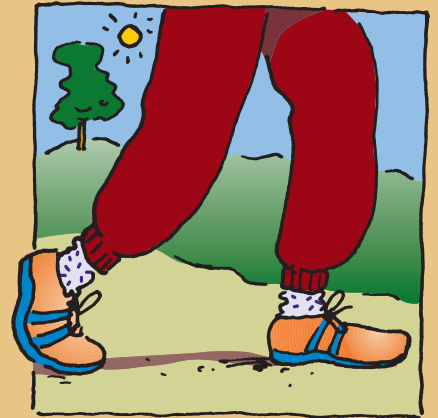


First Steps

A Basic Guide to Managing Your Diabetes

If you have been told by your healthcare team that you have diabetes, this booklet will give you some information to help you care for yourself. You may be feeling overwhelmed or frightened, or you may feel that you don't have enough information to care for yourself properly. This booklet gives you "the first steps." New research and treatments are always on the horizon, so you will want to keep learning. Be sure to ask about anything you don't understand.

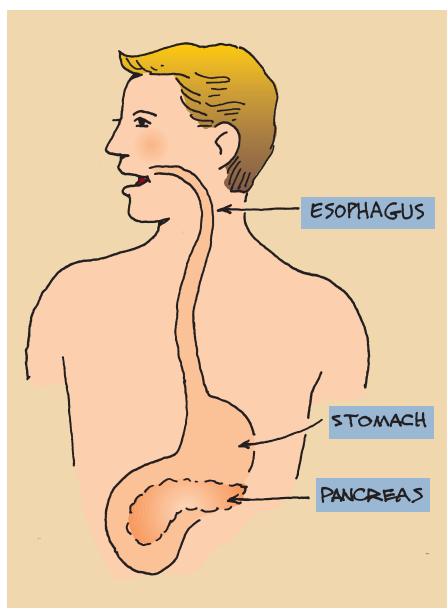


What is diabetes?

Diabetes is a disease in which your body is unable to properly use and store glucose (a form of sugar). To understand diabetes, first you need to know how the body uses food to make energy.

The body changes much of the food we eat into a form of sugar called glucose. Glucose passes from the stomach and intestines into the blood. Blood carries glucose to the many cells that make up all the parts of the body. Our bodies use glucose to make the energy we need to function.

A hormone called insulin, made by the pancreas, is needed to help the glucose pass into the cells. If you have diabetes, the insulin is not moving enough glucose into the cells or there is a lack of insulin. This causes glucose to build up in the blood where it cannot be used. Over time, the high levels of glucose in the blood cause health problems, some of which may be serious.



What are the different types of diabetes?

The main types of diabetes are:

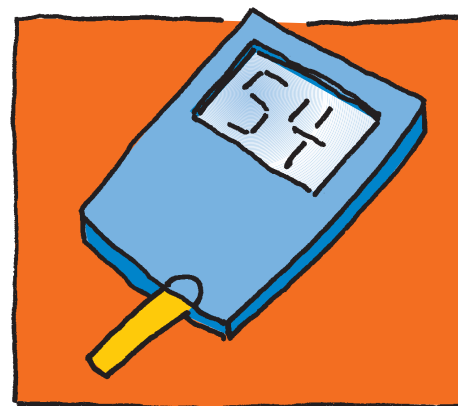
Type 1: The pancreas makes no insulin. A person with type 1 diabetes must take insulin injections in addition to using a meal plan and plan for physical activity.

Type 2: This is the most common type of diabetes. The pancreas may not be making enough insulin, and the body doesn't use it as well as it should. People with type 2 diabetes use a meal plan and an activity plan to help keep blood glucose in the target range. Many people with type 2 diabetes also take pills or insulin injections or a combination of both to control blood glucose.

Caring for diabetes

Keeping blood glucose in good control is the best indication that one is living well with diabetes. The goal of diabetes treatment is to keep blood glucose within a certain range called a "target range" and by doing so reduce long-term health risks. Your healthcare team will discuss your target range with you. For many people, a target range before eating is 90-130. Keeping your blood glucose in the target range doesn't mean you no longer have diabetes. It means your treatment is working as it should. Here are some things you can talk to your healthcare team about doing for yourself:

- ▲ Check your blood glucose.
- ▲ Use a meal plan to help guide your food choices.





- ▲ Be physically active.
- ▲ Take your diabetes medicine.
- ▲ Know what to do if you are sick.
- ▲ Take steps to prevent complications.

