



small steps
big rewards

YOUR GAME PLAN



FOR PREVENTING TYPE 2 DIABETES

HEALTH CARE PROVIDER'S TOOLKIT

ACKNOWLEDGMENTS

Many National Diabetes Education Program (NDEP) partners contributed to the development of this toolkit. Members of the NDEP's Lifestyle Tools Work Group and Executive Committee translated the lessons learned from the Diabetes Prevention Program clinical trial to help health care providers and their patients initiate steps to prevent type 2 diabetes. Their dedication and hard work were invaluable.

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COPIER-READY GAME PLAN TOOLS FOR PATIENTS

1. Small Steps. Big Rewards. Your GAME PLAN for Preventing Type 2 Diabetes
2. Who Is at Risk for Type 2 Diabetes and Pre-Diabetes?
3. Walking....A Step in the Right Direction
4. Food and Activity Tracker

REFERENCES AND RESOURCES

TOOLKIT POCKET

GAME PLAN Office Poster

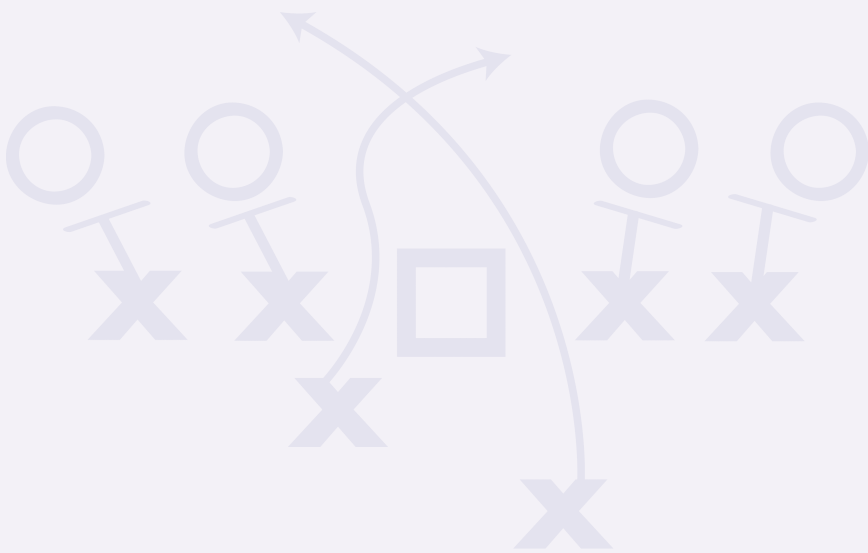
GAME PLAN Booklets for Patients (3 sets)

1. Am I at Risk for Type 2 Diabetes?
2. Small Steps. Big Rewards. Your GAME PLAN for Preventing Type 2 Diabetes
3. Small Steps. Big Rewards. Fat and Calorie Counter
4. Small Steps. Big Rewards. Food and Activity Tracker

The Small Steps. Big Rewards. GAME PLAN toolkit is based on the lifestyle modification strategies used in the Diabetes Prevention Program (DPP), sponsored by the National Institutes of Health. All of the DPP resources are available on the Internet at www.bsc.gwu./dpp/manuals.htmlvdoc. The Walking section was adapted from a brochure produced by the Weight-Control Information Network, NIH Publication No. 01-4155.

All of the materials in this kit may be reproduced without permission and shared with colleagues and patients. Feel free to duplicate the copier-ready masters for your practice.

For more information about diabetes prevention and control, call the National Diabetes Education Program at 1-800-438-5383 or visit our web site at www.ndep.nih.gov on the Internet.



PREFACE



In August 2001, U.S. Department of Health and Human Services Secretary Tommy G. Thompson announced that the National Institutes of Health’s Diabetes Prevention Program (DPP) clinical trial—a multi-year study with more than 3,000 participants—was concluding early because of its tremendous success. The DPP, together with studies in Finland and Asia, demonstrated that **TYPE 2 DIABETES CAN BE DELAYED OR PREVENTED.**

This is very good news for your patients at risk. There are now 17 million Americans with diabetes and each year there are about one million new cases. The DPP study showed that it is possible to prevent or delay the onset of type 2 diabetes in a group of research participants at risk. Importantly, the participants were representative of the racial and ethnic diversity of the United States and of the groups at highest risk for diabetes.

Diabetes incidence was reduced substantially—58 percent in the lifestyle group and 31 percent in those taking metformin compared with the placebo group. What’s more, the DPP demonstrated that only seven patients needed to be treated to prevent one case of diabetes.

If we can apply the lessons learned from the DPP to patients who are at risk for diabetes, this will result in significantly fewer new cases of diabetes each year.

The National Diabetes Education Program (NDEP)—a joint program of the National Institutes of Health and the Centers for Disease Control and Prevention—is pleased to provide you with this **Small Steps. Big Rewards. Your GAME PLAN for Preventing Type 2 Diabetes** toolkit. This kit *will* help you apply the lessons learned from the DPP to your patients.

The risk is great.

The goals are important.

The changes are modest.

The action steps are clear.

That doesn’t make it easy for you or your patients, but the DPP demonstrated that it can be done.

Please join with us!

Sincerely,

James R. Gavin III, MD, PhD

Chair, NDEP Steering Committee

The DPP showed that only seven patients needed to be treated to prevent one case of diabetes.



EXECUTIVE SUMMARY: IDENTIFYING AND TREATING PRE-DIABETES

1. Identification of High-Risk Patients

Identify high-risk patients based upon these risk factors:

PRE-DIABETES RISK FACTORS

- **Age** — The risk of pre-diabetes increases with age.
- **Overweight** — Defined as a body mass index (BMI) ≥ 25 (≥ 23 if Asian American or ≥ 26 if Pacific Islander).
- **Blood pressure** — $> 140/90$ mm/Hg
- **Abnormal lipid levels** — HDL cholesterol < 40 mg/dL for men and < 50 mg/dL for women; triglyceride level ≥ 250 mg/dL
- **Family History** — Parent, brother, or sister with diabetes.
- **Ethnicity** — African American, American Indian, Asian American, Hispanic/Latino, or Pacific Islander heritage.
- **History of gestational diabetes** — Or gave birth to at least one baby weighing 9 pounds or more.
- **Inactive lifestyle** — exercises less than three times a week.

In addition to age and weight, these factors increase risk for pre-diabetes:

2. Blood Glucose Testing & Diagnosis of Pre-diabetes

- **Age 45 or older and overweight**, testing for diabetes and pre-diabetes is strongly recommended.
- **Age 45 or older without any other risk factors**, consider the risks and discuss with your patient before deciding on testing.
- **Younger than 45, overweight, and have checked any other items above**, consider the risks and discuss with patient before deciding on testing.

Perform FPG or 2-hour OGTT test (defined throughout this document as a single 2-hour post challenge glucose level after drinking or ingesting a 75-gram glucose solution after an overnight fast of 8 to 12 hours). See page 13 for a discussion of the relative merits of the two tests.

