

# Diabetes Prevention in Massachusetts: Prediabetes and the Diabetes Prevention Program



Diabetes Prevention and Control  
[www.mass.gov/dph/diabetes](http://www.mass.gov/dph/diabetes)

Massachusetts  
Department of  
Public Health





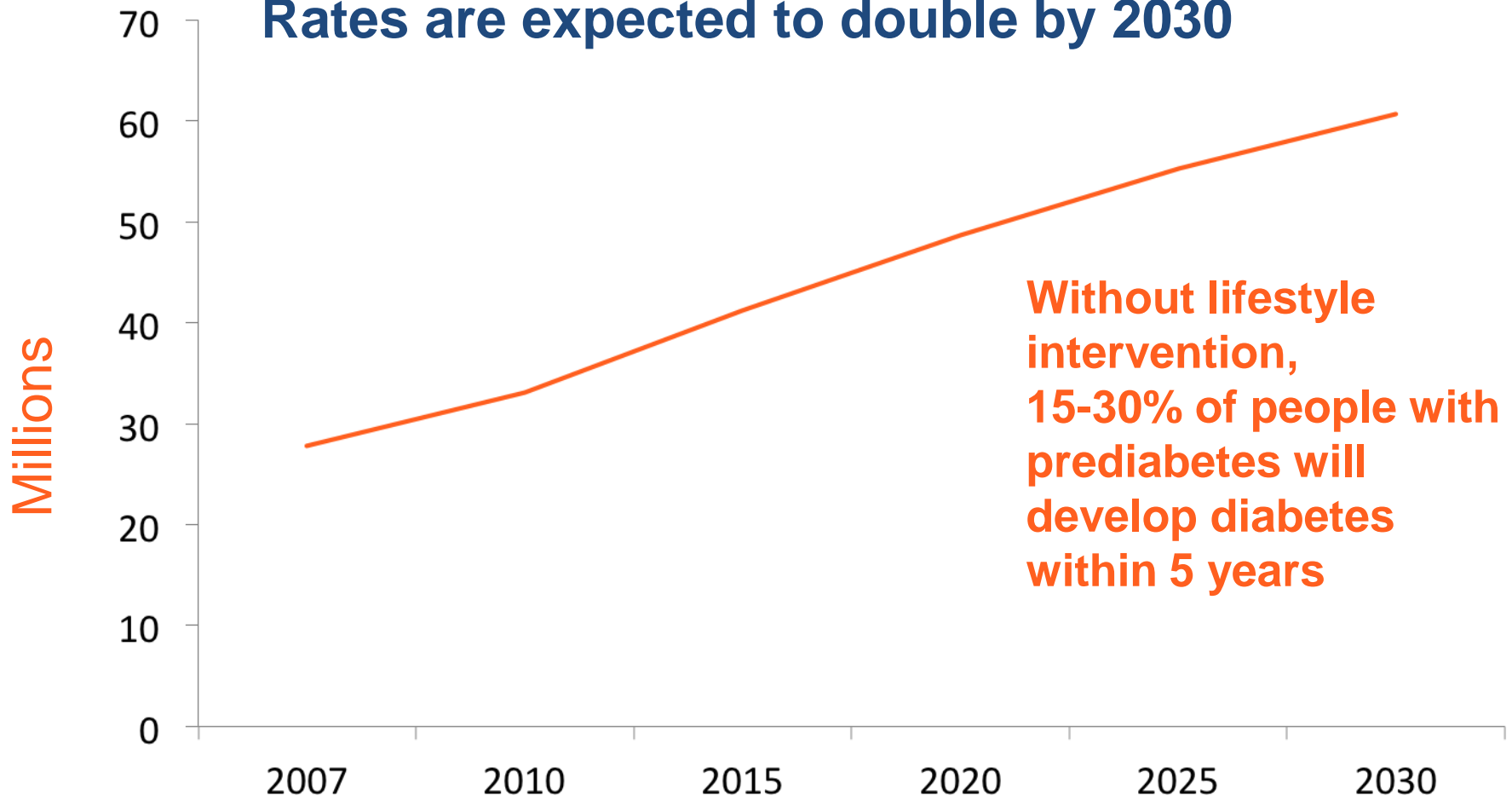
**29 million  
with Diabetes**

**86 million  
with Prediabetes**

**Only 11% are aware  
they have prediabetes!**

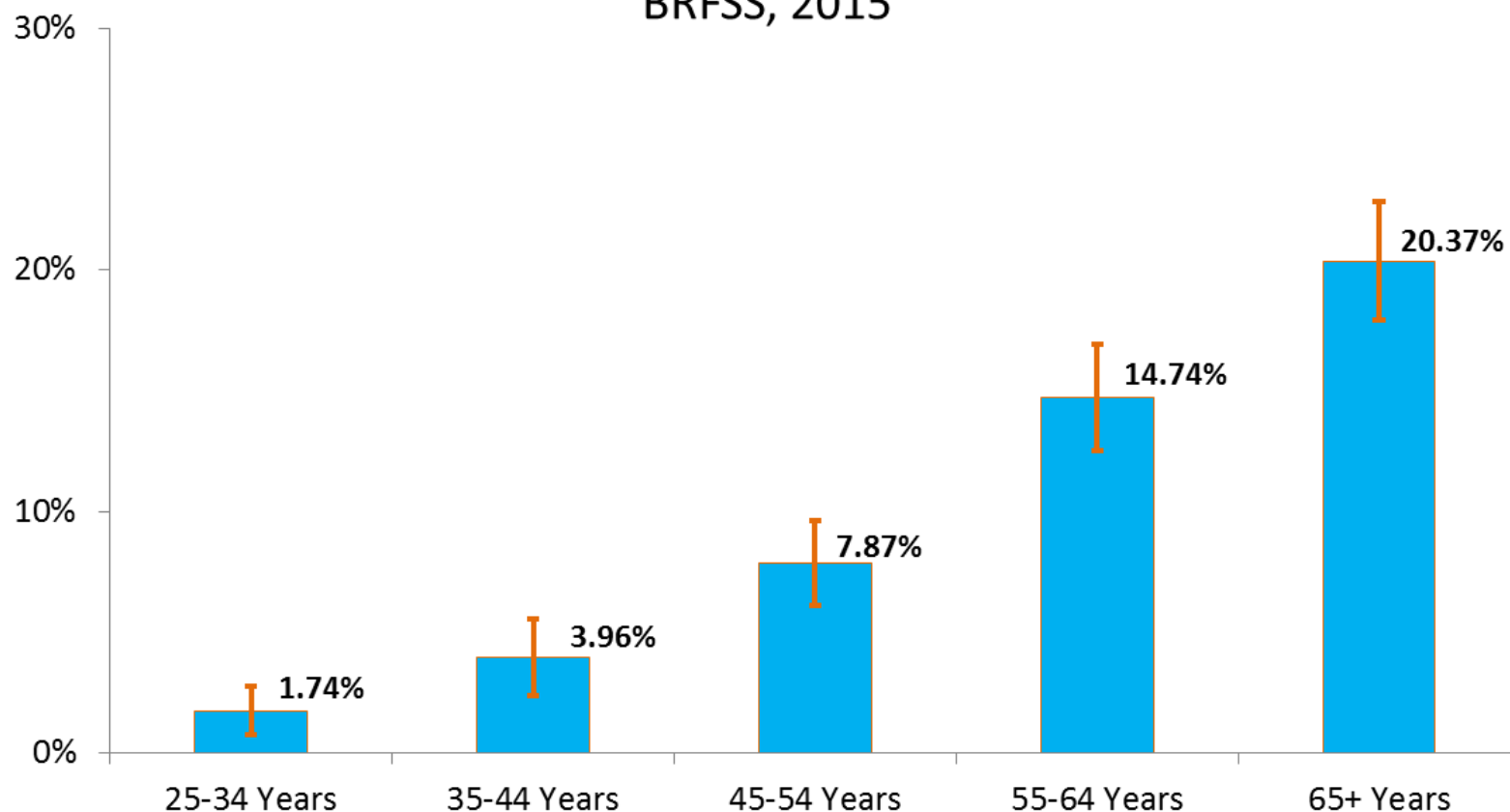
# Current Projections of Cases of Diabetes in the United States by 2030

**Rates are expected to double by 2030**



## Statewide Diabetes Prevalence by Age Group\*

BRFSS, 2015



