

I CAN LOWER MY RISK FOR
TYPE 2 DIABETES



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**Taking Steps to Lower
the Risk of Getting Diabetes**

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A Native Physician's Thoughts

Dear Friends,

As a Native physician practicing in Indian communities, I have seen the devastating changes diabetes has caused among our people. American Indians are more than twice as likely to become diabetic than the rest of the U.S. population, and we are more likely to develop complications of diabetes once we have the disease.

Despite these higher risks, Indian communities can work toward preventing diabetes by modest lifestyle changes. Changes like losing 10-15 pounds and exercising 30 minutes most days makes a dramatic difference in your risk of getting diabetes. For years we have assumed that losing weight and exercising more will lower our risk of developing diabetes. With the recent results of the Diabetes Prevention Program (DPP), we have not only confirmed that it is TRUE, but we now know that the changes needed to reduce our risk of diabetes are not as big as we thought. We do not have to completely return to the lifestyle of our ancestors to prevent diabetes. We can take **SMALL STEPS** toward achieving **BIG REWARDS**.

Donald K. Warne, MD, CDE, MPH
Oglala Lakota

Research gives hope that diabetes can be prevented

People with diabetes can prevent or delay complications by keeping blood glucose levels close to normal. Preventing or delaying the development of type 2 diabetes in the first place is even better. The results of a major federally-funded study, the Diabetes Prevention Program (DPP), give us hope we can do so.

This study of 3,234 people at high risk for diabetes showed that moderate weight loss through diet and exercise can delay and possibly prevent type 2 diabetes. One hundred and seventy-one American Indians participated in the Diabetes Prevention Program.

Study participants were overweight and had higher levels of blood sugar (glucose), a condition called pre-diabetes (impaired glucose tolerance). Pre-diabetes and obesity increase your chances of getting type 2 diabetes.

The DPP tested two ways to prevent diabetes: a healthy eating and exercise program (changes that caused weight loss), and the diabetes drug metformin (Glucophage). People in the lifestyle group exercised about 30 minutes a day, 5 days a week (usually by walking), and lowered the amount of fat and calories they ate. Those who took metformin got basic advice on exercise and diet annually, as is done in an IHS or tribal physician's office. A third group received only the basic advice on exercise and diet.

The results showed that people in the lifestyle modification group lowered their risk of type 2 diabetes by 58 percent. Even more exciting: many of the people in the lifestyle modification group lowered their blood sugar to normal. Average weight loss in the first year of the study was 15 pounds. People taking metformin lowered risk by 31 percent.





What is type 2 diabetes?

Diabetes is a disease in which blood sugar levels are higher than normal. When a person has diabetes the body has a difficult time converting food to energy. After food is eaten, it is changed into a sugar called glucose, and then carried by the blood to all parts of the body. Some types of foods, like bread, cereals, sugared sodas and others (carbohydrates) are absorbed by the body and move into the blood as glucose or blood sugar. The hormone insulin, made in the pancreas, helps the body to change blood sugar into energy.

For some people, the body makes very little or no insulin (type 1 diabetes). Type 1 diabetes is very rare in American Indians. In type 2 diabetes, the body makes large amounts of insulin, but the body does not use the insulin properly. As a result, blood sugar is not changed into energy, and the blood sugar goes up. Over time, high blood sugar causes damage to nerves and blood vessels and can lead to problems such as heart disease, stroke, blindness, kidney failure and amputations.

Gestational Diabetes

Some women develop gestational diabetes during pregnancy. Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop type 2 diabetes later in life.

What are the signs and symptoms of type 2 diabetes?

Many people have no visible signs or symptoms of diabetes. Symptoms can also be so mild that you might not even notice them. Nearly 6 million people in the United States have type 2 diabetes and do not know it.

Look for:

- increased thirst
- increased hunger
- fatigue
- increased urination, especially at night
- unexplained weight loss
- blurred vision
- sores that do not heal



What does pre-diabetes mean?

Pre-diabetes means your blood sugar is high but not yet as high as if you had diabetes. Pre-diabetes also means you are at risk for getting type 2 diabetes and heart disease. Pre-diabetes has no visible symptoms. The good news is if you have pre-diabetes you can lower the risk of getting diabetes and even return to normal blood glucose levels. With modest weight loss and moderate physical activity, you are likely to delay or prevent type 2 diabetes.



What increases my risk for diabetes?

- Having higher than normal blood sugar
- Being overweight or gaining weight

To find out your other risks for type 2 diabetes, check each item that applies to you:

- My mother had diabetes when I was born.
- I have a parent, brother, or sister with diabetes.
- My family background is American Indian.
- I have had gestational diabetes, or I gave birth to at least one baby weighing more than 9 pounds.
- My blood pressure is 140/90 or higher, or I have been told that I have high blood pressure.
- My cholesterol levels are higher than normal. My HDL (“good” cholesterol) is less than 40 (for men) or less than 50 (for women). My triglyceride level is 250 or higher.
- I am fairly inactive. I exercise fewer than three times a week.

