

Prediabetes and the CDC's National Diabetes Prevention Program (DPP)

Susie King

Diabetes Prevention Coordinator



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Indiana State
Department of Health



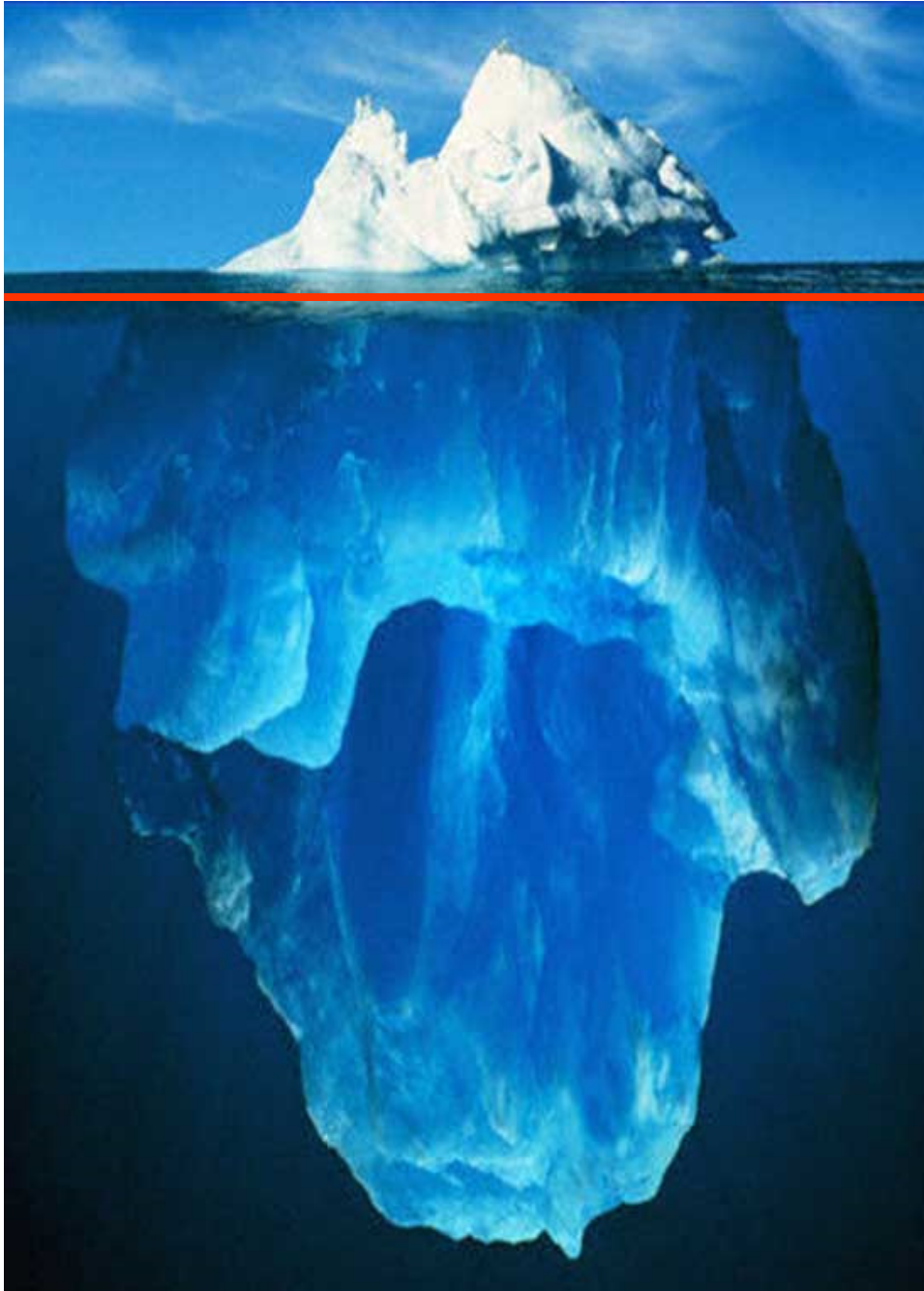
Let's begin with discussing the ...

Prevalence



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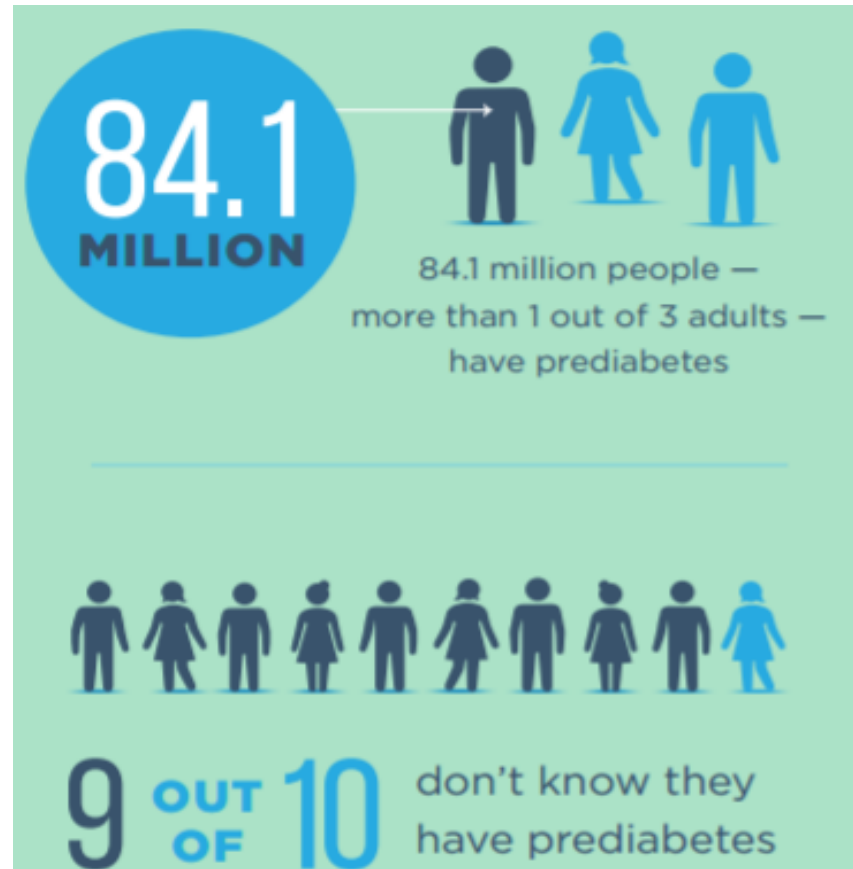