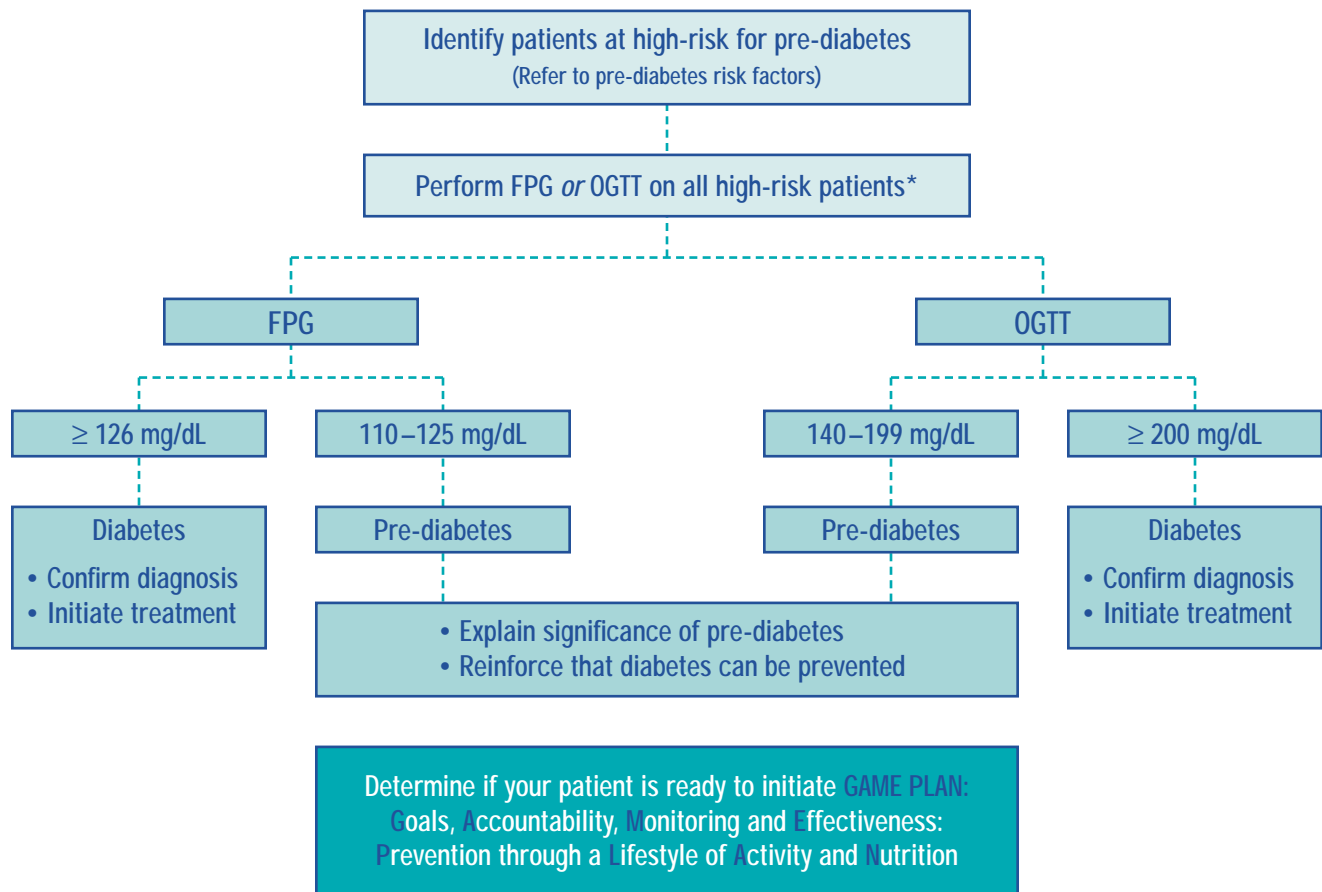
3. Determine Patient's Readiness to Initiate GAME PLAN

The GAME PLAN (Goals, Accountability, Monitoring, and Effectiveness: Prevention through a Lifestyle of Activity and Nutrition) builds upon proven behavioral strategies used in the DPP to help patients successfully initiate lifestyle changes. Pages 4–6 outline the GAME PLAN and how to use the toolkit materials.

4. Initiate Appropriate Intervention and Follow-up Based Upon Readiness

This kit includes materials for you to share with patients to help develop an intervention that is effective for their individual needs. Pages 7–10 offer strategies health care providers can employ to engage patients and create accountability for their actions.

DECISION PATHWAY



*Even with an FPG <110, a percentage of persons with IGT and diabetes will be missed. See page 13.



HOW TO USE THE GAME PLAN KIT



The good news is that we have definitive proof that type 2 diabetes can be delayed or prevented through moderate changes in lifestyle.

The Good News About Diabetes

You might be wondering: What's the "good" news about diabetes, the sixth leading cause of death that has reached epidemic proportions in the United States in the past 10 years? The good news is that we now have **definitive proof** that type 2 diabetes can be delayed or prevented in persons at risk for the disease. How—through moderate changes in lifestyle.

The Diabetes Prevention Program (DPP) was a large, multi-site clinical trial that proved that type 2 diabetes can be prevented or delayed through modest weight loss (5 to 7 percent of initial body weight) and regular physical activity. In fact, these modest changes resulted in a 58 percent reduction in the development of diabetes in persons at increased risk for the disease. Moreover, these impressive results were obtained in all ethnic and age groups and especially in those over age 60.

You're probably saying to yourself ...

"Every time I try to get my overweight patients to lose weight, I fail." We recognize how difficult it is to get patients to lose weight. Aggressive (and sometimes unrealistic) goals often lead to failure and frustration for both patient and health care provider. Again, the good news is that significant risk reduction can be achieved through **modest** weight loss. In the DPP, a man who weighed 290 pounds and lost 7 percent of his body weight would still weigh 270 pounds, but have the potential for significant risk reduction for developing diabetes.

Realistically, you have two options for helping your patients lose weight:

1. You can refer them to weight loss programs and health care professionals in your area who specialize in nutrition and weight management.
2. You can provide your patients with the basic tools to enable them to make appropriate lifestyle changes to help reduce their risk for developing diabetes.

The materials included in this package are designed to help you with Option 2. They are adapted from those used in the DPP and have been proven essential and effective in helping patients make the changes in their life that can delay or prevent diabetes.

We have incorporated these materials into a comprehensive program called the "**GAME PLAN:**"

Goals, Accountability, Monitoring, and Effectiveness: Prevention through a Lifestyle of Activity and Nutrition.

We call it the **Small Steps. Big Rewards. Your GAME PLAN for Preventing type 2 Diabetes.** to tie in with the National Diabetes Education Program's mass media public awareness campaign on diabetes prevention.



WHAT'S INCLUDED IN THIS PACKAGE ...