\* Age group 18 - 24 failed stability rules.

# Financial Costs of Diabetes

- **\$245 billion** dollars in US diabetes related expenses in 2012
  - 176 Billion in Medical Costs + 69 Billion in reduced productivity
- People with diabetes have **2.3x** the medical costs as those without
  - People with diabetes spend about \$13,700 a year on medical costs: \$7,900 of which is directly related to their diabetes

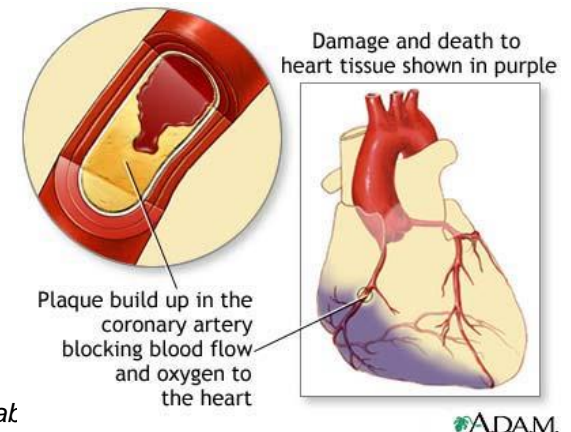
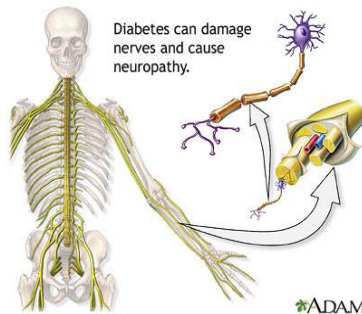
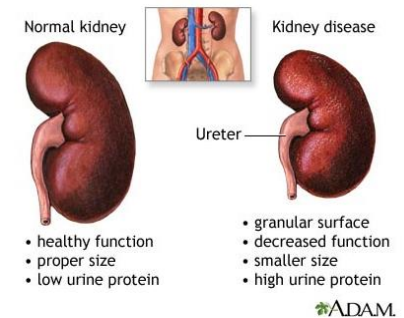
# Personal Costs of Diabetes