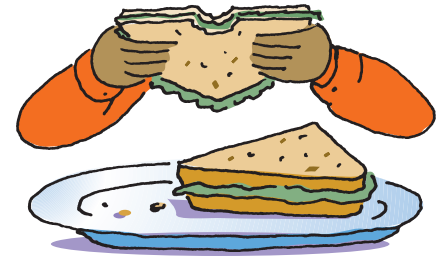
The information on the following pages explains more. If there is anything you do not understand, please ask your healthcare team!

1. Check your blood glucose

By checking your blood glucose, you'll learn how well your diabetes care plan is working and if your blood glucose is in your target range. You can do this by checking your blood glucose with a small device called a glucose meter.

You'll learn to use a small needle called a lancet to get a drop of blood from your finger, arm or other site. The blood is placed on a special strip, which is put into the meter. The meter "reads" the strip and gives you a blood glucose reading. Your healthcare team will help you practice using a meter.

Your blood glucose changes throughout the day. For example, it may be lower before you eat, and higher after you eat. Discuss your target glucose range with your healthcare team. Many peo-



ple aim for blood glucose between 90-130 before meals. Your target may be different, so make sure you know what it is.

Some people check their blood once a day. Others check their blood 3 or 4 times a day. Sometimes you will need to check it more when you are active, ill or making a change to your diabetes care plan. Your healthcare team will discuss with you how often and when to check your blood glucose.

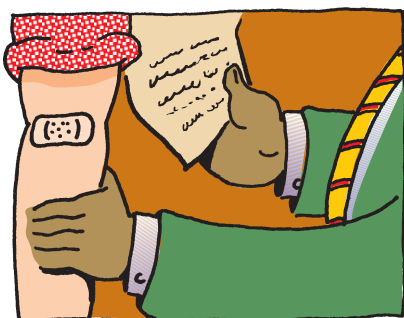




Write down your results, look for patterns

When you learn to use the glucose meter, you'll also be shown how to write down your blood glucose in a record or log book with other aspects of your diabetes care. It will be important for you to note when your glucose is above or below target range. You will learn to take the steps you need to correct the problem.

Bring your record with you to all of your appointments.



Your A1C test

It is recommended that everyone with diabetes have a blood test called a hemoglobin A1C, HbA1C, or A1C (A-one-see). This is a lab test ordered by your provider 2-4 times a year. It gives a number expressed as a percent that tells you about your average blood glucose over the last 2-3 months. This number, combined with your daily blood glucose results, helps you and your healthcare team plan your treatment and adjust your medicines.

It's a good idea for you to keep a record of your A1C results. Ask your healthcare team for your own A1C goal. For most people, the goal is 7% or lower. If your number is higher than your target, follow the guidelines in this booklet and talk with your healthcare provider to learn about steps you can take to bring it down.

Know the symptoms of high blood glucose (hyperglycemia)

If you are following your diabetes care plan and your blood glucose is higher than your target (above 180), it could be because of

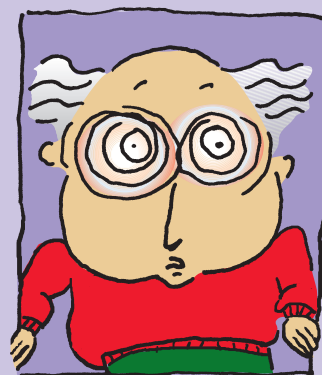
- too much food
- not enough medicine
- illness
- not enough physical activity

You may:

- feel thirsty or have a dry throat
- need to urinate more often
- have blurry vision
- feel very tired
- feel no different

If you have the symptoms above:

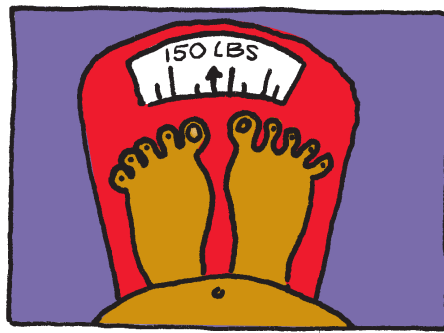
1. Check your blood glucose.
2. Follow your medicine and meal plan.
3. Drink lots of water.
4. Call your healthcare provider if your blood glucose stays above your target (or above 180) each time you check for 3 days in a row OR above 250 if you are feeling ill.