Boxes 1-3 are the most important, but the more you checked, the higher your risk.

What can I do about my risk?

You can do a lot! Stay healthy.

- Exercise regularly.
- Eat less fat and calories.
- Lose weight.

Doing these things can reduce your risk of diabetes. Lowering blood pressure and cholesterol levels also help you stay healthy.

If you are pregnant, plan to breastfeed your baby. Besides being good for your baby, studies done with the help of Pima volunteers show that breastfeeding may lower the baby’s risk of becoming overweight and getting diabetes.



“My great grandmother told me to breast-feed my child so the baby would be healthy.”

Audrey Santo, Salt River

Small Steps – Big Rewards

Your weight affects your health in many ways. Being overweight can keep your body from making and using insulin correctly. It can also cause high blood pressure. The Diabetes Prevention Program (DPP) showed that losing even a few pounds can help lower your risk of developing type 2 diabetes because it helps your body use insulin more effectively. In the DPP, people who lost between 10 and 15 pounds significantly lowered their risk of type 2 diabetes in just 3 years. *If you are overweight, choose sensible ways to lose weight.*

- Don't use crash diets. Instead, eat less of the foods you usually have, and limit the amount of fat you eat.
- Increase your physical activity. Aim for at least 30 minutes of exercise most days of the week. Do something you enjoy, like biking or walking with a friend.
- Set a reasonable weight-loss goal, such as losing about a pound a week. Aim for a long-term goal of losing the number of pounds that's right for you.
- Every pound you lose lowers your risk of getting diabetes.
- On average people in the DPP who lost 5 pounds reduced their chance of getting diabetes by a third.

Getting started

Making big changes in your life is hard, especially if you are faced with more than one change. You can make it easier by taking these steps:

- Make a plan to change behavior.
- Decide exactly what you will do and when you will do it.
- Plan what you need to get ready.
- Think about what might prevent you from reaching your goals.
- Find family and friends who will support and encourage you.
- Decide how you will reward yourself when you do what you have planned.

Your doctor, a nutritionist, or a counselor can help you make a plan.

Build up to 30 Minutes of Brisk Walking Five Days a Week

Week #	Warm Up Time (walk slowly)	Fast Walk Time (walk briskly)	Cool Down Time (walk slowly)	Total
1	5 minutes	5 minutes	5 minutes	15 min.
2	5 minutes	8 minutes	5 minutes	18 min.
3	5 minutes	11 minutes	5 minutes	21 min.
4	5 minutes	14 minutes	5 minutes	24 min.
5	5 minutes	17 minutes	5 minutes	27 min.
6	5 minutes	20 minutes	5 minutes	30 min.
7	5 minutes	23 minutes	5 minutes	33 min.
8	5 minutes	26 minutes	5 minutes	36 min.
9+	5 minutes	30 minutes	5 minutes	40 min.

Source: National Diabetes Education Program

Make wise food choices most of the time

What you eat has a big impact on your health. By making wise food choices, you can help control your body weight, blood pressure, and cholesterol.

- Keep a food and exercise log. Start with the pages in the back of this book. Write down what you eat, and how much you exercise – anything that helps keep you on track. In the DPP, those who kept track were more successful in making change.
- Take a look at the serving sizes of the foods you eat. Limit serving sizes of main courses (such as meat), desserts, and foods high in fat. Increase the amount of fruits and vegetables at every meal.
- Limit your fat intake to about 25 percent of your total calories. For example, if your food choices add up to about 2,000 calories a day, try to eat no more than 56 grams of fat. Your doctor or a nutritionist can help you figure out how much fat to eat. You can check food labels for fat content too.
- Lower the number of calories you have each day to lose weight. People in the DPP lifestyle group lowered their daily calorie total by an average of about 450 calories. This will result in a weight loss of about a pound a week. Your doctor or nutritionist can help you with a meal plan that emphasizes weight loss.
- Choose healthier commodity foods, including those lower in fat.
- When you meet your goal, reward yourself with a nonfood item or activity, like treating yourself to a new outfit or watching a movie.



*“If I can do it,
anyone can do it.”*

Glenda Thomas Eifer, *Gila River*

Keep your food portion sizes in check

THIS MUCH FOOD	LOOKS THE SIZE OF
3 ounces of meat	a deck of cards
2 Tablespoons of peanut butter	a golf ball
a medium apple/orange	a baseball
1 cup of fruit	a baseball
a medium potato	a bar of hand soap
1 ounce of cheese	four dice

IMAGINE THESE ITEMS AS GUIDES WHEN JUDGING PORTION SIZES

Think about reducing fat.