- Retinopathy (blindness)
- Nephropathy (kidney problems)
- Feet ulceration and/or amputations
- Heart attack
- Stroke



A slitlamp is used to view the interior of the eye

ADAM.



**Acknowledgment:** Adapted from the Diabetes Outreach Services Campaign, (1991) Queen Elizabeth

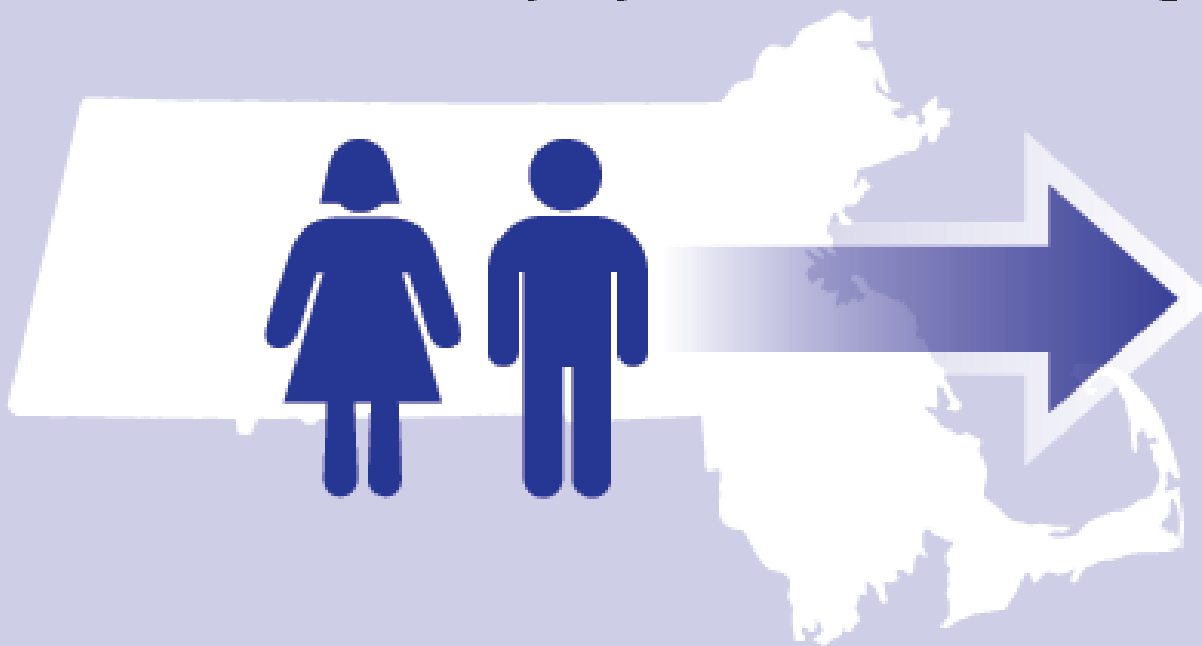
Diabetes Centre, Woodville South SA.

# Prediabetes in the Elderly

**50% of Adults over the age of 65  
have prediabetes**

# MA Prediabetes Prevalence and Awareness

**In Massachusetts, 1.8 million adults or 35% of the population have prediabetes.**



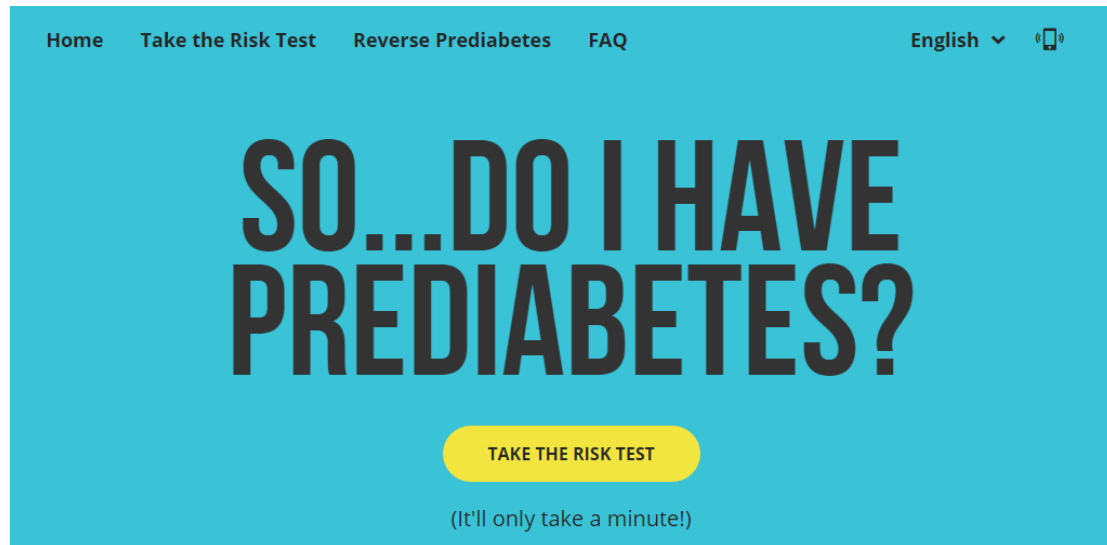
**Only 7%**  
are aware  
of their  
condition.