2. Use a meal plan to help guide your food choices

People with diabetes do not need special foods. But it's important to use a meal plan set up with you by a dietitian. The meal plan will help to keep your blood glucose within target range while at the same time allowing you to enjoy your favorite foods. It takes some practice, but you will soon learn how to portion your foods in order to keep your blood glucose in control. Ask your healthcare provider for assistance in scheduling a visit with a dietitian in your local area. Here are some first steps to get you started.

- ▲ Eat meals at regular times. Do not skip meals.
- ▲ Eat about the same amounts of carbohydrate foods each day.



- ▲ Eat a variety of the following:
 - Fresh fruits and vegetables
 - Whole grain breads, cereals, rice, pasta, legumes and beans
 - Lowfat milk and other lowfat dairy products
 - Lean cuts of meat, poultry, fish
- ▲ If you are overweight, think about a weight-loss plan with the help of your dietitian.



Learn about carbohydrates, proteins, and fats

Your dietitian will talk with you about three different food types: carbohydrate, protein and fat. People with diabetes need to pay special attention to the carbohydrates or starches and sugars that they eat. This is because most of the carbohydrate foods you eat turn into blood glucose.

Keeping track of carbohydrates

Your dietitian will ask you to keep track of "servings of carbohydrates." Here are examples of one serving of a carbohydrate food (one carb choice).

Starches/Breads

- 1/3 cup cooked pasta
- 1/2 cup starchy vegetables (corn, peas, potatoes)
- 1/2 English muffin or bulkie roll
- 1 slice bread or small roll
- 6 saltines
- 1/3 cup cooked beans or lentils
- 1/3 cup cooked rice
- 3/4 cup dry cereal
- 1/2 cup cooked cereal
- 3 cups popcorn, plain

Fruit

- 1 medium fruit
- 1/2 cup juice
- 1/2 cup canned fruit
- 1 cup berries

Milk

- 1 cup skim or lowfat milk
- 8 oz. lowfat, light yogurt

Sweets

- 1/2 cup ice cream, frozen yogurt
- 1 Tbsp jam, sugar, honey

Here are some frequently asked questions about carbohydrates.

What foods contain carbohydrates?

- ▲ Grains, breads, cereals
- ▲ Starchy vegetables (potatoes, corn, peas, winter squash), legumes and beans
- ▲ Fruits and fruit juices
- ▲ Milk, yogurt
- ▲ Sugar, jam, syrup, cookies, ice cream
- ▲ Nonstarchy vegetables such as broccoli, lettuce and green beans are so low in carbohydrates and calories that up to one cup cooked or 2 cups raw is usually considered “free”

Sample Meal Plan

Breakfast

Eat 2-3 carbohydrate choices. Include a lowfat protein source like milk or yogurt.

Lunch & Dinner

Eat 3-4 carbohydrate choices. Be sure to include some fruit and a non-starchy vegetable. Choose small portions of lowfat meat or meat substitutes.

Snack

If you need a snack, eat 1-2 carbohydrate choices.

If you need to lose weight, remember to reduce portion sizes and limit use of added fats and high-fat foods.

How many carbohydrate servings should I have at each meal or snack?

This is different for everyone. On this page is a sample meal plan that you can use until you can meet with a dietitian.

This plan refers to choices of carbohydrates. The “Keeping track of carbohydrates” chart (on page 3) shows some examples of one choice or one serving of carbohydrate.

What about protein and fat?

Eating a variety of foods is important for your good health. Meats and meat substitutes are good sources of protein.

Choose meats and protein foods that are low in fat. Lean beef, fish and poultry without the skin are good choices. Lowfat cheese, tofu and soy products are meat substitutes that are also good sources of protein. Keep portion sizes about 3-4 ounces per serving. That would be a serving of meat about the size of a deck of cards or the palm of your hand. Be aware that milk, yogurt, beans and legumes are good sources of both carbohydrate and protein.

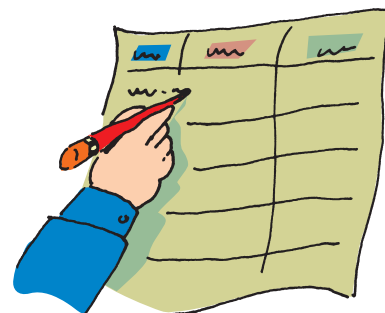
When it comes to fat, eat less animal fat and control all portions of added fats to keep your heart



healthy and your weight in the right range. Heart-healthy choices of added fats would include olive, peanut and canola oils. Ask your dietitian for more information about protein and fats.

What else can I do?

