



Measures have been taken, by the Utah Department of Health, Bureau of Health Promotions, to ensure no conflict of interest in this activity.

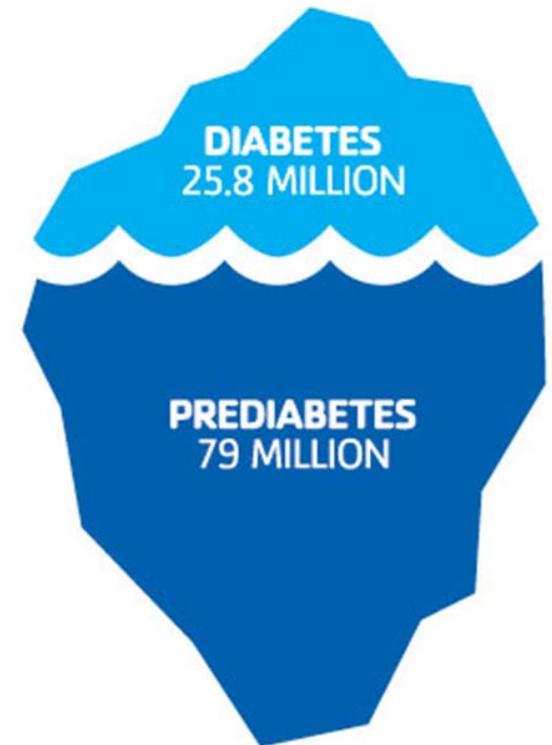
CNE/CEU's are available for this live webinar. You must take the pre and post tests. 80% is required on the post test to receive CNE/CEU's.

Certificates will be emailed out to you within two weeks



The University of Utah

Diabetes Prevention Research Program





“Pre diabetes”

1. People with ***pre diabetes*** have blood sugar levels that are higher than normal but lower than “diabetes” thresholds.
2. Evidence shows associations between ***pre diabetes*** and early forms of nerve damage which can lead to neuropathy, and blood vessel damage which can increase the risk of heart disease and stroke.
3. Over 90% of the people with ***pre diabetes*** do not know they have it.



Diabetes Prevention Program (DPP)

N = 3234 with IFG (FBS) or IGT (2hr OGTT)

Three Groups

Standard lifestyle recommendations plus placebo (BID)

Standard lifestyle recommendations plus Metformin (850mg BID)