# Possible Reasons for Prediabetes Knowledge Gap

- Lack of patient awareness
- Lack of provider awareness
- Lack of screening
- Lack of testing
- Lack of communication between patient and provider
- Lack of systems for coding/payment



# Patient Awareness



[www.DolHavePrediabetes.org](http://www.DolHavePrediabetes.org)



# Provider Awareness

## Increasing Awareness of Prediabetes: Screening, Prevention & Treatment

### PREDIABETES

#### Definition, Prevalence and Risk Factors

- Prediabetes is a condition in which an individual's blood glucose levels are higher than normal but not high enough to be classified as type 2 diabetes.
  - Fasting blood glucose:** 100-125 mg/dL
  - Oral Glucose Tolerance Test:** 140-199 mg/dL
  - HbA1c:** 5.7-6.4%
- The three primary risk factors for diabetes include:
  - Being overweight
  - Over the age of 45
  - Family history of diabetes
- Without making the lifestyle changes noted below, **11%** of adults with prediabetes will develop type 2 diabetes within **3 years**; **15-30%** will go on to develop type 2 diabetes within **5 years**:
  - Improvements in diet
  - Increased physical activity
  - Smoking cessation
  - Stress reduction



#### Screening and Diagnosis

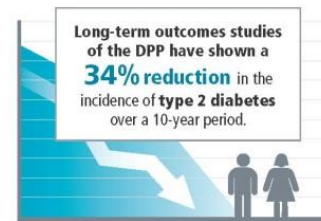
- Medical providers can conduct clinical screenings that effectively detect prediabetes such as **fasting plasma glucose (FPG)**, **Hemoglobin A1c (HbA1c)**, and/or **oral glucose tolerance testing (OGTT)**, especially in people with BMI levels denoting overweight/obese (**BMI  $\geq 25\text{kg/m}^2$ ; if Asian, BMI  $\geq 23\text{kg/m}^2$** ).
- Non-clinical screening tools, based on self-identified risk assessments, have been promoted and made available through the National Diabetes Prevention Program (<http://www.cdc.gov/diabetes/prevention/pdf/prediabetestest.pdf>).
- The ICD-10 includes a more prevalent billable code (R73.09) that can be used to indicate a diagnosis of prediabetes (or other abnormal glucose). This new code is expected to make it easier for providers and health plans to identify patients with prediabetes and intervene to improve health status over time.

#### Costs

- It is estimated that in the U.S., \$44 billion is attributed to medical expenses for prediabetes.
- Prediabetes and lifestyle change interventions could potentially save the U.S. \$539 billion in medical costs and create \$992 billion in non-medical benefits by extending years of employment for affected individuals over a 10-year period. Such dramatic savings highlight the need to make the promotion of prediabetes awareness, screening, and lifestyle change a priority on the state and national levels.

### DIABETES PREVENTION PROGRAM

- Developed by the CDC, the **Diabetes Prevention Program (DPP)** is an evidence-based intervention for preventing type 2 diabetes. DPP is a year-long program where people with prediabetes learn to make sustainable lifestyle changes. It has been shown to reduce the risk of developing type 2 diabetes by **58% (70% for adults over 60)**.
- DPP is delivered by trained and certified lifestyle coaches at local YMCAs, health care facilities, and other community settings throughout the U.S. Organizations offering DPP are formally recognized by the CDC.
- In July of 2015, the national Community Preventive Services Task Force published a recommendation statement (<http://www.thecommunityguide.org/diabetes/combineddietandpa.html>) supporting the use of combined diet and physical activity promotion programs to deter progression to type 2 diabetes in individuals at increased risk.
- "Prevent Diabetes STAT" (<http://www.cdc.gov/media/releases/2015/p0311-diabetes-STAT.html>), a tool kit jointly produced by the CDC and AMA, connects health care providers and individuals with screening, testing, and referral information for DPPs. This site also provides recommendations to employers, insurers, community-based organizations, health systems, and medical associations about how to prevent diabetes.
- A new CPT code (0403T), available as of January 2016, can be used for the purpose of reporting provision of services in a diabetes prevention program.