- Health care provider materials:

- * A “how to” guide that provides suggestions for helping your patients to initiate and maintain risk-reducing behaviors.
- * A Q&A about diabetes prevention, including strategies for identifying your patients at increased risk.
- * A Poster for your office to encourage your patients who may be at risk for diabetes to ask you about starting the GAME PLAN.

- Patient GAME PLAN booklets (3 sets):

- * **Small Steps. Big Rewards. Your GAME PLAN for Preventing type 2 Diabetes** Introduces and explains the tools your patients can use to assess their risk for diabetes, set goals, and start a walking program to prevent or delay the onset of the disease. It also lists organizations and web sites with a wealth of additional weight loss and physical activity information.
- * **Am I at Risk for Type 2 Diabetes?** Provides basic information about diabetes and pre-diabetes and includes a checklist of the factors that increase risk. The BMI charts will help your patients determine if they are overweight.

- * **Food and Activity Tracker** Enables patients to monitor and record their food intake and physical activity. This log is vital because most patients are unaware of their total daily calories and dietary fat consumption. We’ve provided a master copy so your patients can reproduce and make their own pocket diaries.
- * **Small Steps. Big Rewards. Fat and Calorie Counter** Provides calorie and fat gram values to help your patients record their food and drink intake. (*This is provided only as a patient booklet.*)

- Copier-ready versions of the GAME PLAN booklets:

- * **Small Steps. Big Rewards. Your GAME PLAN for Preventing Type 2 Diabetes**
- * **Who Is at Risk for Type 2 Diabetes and Pre-diabetes?**
- * **Walking...A Step in the Right Direction**
- * **Food and Activity Tracker**

Feel free to photocopy and distribute these materials when needed.

All of the GAME PLAN materials may be reproduced without permission for your practice.





HOW TO USE THESE MATERIALS

Help your patients set realistic goals.

1. **Identify patients who would benefit most from lifestyle intervention.** Use the risk factors discussed on page 2 to identify your patients who are at increased risk for type 2 diabetes. As indicated on the Decision Pathway (page 3), patients who meet one or more of these criteria should be tested for pre-diabetes — Impaired Fasting Glucose (IFG) and Impaired Glucose Tolerance (IGT).
2. **Discuss the importance of lifestyle modification for reducing diabetes risk.** You can provide your patients with the *Am I at Risk for Type 2 Diabetes?* booklet or the copier-ready version to communicate basic information about diabetes, diabetes risk reduction, and pre-diabetes and to initiate dialogue about lifestyle modification.
3. **Use the chart on page 7 to determine each patient's readiness to initiate lifestyle changes.** The chart suggests ways to approach patients along the full continuum of readiness to begin the GAME PLAN.
4. **Talk to your patients about initiating the GAME PLAN.** “How to” information on pages 8–10 suggests ways you can explain this program to your patients, help them set realistic goals, and introduce them to the patient materials in the kit. Consider if a physical exam is appropriate before counseling your patients to begin an activity program.
5. **Provide patients with the GAME PLAN tools to help them begin making lifestyle changes.** Reinforce the importance of setting goals, documenting their daily physical activity and dietary intake, and the impact of reducing dietary fat grams. This is also explained in the GAME PLAN patient booklet.
6. **Follow up with your GAME PLAN patients.** It's important for you or someone from your office to review your patients' progress in achieving their risk reduction goals. This does not have to involve a lot of time, but it must be consistent.



DETERMINE PATIENT READINESS TO INITIATE THE GAME PLAN

IF THE ANSWER IS “NO”	IF THE ANSWER IS “YES” BUT NOT AT THIS TIME	IF THE ANSWER IS “YES” WITHIN THE NEXT 30 DAYS
<ul style="list-style-type: none"> • Use motivational strategies: <ul style="list-style-type: none"> * Avoid argument. Say: “I have some information I want to share with you ...” or “I want you to know that it is your choice...” * Acknowledge that “there are good things and bad things about making lifestyle changes.” * Elicit patient’s view of the pros and cons of making lifestyle changes. (Consider having patient list his/her pros and cons.) * Educate patient about health risks of pre-diabetes and the process of preventing diabetes. * Reinforce “small steps, big rewards” in preventing/avoiding future complications. * Reinforce that “the window of opportunity is now” to initiate changes. • OFFER TO HELP YOUR PATIENT WHEN HE/SHE IS READY TO BEGIN THE GAME PLAN. 	<ul style="list-style-type: none"> • Identify and address barriers to initiating the GAME PLAN: <ul style="list-style-type: none"> * Lack of knowledge of lifestyle change principles/strategies * Discouraged or hopeless because past attempts were unsuccessful * Lack of social support * Lack of environmental support (access to safe exercise areas, foods) * Life events or emotional issues that absorb most of patient’s time and energy — chronic and acute. • Identify reasons to lose weight or engage in physical activity: <ul style="list-style-type: none"> * Health-related * Emotional, social, financial, relationships & other — be sensitive to cross-cultural body image differences. • Work with patient to start thinking about a personal plan: <ul style="list-style-type: none"> * Discuss setting a realistic long-term goal (5–10% weight loss and/or exercise 150 minutes per week over next 12 months). * Discuss realistic short-term objectives (e.g., 30 minutes of exercise per week for next 30 days and/or reduce total daily fat consumption by 10%). • THIS DISCUSSION MAY PROMPT YOUR PATIENT TO COMMIT TO THE GAME PLAN. 	<ul style="list-style-type: none"> • Ask patient to set a starting date for initiating the GAME PLAN. • Assess prior efforts: <ul style="list-style-type: none"> * “What have you tried?” * “What worked?” * “What didn’t work?” • Work with patient to develop a personal plan. • Set a realistic long-term goal (5–10% weight loss and/or 150 minutes of exercise per week over next 12 months). • Set a realistic short-term objective (e.g., 30 minutes of exercise per week for next 30 days and/or reduce total daily fat consumption by 10%). • Consider pharmacotherapy. • Offer behavioral support: <ul style="list-style-type: none"> * GAME PLAN tools or other booklets * Referral to RD, counseling program, telephone counseling, on-line resources • EXPRESS CONFIDENCE IN YOUR PATIENT’S ABILITY TO MAKE LIFESTYLE CHANGES.



HOW TO TALK WITH YOUR PATIENTS ABOUT STARTING THE GAME PLAN



Patients who achieve short-term successes are more inclined to stay with the program. Have your patients select something they enjoy doing.

These guidelines are meant to help you talk with your patients about the GAME PLAN, specifically those patients who have indicated a willingness to take action within the next 30 days. We urge you to use these guidelines to discuss key aspects of the program.

1. Explain the GAME PLAN to your patients.

The acronym is designed to communicate the key components of an effective diabetes prevention regimen: **G**oals, **A**ccountability, **M**onitoring, and **E**ffectiveness: Prevention through a Lifestyle of Activity and Nutrition.