Intensive lifestyle modification

7% weight loss and 150 min exercise/week

Results

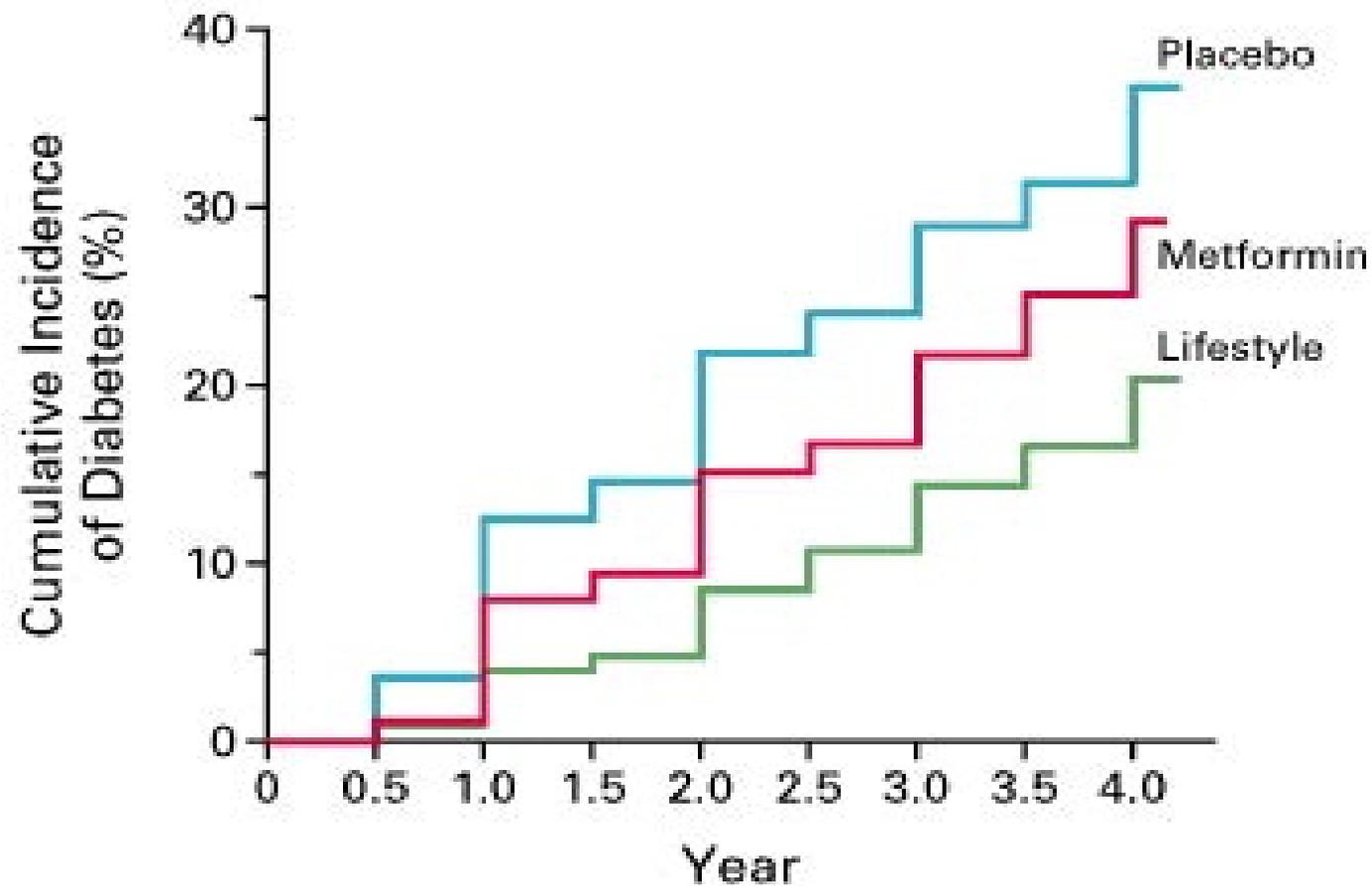
Metformin reduced DM by 31%

Intensive lifestyle reduced DM by 58%

Intensive lifestyle in pts > 60yrs reduced DM by 71%



Cumulative Incidence of Diabetes





Additional studies that support lifestyle modification to decrease the risk of type 2 diabetes.....

- Eriksson, KF and Lindgarde, F, Prevention of Type 2 (non-insulin-dependent) diabetes mellitus by diet and physical exercise, *Diabetologia*, 1991 **SWEDEN**
- Pan X, et al, Effects of diet and exercise in preventing NIDDM in people with impaired glucose tolerance. The DA Qing IGT and Diabetes Study. *Diabetes Care*, 1997 **CHINA**
- Toumlehto J, et al, Finnish Diabetes Prevention Study Group. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *NEJM*, 2001 **FINLAND**
- Ramachandran A, et al, Indian diabetes Prevention Programme (IDPP). The Indian Diabetes Programme shows that lifestyle modification and metformin prevent type 2 diabetes in Asian Indian subjects with impaired glucose tolerance. *Diabetologia*, 2006 **INDIA**



Studies looking at the long term effects of diabetes prevention...

- **The Finnish Diabetes Prevention Study (DPS) Lifestyle intervention and 3-year results on diet and physical activity, 2003**
- Sustained reduction in the incidence of type 2 diabetes by lifestyle intervention: **follow-up of the Finnish diabetes Prevention Study, 2006**
- The long-term effect of lifestyle interventions to prevent diabetes in the China **Da Qing diabetes Prevention Study: a 20-year follow-up study, 2008**
- **10-year follow-up of diabetes incidence and weight loss in the DPPOS**
Diabetes Prevention Research Group, 2009



Translating Diabetes Prevention Programs

- Translating the Diabetes Prevention Program into the Community: The DEPLOY Pilot Study, **2008**
- One-Year Results of a Community-Based Translation of the DPP: Healthy Living Partnerships to Prevent Diabetes: HELP PD, **2011**
- Training Peers to Deliver a Church-Based DPP, **2012**



The 10-Year Cost-Effectiveness of Lifestyle Intervention or Metformin for Diabetes Prevention

An intent-to-treat analysis of the DPP/DPPOS

- 10 year cumulative per capita direct medical costs of the DPP/DPPOS
 - Lifestyle \$4601
 - Metformin \$2300
 - Placebo \$769
- Cumulative direct medical costs outside the DPP/DPOS
 - Lifestyle \$24,563
 - Metformin \$25,616
 - Placebo \$27,468
- Cumulative quality-adjusted life years accrued over 10 years
 - Lifestyle 6.81
 - Metformin 6.69
 - Placebo 6.67