#### SCREEN: ☒

Incorporate routine screening for prediabetes among your patients using the CDC risk test

#### TEST: ☒

Order one of the three blood tests to confirm diagnoses of prediabetes among your patients  
  
Use new ICD-10 code for diagnosis of prediabetes

#### ACT TODAY: ☒

Become familiar with the DPPs in your region and refer your eligible patients  
  
Talk to your payers about whether the DPP is, or can be, a covered benefit for your patients

# Screening

- **USPSTF:**
  - All adults, aged 40-70 who are overweight or obese
- **ADA:**
  - All adults 45 and older
  - Adults 18 or older who are overweight or obese AND have at least 1 risk factor

## ARE YOU AT RISK FOR

# TYPE 2 DIABETES?



## Diabetes Risk Test

### 1 How old are you?

Less 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 box.

### 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 status? (see chart at right)

### If you scored 5 or higher:

You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes (a condition that precedes type 2 diabetes in which blood glucose levels are higher than normal). Talk to your doctor to see if additional testing is needed.

Add up  
your score.

Type 2 diabetes is more common in African Americans, Hispanics/Latinos, American Indians, and Asian Americans and Pacific Islanders.

Higher body weights increase diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weights than the rest of the general public (about 15 pounds lower).

For more information, visit us at [diabetes.org/alert](http://diabetes.org/alert) or call 1-800-DIABETES (1-800-342-2383)

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 amount  
in the left column  
(0 points)

Adapted from Bang et al., Ann Intern Med  
151:775-783, 2009.  
Original algorithm was validated without  
gestational diabetes as part of the model.

## Lower Your Risk

The good news is that you can manage your risk for type 2 diabetes. Small steps make a big difference and can help you live a longer, healthier life. If you are at high risk, your first step is to see your doctor to see if additional testing is needed. Visit [diabetes.org](http://diabetes.org) or call 1-800-DIABETES (1-800-342-2383) for information, tips on getting started, and ideas for simple, small steps you can take to help lower your risk.



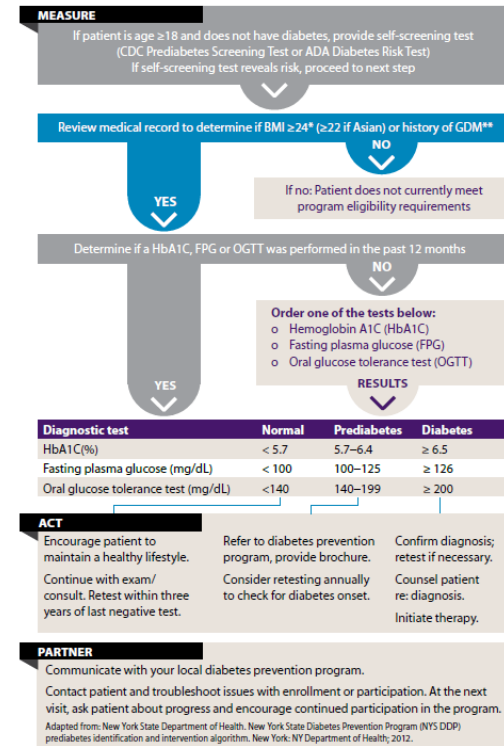
Special Thanks to our National Sponsor

Walgreens

# Testing

- Retest every 3 years if normal
- Confirm diagnoses with 2 tests taken on separate days
- Retest every 6-12 months after a diagnosis

## Point-of-care prediabetes identification



\* Some diabetes prevention program providers require a BMI ≥25. Please check with your diabetes prevention program provider for eligibility requirements.

\*\* History of GDM = eligibility for diabetes prevention program



Prevent Diabetes **STAT** | Screen / Test / Act Today™



The American Medical Association and the Centers for Disease Control are supporting physicians, care teams and patients to prevent diabetes.

—20—

Diagnostic test	Normal	Prediabetes	Diabetes
HbA1C(%)	< 5.7	5.7–6.4	≥ 6.5
Fasting plasma glucose (mg/dL)	< 100	100–125	≥ 126
Oral glucose tolerance test (mg/dL)	<140	140–199	≥ 200

# Communication and Referral

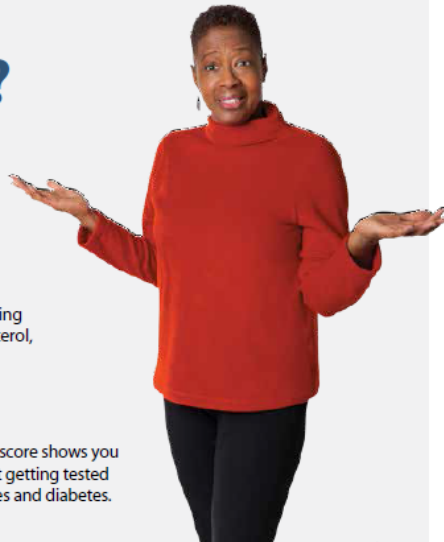
## Prediabetes? That's a thing?