- **Goals** should be simple, realistic, and incremental. For example, the program goal may be losing 5 to 10 percent of current body weight; a short-term goal may be something as simple as walking briskly for 10 minutes a day, at least 3 days this week. Patients who achieve short-term successes are more inclined to stay with the program.
- **Accountability** means having your patients identify an individual (or individuals) to whom they can report their progress. You can help your patients identify a coach or refer your patients to other health professionals and/or resources in your community. It is much easier for your patients to stay on their program when they know someone is working with them.

- **Monitoring** progress means keeping track of nutrition, physical activity, and weight loss. This requires patients to keep daily logs of their exercise and food and drink intake using the Food and Activity Tracker provided in this kit. The DPP study showed that patient monitoring and documentation of food intake was the single most effective strategy for successful weight loss.

- **Effectiveness** is tracked using the Food and Activity Tracker. Patients should be encouraged to utilize and review this important tool. Additional copies can be downloaded at www.ndep.nih.gov and click on the *Small Steps* logo.

2. Help your patient set goals.

Work with your patients to set short-term goals. Short-term goals will provide the motivation and positive reinforcement needed to meet their long-term goals. The GAME PLAN patient materials, especially the Food and Activity Tracker, include blank spaces for your patients to write in both their short-term and long-term goals.

Here are some ways to help your patients set their physical activity goals and GAME PLAN...

- **Have your patients select something they enjoy doing.** Most patients choose walking because it doesn't require any special equipment, and they can do it anywhere — parks, neighborhoods, downtown, even shopping malls.

- **Urge your patients to start slowly.** “Walking...A Step in the Right Direction” provides information about initiating a safe, gradual walking program. If your patients never had a regular exercise routine, they should start with 10 minutes of brisk walking 3 to 5 days a week. Then they can increase their walking to 30 minutes per day, 5 days a week. The frequency and intensity of physical activity can be increased gradually.
- **Remind patients to keep track of their physical activity.** The best way to stay motivated is for your patients to record when and how long they are active in their Food and Activity Tracker. The more often they are physically active, the more it will become part of their routine.

Here are some ways to help your patients set their nutrition goals and GAME PLAN...

- Explain that healthy eating involves eating less fat and fewer calories. Eating too much fat causes weight gain and is related to heart disease and diabetes. Eating too many calories from any type of food is fattening.
- The first step to eating less fat and fewer calories is to become a “fat detective.” Show your patients how to figure out how many fat grams and calories they are eating by using the Fat and Calorie Counter. Explain

how to record everything they eat and drink in the Food and Activity Tracker.

- Help your patients set their fat and calorie goals using the chart below. Explain that it may be hard to reach their fat gram and calorie goals at first. They should try to get as close to their goals as they can, first focusing on fat grams and then on calories.

WEIGHT (POUNDS)	FAT GOAL (GRAMS)	CALORIE GOAL
120–174	33	1,200
175–219	42	1,500
220–249	50	1,800
250+	55	2,000

3. Explain how to use the Food and Activity Tracker.

The purpose of the Food and Activity Tracker is to provide patients with a tool to reach daily adherence to nutrition and activity goals. Explain that spelling and grammar are not important; honesty and self-awareness are what really matter.

Each set of patient booklets includes one seven-day tracker. For more copies, your patients either can reproduce the copier-ready master provided in their GAME PLAN booklet or go to the NDEP web site at www.ndep.nih.gov and click



Your ongoing interest and reinforcement of their efforts is essential to your patients' long-term success.

on the *Small Steps* logo to download additional copies. There also is a copier-ready master at the back of this booklet.

Patients should be instructed:

- How to record their daily and weekly activity, calorie, and fat gram goals on the Food and Activity Tracker.
- How to use the Fat and Calorie Counter to look up the fat and calorie content of the foods they eat.
- How to record the type and amount of food and drink they consume on the tracker.
- How to add up the total fat grams, calories, and minutes of activity in the tracker.
- How to enter their weight each day and their weekly weight loss in the tracker.

4. Reinforce and encourage.

It is important to remind your patients that small steps in improving their eating and activity habits can lead to big rewards in improving their health and quality of life. Explain to your patients that:

- Initiating lifestyle change is difficult, even for the most disciplined individuals. It is very easy for patients to get discouraged when results don't appear quickly or when they "skip" a day (or two) of exercise and/or proper nutrition.
- They shouldn't quit the program if they miss a few days. They just need to start again and keep going. It takes time and often several attempts to make long-lasting lifestyle changes.
- They need to be patient with themselves and their progress. There are no "quick fixes" when it comes to weight loss. If they follow their GAME PLAN, they *will* eventually lose weight and improve their overall health.

Finally, remember to ask your patients how they are doing with the GAME PLAN at *every* visit. Your ongoing interest and reinforcement of their efforts is essential to your patients' long-term success.



Q&A: TRANSLATING DIABETES PREVENTION RESEARCH INTO CLINICAL PRACTICE



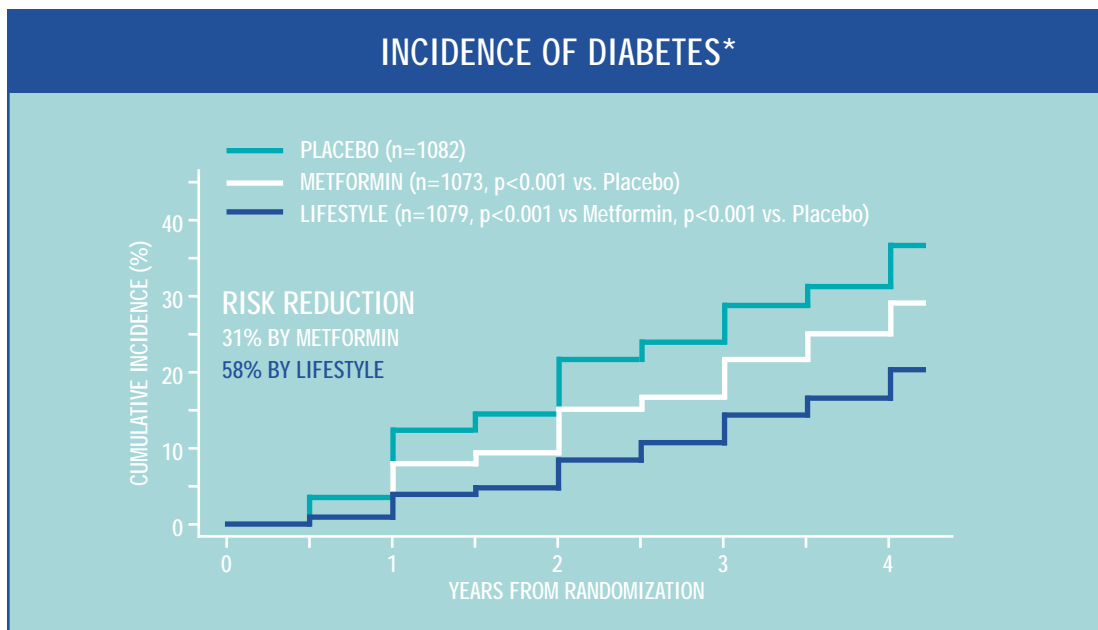
Q: What is the evidence that diabetes mellitus can be prevented?