**30 million
with diabetes**

**84 million
with prediabetes**
(33.9% of the adult U.S. population)

Centers for Disease Control and Prevention
National Diabetes Statistics Report, 2017

National Prevalence



Note: About half of the people older than 65 have prediabetes.

Source: Centers for Disease Control and Prevention, 2017 Infographic: A Snapshot – Diabetes in the United States

Prediabetes prevalence in Indiana



Population of Indiana 6.7 million (2018)

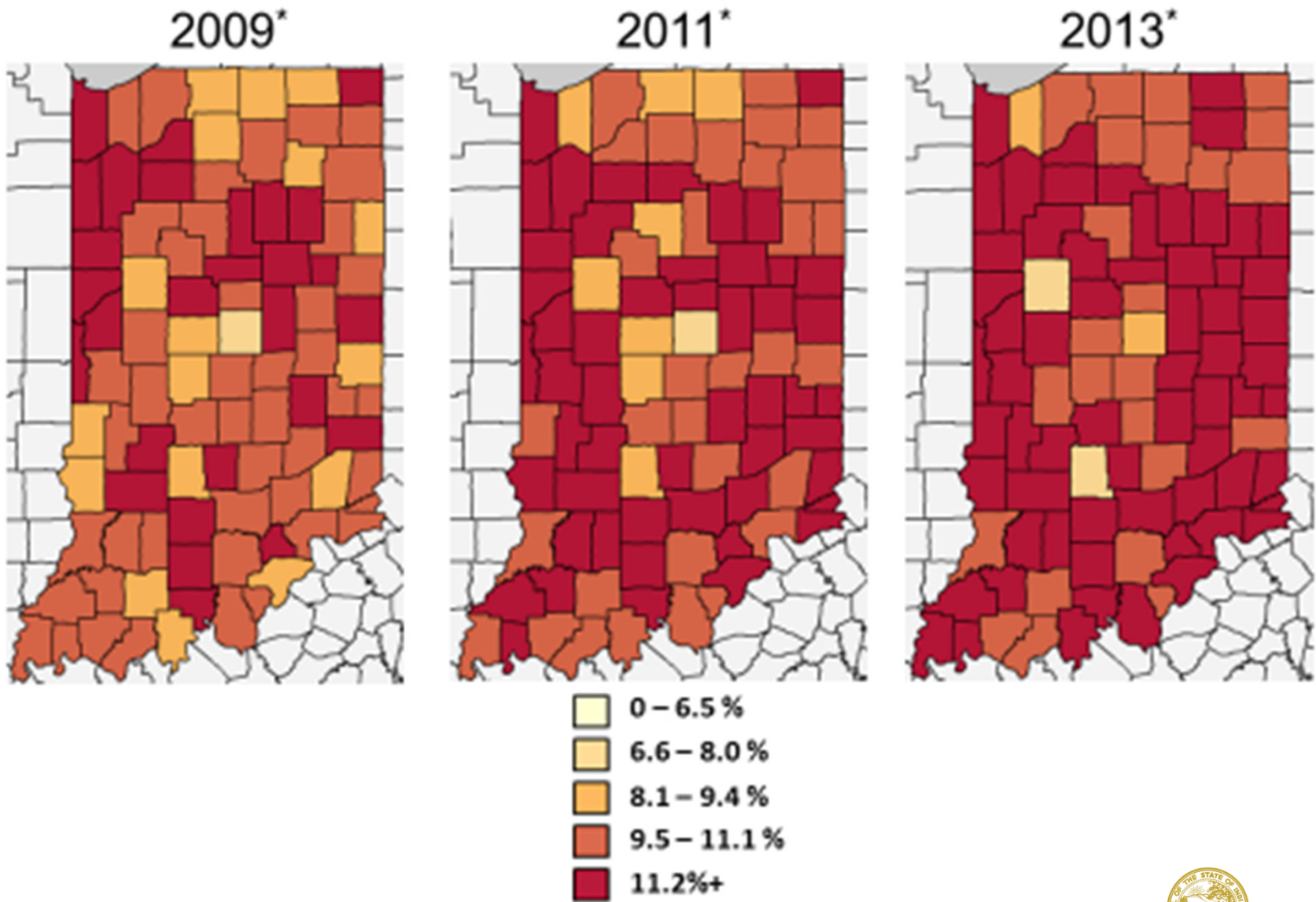
**According
to the CDC:**

**36% OF ADULTS
IN INDIANA
HAVE PREDIABETES.**

KNOW WHERE YOU STAND

DoIHavePrediabetes.org

This is 1/3 of our Hoosier population!



*2009 county-level prevalence data is comprised of years 2008, 2009, and 2010
 *2011 county-level prevalence data is comprised of years 2010, 2011, and 2012
 *2013 county-level prevalence data is comprised of years 2012, 2013, and 2014

Source: Centers for Disease Control and Prevention. (2015) Interactive Diabetes Atlas.



Prediabetes 101



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What exactly is prediabetes?