Yes, 1 in 3 people have prediabetes, which means they have a much greater risk of developing Type 2 diabetes. Prediabetes happens when your blood sugar (glucose) level is higher than normal, but not high enough to be diagnosed as diabetes. In Massachusetts, 35% of adults have prediabetes, but most of them don't know they have it.

Health risks for prediabetes and diabetes include being overweight or obese, high blood pressure or cholesterol, and being inactive.

### Take the Risk Test

See the reverse side for a prediabetes risk test. If your score shows you are at high risk, talk to your healthcare provider about getting tested for prediabetes. A blood test can diagnose prediabetes and diabetes.



### What can I do to lower my risk?

By **improving your diet** and increasing **physical activity**, you can reverse prediabetes and reduce your risk of diabetes in the future. Making healthy food choices and getting regular physical activity can lower weight, blood pressure and cholesterol - and help you keep a normal blood sugar level. Programs that focus on diet and physical activity - like the **Diabetes Prevention Program** - are proven to reduce the risk of type 2 diabetes by up to 58% (71% reduction for those over age 60).

### The Diabetes Prevention Program

The Diabetes Prevention Program (DPP) is a year-long, group program held at a local community or health center, such as a YMCA.

A trained lifestyle coach will help you learn:

- Practical ways to eat healthy
- How to add physical activity to your daily routine
- How to manage stress

Joining a DPP may be free or you may be eligible for financial assistance. Contact a local program to learn more: <http://www.mass.gov/dph/preventdiabetes>



<sup>1</sup>National Diabetes Prevention Program: For Healthcare Providers, Centers for Disease Control and Prevention, August 2015. [http://www.cdc.gov/diabetes/prevention/resources\\_hcp.htm](http://www.cdc.gov/diabetes/prevention/resources_hcp.htm)

## Are you at risk for diabetes?

### Prediabetes: 1 in 3 adults have it.

Prediabetes is a condition where your blood sugar level is above normal.

Prediabetes means you have a higher risk for developing Type 2 diabetes.

### Diabetes

Type 2 diabetes is the most common form of diabetes. This condition happens when a person's body doesn't make enough of the hormone insulin, or it doesn't use insulin correctly. If Type 2 diabetes isn't controlled, it can have serious health consequences, including blindness, kidney or heart disease.

Type 1 diabetes can happen at any age, but commonly occurs in children and young adults.

Studies of **Diabetes Prevention Program** showed that losing 5-7% of body weight, by reducing calories and increasing physical activity, **cuts the risk of developing diabetes by 58%** (70% for adults over 60).

#### Risk factors that you can change are:

- Being overweight or obese
- Low activity level
- Unhealthy diet
- High blood pressure
- High cholesterol

#### Other risk factors that you can't change include:

- Age of 45 or above
- Race/ethnicity - African American, Hispanic/Latino, American Indians, Asian Americans, Pacific Islanders
- Family history of diabetes
- History of Gestational Diabetes
- Having Polycystic Ovarian Syndrome

### Ask your doctor about your risk for prediabetes or diabetes.

In Massachusetts, 35% of adults have prediabetes but only 7% know that they have it.\*

### Prevent Diabetes

You can help prevent diabetes through a healthy diet and physical activity. If you're at risk, ask your doctor about the **Diabetes Prevention Program (DPP)** - a one year program led by a trained lifestyle coach. This program provides a supportive group environment where you will:

- Learn how to make healthy food choices
- Add physical activity into your daily routine
- Manage stress

This program may be free or offered at a reduced cost based on your income or the DPP location. Typically the program cost is \$400.

To learn more about preventing prediabetes and diabetes, visit [mass.gov/dph/preventdiabetes](http://mass.gov/dph/preventdiabetes).



\*Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*. 2002;346(6):393-403. <http://www.ncbi.nlm.nih.gov/pubmed/11832527>

# Massachusetts Clearinghouse

www.massclearinghouse.ehs.state.ma.us

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Massachusetts Health Promotion  
**clearinghouse**

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## Diabetes

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# Coding/Payment

- ICD-10 code for prediabetes and abnormal glucose is R73.09
- Diabetes Prevention Program specific CPT code is 0403T

# National Diabetes Prevention Program Research Study

- A major multi-center, NIH sponsored national RCT (n = 3234)
- Representative sample of age, gender, and ethnicity
- Eligible participants were randomized to one of three interventions
  - Control
  - Metformin
  - Lifestyle Intervention



# Evidence for National Diabetes Prevention Program

- The DPP research study showed that participants in a structured lifestyle change program (Lifestyle Intervention) who achieved:
  - **Modest weight loss of 5-7 percent**
  - **150min per Week of moderate physical activity**
- Were able to:
  - Reduce type 2 diabetes by **58% (71% in those over age 60)**
  - Improve blood pressure and lipids (**25% reduction in medication use**)
- 10-year f/u shows continued reduction in new cases of type 2 diabetes (34%)
- Translational studies demonstrated that trained lay health workers are as effective in delivering the lifestyle change program at 1/3 of the cost, while achieving similar results