A: The Diabetes Prevention Program, sponsored by the National Institutes of Health, was a randomized clinical trial testing whether lifestyle modification or medication could prevent or delay the development of type 2 diabetes in high-risk individuals with fasting plasma glucose values greater than 95 and impaired glucose tolerance. The 27 clinical centers in the U.S. that participated in the study recruited 3,234 participants of both sexes, approximately 50 percent of whom were minority patients and 20 percent of whom were 60 years of age or older.

Participants were randomized to one of three intervention groups: an intensive

lifestyle intervention focusing on a healthy diet and exercise and two masked medication treatment groups — metformin or placebo — combined with standard diet and exercise recommendations. Participants were asked to lower fat to less than 25 percent of caloric intake. If reducing fat did not result in weight loss, a reduced calorie goal was added. The primary outcome was the development of diabetes, diagnosed by fasting or post-challenge plasma glucose concentrations meeting the 1997 American Diabetes Association criteria.

The study demonstrated that the lifestyle intervention resulted in a 58 percent reduction and the metformin intervention a 31 percent reduction in the risk of developing diabetes.



Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin. *N Engl J Med* 2002; 346:393-403

People with pre-diabetes can delay or prevent the onset of type 2 diabetes through modest lifestyle changes.

Several studies in other countries have examined the effects of intensive changes in diet and exercise in people at risk for type 2 diabetes. For example, a study in Finland showed that diet and exercise resulted in a risk reduction similar to that shown in the DPP.

Q: What is “pre-diabetes?”

A: Pre-diabetes is the term that has been adopted to describe those states that occur when a person’s blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. Pre-diabetes includes impaired fasting glucose (IFG) or impaired glucose tolerance (IGT) and is a significant risk factor for type 2 diabetes. In fact, before people develop type 2 diabetes, they almost always have pre-diabetes. Studies show that most people with pre-diabetes develop type 2 diabetes within 10 years.

The good news from the Diabetes Prevention Program (DPP) is that people with pre-diabetes can delay or prevent the onset of type 2 diabetes through modest lifestyle changes. Therefore, screening for and treatment of pre-diabetes should be a priority for all health care professionals.

Importantly, pre-diabetes is not simply an “early warning” of diabetes. For example, individuals with IGT have

a 1.5 times greater risk of cardiovascular disease compared to people with normal blood glucose. This risk remains high even if they never go on to develop diabetes. Therefore, these patients should have screening for and appropriate treatment of other cardiovascular risk factors, especially hypertension and dyslipidemia.

Q: Who is most likely to be at risk for diabetes and pre-diabetes?

A: According to the National Health and Nutrition Examination Survey III (NHANES III), at least 16 million people in the U.S. have IGT, the closest match we have for identifying the number of people with pre-diabetes. In addition to the metabolic defect identified by elevated fasting and/or 2-hour OGTT mentioned above, the risk factor chart on page 2 details additional areas of concern.

Q: How do I diagnose pre-diabetes?

A: In 2002, a group of diabetes experts (The Prevention or Delay of Type 2 Diabetes, *Diabetes Care*, April 2002) decided either impaired fasting glucose or impaired glucose tolerance levels could be used to determine if a patient could potentially benefit from DPP-like interventions. Pre-diabetes, then, can be diagnosed using either the fasting plasma glucose test (FPG) or the 2-hour oral glucose tolerance test (2-hour OGTT).

FPG is performed by measuring a person's blood glucose after an overnight fast (8 to 12 hours). The 2-hour OGTT is performed after an overnight fast (8 to 12 hours) by measuring a person's blood glucose immediately before and 2 hours after drinking a 75-gram glucose solution.

DIAGNOSTIC CRITERIA		
TEST	VALUE	DIAGNOSIS
FPG	110–125 mg/dL	Pre-diabetes (IFG)
FPG	≥ 126 mg/dL	Diabetes
OGTT	2-hour value 140–199 mg/dL	Pre-diabetes (IGT)
OGTT	2-hour value ≥ 200 mg/dL	Diabetes

Although the 2-hour OGTT is a more sensitive test for diagnosing pre-diabetes, it is not always practical. Therefore, you may decide to use the FPG. If you choose to use the FPG test alone, however, it is important to note that because it is less sensitive than the 2-hour test, some patients who have IGT or diabetes will be missed.

Data collected from the NHANES III illustrate this point:

DIAGNOSES MISSED BY FPG ALONE		
FASTING PLASMA GLUCOSE mg/dL	PERCENTAGE (%) MISSED BY FPG ALONE*	
	IGT	DIABETES
< 80	7.2	1.5
81–109	14.3	1.6
110–126	N/A pre-diabetes diagnosed	17.6

* Based on U.S. population 40 to 74 years of age.

These data show that if you rely solely on a FPG value, a percentage of persons with IGT and/or diabetes that would have been identified with a 2-hour OGTT will be missed. Recognizing the issues involved in conducting timed glucose tests, you may want to consider how many of the other pre-diabetes risk factors are present in deciding which test is appropriate. In addition, you may want to discuss the benefits and limitations of both testing methods with your patients in determining which testing procedure should be used.

Lifestyle intervention was extremely effective in people aged 60 and older, reducing the development of diabetes by 71 percent.

Q: What is the treatment for pre-diabetes?

A: The DPP and other studies have definitively shown that type 2 diabetes can be delayed or prevented by modest weight loss (5 to 7 percent of total body weight) through diet modification and moderate exercise such as walking, 30 minutes a day, 5 days a week. Other studies also suggest that metformin and acarbose reduced the incidence of diabetes in individuals at risk. However, these medications have not yet been approved for preventing diabetes.

Because individuals with IGT are at a 1.5 times greater risk for heart disease, it is advisable to counsel patients with pre-diabetes about cardiovascular risk factors such as tobacco use, high blood pressure, and high cholesterol. Hypertension and dyslipidemia also should be treated aggressively and are responsive to lifestyle modification and pharmacologic therapy.

Referral is advisable to a registered dietitian or credible weight loss program/service for counseling in calorie-reduction strategies, low-fat meal planning and lifestyle modification. Reimbursement of nutrition counseling is available for diabetes. It also may be available for hypertension and/or dyslipidemia.

Q: Will insurance cover testing and treatment?

A: All insurance plans are different. Medicare and most insurance plans cover testing for people suspected of having diabetes. Individuals at risk for diabetes are also at risk for pre-diabetes. Since the test is the same and the risk factors are the same for both conditions, a pre-diabetes test may be covered.

Q: Should children be screened for pre-diabetes?