Effectiveness and Cost Effectiveness of Diabetes Prevention Among Adherent Participants

- Among adherent participants, lifestyle intervention and metformin were effective and cost effective for prevention compared to placebo
- Intervention to delay or prevent chronic disease are often cost saving later in the natural history of the disease
- Intervention for diabetes prevention provides good value for the money





Evidence for Diabetes Prevention

- Diabetes Prevention makes a difference
- The intervention has lasting effects for adherent participants
- The intervention can be delivered by non-medical personnel
- It is cost effective





What is the NDPP?

Ann Albright, PhD, RD
Director, Division of Diabetes Translation
Centers for Disease Control and Prevention

- Takes research into practice
- Makes the lifestyle change program accessible to people at high risk for type 2 diabetes
- Lifestyle Coaches and participants follow a “standardized” protocol
- Designed to be implemented at the community level
- Designed not to be “cost-prohibitive”, therefore sustainable
 - *National DPP is 1/3 of the cost of DPP research study and demonstrates similar lifestyle change results
- The goal is to prevent or delay the onset of type 2 diabetes

National Diabetes Prevention Program

COMPONENTS



Training: Increase Workforce

Train the workforce that can implement the program cost effectively.



Recognition Program: Assure Quality

Implement a recognition program that will:

- Assure quality.
- Lead to reimbursement.
- Allow CDC to develop a program registry.



Intervention Sites: Deliver Program

Develop intervention sites that will build infrastructure and provide the program.



Health Marketing: Support Program Uptake

Increase referrals to and use of the prevention program.

Albright A, Gregg EW. *Am J Prev Med.* 2013;44(4S4):S346-S351.



Training the Workforce

- Center for Excellence in Aging & Community Wellness, quality and Technical Assistance Center (QTAC) **Albany, NY**
- Diabetes Training and Technical Assistance Center (DTTAC), The Emory Centers for Training and Technical Assistance at Emory University **Atlanta, GA**
- State of Wellness **Columbia, MD**
- University of Pittsburgh diabetes Prevention Support Center (DPSC), Dept. of Epidemiology at the Graduate School of Public Health **Pittsburgh, PA**
- Viridian Health Management **Phoenix, AZ**



DPRP Standards

Centers for Disease Control and Prevention Diabetes Prevention Recognition Program

Standards and Operating Procedures

www.cdc.gov/diabetes/prevention//recognition

January 1, 2015



Participant Eligibility

- All participants must be at least 18 years of age
- BMI ≥ 24 kg/m² (≥ 22 kg/m², if Asian)
- At least 50% must have a recent (within the year) blood test (may be self-reported)
 - FBS 100-125 mg/dl
 - 2 Hour OGTT 140-199 mg/dl
 - HbA1c 5.7-6.4%
 - Clinically diagnosed GDM during a previous pregnancy
- At most 50% can be considered eligible if they screen positive for prediabetes based on:
 - CDC Prediabetes Screening Test
 - ADA Type 2 Risk Test



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.

Yes	No
1	0
1	0
1	0
5	0
5	0
5	0
9	0

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 as 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?

Add your score and check the back of this page to see what it means.

AT-RISK WEIGHT CHART

Height	Weight <small>Pounds</small>	Height	Weight <small>Pounds</small>
4'10"	129	5'7"	172
4'11"	133	5'8"	177
5'0"	138	5'9"	182
5'1"	143	5'10"	188
5'2"	147	5'11"	193
5'3"	152	6'0"	199
5'4"	157	6'1"	204
5'5"	162	6'2"	210
5'6"	167	6'3"	216
		6'4"	221





ARE YOU AT RISK FOR TYPE 2 DIABETES?



Diabetes Risk Test

- 1** How old are you? Write your score in the box.
- Less than 40 years (0 points)
 - 40—49 years (1 point)
 - 50—59 years (2 points)
 - 60 years or older (3 points)
- 2** Are you a man or a woman? Write your score in the box.
- Man (1 point) Woman (0 points)
- 3** If you are a woman, have you ever been diagnosed with gestational diabetes? Write your score in the box.
- Yes (1 point) No (0 points)
- 4** Do you have a mother, father, sister, or brother with diabetes? Write your score in the box.
- Yes (1 point) No (0 points)
- 5** Have you ever been diagnosed with high blood pressure? Write your score in the box.
- Yes (1 point) No (0 points)
- 6** Are you physically active? Write your score in the box.
- Yes (0 points) No (1 point)
- 7** What is your weight status? (see chart at right) Write your score in the box.