The main thing to do now is pay attention to the food you eat. If you haven't yet met with the dietitian, it's a great idea to write down what you eat and drink for three days. Take the record with you when you visit with the dietitian. That way you can plan as much as possible around your usual eating habits.



How to keep a food record:

- ▲ Write down everything you eat and drink for 3-4 days
- ▲ Include the time next to each item
- ▲ Try to estimate the amount of each food or drink

3. Be physically active

Physical activity is very helpful for controlling your diabetes. Walking instead of driving, or taking the stairs instead of the elevator, are two examples of how you can fit more physical activity into your day. Aim for doing something active every day. Swimming, walking, biking, using exercise equipment or involving yourself in a sport are some options to think about. Getting enough physical activity is good for you because it:

- ✓ helps keep your blood glucose in your target range
- ✓ helps insulin work
- ✓ is good for your heart and lungs
- ✓ improves your level of fitness
- ✓ helps with weight control
- ✓ lowers stress



Before you start increasing your activity level, check with your healthcare provider. You may need some further information as to what is safe and what is NOT safe for you to do. Your healthcare provider can help you design your physical activity plan and make sure your diabetes does not stop you from doing it!



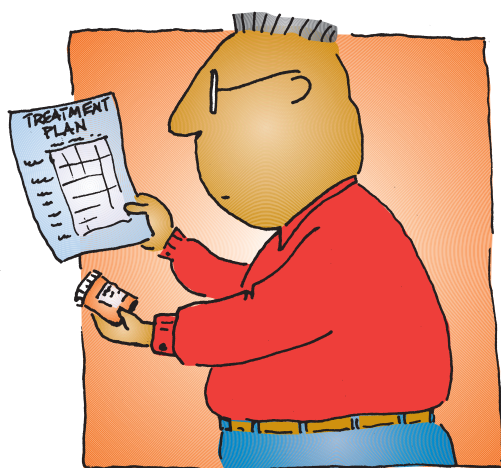
When you are physically active, your body uses blood glucose for energy. Sometimes if you take certain diabetes medicines, either pills or insulin, adding extra activity may make your blood glucose drop too low. It is important to learn how to prevent a low blood glucose from happening if you are at risk.

You may learn, for example, that it is best to go for a walk an hour after eating when your glucose levels are temporarily higher from eating. Or, your healthcare provider may suggest that you adjust your insulin dose instead. If you are at risk for having a low blood glucose, always carry your meter and a snack. Most of the time you will not feel your blood glucose getting low during your activity. That is one reason it is important to keep your glucose meter with you at all times, especially when you are increasing your physical activity (See Hypoglycemia box, page 6).

Remember to find activities that you enjoy, start slowly, and enjoy your success. The first step is up to you!



Sample Food Record		
Date	Time	Food/amount
6/1	8 AM	4 OZ. JUICE 1/2 CUP OATMEAL WITH 8 OZ SKIM MILK 2 SLICES TOAST WITH 1 TSP JELLY
6/1	10 AM	1 BANANA



4. Take your diabetes medicine

A few people with type 2 diabetes may be able to control their blood glucose with only a meal plan and a physical activity plan. You can discuss with your healthcare provider if that is an option for you. Most people will take pills or insulin or both for blood glucose control. Because the pancreas of a person with type 1 diabetes does not make insulin, insulin must be taken by injection. Remember that taking diabetes medicine is only part of good diabetes care. Using your meal plan and being physically active are also important.

Diabetes pills: Diabetes pills work for people who have type 2 diabetes and whose bodies still make some insulin of their own. There are many pills that work in different ways. For example, some work by making your insulin work better. Others help your body make more insulin. Some pills are taken once a day, some are taken more often.

However, one of the things you may not know is that over time your body may not use insulin as well, and eventually may not make as much insulin. Studies show that most people over time require some change in treatment or additional or different medication. Your first treatment plan may have only called for a meal plan and an exercise plan to keep your glucose in good control. Perhaps later your healthcare provider recommended that you add one or more diabetes pills as well. If your treatment plan needs to be changed yet again – perhaps with additional or different pills, or perhaps by adding insulin, this does not mean that you have done anything wrong, but is the natural course of diabetes.