- **Prediabetes:** A condition in which individuals have higher than normal blood sugars, but not high enough to be diagnosed by a doctor as type 2 diabetes.
- **Prediabetes** can also be referred to as:
 - Impaired fasting glucose
 - Insulin resistance
 - Impaired glucose tolerance
 - A little touch of sugar
 - Borderline sugar
- **Prediabetes** can turn into type 2 diabetes in as few as *five years*.

Source: Centers for Disease Control and Prevention, 2014 Infographic: Prediabetes – Could it be you?

Who is at risk?

- Age 45 or older
- Overweight
- Sedentary lifestyle
- First degree relative with diabetes
- Excess abdominal fat
- High risk race/ethnicity (Latino, African American, Asian, American Indian, Pacific Islander)
- Hypertension ($\geq 140/90$ mmHg or on therapy)
- HDL (< 35 m/dL)
- Triglyceride (≥ 250 mg/dL)
- Acanthosis Nigricans
- Polycystic ovary syndrome (PCOS)
- History of gestational diabetes

Acanthosis Nigricans

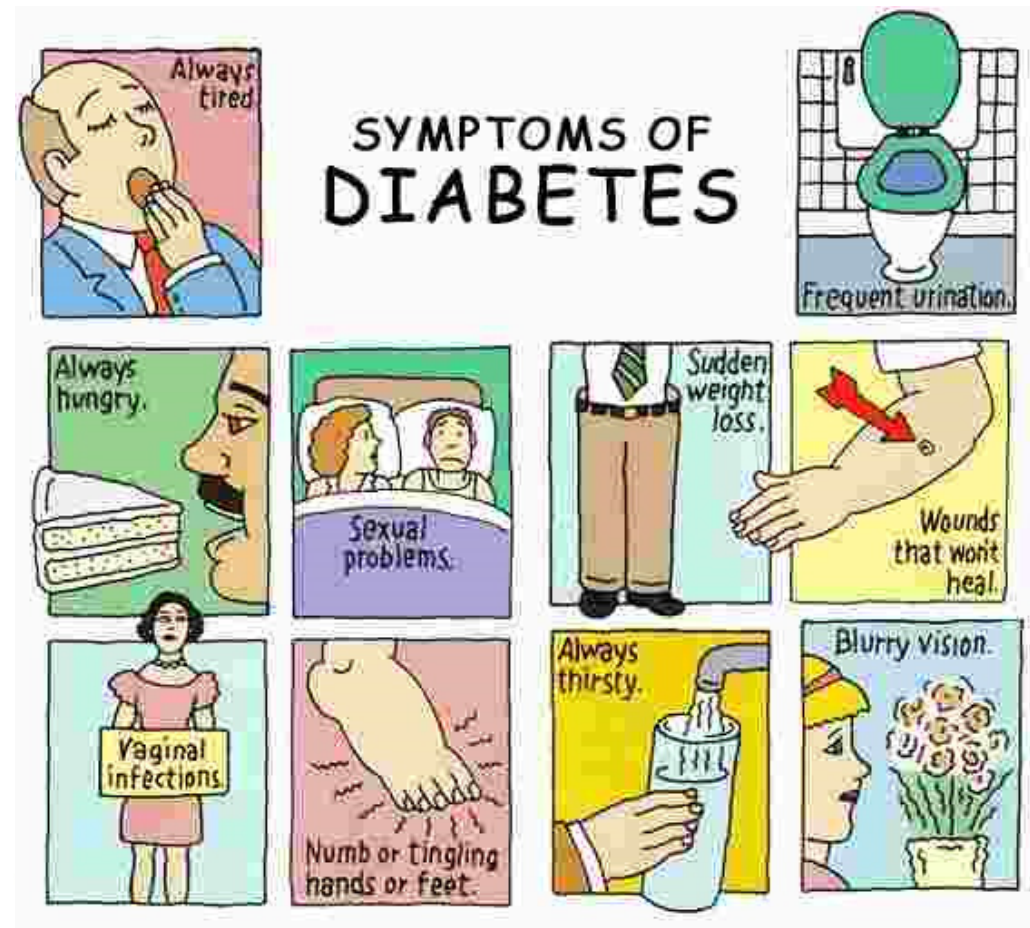


Darkening of the skin, back of the neck and skin folds



Symptoms of prediabetes


- Usually there are **NO** clear symptoms of prediabetes
- People with prediabetes may show some of the same signs and symptoms of diabetes.



Healthcare providers use routine tests to detect prediabetes ...

Most common tests used are called the Hemoglobin A1c test or a FPG (fasting plasma glucose) test.

Blood Test Levels for Diagnosis of Diabetes and Prediabetes



	A1C (percent)	Fasting Plasma Glucose (mg/dL)
Diabetes	6.5 or above	126 or above
Prediabetes	5.7 to 6.4	100 to 125
Normal	≤ 5.6	99 or below

Definition mg= milligram, dL= deciliter

The higher the test result in the prediabetes range, the greater the risk for developing diabetes!

If you suspect you have prediabetes, please consult your doctor.

CDC's and ADA's prediabetes screening tools

CDC Prediabetes Screening Test

COULD YOU HAVE PREDIABETES?
 Prediabetes means your blood glucose (sugar) is higher than normal, but not yet diabetes. Diabetes is a serious disease that can cause heart attack, stroke, blindness, kidney failure, or loss of feet or legs. Type 2 diabetes can be delayed or prevented in people with prediabetes through effective lifestyle programs. Take the first step. Find out your risk for prediabetes.

TAKE THE TEST—KNOW YOUR SCORE!
 Answer these seven simple questions. For each "Yes" answer, add the number of points listed. All "No" answers are 0 points.