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.

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.

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

For more information, visit us at www.diabetes.org or call 1-800-DIABETES

Visit us on Facebook
[Facebook.com/AmericanDiabetesAssociation](https://www.facebook.com/AmericanDiabetesAssociation)



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 for information, tips on getting started, and ideas for simple, small steps you can take to help lower your risk.



Location and Staffing

- Private setting for a group or individuals
- Where participants can be weighed privately

- Provide support and guidance and implement the standard curriculum
- Must be trained to deliver the required curriculum content
 - Organized
 - Facilitate social interaction
 - Guide behavior change without imposing personal solutions
 - Communicate empathy
 - Understand basic health, nutrition and fitness principles
 - Understand principles of behavior change (MI)
 - Ability to work with many types of people
 - Strong attention to detail and data collecting



NDPP Curriculum

- **Curriculum topics** (Months 1-6)
 - Healthy eating
 - Physical activity
 - Behavior modification
 - How to stay motivated

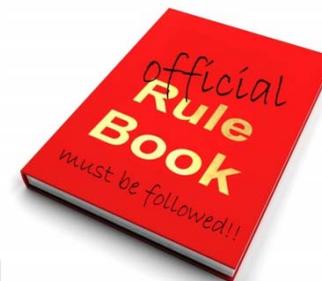
- **Curriculum topics** (Months 7-12)
 - Healthy eating
 - Physical activity
 - Behavior modification
 - How to stay motivated

<http://www.cdc.gov/diabetes/prevention/recognition/curriculum.htm>



CDC Data Collection Guidelines

- Once approved for pending recognition, CDC assigns org an “effective date”
- Classes and data collection must begin within 6 months of the “effective date”
- Data is to be submitted to the CDC annually on the anniversary month of the “effective date”
- After the first 12 months, the CDC will provide an interim progress report
- After the second 12 months, the CDC will provide the first evaluation report and assess org status for recognition
- Once “recognition status” is met, data submission is required annually





The University of Utah

Diabetes Prevention Research Program

Purpose and Objectives

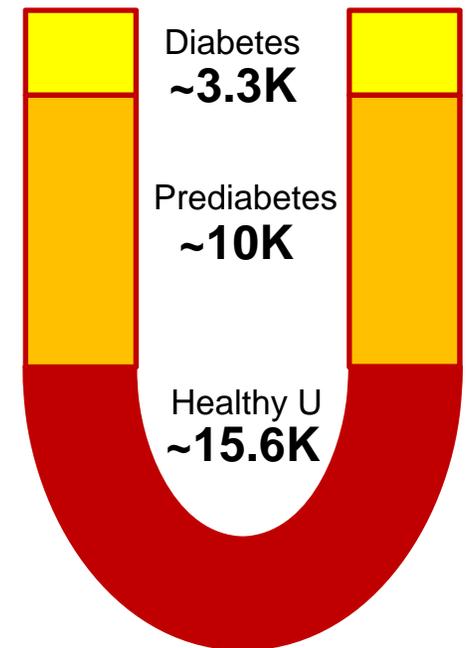
- Identify U of U Hospital and Campus employees (and family members) at high risk for type 2 diabetes
- Provide access to a 12 month “CDC-led” National Diabetes Prevention Program
- Create a database of select indices of prediabetes at baseline and 12 months
- Build teams of COH students to carry out participant education and training (can students effectively do this?)
- Become the first Utah “CDC–nationally recognized site”



University of Utah

Diabetes Prevention Research Program

Modelled after the NDPP



Approximately 30,000 U employees



Where do things stand?

- We received pending recognition in June 2014
- We have IRB approval for data collection
- Flyers, online advertising and a video
- “E-mailbox” (DPP@utah.edu) for contact info
- University funding secured and moving forward
 - CDC trained Lifestyle Coaches = COH Graduate Students.
 - We are collaborating with the CCTS to collect blood and the Dept. of Neurology to collect early neuropathy measures.
 - **WellU** participants will be eligible for discounted insurance premiums and **WellnessNOW** participants will be eligible for incentives.
 - Started classes on campus January 2015!