Insulin: For some people, starting insulin can seem difficult. It may make you feel so anxious that you may not want to take it. You may feel that insulin is “the last resort,” that you’ve done everything you

Know the symptoms of low blood glucose (hypoglycemia)

If you are following your diabetes care plan and your glucose is low (below 80), it could be because of:

- Too much diabetes medicine
- Too little food or a delayed meal
- Too much or unplanned exercise

You may feel:

- Sweaty, shaky, weak or dizzy
- Unable to concentrate
- Hungry
- Uncoordinated

If you have any of the symptoms above, here’s what to do:

1. Check your blood glucose.
2. If your glucose is low (below 80), take one of the following:
 - 3-4 glucose tablets
 - 4 oz. juice
 - 6 oz. regular soda
 - 1 Tbsp. sugar or jelly
 - 7-8 Lifesavers™
3. Check your blood glucose again in 10-15 minutes. If it is still below 80, repeat step 2 above.
4. If your next meal is more than an hour away, you will need to eat one carbohydrate choice as a snack to keep your blood glucose from going low again.
5. If you can’t figure out why you have low blood glucose, call your healthcare provider, as your medicine may need to be adjusted.

can, and now your diabetes is “bad.” But, these things are not true! With type 2 diabetes, at some point in time, your pancreas will gradually stop making

enough insulin, and pills alone may not work to help control your blood glucose. In this case, adding insulin is often the best choice. In fact, most people will start to feel better after taking insulin because it will bring blood glucose levels closer to target ranges. And the closer your blood glucose is to target levels – the better you may feel. This may be hard to believe, so ask others who are taking insulin. You may be pleasantly surprised!

If you need insulin, your healthcare team will show you how to use it. Some people with type 2 diabetes take 1–4 injections per day. Many insulins now come in new, easy-to-use, pre-filled pen-like devices.

No matter what kind of diabetes medicines you take, you need to know:

- ▲ the names of your medicines
- ▲ when you need to take them
- ▲ how much you need to take
- ▲ whether there are any side effects – especially if it may cause low blood sugar
- ▲ how your medicine works to lower your blood glucose

If you take insulin, you also need to know:

- ▲ how to give an injection
- ▲ where to inject

- ▲ how to store insulin
- ▲ how to dispose of needles
- ▲ what to do if you forget to give an injection or make a mistake

5. Know your sick day plan

If you get sick, it affects how your body uses glucose. Your glucose may increase to a higher level that is unhealthy for your body. You may need to make changes in your routine if you have:

- ▲ a cold or flu
- ▲ an infection
- ▲ nausea, vomiting or diarrhea
- ▲ surgery
- ▲ an injury
- ▲ major stress

Follow the instructions in the “Sick day plan” on this page if you get sick. **Remember**, any time you cannot eat or take your medicine, call your healthcare provider!

6. Take steps to prevent complications

There is a lot you and your healthcare team can do to prevent the complications of diabetes. The most common complications may involve your feet, eyes, kidneys, nerves, heart or blood vessels. Here are some points to follow. **Remember**, you can reduce the risk of most complications if you keep your blood glucose, A1C, blood pressure and cholesterol in their target ranges.

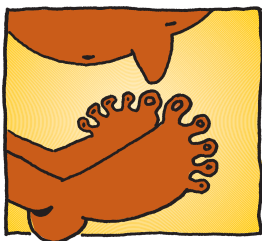
Sick day plan

1. Keep taking your diabetes medicine unless your healthcare provider says not to.
2. Check your glucose more often. Check it 4 times a day for mild illness, and every 3–4 hours for more severe illness. Do this during the day and night.
3. If your glucose stays out of your target range, for two results in a row, call your healthcare provider.
4. You may also need some treatment if you have an illness that is making your blood glucose rise (for example, an antibiotic for an infection).
5. If you have type 1 diabetes and your blood glucose is higher than 250, you will need to take extra insulin and check your urine for ketones. Your healthcare team will instruct you on both.
6. Get plenty of rest and avoid physical activity.
7. If you can't eat your meals, drink something every hour. Drink fluid with carbohydrates one hour and something without carbohydrates the next. For example, you might drink 8 oz. juice at 10 am and 8 oz. water at 11 am.
8. If you cannot drink or keep fluids down, call your healthcare provider.



Take care of your feet:

Foot problems for people with diabetes may become serious. It's important to make sure that



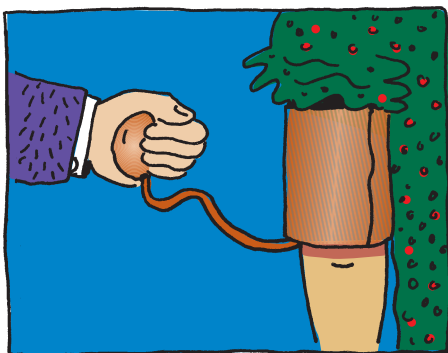
you wear well-fitted, protective shoes and that your feet are not cut or injured. The box called "How to take care of your feet" provides more information about proper foot care.

