

Welcome to **Diabetes and Balance: My Personal Roadmap**. This program is designed to help you understand your diabetes by covering:

- What it is
- How it can affect you
- How you can manage it to stay healthy
- How to communicate your needs with your health care team to get the best care possible

This program in its entirety is about two hours in length. We don't expect you to or recommend that you watch the entire program in one sitting. Take your time learning about your diabetes and options for its management. We recommend you go through one chapter at a time. Running times for each chapter are listed in the chapter's menu, so you'll know what to expect.

As you watch each chapter, you will have opportunities to answer questions or reflect on the information to create your own customized diabetes action plan. The program will direct you when to stop to complete an exercise. Use your remote control to pause the DVD to give yourself ample time to answer questions.

We recommend that you complete the exercises included. We know that those who complete an action plan and set realistic goals are more successful at integrating healthy patterns into their lives.

We applaud you for investing this time and attention to learning about your diabetes. It may seem overwhelming at first, but as you proceed through the chapters of the program, we hope you will become more comfortable with the tools and resources available.

To start the program, we will begin with the chapter titled "Understanding the Basics".

We will begin the Diabetes and Balance program by going over some Diabetes management basics.

You've been told you have diabetes. Now what? The most important thing to know is that millions of people with diabetes live long, healthy lives. But doing this requires knowledge. Giving you this knowledge, and answering your questions, is what this program is all about.

This section discusses:

- What diabetes is
- Different types of diabetes;
- Ways to cope with the diagnosis
- And the basic information you need to know or the ABCs of diabetes management.

The ABCs of diabetes management are an A1c test, Blood pressure, and Cholesterol. Keeping track of these will help you control your diabetes.

A: A1c is a blood test that tells you your average blood sugar results over the past 2-3 months. It also provides information about your risk for long-term problems.

B: Blood pressure

Blood pressure control is important for all people, but especially for those with diabetes.

C: Cholesterol

Cholesterol tests indicate how much fat is in the blood, and therefore your risk for heart disease.

This program will help you set personal targets and show you how to keep track of your progress.

In the end you will be able to create a personal action plan that helps you make good choices and stay healthy. To get the most out of this program, you'll need to answer these questions:

- What is the most important thing you want to learn from this program?
- What concerns you the most about having diabetes?

Pause the program for a minute by pressing pause on your DVD remote control and jot down your answer to these questions in the space provided in your workbook.

Answering these questions will help you focus on the information that is most important to you. When you are ready to continue, press "play."

How did your doctor know you have diabetes? Did you have symptoms that made your doctor suspect diabetes? What does this diagnosis mean?

Some people with diabetes have symptoms like frequent urination, unusual thirst, hunger, fatigue, blurred vision, or slow healing of cuts. Others have no symptoms at all. Was your diabetes found by accident? Sometimes diabetes is found during a routine physical or during preparation for surgery.

Whether or not you have symptoms, all people with diabetes have blood sugar tests in the range that experts around the world call diabetes.

Before you had diabetes your fasting blood sugar, in the morning before eating, was 70-100. After eating, it would go as high as 140, but return to the normal range before your next meal. Diabetes is diagnosed when the fasting blood sugar is 126 or higher on two different days or if your blood sugar is over 200 and you have symptoms of diabetes.

What were your blood sugar numbers when your diabetes was diagnosed?

Press pause now to complete your workbook exercise on your Diabetes symptoms and blood sugar numbers.

In someone without diabetes, the body makes “instant” insulin-- a hormone produced by the pancreas to help the body use food for energy. Starches, fruit, and sugar from food are digested into sugar that circulates throughout the body to be used for energy. As food is eaten, the body sends a message to the pancreas to make insulin in exactly the right amount for the type and amount of food. The insulin travels through the blood stream to all parts of the body and attaches to muscle and fat cells, like a key in a lock. Once the insulin attaches, the cell is able to move the sugar from the blood into the cell. The sugar is then either burned to provide energy or stored for future energy needs.

People with type 1 diabetes (once called juvenile or insulin-dependent diabetes) make very little or no insulin. Without insulin, they are not able to use their food for fuel. We all need insulin to live. People with type 1 diabetes must take insulin injections to try to imitate the way their bodies used to make insulin.

People with type 1 diabetes are usually younger and leaner than those with type 2 diabetes. Type 1 diabetes makes up about 5-10% of all diabetes.

Type 2 diabetes is much more common than type 1 diabetes. Most people with type 2 diabetes have a family member who also has type 2 diabetes.

Who in your family has diabetes?

People with type 2 diabetes (formerly called adult-onset or non-insulin-dependent diabetes) can make insulin, but there is usually a problem with it such as:

- There might not be enough insulin to cover the food eaten

- The insulin might be “sluggish”, released too slowly to keep the blood sugar normal
- The insulin may not be able to attach to the muscle cells the way it is supposed to

Many people have insulin resistance. What does that mean?

Insulin resistance is a condition that sometimes leads up to type 2 diabetes or it can be a very complicated part of type 2 diabetes. If you have insulin resistance, your body cannot respond to the insulin you have, causing your blood sugars to be more “stubborn” to treat.

Regardless of the cause or causes, the result is that your blood sugar stays in the blood instead of moving into the body cells for energy. High blood sugar can develop so slowly that you might not recognize it until symptoms interfere with your daily activities.