# Diabetes Prevention Program Features

- Year long program
  - 16 weekly group sessions
  - 6-8 monthly follow-up sessions
- Delivered by trained lifestyle coaches
- Uses CDC approved curriculum
  - Participants learn healthy lifestyle skills like healthy eating, physical activity, problem solving, stress reduction and coping
- Offered in community locations
  - YMCAs, Wellness Centers, Churches etc.
- Group support (8-15 participants per class)
- Both in-person and virtual options available
- Adherence to CDC quality standards

# DPP Eligibility Criteria

- 1) Be **at least 18 years old**; and
- 2) Be **overweight** (BMI greater than or equal to 25 kg/m<sup>2</sup> ; greater than or equal to 23 kg/m<sup>2</sup> if Asian.)
- 3) And have **established risk factors** for developing type 2 diabetes (ADA Risk Test)

**OR** have been **diagnosed with prediabetes**

(FBG 100-124 mg/dL, HbA1c 5.7-6.4%, OGTT 140-199 mg/dL)

**OR** have been previously diagnosed with **gestational diabetes**.

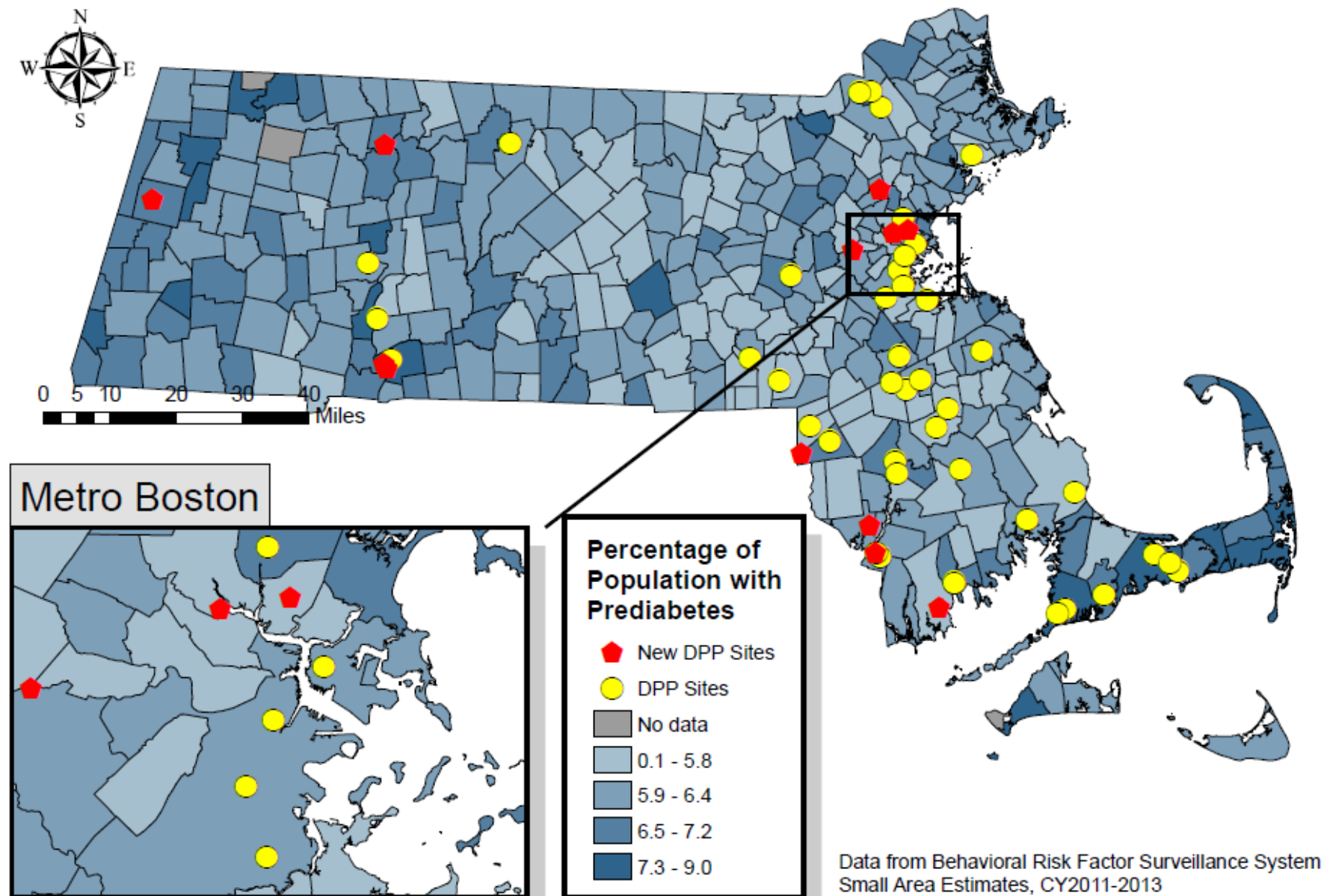
# DPP Costs and Reimbursement

- Program costs range from \$400-\$600 per participant for a full year program
- Most DPP providers subsidize the cost for patients who can not afford it using scholarships or sliding scale fees
- Medicare will start reimbursement on January 1<sup>st</sup> 2018

