dc15-S008](https://doi.org/10.2337/dc15-S008)