Without insulin or your body’s ability to use it properly, your blood sugar rises. Without treatment, the high blood sugar can steal your energy and make you feel bad. In the long term it can also cause health problems. This program will help you learn how to balance your blood sugar, feel better, and how to avoid those problems.

Most people with a new diagnosis of diabetes have a lot of questions about their ability to be healthy in the future. These concerns are usually based on past experience or because a relative or friend with diabetes had problems.

In recent years we have learned a great deal about managing diabetes, with new tools and technology to help us.

As you do this program, remember: each person is different and your diabetes and situation are unique.

Throughout this program, you will be offered tips to help you use the information so that it works for YOU!

If you’re thinking, “why me?” it is important to realize that you didn’t do anything wrong. Type 2 diabetes is usually inherited.

Besides your family history, other risk factors for developing type 2 diabetes are:

- Overweight
- Inactivity
- Ethnic or racial background
- Having a baby that weighed more than 9 pounds
- High blood pressure
- Low HDL (good) cholesterol
- Sometimes we just don’t know

Which of these risk factors do you have?

Take a moment to pause the program and complete the section in your workbook titled My Diabetes Risk Factors. When you are ready to continue, press play.

Knowing your risk factors may not make you feel better. People can have many different reactions to learning that they have diabetes: fear, sadness, anger, even guilt. Some people refuse to believe that they have diabetes, especially if they didn't feel any warning symptoms. All of these reactions are normal, neither right nor wrong.

What was your reaction when you learned that you have diabetes? Negative feelings, if they last too long, can use up your energy and make it even more difficult to take action. What can you do to feel better?

- Learn more about diabetes and what you can do about it
- Talk to a close friend or relative, someone who will listen to you without judging you
- Talk to your health care team
- Talk to your clergy or a counselor
- Find ways to use that emotional energy in positive ways, such as taking a walk or relaxing with your favorite music

What can you do to get “unstuck” from unpleasant emotions about diabetes?

Pause the program to write down in your work book ways that you can get support, stay active, and relax. Press play when you are finished.

This program, along with your health care team, will help you to develop a plan that fits your life, that you can do, and that meets healthy targets. The good news is that these steps can help your family stay healthy too.

The ABCs of meeting your diabetes targets

A: A1c blood test that measures your average blood sugar

B: Blood pressure

C: Cholesterol

Let's take a closer look at each of these

A1c and blood sugar targets

Before you had diabetes, your body automatically kept your blood sugar normal. Now it will take thought, effort and practice to keep your blood sugar in target. The American Diabetes Association has established targets for healthy blood sugar control. Some people may have slightly different targets to help them stay safe. Before meals the ideal blood sugar is 80-120. It may be as high as 140 occasionally; this is acceptable but should be watched. If your fasting blood sugars are consistently over 140, look at ways to bring it back to the ideal range. The ideal target for blood sugar 2 hours after you eat is under 160, but under 180 is acceptable. The blood sugar target at bedtime is 100-140. You are not expected to have “perfect” blood sugars all of the time, but you will feel better and be healthier if you keep your blood sugar levels within these targets as much as possible.

Hitting these targets may seem difficult at first, but the more you practice, the better you will get.

The A1c blood test measures your average blood sugar over a 2-3 month period of time. The usual target is below 7%. This test should be done every 3 months if A1c is not in target, but it is okay to go 6 months if it is in target and you are doing well. When A1c is in target, your risk for diabetes complications is reduced. Your doctor may identify special targets for you. Ask this at your next appointment.

Has your A1c been checked? If so, what is it? Complete these questions in your workbook now.

Blood pressure

Your blood pressure tells you about your risk for heart attack and stroke. Your health care team will check your blood pressure at every visit. In fact, your health care team may recommend that you learn to check your own blood pressure at home. It is really important that your blood pressure be at or below 130/80. Many people need blood pressure medication to accomplish this. Discuss this with your doctor. Press pause to write down your blood pressure information now in your workbook.

Cholesterol

Your cholesterol profile tells you about your risk for heart disease, stroke, and poor circulation to your feet. Your LDL, or bad cholesterol, target is below 100.

Your HDL, or good cholesterol target is:

- over 50 for women
- over 40 for men.

Your Triglycerides target is below 150.

Work closely with your health care team to get and keep your cholesterol profile in target. Many people need cholesterol medications, called statins, in addition to healthy eating and activity to accomplish this. Discuss this with your doctor, too.

Press pause now to complete the ABC Targets chart in your workbook by completing your information on Cholesterol.

With help from the top diabetes specialists, the American Diabetes Association has established guidelines for basic care of people with diabetes. Working together, you and your health care team can follow these guidelines to help you stay healthy and prevent complications.

Check at every office visit and discuss with your doctor your:

- Blood pressure
- Weight: If you are overweight, a 10-15 pound weight loss can help you reach your ABC targets.
- Smoking: If you smoke, stop! Ask about resources and help so you can quit.

- A foot inspection to check for signs of nerve damage or other problems. Is the sensation normal in your feet?

Check A1c every 3-6 months:

- Every 6 months if in target
- Every 3 months if not in target--then discuss ways to fine-tune your treatment plan

Check at least yearly:

Cholesterol: If not in target, discuss food, activity and medications that can help.

Microalbumin: This urine test checks for protein in the urine, to see how well your kidneys are functioning.

Eye exam: The eye doctor checks the blood vessels in the retina (back of the eye) for early and treatable signs of damage.

Flu shot: This is recommended every year for people with diabetes.