Are you a woman who has had a baby weighing more than 9 pounds at birth?
 Do you have a sister or brother with diabetes?
 Do you have a parent with diabetes?
 Find your height on the chart. Do you weigh as much or more than the weight listed for your height?
 Are you younger than 65 years of age and get little or no exercise in a typical day?
 Are you between 45 and 64 years of age?
 Are you 65 years of age or older?

Yes No
 1 0
 1 0
 1 0
 8 0
 5 0
 5 0
 5 0

AT-RISK WEIGHT CHART

Height	Weight (lbs)	Height	Weight (lbs)
4'10"	129	5'7"	172
4'11"	133	5'8"	182
5'0"	138	5'9"	188
5'1"	143	5'10"	193
5'2"	147	5'11"	199
5'3"	152	6'0"	204
5'4"	157	6'1"	210
5'5"	162	6'2"	216
5'6"	167	6'3"	221

National Center for Chronic Disease Prevention and Health Promotion
 Division of Diabetes Translation

ARE YOU AT RISK FOR TYPE 2 DIABETES?

Diabetes Risk Test

American Diabetes Association

- 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)
- Are you a man or a woman?
 Man (1 point) Woman (0 points)
- If you are a woman, have you ever been diagnosed with gestational diabetes?
 Yes (1 point) No (0 points)
- Do you have a mother, father, sister, or brother with diabetes?
 Yes (1 point) No (0 points)
- Have you ever been diagnosed with high blood pressure?
 Yes (1 point) No (0 points)
- Are you physically active?
 Yes (0 points) No (1 point)
- What is your weight status? (see chart at right)

Write your score in the box.

Height	Weight (lbs.)	Weight (lbs.)
4' 10"	128-147	143-190
5' 0"	128-152	148-197
5' 1"	132-157	153-203
5' 2"	136-163	158-210
5' 3"	141-168	163-217
5' 4"	146-173	168-224
5' 5"	150-179	174-231
5' 6"	155-185	180-239
5' 7"	159-190	186-246
5' 8"	164-196	191-254
5' 9"	169-202	197-261
5' 10"	174-208	203-269
5' 11"	179-214	209-277
6' 0"	184-220	215-286
6' 1"	189-226	221-293
6' 2"	194-232	227-301
6' 3"	200-239	233-310
6' 4"	205-245	240-319
		246-327

(1 Point) (2 Points) (3 Points)

You weigh less than the amount in the left column (0 points)

Add up your score.

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 or call 1-800-DIABETES (1-800-342-2383) for information, tips on getting started, and lower your risk.

For more information, visit us at diabetes.org/alt or call 1-800-DIABETES (1-800-342-2383)

STOP DIABETES

Special Thanks to our National Sponsor
Walgreens

Adapted from Berg et al., Ann Intern Med 2012;157:782-788. Original algorithm was validated without gestational diabetes as part of the model.

Why is diabetes a national problem?

Being overweight/obesity is the primary risk factor for developing type 2 diabetes.

- Approximately 90% of people with type 2 diabetes are overweight or obese.¹
- In the United States, approximately 70.2% of adults are considered overweight or obese.²



Sources: ¹ World Health Organization. Obesity and Overweight Fact Sheet. Accessed from http://www.who.int/dietphysicalactivity/media/en/gsf_obesity.pdf, October 2013.

² NHANES survey of the National Center for Health Statistics (NCHS), 2013-2014. (NCHS is part of the CDC.)

Why should we prevent Type 2 diabetes?

- Diabetes is the **7th** leading cause of death in the United States.¹
- Diabetes is the **7th** leading cause of death for Indiana residents.²
 - **4th** leading cause of death for black women.²
 - **5th** leading cause of death for black men, Hispanic women, Hispanic men.²
- Diabetes is a major cause of heart disease and stroke.
- Diabetes is the leading cause of kidney failure, amputations, and adult-onset blindness in the United States.

Sources: ¹ National Center for Health Statistics. Health, United States, 2016: With Chartbook on Long-term Trends in Health. Hyattsville, MD. 2017.

² 2015 *Indiana Mortality Report*. Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team. 2016.

Diabetes is ...

COSTLY

and

TIME CONSUMING



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The costs ...

- Use of healthcare resources (**\$237 billion**)
 - Ambulance runs for severe hypoglycemia (low blood sugar)
 - Emergency room visits
 - Inpatient stays
 - Specialized outpatient care (dialysis, wound care, etc.)
 - Physician office visits
 - Home health visits
 - Medications and supplies
- Lost productivity (**\$90 billion**)
 - Absence
 - Nominal performance
 - Disability



Source: American Diabetes Association. Economic Costs of Diabetes in the U.S. in 2017. *Diabetes Care* Publish Ahead of Print, published online March 22, 2018.

The progression of diabetes is costly!

\$5,277

Annual out-of-pocket
medical cost of
someone **WITHOUT**
diabetes

\$14,031

Annual out-of-pocket
medical cost of
someone **WITH**
diabetes

\$24,824

Annual out-of-pocket
medical cost of
someone **WITH**
diabetes and
associated conditions

SOURCE: 2009 United Healthcare published diabetes cost data based on 10 million members

Health impact

According to numerous studies, *by treating just 100 high-risk adults* (age 50) for three years it is possible to:

- Prevent 15 new cases of type 2 diabetes¹
- Prevent 162 missed work days²
- Avoid the need for blood pressure or cholesterol medications in 11 people³
- Add the equivalent of 20 perfect years of health⁴
- Avoid \$91,400 in health care costs⁵

Sources: ¹DPP Research Group. N. Engl J Med. 2002 Feb;346(6): 393-403.
²DPP Research Group. Diabetes Care. 2003 Sep;26(9): 2693-4.
³Ratner, et al. 2005 Diabetes Care 28 (4), pp. 888-894.
⁴Herman, et al. 2005 Ann Intern Med 142 (5), pp. 323-32.
⁵Ackermann, et al. 2008 Am J Prev Med 35 (4), pp. 357-363; estimates scaled to 2008 \$US.