Ways to eat lower-fat foods instead	For example, instead of this food	Fat (g)	Calories	Choose this food	Fat (g)	Calories
Instead of high-fat foods, pick low-fat foods	Sunflower seeds, shelled, roasted, 1/4 cup	16	184	Pretzels, 1-ounce bag	1	108
Instead of high-fat foods, use low-fat substitutes	Regular margarine, 1 teaspoon	4	34	Low-fat margarine, 1 teaspoon	2	17
Find ways to lower the amount of fat in meats you eat	Stew meat, untrimmed, 3 oz.	16	269	Stew meat, trimmed, 3oz.	11	228
Instead of flavoring foods with fat, use low-fat flavorings	Small baked potato with 2 tablespoons sour cream	6	113	Baked potato with 2 table- spoons salsa	0	65
Avoid frying foods; bake or grill instead	Chicken breast, with skin, breaded, fried	24	439	Chicken breast with skin, grilled	9	205

Source: National Diabetes Education Program

Warning: Low-fat or fat-free products still contain calories. Be careful about how much you eat. In fact, some low-fat or fat-free products are very high in calories because they're loaded with sugar. Check the label before you purchase.



Be physically active every day

Regular exercise tackles several risk factors at once. It helps you lose weight, keeps your cholesterol and blood pressure under-control, and helps your body use insulin. Start slowly if you are not very active. Talk with your doctor first about what kinds of exercise would be safe for you. Make a plan to increase your regular physical activity.

- Aim for at least 30 minutes a day most days of the week.
- Incorporate physical activity into plans with family and friends. Set a good example for your children. Play softball on weekends. Go on a hike.
- Make a plan to increase your activity level every day. Consider chores, like vacuuming, walking to the store, or gardening.



“Running makes me feel good.”

Monica Boone, Zuni

Make a plan to lose weight

Losing 7 percent of your weight is one big step to reduce your risk of diabetes. Multiply your weight by .07 to figure out your weight loss goal.

Take your prescribed medications

Some people need medication to help control their blood pressure or cholesterol levels. If you do, take your medicines as directed. Ask your doctor about taking metformin (Glucophage) to prevent diabetes.

Hope through research

With the help and participation of many Pima volunteers over the years, NIH has been able to identify several ways doctors can take better care of people with diabetes. We know it is very important to keep blood pressure under control. We know that it is important for pregnant mothers with diabetes to keep their blood sugar down so their babies will have lower risk of diabetes. Breastfeeding, even for a few weeks, protects babies from overweight and diabetes.

We also now know that many people who might otherwise develop illness can prevent type 2 diabetes through regular exercise, lowering the amount of fat and calories they eat, and weight loss. Researchers are also studying the genetic and environmental factors that can lead to overweight, pre-diabetes, and diabetes. As they learn more about the events that lead to diabetes, they hope to develop more ways to prevent and cure the different stages of this disease. People with diabetes and those at risk for it now have easier access to clinical trials that test promising new approaches to treatment and prevention. For information about current studies, see <http://ClinicalTrials.gov>.

Keeping Track

SAMPLE

DAY <u>Monday</u> DAILY FOOD AND DRINK TRACKER			
Time	Amount/Name/Description	Fat Grams	Calories
8:00am	1/2 cup oatmeal	1	73
	1 cup 2% milk	5	121

DAY _____ DAILY FOOD AND DRINK TRACKER			
Time	Amount/Name/Description	Fat Grams	Calories

DAILY FOOD AND DRINK TRACKER <i>(continued)</i>			
Time	Amount/Name/Description	Fat Grams	Calories
TOTALS			

DAILY PHYSICAL ACTIVITY	
Type of Activity	Minutes
TOTAL	

Make copies as needed.

Additional information on Diabetes is available from:

National Diabetes Information Clearinghouse

1 Information Way
Bethesda, MD 20892–3560
Phone: (800) 860–8747 [toll-free]
(301) 654–3327
Fax: (301) 907–8906
Email: ndic@info.niddk.nih.gov
Web: www.diabetes.niddk.nih.gov

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Publications produced by NIDDK are carefully reviewed by NIDDK scientists. This booklet was reviewed by Don Warne, MD, William C. Knowler, MD, PhD, and Mary Hoskin, RD, MS. It was also reviewed by American Indian health care providers who work with the National Diabetes Education Program. Comments from members of the Indian Health Service, the Gila River Indian Community, and other American Indian communities have also been included.

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→ *This booklet is also available at www.diabetes.niddk.nih.gov.*

We would not have been able to develop this prevention information without the help of the many American Indians who participated in the DPP. Many thanks to the tribal leaders, American Indian Communities, and health care facilities that supported the DPP. This generous gift of time and energy is bringing the message that small steps result in big health rewards to all American Indians.