Pneumonia vaccine: You need to get this at least once. Have you had yours?

Some of these will be discussed in greater detail later in the program.

Take a few minutes to think about your daily routines and patterns. You may already be physically active or eating healthy foods. But many of us can identify some routines or patterns that are not so healthy.

If you were to list your current routines in 2 columns, one listing healthy routines or patterns, and the other listing those that could be improved, what would you write?

The process of setting goals that will help you can be broken down step-by-step.

First, choose a habit or pattern that you feel you can change within the next few weeks.

“The area I would like to improve is,” “I eat too much at each meal.” Write a simple goal, which states exactly what you will do. “My goal is I will eat one serving of the foods at my meals.” Next, write the small steps you will take to accomplish the goal.

“Get my family to support me; fill my plate in the kitchen and leave serving dishes there; eat slower.” At the end of the week, look back to see how it worked.

What worked well? “My family and I enjoyed conversation.”

Were there barriers? “I slipped back one evening when I was in a hurry and ate in the kitchen. Also, I really wanted the second helpings at first. It took most of the week to begin to realize that I wasn’t really hungry.”

What can you do to get around the barriers? “I will focus on talking with my family and not on my food. When I am in a hurry I will still take my food to the table”

What can you do if you need support? “I will negotiate with my family to help. I will also put a picture of myself weighing 15 pounds less on the refrigerator.”

Keep your goals simple and achievable. You may find that there are unexpected rewards, too, such as more energy. Maybe you watch TV in the evening because you get tired after a large dinner. With more energy, perhaps you will feel more like being active in the evening.

Rewarding yourself for goals accomplished can help you realize that you can do what you set out to do. Choose rewards which will make you feel great. You deserve it. How will you reward your success? “I’m going to buy some fresh flowers for the dinner table.”

It has been said that a goal is a dream with a deadline. It has also been said that it takes 3 weeks to change a new behavior into a new habit.

Pause the program now to take a moment to write down your current healthy and unhealthy habits as well as your goals in your workbook.

Your Personal Action Plan that this program will help you set includes several key areas to guide you in making daily choices and decisions.

The sections include:

Monitoring your blood sugar

Taking medications

Meal planning

Physical Activity Plan

Staying healthy, tracking your progress toward your healthy targets

In the following chapters of this program, you will learn much more about each of these areas. You don’t need to learn it all at once. Your health care team can help you. Take advantage of the resources available to you-your doctor, your Nurse Educator, your dietitian, your pharmacist or clinical pharmacy resource, exercise specialist, or psychologist. Remember, you are the most important part of the health care team. No one, expert or not, can manage your diabetes for you.

As you proceed through each of the following chapters, you will add information to your personal plan.

Making the right food choices is an important part of managing your diabetes. But how do you go about making those choices? Maybe you've heard a lot of conflicting advice about what to eat with diabetes and don't know where to start. Maybe you think it means giving up all you're favorite foods. Or maybe you're just afraid to eat anything.

This chapter will help you learn how to make smart food choices and explain why it's important.

Most people have pretty consistent eating habits, and making changes is not easy. There are many reasons why we eat the way we do, such as taste, availability and price. Other, less obvious reasons include personal values and habits.

Your diabetes food plan focuses on balance and moderation. You will still be able to enjoy your favorite foods. Also, what's good for you to eat is probably good for your entire family. Healthy eating with diabetes is about making healthy food choices, something that is good for everyone.

Think about what you usually eat. For example, what is your typical evening meal? Do you eat large portions? Do you often eat fried foods? Do you choose only certain food groups like "meat and potatoes," and rarely eat fruits and vegetables? How about your meal timing yesterday? Did you skip meals, or go more than 5 hours without eating?

Learning to make better food choices is one of the most important aspects of your diabetes management and overall health. Appropriate food choices and meal timing can help prevent blood sugar swings that affect your risk of complications. You may also find that you have more energy and lose weight. Eating healthy just makes you feel better!

Simple changes can improve your eating right away.

First, consider your meal timing. Do you skip meals? Or go too long without eating? Start by eating at least three meals per day--going no longer than 4-5 hours between meals. Start your day off right by eating something soon after waking up. If your meal timing is less than perfect, or you get too hungry, you can add a small snack such as 4-5 crackers; a small bowl, approximately one cup, of cereal; or one carton of light yogurt. If you take diabetes medication, consider adding a small snack in the evening.

Start to eat less fat by choosing food that is baked, grilled, or cooked in non-stick spray. Eat high-fat, fried foods less often. A generous serving of vegetables or salad at your main meals adds important nutrients and fiber and is a great way to fill up and prevent hunger. Think about your food servings. Eating a little less at each meal or not taking extra servings will reduce your intake of carbohydrates, calories, and fat.

Think about how your plate might look at a typical meal.

Can you eat...

Smaller portions?

More vegetables?
Lower fat choices?

Carbohydrates are an important part of your eating plan and play a huge role in controlling your blood sugar. Carbohydrates have gotten a bad rap lately, and you may think you need to avoid them altogether. Actually, carbohydrates are your body's best source of energy. Without enough carbohydrates, you might become sluggish and tired, or your blood sugar might be unbalanced. The goal is to become aware of the foods that contain carbohydrates and learn to spread them evenly throughout the day.