Preventing diabetes can save healthcare costs and lives ...



Centers for Disease Control and Prevention, 2014
Infographic: Prediabetes – Could it be you?

KEY TAKE AWAYS:

1. **Prediabetes is reversible.** People with prediabetes can prevent or delay the onset of type 2 diabetes by making modest behavior changes now.
2. **It is extremely hard (and rare) for a person to reverse diabetes.**



**So what's being done
nationally and statewide?**

Prediabetes Awareness



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U.S. Preventive Services Task Force (USPSTF)

- NEW RECOMMENDATION -

Abnormal BG and type 2 diabetes screening (effective Oct 2015)

Population: Adults aged 40 to 70 years who are overweight or obese.

Recommendation: The USPSTF recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer to refer patients with abnormal blood glucose to *intensive behavioral counseling interventions* to promote a healthful diet and physical activity.

Grade B: Offer or provide service. USPSTF recommends this service. High certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.

“Intensive behavioral counseling intervention” - Behavioral interventions that have an effect on CVD risk and delay or avoid progression of glucose abnormalities to type 2 diabetes combine counseling on a healthful diet and physical activity and are **intensive, with multiple contacts over extended periods.**



AMA and CDC Partnership



Prevent Diabetes STAT: Screen, Test, Act – Today

A multi-year initiative that expands on each organization's work to reach more Americans with prediabetes and stop the progression to type 2 diabetes.

“The time to act is now. We need a national, concerted effort to prevent additional cases of type 2 diabetes in our nation – and we need it now.”

- Dr. Ann Albright

Director of CDC's Division of Diabetes Translation (March 2015)

National PSA Campaign (Three years beginning Jan 2016)



- Forces joined: ADA, AMA, CDC, and Ad Council.
- Aim of campaign: *“NO ONE is excused from prediabetes”*
 - 1) Raise awareness of prediabetes
 - 2) Help people know where they stand (risk test)
 - 3) Learn how to prevent type 2 diabetes
- Aimed at people 40 to 60-plus years of age.
- Consists of television and radio PSAs, billboards and social media all across the nation
 - Launched national website: www.DoIHavePrediabetes.org

National Diabetes Prevention Campaign

84 MILLION AMERICANS MAYBE EVEN YOU, HAVE PREDIABETES. PERSON-ABOUT-TO-FACT-CHECK-THIS-FACT.

Ad Council
PSACentral.org

DoIHavePrediabetes.org

Ad Council American Diabetes Association AMA CDC

This vertical poster features a teal background with bold yellow and black text. It includes the Ad Council logo, a download icon, and logos for the American Diabetes Association, AMA, and CDC.

84 MILLION AMERICANS HAVE PREDIABETES. EVEN PUPPY LOVERS.

DoIHavePrediabetes.org

Ad Council American Diabetes Association AMA CDC



This horizontal poster has a light yellow background. It features a close-up of a black and white French Bulldog puppy's face on the right side. The text is in bold black and blue fonts. Logos for Ad Council, American Diabetes Association, AMA, and CDC are at the bottom.

US Creative Works Ad of the Week: Ad Council 'Prediabetes'

189 Shares      

Take the Prediabetes Risk Test | Type 2 Diabetes Prevention | Ad Council

ANYONE IN YOUR FAMILY HAVE DIABETES?

0:00 / 1:01 YouTube

The video player shows a man in a white lab coat pointing upwards. The text 'ANYONE IN YOUR FAMILY HAVE DIABETES?' is overlaid on the video. The video player interface includes a play button, progress bar, and YouTube logo.



YouTube Videos from the National Prediabetes Awareness Campaign

1. *"Take the Prediabetes Risk Test"* Video (1 minute):
<https://www.youtube.com/watch?v=s020q-FE0H4>
 2. *"Busy Moms"* Video (30 seconds):
<https://www.youtube.com/watch?v=dYSzAAM1BX8>
 3. *"Bacon Lovers"* Video (30 seconds):
<https://www.youtube.com/watch?v=3YWIaT0G65E>
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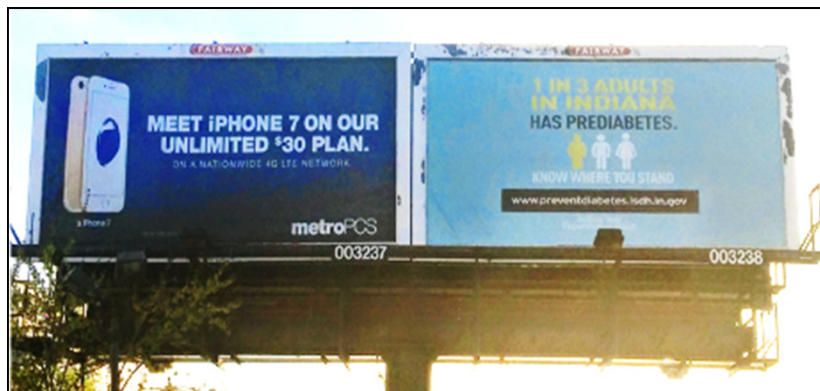


Indiana's Statewide Prediabetes Awareness Campaign

- **Campaign targeted:** People 40 years of age and older
 - **Cities targeted:**
 - 2017: Indianapolis, South Bend, Fort Wayne and Evansville
 - 2018: Indianapolis, South Bend, Terre Haute, Richmond, and New Albany
 - **Length:** April through June 2017
March through April 2018
 - **Media included:**
Radio stations, billboards, transit (bus) signage, and various social media.
- 