# Clinical and Economic Support for National Diabetes Prevention Program

- Recommended by the Community Guide
- USPSTF Grade “B” Rating
- ICER Grade “B+” Rating
- CMS Cost Savings of \$2,650 per individual over the first 18 months
- Overall median cost per QALY gained is \$9,824
- Total potential budget impact at 10% uptake over 5 years is \$2.2 billion per year in savings

# Prediabetes Prevalence and Diabetes Prevention Program (DPP) Sites in MA



# What you can do!


- Screen
  - Assess your patients risk for diabetes using the ADA Diabetes Risk Test  
(<http://main.diabetes.org/dorg/PDFs/risk-test-paper-version.pdf>)
- Test
  - Connect your patients to their healthcare provider to get diagnosed
- Act
  - Refer your eligible patients to the nearest DPP provider or host DPP on site!

# How to locate and refer to DPPs in MA?

- 1. Visit [www.mass.gov/dph/preventdiabetes](http://www.mass.gov/dph/preventdiabetes) to find program info and contact directly

The screenshot shows the website for the Massachusetts Diabetes Prevention and Control Program. The breadcrumb trail at the top reads: Home > Government Agencies > Departments & Divisions > Public Health > Bureaus and Programs > Community Health > Diabetes Prevention and Control Program > Diabetes Prevention.

## Diabetes Prevention



**You can prevent type 2 diabetes!**

About 1 in every 3 adult Americans has **prediabetes**. For those over 65, 1 in every 2 has prediabetes. In Massachusetts, there may be as many as 1.8 million adults who have prediabetes.

Prediabetes happens when blood sugar (glucose) levels are higher than normal, but not high enough to be diabetes. People with prediabetes are much more likely to develop diabetes than people with normal blood sugar levels. A simple blood test can determine your blood sugar levels.

**If you have prediabetes, you probably don't know it.**

1 in 3 MA adults have prediabetes, but only 7% know they have it. Find out if you are at risk for diabetes by [taking the online quiz!](#)

**If you think you might be at risk for prediabetes or diabetes, ask your doctor for a blood test to measure glucose. Knowing these results is the first step in preventing a more**

Friendly URL:  
[www.mass.gov/dph/preventdiabetes](http://www.mass.gov/dph/preventdiabetes)

**DIABETES PREVENTION PROGRAM**  
[Learn More!](#)

**FIND A DPP NEAR YOU**  
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Diabetes Prevention and Control

# How to locate and refer to DPPs in MA?

- 2. Visit [www.healthyliving4me.org](http://www.healthyliving4me.org) or call 1-978-946-1211 to get connected with a nearby program



The screenshot displays the homepage of the Healthy Living Center of Excellence. The website features a blue header with the organization's name and a navigation menu including Home, Participant Champions, Leaders Training Opportunities, and Leaders Information. A prominent phone number, 978-946-1211, and a 'MAKE A REFERRAL' button are also visible. The main content area is divided into sections: a 'Welcome' message, a 'Programs' section, an 'About Us' section, and a 'Programas en Español' section. Each section includes a brief description of the services and a 'READ MORE' button. The website uses a clean, professional layout with a color palette of blue, orange, and white.

**the healthy living**  
Center of Excellence

Home Participant Champions Leaders Training Opportunities Leaders Information

978-946-1211 Resize text: A<sup>+</sup> A<sup>-</sup> MAKE A REFERRAL

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## Welcome

The Healthy Living Center of Excellence is an innovative collaborative between Elder Services of the Merrimack Valley, Inc., a community based organization and Hebrew Senior Life, a medical provider with a goal of helping seniors remain independent and in the community as long as possible. By combining our expertise in the aging service and medical networks, the collaborative encourages older adults to become active partners in managing their health.

LEARN MORE >

### Programs

The Center offers over a dozen programs which help you maintain your self- confidence and improve your overall health. The variety of programs encompasses many aspects of healthy living all designed to help you become more active partner in your health care

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### About Us

The Center fosters evidence-based programs through regional collaboratives that include community based organizations, health care providers and plans, government, foundations and for-profit partners. These programs all occur in community settings and are

READ MORE >

### Programas en Español

El Centro de Excelencia de Salud es una serie de programas diseñado para educar y ofrecer apoyo a personas mayores con problemas de salud. Los programas en español fueron creados especialmente para la cultura Latina

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# Action Steps

- Talk to your patients about prediabetes
- Screen your patients for diabetes
- Become familiar with local DPP providers to refer to, or host one on site
- Be a DPP champion and spread the word to fellow programs and providers

# Thank You!

Max Alderman

Diabetes Program Coordinator

MA Department of Public Health

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