Foods that contain carbohydrates include:

- Starchy foods such as bread, potatoes, pasta, rice, beans, peas, corn, and tortillas.
- Sugar is another carbohydrate found in honey, table sugar, syrup, fruits, fruit juices, sweets and desserts.
- Some dairy foods, such as milk and yogurt, also contain carbohydrates.

Pause the program to write down one or two carbohydrate foods you eat on a regular basis. Press play when you are ready to continue.

Protein foods like meat, poultry, cheese, and eggs contain little or no carbohydrates, and therefore have little effect on your blood sugar. Small amounts of fat may not raise blood sugar, but it can be affected by eating a lot of fat throughout the day or at one time.

Eating foods that contain carbohydrates raises your blood sugar. Let's look at carbohydrate counting in more detail. For example, say you've just had a breakfast of bread, cereal, milk, and fruit. Very soon after eating, the digestion process changes these foods into sugar or glucose--the energy for your cells to run your body's processes. Your blood sugar usually peaks about 1-2 hours after eating and starts to go back down after 4-5 hours. It's expected that your blood sugar will be a little higher after eating-- hopefully, just not too high.

Counting your carbohydrates or planning how many carbohydrates you will eat at each meal and snack will show you how to balance your intake to maintain good blood sugar levels. Controlling the amount of glucose entering your blood stream at one time makes your own insulin or insulin you are taking work its very best. The easiest way to count carbohydrates is to check food labels, or recipes for the carbohydrate grams and fiber in a portion. Grams are abbreviated as "g".

When reading a label for carbohydrate- counting, you only need to check a few things. Here's what you do:

Look at the food label under NUTRITION FACTS-
Find the serving size. Think about the actual serving you are going to eat. Also check how many servings are in the container. Next, scan down to the total carbohydrate grams.

You may be tempted to just check the sugar; however, this is unnecessary as the grams of sugar are included in the total carbohydrates.

Study this label for a minute to practice.

Find the serving size.

Find the total carbohydrate grams.

Compare the serving size listed to your actual serving. What if you were going to eat 1 cup of this rather than ½ cup. How much carbohydrates would you count?

Another good idea is to look for foods with more fiber. Ideally, the carbohydrate foods you choose should contain generous amounts of fiber and nutrients such as whole grain bread, brown rice, beans and lentils, and whole, fresh fruits. White bread, white rice, and white flour are less healthy choices because they lack fiber and are stripped of many nutrients. Fiber counts in the carbohydrate total, but does not raise blood sugar. As a rule, foods with 3 or more grams of fiber are good choices. Is this a good fiber choice?

The next time you eat or prepare foods, practice reading the labels. Can't find a label? Carbohydrate information can also be found in reference books, on recipes, or even in nutrition information provided in your favorite restaurants.

Now you may be wondering, how much carbohydrates can I have? How much carbohydrates you should have at meals and snacks depends on several factors, including your energy needs, activity, and weight goals. A dietitian can help individualize your carbohydrate targets. However, there are some general carbohydrate targets we suggest:

For women, 45-60 grams per meal

For men, 60-75 grams per meal.

Notice these suggested targets are PER MEAL NOT PER DAY.

For snacks 15- 30 grams of carbohydrates works well.

Now take a few minutes to plan your carbohydrate targets for your meals and snacks. Write them down in your workbook. Press pause to allow yourself time to do this.

Remember to balance your meals by adding some low or no-carbohydrate foods to each meal, such as lean meat, poultry, or fish, some low-carbohydrate vegetables, and a small amount of added fat.

Let's put it all together to plan a healthy meal that has about 60 grams of carbohydrates.

For carbohydrate choices you can have 1/2 cup of brown rice (23 grams of carbohydrates and high in fiber), 1 cup of low-fat no sugar added yogurt (20 grams of carbohydrates) and 1 cup of berries (15 grams of carbohydrates). Now add some food with little or no carbohydrates, such as a small chicken breast, broccoli, salad, and a small serving of salad dressing.

Practice carbohydrate counting by keeping a written record of what you eat and drink for several days. Track the total carbohydrate intake from labels or other references. See how your actual intake compares to your targets. Another important aspect of healthy eating is keeping your total fat intake lower, and choosing healthy fats more often. Doing this will help lower your cholesterol and triglycerides, which helps protect you from heart disease and stroke. If you have high blood pressure you should also limit salt or sodium intake. Cutting calories from fat is also a great way to lose weight.

To lower your overall fat intake, try these changes and substitutions. Choose leaner meat and protein choices, such as poultry without skin, or turkey, and eat fish at least 2-3 times per week.

If you like meat such as beef or pork, eat them only occasionally. Choose extra lean, for example 93% lean, hamburger, and round or loin cuts of beef and pork. Have only 2-4 egg yolks per week. Consider having a meatless meal including soy, tofu or beans several times a week. Remember that beans contain carbohydrates and should be counted. Choose only skim or 1% milk and low-fat cheese. Avoid cooking with fat--use non-stick spray, and broil, bake, or grill instead.

Watch added fats such as salad dressing, margarine, cream cheese, and sour cream. Two tablespoons of salad dressing can provide almost 20 grams of fat and 200 calories. Use the smallest amount possible or substitute light or reduced-fat products.

When choosing fats, limit unhealthy saturated and trans fats by substituting small amounts of unsaturated fats instead. Saturated fats include meat and animal fat, whole milk, and cheese, and solid fats such as lard or shortening. Saturated fats are found in foods such as some meats, cheese, crackers, and potato chips. Trans fats are found in processed foods such as crackers, snack foods, baked goods, stick margarine, and fast foods.