A: The DPP and other studies focused on diabetes prevention in adults. We do not have firm evidence that type 2 diabetes can be prevented or delayed in children at risk for the disease. However, a study of extremely obese youth (with a body mass index greater than the 95th percentile for age and sex) found that 25 percent of the 55 children and 21 percent of the 112 adolescents studied had IGT.* Given the significant increase in obesity and sedentary lifestyle among American children and adolescents (especially in high-risk ethnic populations), it may be reasonable to begin identifying children at risk for developing diabetes and initiating the appropriate therapy (lifestyle changes and counseling with parents).

* Sinha R, Fisch G, Teague B, et al. Prevalence of impaired glucose tolerance among children and adolescents with marked obesity. *N Engl J Med* 2002; 346:802-10.

Q: Lifestyle intervention more effectively reduced diabetes risk than metformin. Within each arm, did certain groups of DPP participants benefit more from the intervention than other groups?

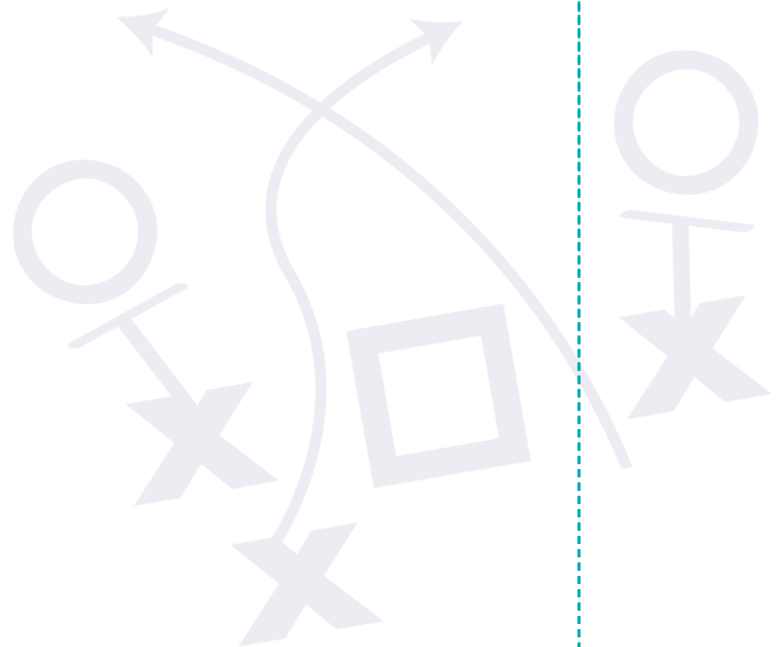
A: Lifestyle intervention worked in all of the groups, but it was extremely effective in people aged 60 and older, reducing the development of diabetes by 71 percent. This is an important and heartening discovery because as many as 20 percent of people aged 60 and older develop diabetes. Among those taking metformin, its effect in reducing diabetes risk was most pronounced in younger, heavier people — those 25 to 40 years old with a body mass index of 36 (about 50 to 80 pounds overweight).

Q: For a person with IGT, what is the risk of developing type 2 diabetes?

A: As few as one, to as many as 10, of every 100 persons with IGT will develop diabetes per year. The risk of getting diabetes rises as people become more overweight and more sedentary, have a stronger family history of diabetes, and belong to a racial or ethnic minority group. In the DPP, about 10 percent of participants in the placebo or standard group developed diabetes per year. The DPP interventions decreased the development of diabetes by 58 percent with intensive lifestyle intervention and by 31 percent with metformin.

Q: Are diet and exercise beneficial even after diabetes develops?

A: Research has clearly shown that diet and exercise help people with type 2 diabetes control their blood glucose, blood pressure, and blood lipids in the short term. Although diet and exercise should lower the risk of developing cardiovascular disease and the other complications of diabetes, no long-term clinical trials have addressed this question. A recently launched trial, the *Look AHEAD* study, will examine how diet and exercise affect heart attack, stroke, and cardiovascular-related death in overweight people with type 2 diabetes.



A photograph of an elderly man and woman in a kitchen, both smiling as they prepare food. The man is on the left, using a white spatula to mix ingredients in a bowl. The woman is on the right, holding a plate of sliced cucumbers and other vegetables. The table is set with various dishes, including a bowl of salad and a small pot. The background shows a window with blinds. The entire image is overlaid with a semi-transparent blue filter.

**COPIER-READY GAME PLAN TOOLS
FOR PATIENTS**

SMALL STEPS. BIG REWARDS. YOUR GAME PLAN FOR PREVENTING TYPE 2 DIABETES

1

Congratulations! By reading this you are taking your first step toward preventing diabetes and living a longer, healthier life. Diabetes prevention means lowering your risk for heart disease, stroke, kidney disease, blindness, amputation and other serious problems. That's a big reward for you and a big reward for your family and friends.

You may have a family member with diabetes. Maybe you have to drive him to his weekly kidney dialysis. Maybe you help her cut her toenails, because she can't see and it would be dangerous to damage her feet. But you are in a position to avoid these complications from diabetes. You can prevent diabetes and stay healthy.

Diabetes prevention is possible, powerful, and proven. Recent studies have proven that people at high-risk for diabetes can prevent or delay the onset of the disease with 30 minutes of physical activity, 5 days a week and losing 5 to 7 percent of their body weight. In other words, you don't have to knock yourself out to prevent diabetes. The key is: small steps leading to big rewards.

One Small Step: *Know your diabetes risk.*

Work with your health care provider to find out if you are at risk for diabetes or if you have pre-diabetes. The fact sheet on "Who Is at Risk for Diabetes and Pre-diabetes?" also can help.

Big Reward: Knowing you don't have diabetes, and that you can prevent or delay it if you are at risk, will give you peace of mind. Note below why you want to prevent diabetes...or who you want to do it for.

One Small Step: *Commit to your GAME PLAN.*

Set goals, and don't forget to work with your health care provider, family, and friends. For example, losing 5 to 7 percent of your weight is one big step to reduce your risk of diabetes. That's 10 to 15 pounds for a person who weighs 200 pounds. When you figure out how many pounds that is for you, you will see that you can meet your goal.

My 5% goal will be to lose _____ pounds

My 7% goal will be to lose _____ pounds

My 10% goal will be to lose _____ pounds

To figure out your weight loss goal, multiply your weight by the percent you want to lose. For example, if John weighs 240 pounds and wants to lose 7 percent of his weight, he would multiply .07 by 240.

$$\begin{array}{r} 240 \text{ (pounds)} \\ \times .07 \text{ (7 percent)} \\ \hline 16.8 \text{ pounds} \end{array}$$

John's goal would be to lose about 17 pounds and bring his weight down to 223 pounds.

Try to weigh yourself every day and record your progress. Research shows that this is an effective way to help you reach your goals.

Big Reward: Setting goals will help you stick to your GAME PLAN and help you track your success!



You don't have to knock yourself out to prevent diabetes. The key is: small steps leading to big rewards.