Examples from around the state

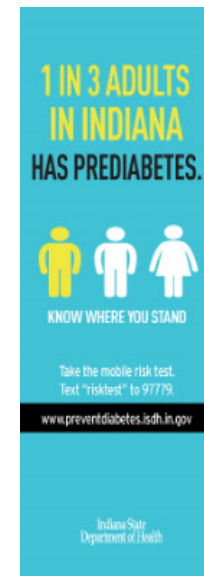
Billboards and Transit Signage



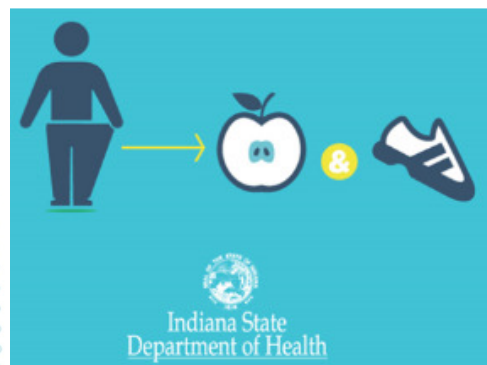
Examples from around the state

Digital ads and social media

Digital media visuals:



Social media visuals:



CDC's National Diabetes Prevention Program (an evidenced-based program)



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Reviewing the Research Behind the Program



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CDC's National Diabetes Prevention Program

- *The Original Research Study* -

Published *New England Journal of Medicine*, 2002

GOAL:

To determine whether losing modest amounts of weight through improving diet and increasing physical activity — or taking metformin — could prevent or delay type 2 diabetes in people with prediabetes or at high risk for developing the disease.



CDC's National Diabetes Prevention Program

- An Evidenced-Based Program -

- This was a large randomized clinical trial involving 3,234 participants
- Participants were American adults 25-plus years of age, classified as already having prediabetes or rating high risk for developing diabetes
- 27 clinical centers throughout the United States
- Funded primarily by the National Institute of Health (NIH)
- Study took place between 1996-1999
- The study was stopped one year early as the data obtained had already shown great statistical significance.



Eligible participants were assigned to one of three randomized groups

Group 1: Standard lifestyle recommendations
plus metformin 850 mg twice daily

Group 2: Standard lifestyle recommendations
plus placebo twice daily

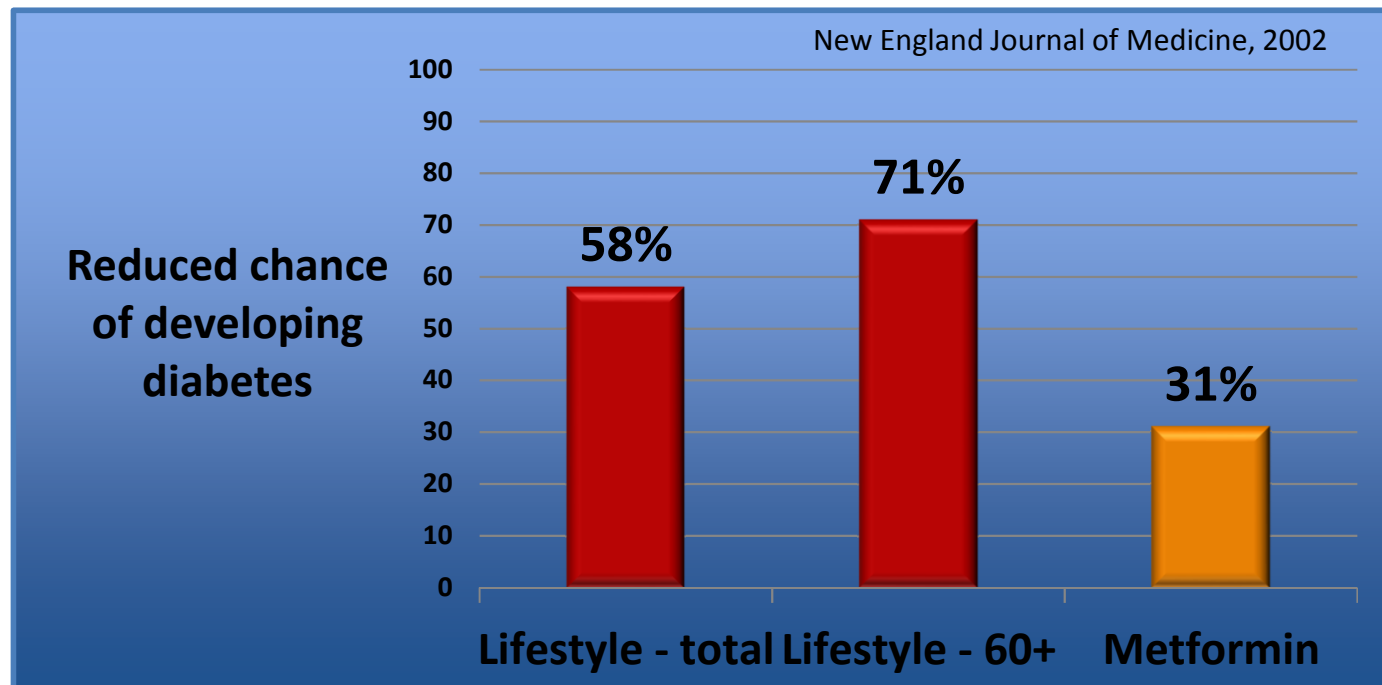
Group 3: Intensive program of lifestyle
modification



Definitions

- **Standard Lifestyle Recommendations:**
 - *Provided written information* at an annual 20- to 30-minute visit that emphasized the importance of a healthy lifestyle
 - *Asked* to reduce weight and increase activity
- **Intensive Lifestyle Intervention:**
 - Provided the National Diabetes Prevention Program (NDPP)
Two goals of the program:
 - Achieve and maintain weight reduction between 5 to 7% initial body weight
 - Engage in physical activity 150 minutes/week

What were the research study findings?