Healthy fats are mono- or poly- unsaturated fats. Also, the omega-3 fats found in fish are heart protective and may lower triglyceride levels. Choose healthier oils such as olive or canola. Eat fatty fish such as salmon, trout, or albacore tuna at least twice a week. Choose soft, trans-fat free margarine. Eat small amounts of seeds, nuts, and avocados.

Think of a high-fat food that you eat frequently, and a healthy substitute. Write them down in your workbook. Press pause to allow yourself time to do this.

If you're overweight, remember that all fats are high in calories, and may affect blood sugar if eaten in large amounts. Keep all fat portions small. You can measure margarine, oil, or salad dressing by using your thumb tip to measure a serving size. A serving of nuts is a small handful. 1-2 small slices of avocado is a reasonable serving.

Read labels looking for the total fat, saturated, and trans fat content. In general, your fat intake should not exceed about 30% of your calories or, for an average person, between

40-65 grams of fat per day. Look for foods low in saturated and trans fats. You may notice as you read labels that high fat foods also tend to be higher in calories.

If you have high triglycerides, limit or avoid alcohol, including beer, wine and mixed drinks. Also, avoid high sugar foods, including fruit juice, sweetened beverages, and desserts

To lower your salt consumption, don't add salt in cooking or at the table. Avoid processed foods such as cured meats, ham, bacon, sausage, and lunch meat. Canned, frozen, and packaged foods are nearly always high in salt, as are condiments such as soy sauce. There are many low- or no-salt-added products such as canned vegetables, soup or broth, and snack foods like crackers or pretzels. For flavor add pepper, lemon, lime, garlic, vinegar, or herbs.

Eating whole grains, fresh vegetables, or fruit, within your carbohydrate targets, is also a good idea, since they are naturally low fat, low in salt, and high in fiber. Eating more fruits and vegetables may also help lower your blood pressure.

The rest of this chapter contains additional, helpful information on healthy eating. However, now is a good place to break and return later.

Everyone who drinks alcohol should limit their intake by drinking only occasionally and limiting portions. Moderate intake is 1 drink for a woman, and no more than 2 drinks for a man.

With diabetes, never drink without eating, as some alcohol choices may actually lower blood sugar too much. Count carbohydrates for choices such as beer or mixed drinks. It's important to check blood sugars more often when using alcohol and to avoid alcohol if your blood sugars are uncontrolled.

Losing weight might be an important goal for someone with diabetes who's overweight. A weight loss of as little as 10-15 pounds can help to improve blood sugar, blood pressure, cholesterol, and triglyceride levels.

Following your diabetes meal plan can help you to manage your weight. You will be eating on a regular schedule, which will help you avoid getting very hungry and then overeating. Choosing healthier carbohydrates and higher fiber foods can help you feel fuller and also prevent hunger and overeating. Watching your portions and monitoring your carbohydrates often leads to a lower calorie intake.

Finally, this eating plan encourages you to be more mindful of your fat choices. Fat, gram for gram, contains more calories than either protein or carbohydrate. So cutting back on fat in general is one of the best ways to manage your weight.

To manage both your diabetes and weight, it is essential to become more active. Losing weight is about eating less and moving more. If you are not at all active, start small and

build up slowly. Eating as little as 250 calories less each day and adding more physical activity may start the weight loss process.

Many people trying to lose weight find it useful to attend a class or a support group. A variety of resources are available to support your weight loss efforts. It's easy, especially in the beginning, to get side tracked from your diabetes eating plan. What and why you eat are complex. In some situations-- restaurants, at work, family dinners, on vacation, even at home—it might be difficult to make healthy choices

Here are some tips to help you become more successful at sticking to your eating plan:

- Plan ahead to prevent pitfalls. Visualize the scenario ahead of time, preparing for how you will react in a positive way.
- Get support- Let your friends, co-workers, and family know what you are doing, and give them specific ideas on how they can support you. For example, ask that problem foods not be brought into the home, or be stored out of sight.
- Bring items that fit into your food plan to social events, such as a salad or lower carbohydrate dessert.

Eating in restaurants can also be challenging. Start by choosing restaurants that offer a good variety of healthy foods. Learn more about your favorite restaurant foods. You may be surprised by the fat and calories in many restaurant meals. Many fast food and chain restaurants have nutrition information pamphlets. Most have websites. There are also several diabetes nutrition reference books that may be useful when eating out. Plan on eating smaller portions by sharing a meal or getting a take out box. Count your carbohydrates when eating out. Avoid high carbohydrate extras such as baskets of bread or chips, and high carbohydrate beverages. Don't be afraid to make special requests when ordering, such as getting toppings on the side, or asking for food prepared with less fat.

Eating out less often, at most one or two times per week, will also help with weight loss.

This section of the program has given you a chance to consider your eating patterns and routines. Perhaps you've identified an area for improvement.

Now consider adding a meal planning goal to your action plan. First, choose an eating change you feel you can make over the next few weeks. Some examples might be:

Eating regular meals.

Counting your carbohydrate intake.

Adding more vegetables to your meals or snacks.

Cutting back on high sugar, high carbohydrate foods or beverages.

Write down the small steps you will take to accomplish this goal. Consider the goals to eat breakfast or add vegetables. Small steps to accomplish this might be:

“I will get up 15 minutes earlier on weekdays to eat breakfast.”