Take a minute to think about why you want to start living healthier and how you plan to succeed... and now go out there and take your next small step!

Add healthy changes every week and always try to get back on track, even if you fall off a few times.

And remember: preventing diabetes is good for you and good for your family!

One Small Step: *Track your GAME PLAN progress.* Use the Food and Activity Tracker to help you lose 5 to 7 percent of your weight. Just jotting down what you eat and drink each day is proven to be one of the most powerful ways to lose weight and keep it off.

Make sure you track the number of calories and fat grams you consume each day. You may buy a fat and calorie counter at a supermarket or bookstore or use the on-line counters listed on this page. Also, be sure to record how many minutes of physical activity you perform each day. Check with your health care provider about what goals are best for you.

My goal is to consume _____ calories per day.

My goal is to consume _____ fat grams per day.

My goal is to get _____ minutes of physical activity per day.

Big Reward: Losing weight can help prevent diabetes, heart disease, certain cancers, and many other chronic diseases. You will also look better and feel better.

One Small Step: Start walking. Start off slowly and work up to 30 minutes of brisk walking a day. Or try dancing, swimming, biking, jogging, or any activity that helps get your heart rate up a bit. The fact sheet on “Walking...A Step in the Right Direction” can help you reach your goal. Record the ways that you will become more active:

Big Reward: Even modest amounts of activity help cut the risk of obesity, high blood pressure, and diabetes. Taking walks or bike rides can also be great ways to spend time with friends or family. You are now on the road to a lifetime of good health!

ADDITIONAL RESOURCES

National Diabetes Education Program

1-800-438-5383 or www.ndep.nih.gov and click on the *Small Steps* logo

American Association of Diabetes Educators

1-800-TEAM-UP4 or www.aadenet.org

American Diabetes Association

1-800-DIABETES or www.diabetes.org

American Dietetic Association

1-800-877-1600 or www.eatright.org.

Centers for Disease Control and Prevention

1-877-232-3422 or www.cdc.gov/diabetes

Healthier US Initiative

www.healthierus.gov

National Institute of Diabetes and Digestive and Kidney Diseases

National Diabetes Information Clearinghouse
1-800-860-8747 or www.niddk.nih.gov

Weight-Control Information Network

www.niddk.nih.gov/health/nutrit/win.htm

National Heart, Lung, and Blood Institute

301-592-8573 or www.nhlbi.nih.gov

For on-line fat and calorie counters, visit these web sites:

National Heart, Lung, and Blood Institute

<http://hin.nhlbi.nih.gov/menuplanner/menu.cgi>

United States Department of Agriculture

Nutrient Data Laboratory
www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

What is diabetes?

About 17 million Americans have diabetes mellitus, a serious disease in which blood glucose (blood sugar) levels are above normal. The vast majority of people with diabetes have type 2 (formerly called adult onset), which usually occurs after age 45, but is occurring increasingly more often in individuals, including children and adolescents.

High blood glucose levels can lead to problems such as heart disease, stroke, vision loss, kidney disease and nerve damage. About one-third of people with diabetes don't even know they have it. Many people don't find out they have diabetes until they are faced with problems such as blurry vision or heart trouble. That's why you need to know if you are at risk for diabetes.

What is pre-diabetes?

Before people develop type 2 diabetes, they usually have "pre-diabetes"—a condition in which blood glucose levels are higher than normal, but not yet high enough for a diagnosis of diabetes. People with pre-diabetes are more likely to develop diabetes within 10 years and also are more likely to have a heart attack or stroke. The good news is that people with pre-diabetes often can prevent or delay type 2 diabetes by making modest lifestyle changes.

It is important to find out early if you have type 2 diabetes or if you are at risk for developing it, because treatment can prevent the serious problems caused by high blood glucose. As people get older, their risk of developing diabetes increases. To find out about your risk, check each item that applies to you.

- 1. My weight puts me at high risk according to the At-Risk Weight Chart (see next page).
- 2. I have a parent, brother, or sister with diabetes.
- 3. My family background is African American, American Indian, Asian American, Hispanic/Latino, or Pacific Islander.
- 4. I have had gestational diabetes or I gave birth to at least one baby weighing 9 pounds or more.
- 5. My blood pressure is 140/90 or higher, or I have been told that I have high blood pressure.
- 6. My cholesterol (lipid) levels are not normal. My HDL cholesterol ("good" cholesterol) is less than 40 (for men) or less than 50 (for women), or my triglyceride level is 250 or higher.
- 7. I am fairly inactive. I exercise fewer than three times a week.



Find out if you are at risk for diabetes. Talk to your health care provider.

AT-RISK WEIGHT CHARTS

Find your height in the correct chart. If your weight is equal to or greater than the weight listed, you are at increased risk for type 2 diabetes.

IF YOU ARE NOT ASIAN AMERICAN OR PACIFIC ISLANDER AT RISK BMI ≥ 25		IF YOU ARE ASIAN AMERICAN AT RISK BMI ≥ 23		IF YOU ARE PACIFIC ISLANDER AT RISK BMI ≥ 26	
HEIGHT	WEIGHT	HEIGHT	WEIGHT	HEIGHT	WEIGHT
4'10"	119	4'10"	110	4'10"	124
4'11"	124	4'11"	114	4'11"	128
5'0"	128	5'0"	118	5'0"	133
5'1"	132	5'1"	122	5'1"	137
5'2"	136	5'2"	126	5'2"	142
5'3"	141	5'3"	130	5'3"	146
5'4"	145	5'4"	134	5'4"	151
5'5"	150	5'5"	138	5'5"	156
5'6"	155	5'6"	142	5'6"	161
5'7"	159	5'7"	146	5'7"	166
5'8"	164	5'8"	151	5'8"	171
5'9"	169	5'9"	155	5'9"	176
5'10"	174	5'10"	160	5'10"	181
5'11"	179	5'11"	165	5'11"	186
6'0"	184	6'0"	169	6'0"	191
6'1"	189	6'1"	174	6'1"	197
6'2"	194	6'2"	179	6'2"	202
6'3"	200	6'3"	184	6'3"	208
6'4"	205	6'4"	189	6'4"	213

Source: Adapted from *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report*

What is the next step?

Talk with your health care provider at your next visit:

- If you are age 45 or older and have an at-risk weight, testing for diabetes and pre-diabetes is recommended.
- If you are age 45 or older without any risk factors, ask about your risk for pre-diabetes or diabetes and if you should get tested.
- If you are an adult younger than 45 years of age, have an at-risk weight, and have checked any other items, ask about your risk for pre-diabetes or diabetes, and if you should get tested.

Type 2 diabetes is a serious disease, but it can be delayed or prevented. Take steps now to lower your risk of getting diabetes.



Why walk?

Walking is one of the easiest ways to be physically active. You can do it almost anywhere and at any time. Walking is also inexpensive. All you need is a pair of shoes with sturdy heel support. Walking will:

- Give you more energy
- Help you to relax
- Reduce stress
- Help you sleep better
- Tone your muscles
- Help control your appetite
- Increase the number of calories your body uses
- Help prevent diabetes

For all these reasons, people have started walking programs. If you would like to start your own program, read and follow the information here.