- Lifestyle intervention sharply reduced the chances of developing type 2 diabetes (58%)
 - 71% for aged 60+ (Half of the people over 65 have prediabetes!)
- Metformin group reduced their risk but not as much as the lifestyle intervention group (31%)


CDC Develops the DPRP (Diabetes Prevention Recognition Program)

- Research translated into evidence-based, standardized curriculums by the CDC.
- **Being a CDC-Recognized Program:**
 - ... *WILL* mean your organization will be eligible to pursue reimbursement for the program from private and public payers. *(Only CDC-recognized programs will be reimbursed.)*
 - ... *WILL* assure healthcare providers your program upholds the highest of quality assurance standards and consistency.
 - ... *WILL* allow the CDC and the State of Indiana to actively promote your program on their registries, websites, and other promotional materials.
 - ... *WILL* allow your organization to receive technical assistance and support for your program as needed from the CDC and the State of Indiana.



Programs being implemented nationwide

1,800 programs as of June 2018

- YMCAs (membership not required)
 - Community centers
 - Local health departments
 - Hospital systems
 - Physician group practices
 - Pharmacies
 - Employer groups (e.g. Dow Chemical, Bayer, Costco)
 - Faith-based organizations
- 

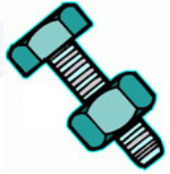


Components of the CDC National Diabetes Prevention Program



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What are the nuts and bolts of the National Diabetes Prevention Program?



- CDC's National DPP is a year long, evidenced-based lifestyle change program:
 - First six months: Weekly one-hour sessions
 - Second six months: Monthly or bi-weekly one-hour sessions
- A trained lifestyle coach works with participants in a group setting to reduce risk by helping them:
 - Discuss topics to help identify and address barriers to healthy eating and physical activity
 - Program relies on self-monitoring, goal setting and group process. (i.e. participants track their food and physical activity)

Program's Main Goals

- ✓ Lose 5% of beginning body weight over the time period of one year
- ✓ Aim for 150 minutes/week of physical activity (30 minutes/day 5 times a week)
- ✓ Session attendance counts; **key** to program's success

ORIGINAL CURRICULUM FROM CDC

FIRST SIX MONTHS (all sessions required)

Skills

1. Welcome
2. Be a Fat and Calorie Detective
3. Three Ways to Eat Less Fat and Fewer Calories
4. Healthy Eating
5. Move Those Muscles
6. Being Active: A Way of Life
7. Tip the Calorie Balance

Controlling the external environment

8. Take Charge of What's Around You
9. Problem Solving
10. Four Keys to Healthy Eating Out

Psychological and emotional

11. Talk Back to Negative Thoughts
12. The Slippery Slope of Lifestyle Change
13. Jump Start Your Activity Plan
14. Make Social Cues Work for You
15. You Can Manage Stress
16. Ways to Stay Motivated

SECOND SIX MONTHS

(6 to 8 topics are chosen by the group)

Introduction (1 topic)

- Goal setting and self-monitoring

Healthy Eating and Nutrition (5 topics)

- Different types of fat
- Food preparation and recipe modification
- Not skipping meals, healthy meal and snack planning
- Fruits and vegetables, mindful eating
- Adding fiber, water, and whole grains

Physical Activity (2 topics)

- Overcoming barriers, health benefits
- Lifestyle activity, using a pedometer, flexibility and balance

SECOND SIX MONTHS (*continued*)

Chronic Disease (2 topics)

- Heart disease, cholesterol, and blood pressure
- Type 2 diabetes

Managing Stress and Preventing Relapse (4 topics)

- Overcoming self-defeating thoughts, assertiveness
- Handling holidays, vacations, and special events
- Preventing relapse
- Stress management and relaxation techniques

Program Conclusion (1 topic)

- Long-term goals, strategies, and self-review



A Note About the “lifestyle coach”...

Their role is to provide support, motivation and guidance to participants while implementing the standard curriculum designed for the lifestyle change program.

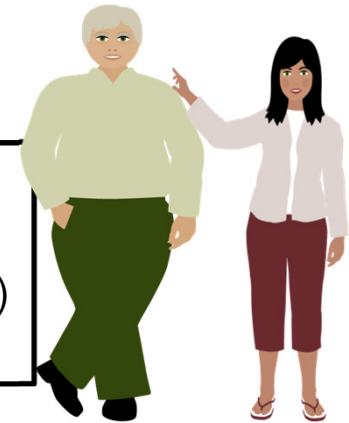
- Training to become a lifestyle coach is **required**
- Live and online trainings are available from many organizations for a fee

Who Can Participate?

Program eligibility:

Be at least
18 years old or older

BMI of 25 or greater
(Asian Americans: > 23)



Participants must meet one or more of these criteria:

Medical diagnosis
of prediabetes

History of
gestational diabetes

Screen positive for prediabetes based
on the Prediabetes Risk Test
(CDC or ADA)



CDC's Diabetes Prevention Recognition Program



General requirements:

- Read the CDC's Standards and Operating Procedures, Fill out the Organization Capacity Assessment
- Specific training needed for Lifestyle Coach
- DPP needs to be one full year in length
- Applicant organizations need to follow laws on privacy and confidentiality of participants' data (HIPPA)
- Organizations are required to submit their blind data to the CDC every six months

General costs

- There are now 2 CDC curricula available; both at no charge
- There are **no** licensing, application, or association fees for organizations implementing the program
- Organizations offering the DPP decide what to charge for their program





CDC offers two curriculums:

1. Original CDC curriculum (Effective: January 2012)
2. PreventT2 curriculum (Effective: March 2016)
 - **BOTH** curriculums are approved by the CDC;
 - **BOTH** curriculums are taught for one full year;
 - **BOTH** programs are based on the original 2002 research;

OR

3. Organizations can develop their own curriculum for the CDC to approve.
- 



Program Reimbursement



- BIG ANNOUNCEMENT -

Medicare will reimburse (no cost-sharing) for the National DPP, began April 1.