“I will add salad and frozen vegetables to my shopping list.”

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Diabetes Program

Final Scripts

Take a few minutes to complete your action plan.

Chapter 2 – Healthy Eating

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You've probably heard that exercise is a cornerstone of diabetes treatment. But knowing this and doing something about it are very different. In this chapter, we discuss the benefits of regular exercise and some ideas to get you started.

How do you feel about exercise? Do you:

- Hate it!
- Can't get motivated!
- Self-conscious.
- It's okay-for someone else.
- I love it!

What kind of activities or exercise are you doing now?

Do you

- Go for walks?
- Ride a bike?
- Lift weights?

Activity doesn't need to be traditional exercise; it can also be part of your usual daily routine:

- Household chores
- Walking to and from the parking lot or bus stop
- Vacuuming
- Mowing the lawn
- Dancing

Take a moment to list the activities that you do on a regular basis. Press pause on your DVD remote to allow time to write down your answers in your workbook. Press play when you are ready to continue with the program.

Everyone benefits from being active. Benefits include:

- Improved strength and flexibility
- Better endurance
- Heart and lung health
- Reduced heart risks such as hypertension and high cholesterol
- Promoting or maintaining weight loss
- Helping to prevent osteoporosis
- Helping to decrease depression, anxiety, feeling stressed
- Improved feelings of well-being
- Looking better

For those with diabetes, regular activity can also improve your insulin sensitivity. Your body can more easily use your blood sugar for energy, with less need for insulin. In other words, you can get more mileage out of the insulin you have!

You might even need less diabetes medication, such as pills or insulin, when you are consistently active! You may appreciate the benefits of being active on a regular basis but still find it hard to do.

What are some of the barriers that keep you from being active? Is it:

- Not enough time
- Too tired
- Dislike exercise
- The weather
- Other illnesses
- Exercise is boring
- Can't afford health club
- Pain or discomfort
- Too embarrassed or self-conscious around others
- Past failure to lose weight

Take a moment to mark the barriers that keep you from being active in your workbook. Press pause on your DVD remote to allow time to write down your answers. Press play when you are ready to continue with the program.

Think back to the benefits of regular exercise we identified. What benefits of exercise would motivate you to become more active? Are they strong enough to help you make an activity plan that you can live with? Strong enough to overcome the barriers you have identified?

Identify some benefits of exercise that are important to you in your workbook.

Once you've identified your own reasons for "why to be active," we can put together an action plan to help you begin. First, think about what activity you can do. Take a few moments to write down a few activities you can do, that you would enjoy, and that would help you enjoy the benefits you want. Choose something you can begin now. What is the best time for you to do it? Then decide how often you will do it. Be very specific about what, when, and how often.

Here is an example of an activity action plan:

I will:

- Walk around the block
- In the morning after cleaning up the breakfast dishes
- Three days a week

Plan on ways to handle the barriers you will encounter. For example:

- In bad weather I will go to the mall and walk the same amount of time
- If I am tired, I will walk at least one block and back

I will also park further from the door when I go to the grocery store.

If you have not been active, discuss your plans and goals with your doctor before you begin. Your doctor may have concerns about the type of activity or discuss precautions if you have other health problems.

Choose comfortable clothing that is appropriate for the activity.

Shoes are especially important for people with diabetes. Take extra time to buy shoes that:

- Fit comfortably when you buy them.
- Have plenty of room in the toe box.
- Breathe and are well cushioned.

Check your blood sugar before you begin the activity—you may need a small snack if it is low or even at the low side of target. If your blood sugar is higher than usual, the activity may help bring it back down. But if your blood sugar is very high and you feel dehydrated or ill, hold off on the activity until your blood sugar is closer to target and you feel better.

Many people also check their blood sugar after the activity to see if it was affected, if they need to adjust their food, or if they need to discuss medications with their doctor.

Warming up before you go for that walk or get on the bike helps warm the muscles you will be using, gets your heart beating a little faster to get ready, and lubricates your joints. Warming up can be walking around slowly for a few moments, stretching your arms and legs, or just moving them in place.

Strength training exercises help make your muscles stronger, beyond what aerobic exercises can do. Strength exercises help to stabilize your joints, improve your ability to do aerobic activities, and prevent injuries. Strong, toned muscles--especially the large muscle groups such as the leg, hip, abdominal and upper arm muscles--help you burn blood sugar more efficiently. You don't need expensive equipment to tone muscles, but working with a physical therapist or an exercise expert will help you learn how to do this properly, without injury.

While making plans for increased physical activity, think F.I.T.

F stands for frequency, how often you do the activity. Aerobic activities can be done every day, but plan for at least 4 days per week. Strength training should be done at least 2 days per week, more often if you are working with an exercise expert or personal trainer.

I stands for intensity, or how hard you work. When you exercise, pay attention to how hard you are breathing. Ideally, the activity should cause you to feel mildly winded, but still able to carry on a conversation. If you are too winded to talk, slow down until you

can catch your breath. If you can sing or whistle, pick up the pace a bit. As you become more fit, you'll be able to exercise longer and faster without undue stress. Some people use their heart rate to judge how intensely they are exercising. There are some medications, however, that can make this unreliable. Discuss these questions with your doctor.

T stands for time or how long you exercise. At first you may only be able to walk for 10 minutes. That is fine. Be patient and persistent. Soon you might add another 10 minute walk later in the day. The eventual, "ideal" goal is at least 30 minutes of exercise in a single session or accumulated during the day.