Take care of your eyes:

See an eye doctor for a dilated eye exam once a year. Since blood vessels in the eyes can be damaged by high blood pressure, make sure your blood pressure is in target range (130/80 or less).

Take care of your kidneys:

Your kidneys can also be damaged by high blood pressure, so make sure your blood pressure is in the target range. Ask your healthcare provider about a urine test for microalbumin once a year. This test checks for early signs of kidney damage.



Take care of any problems caused by damage to nerves:

Tell your healthcare provider if you have pain or loss of feeling in your arms, legs, or feet. Learn how to take care of your feet, toenails, and skin. See a foot doctor if you have poor circulation or nerve damage. Tell your healthcare provider about other problems which may be nerve-related such as sexual function problems or stomach problems, as there are ways to treat these.

Take care of your heart and blood vessels

- ▲ Monitor your blood pressure. For most people with diabetes, a goal is 130/80 or less.
- ▲ If you smoke, try a stop smoking program or discuss using a patch, gum or other medicine with your healthcare team.
- ▲ Eat less fat, especially saturated fat and animal protein. Choose more whole grains, dried beans, fruits and vegetables that are high in fiber.
- ▲ Lose weight if you are above your target weight. Losing just 10 pounds can help reduce your risks.
- ▲ Ask your provider to check your cholesterol once a year.

- ▲ Stay active. Find exercises you enjoy doing many times a week. This will keep your heart strong.
- ▲ If you have pain or discomfort in the chest, neck, or arms, or if you have trouble breathing, go to the emergency room right away.

How to take care of your feet

- Look at your feet every day. Make sure there are no cuts or red areas. Use a mirror to see the bottom of your feet.
- Do not soak your feet. Wash them well with mild soap and water every day. Dry them very well, including between the toes.
- Don't go barefoot.
- Wear shoes that fit well.
- Buy socks designed to keep your feet comfortable (padded, minimal seams, not too tight).
- Use lotion on your feet, but not between the toes.
- Do not cut your toenails. File them instead, or have them trimmed by a foot doctor.
- If you have poor circulation, nerve damage, or very thick toenails, see a foot doctor regularly. Also see a foot doctor if you have corns, calluses, or bunions.
- If you do get a cut or scratch, take care of it right away. Wash it with mild soap and warm water. Use a mild ointment. Cover with gauze and paper tape or a fabric bandage. Make sure to change this often.
- Call your healthcare provider right away if the area does not heal or gets red and has any drainage.

The Next Steps

We have given you the first steps to help you work with your healthcare team to take care of your diabetes. As questions arise, continue to ask for information. Diabetes requires lifelong learning and there are many resources for you.



My Diabetes Care Plan

Use the chart below to record your results so that you can take charge of your diabetes. Ask your healthcare team to review your own goals or targets.

Physical and lab results:	Dates/results			
A1C (every 3-6 mo) Goal: < 7% or _____				
Review Blood Glucose Records (every visit)				
Weight (every visit) Goal: _____				
Blood Pressure (2-4 /yr) Goal: ≤ 130/80 or _____				
Cholesterol, LDL (1 /yr) Goal: < 100 or _____				
Cholesterol, HDL (1 /yr) Goal: > 45 or _____				
Triglycerides (1/ yr) Goal: < 150 or _____				
Microalbuminuria (1 /yr) Goal: < 30 or _____				
Dilated eye exam (1 /yr)				
Foot exam (2-4 /yr)				
Flu shot (1 /yr)				
Pneumonia vaccine				

Have you spoken with your healthcare provider about any of these? Keep track of the dates you have.

Self-Management Training				
Meal plan (with dietitian)				
Physical activity plan				
Home blood glucose plan				
Foot care plan				
Medication plan				
Sick day plan				
Stress management plan				

Resources

For more information about how to manage your diabetes contact:
 Joslin Diabetes Center
www.Joslin.org or 617-732-2440

American Diabetes Association
www.diabetes.org or 1-800-DIABETES (1-800-342-2383)

Copyright © 2003 by Joslin Diabetes Center. All rights reserved.

Joslin Diabetes SmartStart™ was funded by an unrestricted educational grant from Aventis Pharmaceuticals.