* Only CDC-recognized programs meeting “preliminary” or “full” status will be reimbursed *

Coverage:

- There are **65+ commercial health plans** covering the program throughout the nation with more plans expected to add coverage soon.
- Employers are asking their insurance plans to cover program. **Health Savings Accounts (HSA) and Health Reimbursement Accounts (HRA)** may also be utilized to cover program.
- **Medicaid coverage:** Indiana is pursuing (MT, MN, NJ, CA, pilots in PA & AR)
- **State employee coverage:** Coming soon for Indiana (18 states so far!)

Location of DPPs



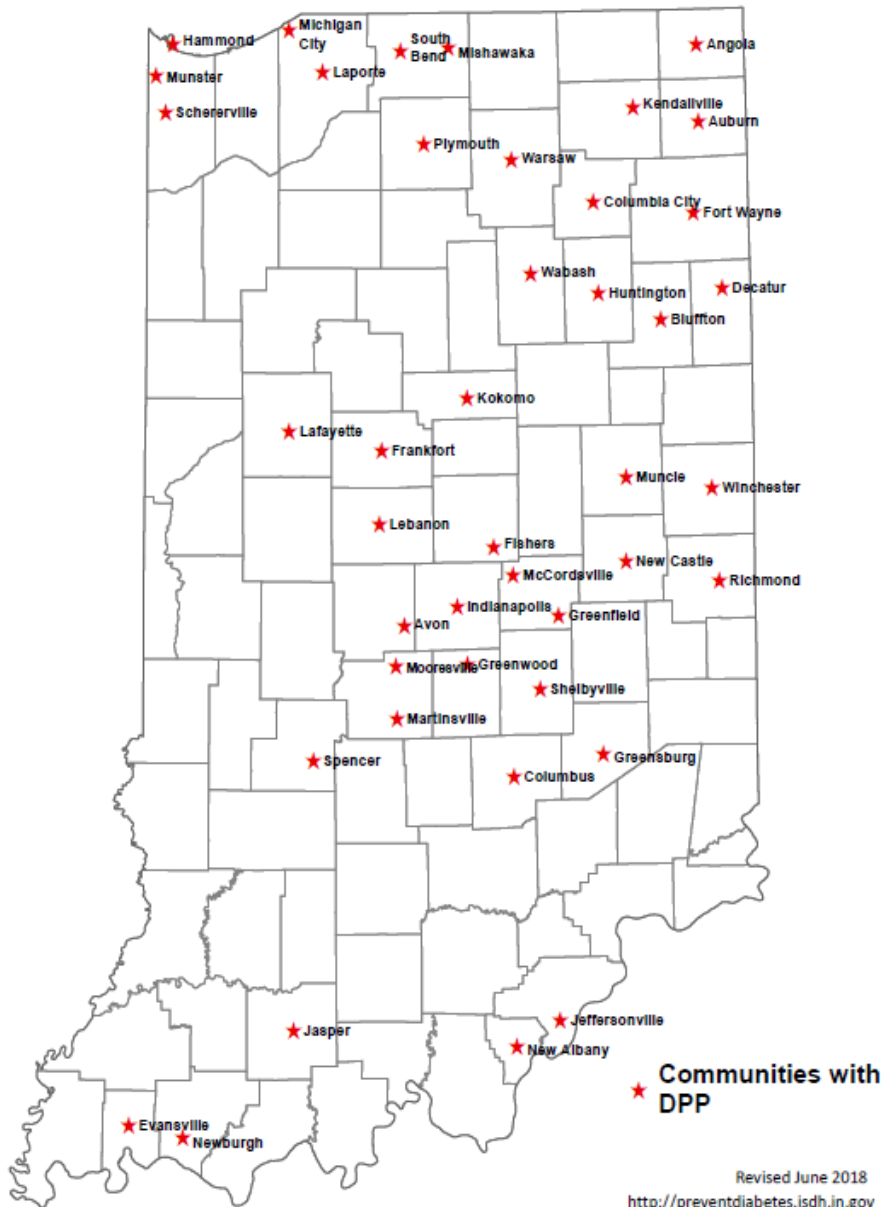
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Communities with CDC National Diabetes Prevention Programs (Indiana 2018)

- Program offered in 41 out of 92 counties
- More than 100 locations offered

New website!

www.preventdiabetes.isdh.in.gov



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State's Website for all Diabetes Prevention Program Listings

www.preventdiabetes.isdh.in.gov



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Another option is available: Virtual Diabetes Prevention Programs

Effective January 2015, virtual programs became available!

- 12 national virtual providers
- 50 other virtual providers


Go to the CDC's website for virtual listing:

https://nccd.cdc.gov/DDT_DPRP/City.aspx?STATE=OTH&CITY=OTH




A Call to Action

- 1. Get yourself (and others) screened for prediabetes!**
(paper risk test and/or blood test)
- 2. High risk for type 2 diabetes?**
Find a National Diabetes Prevention Program (DPP) near you: www.preventdiabetes.isdh.in.gov
- 3. Can't find a DPP in your community?**
Consider offering a program at your organization; contact the Indiana State Department of Health for assistance



**FOOD IS THE
MOST ABUSED
ANXIETY
DRUG.
EXERCISE IS
THE MOST
UNDERUTILIZED
ANTIDEPRESSANT.**





**Thank you for your
attention today!**

Any questions?



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Department of Health



Contact Information

Susie King

Diabetes Prevention Coordinator

317-233-7343

sking@isdh.in.gov



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