There are a few precautions when you have diabetes and are planning an exercise program.

- Start exercising slowly and increase the time or intensity gradually. Don't believe the "no pain-no gain" people. If you have pain, you are likely to quit exercising altogether!
- Check your blood sugar before and after your exercise. Before long, you will know what to expect your blood sugar to do when you exercise.
- If your blood sugars are over 250-300, work on getting them down first, before exercising. Talk to your doctor about your treatment plan.
- If your blood sugar is 100 or lower, snack before exercising and always take a carbohydrate treatment for low blood sugar with you.
- Carry identification with an emergency phone number and a medical alert.

Special needs:

- If you have retinopathy, avoid weight lifting or exercises that cause straining, jarring, or jumping.
- If you have neuropathy in your feet, be especially cautious of exercises that cause repetitive motion on the feet. Biking, swimming or water exercise might be better.

Now write down your activity plan in your workbook.

If you'll recall from earlier in the program, monitoring your blood sugar is crucial to managing your diabetes.

How often do you check your blood sugar? What results are you getting? Do you know what the numbers mean? What are your blood sugar targets?

Take a moment now to pause the program with your DVD remote and answer these questions in your workbook. Press play on your DVD remote when you are ready to continue.

Over the past 20 years, the most significant advance in helping people with diabetes learn how to manage their diabetes is blood glucose monitoring. Checking your blood sugar can give you a lot of important information. It can tell you how well your treatment plan is working. It can show you blood sugar patterns and trends to help you assess your food plan, activity, and medications. It can indicate how your body responds to different situations, like activity changes, different foods, and schedule changes. It can show you if your blood sugar is going too low or too high when you are experiencing symptoms. It can help you plan ahead for unusual situations. It can also help you make smart choices about your food, activity and medication choices on a daily basis.

Understanding what the numbers mean takes time, experience, and practice. Your doctor can help you to understand. In fact, this is information your doctor must have in order to give you good advice about your treatment plan.

A lab test called the hemoglobin A1c gives us two very important pieces of information about your diabetes:

1. It tells us what your average blood sugars have been over the past 2-3 months. For instance, if your A1c result is 8%, it tells us that your average blood sugar has been about 205 and
2. It gives us important information about your risk of developing long-term problems involving your eyes, your kidneys or your nerves.

Your chance of developing these problems goes down the longer your A1c stays close to your target level.

There are a lot of blood glucose meters to choose from—over three dozen the last time we checked! They have differences in the features they offer, how much they cost, and how easy they are to use. Sometimes your health insurance may state the meter of choice for you.

These meters are constantly being improved and finding one to meet your needs should be fairly easy. Your diabetes educator can help you make the right choice and learn how to use it. Some of the fancier meters come with data management systems and information that can be downloaded to your computer. Some meters allow you to check your blood sugar in alternate sites like your arm or thigh. Always use the materials that

come with your meter to be sure that you are using it correctly and getting accurate results.

How often should you check your blood sugar? To start, we suggest that you check your blood sugar at least twice a day, before breakfast and dinner. As an alternative, occasionally check before lunch and at bedtime.

There are three key things to remember about how often to check your blood sugar:

1. Check often enough and at different times of the day to show your blood sugar patterns. This tells you and your doctor how well your treatment plan is working.
2. Check more often than usual when your blood sugars are not being well controlled. The extra results will help you and your doctor figure out how to get your blood sugar balanced again.
3. When your blood sugars are in target and you are feeling well, you may be able to check less often, but never stop checking altogether. You probably won't have symptoms early on if your diabetes goes out of balance.

What are the best times to check your blood sugar? The usual times to check your blood sugar are before meals and/or at bedtime. These are the times your blood sugars are probably closest to the targets.

Press pause on your DVD remote now and complete the workbook exercises My Monitoring Plan and My Target Blood Sugars. When you are ready to continue with the program, press play.

Keep track of your blood sugar results by writing them down to make it easy for you and your doctor to examine the patterns. It is very helpful if you write notes to help explain changes in your day such as:

“Lunch was 1 hour late.”

“Shoveled snow. More exercise than usual.”

“Felt shaky and sweaty before lunch.”

“Ate out. Ate more than planned.”

The blood sugar results and notes make it easier for you and your doctor to make smart decisions about your treatment plan.

When you talk to you doctor about these results, your doctor may also ask you to check your blood sugar at other times to obtain more information. These extra times might be:

- Before and after your main meal to see how much your blood sugar changes with meals,
- Before and after exercise to learn how exercise affects your blood sugar,
- Whenever you “feel bad or different” to see if you blood sugar may be causing the symptoms, or
- At a time during the night if you suspect your blood sugar might be going low while you are asleep,
- Or whenever YOU want to know

Remember, your blood sugar results are not a test of your personal character, nor can you “pass” or “fail” a blood sugar test! Blood sugar results are important pieces of information for you and your doctor to find the best possible treatment plan. The goal is to keep you healthy and help you make smart decisions about your daily activities.

Before you had diabetes, you didn’t have to do a thing to keep your blood sugar in target; your body did it automatically. Now with diabetes, it’s not that simple. Blood sugar balance takes some extra knowledge and effort from you-learning how to balance your food, your activity and your medications to keep your blood sugars smooth and in target.

Occasionally your blood sugar may go higher than the target. This can happen to anyone occasionally, but the important thing is that if it stays high, you work with your diabetes team to get it back into target as soon as possible.