Is it okay for me to walk?

Answer the following questions before you begin a walking program.

- Has your health care provider ever told you that you have heart trouble?
- When you are physically active, do you have pains in your chest or on your left side (neck, shoulder, or arm)?
- Do you feel extremely breathless after you have been physically active?
- Has your health care provider told you that you have high blood pressure?
- Has your health care provider told you that you have bone or joint problems,

like arthritis, that could get worse if you are physically active?

- Are you over 50 years old and not used to a lot of physical activity?
- Do you have a health problem or physical reason not mentioned here that might keep you from starting a walking program?

If you answered yes to any of these questions, please check with your health care provider.

How do I start a walking program?

Leave time in your busy schedule to follow a walking program that will work for you. Keep the following in mind:

- Choose a safe place to walk. Find a partner or group of people to walk with you. Your walking partner(s) should be able to walk with you on the same schedule and at the same speed.
- Wear shoes with thick flexible soles that will cushion your feet and absorb shock. Wear clothes that will keep you dry and comfortable.
- Think of your walk in three parts. Walk slowly for 5 minutes. Increase your speed for the next 5 minutes. Finally, to cool down, walk slowly again for 15 minutes.
- Try to walk at least five times per week. Add 2 to 3 minutes per week to the fast walk. If you walk less than three times per week, increase the fast walk more slowly.
- To avoid stiff or sore muscles or joints, start gradually. Over several weeks, begin walking faster, going further, and walking for longer periods of time.



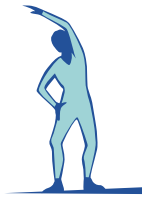
small steps
big rewards
Prevent type2Diabetes

HOW DO I WARM UP?

Before you start to walk, do the stretches shown here. Remember not to bounce when you stretch. Perform slow movements and stretch only as far as you feel comfortable.

Side Reaches

Reach one arm over your head and to the side. Keep your hips steady and your shoulders straight to the side. Hold for 10 seconds and repeat on the other side.



Knee Pull

Lean your back against a wall. Keep your head, hips, and feet in a straight line. Pull one knee to your chest, hold for 10 seconds, then repeat with the other leg.



Wall Push

Lean your hands on wall with your feet about 3 to 4 feet away from the wall. Bend one knee and point it toward the wall. Keep your back leg straight with your foot flat and your toes pointed straight ahead. Hold for 10 seconds and repeat with the other leg.



Leg Curl

Pull your right foot to your buttocks with your right hand. Keep your knee pointing straight to the ground. Hold for 10 seconds and repeat with your left foot and hand.



Take the first step.

Walking the right way is very important:

- Walk with your chin up and your shoulders held slightly back.
- Walk so that the heel of your foot touches the ground first. Roll your weight forward.
- Walk with your toes pointed forward.
- Swing your arms as you walk.

Over several weeks, begin walking faster, going further, and walking for longer periods of time.

BUILD UP TO 30 MINUTES OF BRISK WALKING FIVE DAYS A WEEK

	WARM UP TIME	FAST WALK TIME	COOL DOWN TIME	TOTAL TIME
WEEK 1	walk slowly 5 min.	walk briskly 5 min.	walk slowly 5 min.	15 min.
WEEK 2	walk slowly 5 min.	walk briskly 8 min.	walk slowly 5 min.	18 min.
WEEK 3	walk slowly 5 min.	walk briskly 11 min.	walk slowly 5 min.	21 min.
WEEK 4	walk slowly 5 min.	walk briskly 14 min.	walk slowly 5 min.	24 min.
WEEK 5	walk slowly 5 min.	walk briskly 17 min.	walk slowly 5 min.	27 min.
WEEK 6	walk slowly 5 min.	walk briskly 20 min.	walk slowly 5 min.	30 min.
WEEK 7	walk slowly 5 min.	walk briskly 23 min.	walk slowly 5 min.	33 min.
WEEK 8	walk slowly 5 min.	walk briskly 26 min.	walk slowly 5 min.	36 min.
WEEK 9+	walk slowly 5 min.	walk briskly 30 min.	walk slowly 5 min.	40 min.

REFERENCES AND RESOURCES

REFERENCES

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RESOURCES

Centers for Disease Control and Prevention
www.cdc.gov/diabetes

Diabetes Prevention Program web site for materials:
www.bsc.gwu.edu/dpp/manuals.htmlvdoc

National Diabetes Education Program
www.ndep.nih.gov

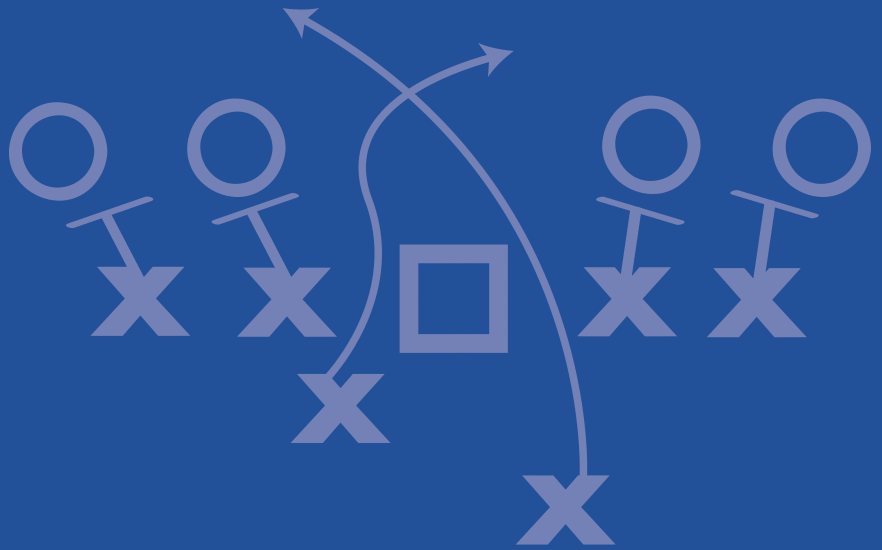
National Diabetes Information Clearinghouse
www.niddk.nih.gov/health/diabetes/ndic.htm

National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov

National Institutes of Diabetes and Digestive and Kidney Diseases
www.niddk.nih.gov

United States Department of Agriculture
www.usda.gov

Weight-Control Information Network
www.niddk.nih.gov/health/nutrit/win.htm



TOOLKIT MATERIALS

Office Poster

GAME PLAN Booklets for Patients (3 sets):

- Am I at Risk for Type 2 Diabetes?
- Small Steps. Big Rewards. Your GAME PLAN for Preventing Type 2 Diabetes
- Small Steps. Big Rewards. Fat and Calorie Counter
- Small Steps. Big Rewards. Food and Activity Tracker



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