DIABETES PREVENTION RESEARCH PROGRAM

— Are you at risk for —

DIABETES?

(family history of diabetes, over 45 years old, physically inactive most days of the week, carry extra weight in your midsection)

JOIN A NEW

12-MONTH

Science-based education and lifestyle modification training program.

The program is **FREE** to University of Utah faculty and staff and University of Utah Hospitals and Clinics employees and family members who are at risk for diabetes. Participants must be 21 or older.

FACT >



24 MILLION PEOPLE ARE AFFECTED BY TYPE 2 DIABETES



80 MILLION PEOPLE ARE AFFECTED BY PREDIABETES



Decrease Your Risk for Diabetes

VISIT PULSE AND EMAIL DPP@UTAH.EDU FOR MORE INFORMATION



Look for our flyer around the hospital and lower campus!



Video

<http://youtu.be/TQnyxTBY1IM>



Find us on:

1. U of U Health Care YouTube page
2. UUHC Facebook page
3. UUHC Telemedicine Facebook page
4. “The Pulse” Q & A
5. FYI Sept 26, 2014 issue



Outcomes

Patients (N=100)

- Fasting Glucose, 2 hr OGTT, HbA1c
- **Body weight**
- BMI
- Waist : Hip ratio
- **Minutes of physical activity/week**
- Six minute walk distance
- Quality of life assessment
- 24 hr diet recall
- Follow-up to determine incidence of Type 2 diabetes every 6 months for 10 years

Lifestyle Coaches (N=8)

- Feasibility of utilizing Graduate Students for teaching the DPP



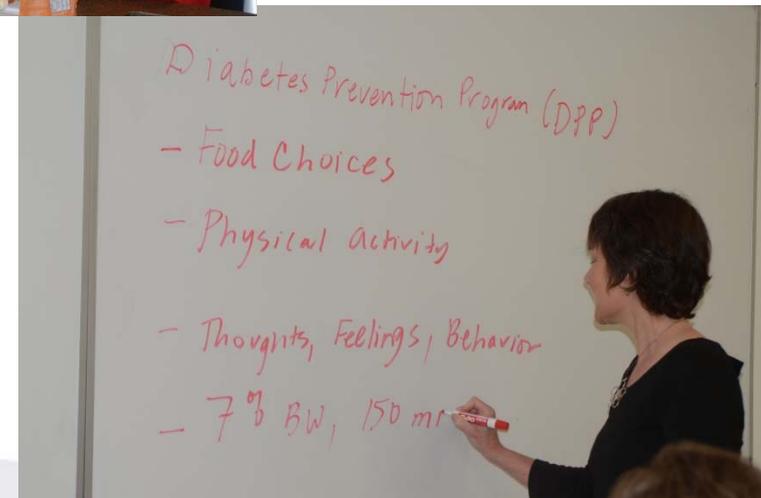
Education Class Schedule

- 1x/week for 2 months
- 1x every other week for 4 months
- 1x/month for 6 months

- 1 hour classes
- Meet before and after the work day

- 15 - 20 participants/class
- 2 lifestyle coaches/class

- Rolling enrollment
 - New classes start every 2-3 months until we reach our goal of 100 participants who have completed the 12 months





Physical Activity Offerings

- 12 weeks free supervised exercise beginning week 5
 - Ongoing fitness program (DASH) will be utilized (T/TH 3-8pm)
 - Exercise release form from referring MD
 - Exercise intensity based on $220 - \text{age} \times 60 - 85\%$ and RPE
 - Cardio, resistance and flexibility progression
 - Cardio goal = 150min/week





Project Costs

Direct

- Graduate Student Stipends
 - \$9000
- Lifestyle Coach Training
 - \$760/person x 6 = \$4550
- Education materials
 - \$10/binder x 100 = \$1000
- ARUP Labs
 - HbA1c = \$15 x 100 = \$1500 x 2 = \$3000
- CCTS nursing services = \$18,000
- DASH Staff costs
 - \$2.50/hr x 4 x 3 x 12 = \$30/quarter = \$120/year

- ~ \$36, 000

Indirect

- HR benefits
 - Discounts on health insurance premiums (\$?)



Funding Sources

- \$55,000
 - University of Utah Foundation
 - Sorenson Foundation
 - Utah Department of Health





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Diabetes Prevention Research Program



UTAH DEPARTMENT OF
HEALTH

Diabetes Prevention & Control Program



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HEALTH CARE





DPP@utah.edu

Thank you!