Here are some possible causes of high blood sugar:

- You’re eating more food than usual, especially carbohydrates,
- You’re less active than usual, due to bad weather, or an injury,
- You miss medication doses,
- Your diabetes changes, and you need more or different medication,
- Illness, injury, stress, or pain are all situations which can raise your blood sugar, even if you are eating normally or less than usual,
- Improper timing of your food, activity and medication can cause periods of high blood sugar,
- If you are taking medications that can cause low blood sugar, an episode of low blood sugar is usually followed by “rebound” high blood sugar 4-8 hours later,
- Weight gain can cause people to become more insulin resistant, causing high blood sugar.

How would you feel if your blood sugar were too high?

You might feel:

- No symptoms at all, or
- Tired or weak with no energy
- Thirsty with a dry mouth
- Frequent urination (You might not notice unless you had to get up often during the night)

If this happens, what should you do?

1. Collect information
 - a. Check your blood sugar at least 4 times a day
 - b. Keep a written log book of your blood sugar results
 - c. Take notes about your symptoms, your food, and medications
2. If your food and activity schedule has changed, go back to a regular schedule, and pay attention to when and how much you eat, and your amount of activity.
3. If your blood sugars don’t return to target or if you feel worse, call your doctor. Take your records and notes with you to your appointment.

The treatment for high blood sugar depends on the cause. When you discover the cause, you can then use that information to bring it back to target.

An illness or infection that causes high blood sugar needs to be treated the same as in a person without diabetes. You may also need extra diabetes medication while you are ill to keep your blood sugar in target. Once you recover from the illness, your diabetes is likely to return to its previous state.

While short episodes of high blood sugar are not likely to be dangerous, we do know that long-term high blood sugar can cause problems affecting your eyes, your kidneys, and even nerve damage.

What is low blood sugar? Low blood sugar is any blood sugar of 80 or below, with or without symptoms.

How would you feel if my blood sugar were too low? That depends in part on how quickly your blood sugar is dropping. If your blood sugar drops quickly, you might feel:

- Cold, shaky, or sweaty
- A fast heartbeat and look pale
- Dizzy or hungry

These symptoms are “panic” type symptoms from adrenalin, much the same as if you were suddenly frightened. This can happen before meals, after increased exercise, or any time you run out of fuel in your body. These symptoms need to be treated quickly. If these symptoms are not recognized and treated promptly, more serious symptoms can occur. These more serious symptoms can also occur if your blood sugar drops to very low levels so slowly that your body doesn’t turn on the adrenalin “panic” symptoms. In this situation, you might feel:

- Tired or lethargic
- Slow thinking, slow to respond
- Crabby or cranky
- Have a headache

These are symptoms of true low blood sugar, meaning that your brain doesn’t have enough sugar to function properly. If the low blood sugar is not corrected, it could result in seizures, loss of consciousness, and even death. Headaches are a sort of low blood sugar “hang-over” and can last even after your blood sugar has risen to safe levels.

What should you do if you think that your blood sugar is too low?

Follow the 15:15 rule:

1. Eat 15 grams of carbohydrate
2. Wait 15 minutes

15 grams of carbohydrates could be:

1. 3 glucose tablets (of 5 grams each)
2. ½ cup of fruit juice
3. Or a ½ can of regular soda (diet soda won’t work!)

4. Any other carbohydrate will work, but maybe not as quickly as the above.

It takes 15 minutes for the carbohydrates to absorb into your blood. Eating more than 15 grams of carbohydrates will not make it work any faster; it will just make your blood sugar go too high when it does work.

If you have your blood sugar meter close by, check your blood sugar when you first notice the symptoms if you can. Check again at 15 minutes. If your blood sugar is still under 80, repeat the 15:15 rule. Remember, if your blood sugar is 80 or below, treat, even if you are not experiencing any symptoms. Once your blood sugar is above 80, eat your next meal or snack to keep your blood sugar from falling too low again.

How would you know if your blood sugar went too low at night while you are asleep?

Some symptoms of night time low blood sugar are:

- Waking up for no reason with difficulty getting back to sleep
- Night sweats
- Your spouse might notice that you are unusually restless or agitated while you sleep
- Nightmares or vivid dreams

Sometimes you might sleep through a mild low blood sugar reaction but wake up in the morning with:

- Unusual grogginess
- Headaches
- High blood sugar (that has rebounded from low blood sugar during the night)

If you wake up at night and suspect low blood sugar, check your blood sugar, treat it using the 15:15 rule, then eat an extra snack such as milk and a few crackers to keep your blood sugar from going low again.

Be sure to write in your log book about the low blood sugar episode. Include the blood sugar number, time, symptoms, and what you did to treat it. Once your blood sugar is safe and stable, can you figure out why it happened?

What causes low blood sugar?

Blood sugar levels can go low for many reasons:

- Skipped or delayed meals or snacks
- Eating less carbohydrates than usual
- More than the usual activity
- Taking more diabetes medication than you need
- Losing weight, which tends to improve insulin sensitivity so that your own insulin works better
- Reducing stress

- Getting over an illness (especially if you were taking more diabetes medicine or insulin while you were ill)
- Improper timing of your food, activity, and medications can cause periods of low blood sugar as well as periods of high blood sugar.

Can you prevent low blood sugar?

Most episodes of low blood sugar can be avoided, especially if you are able to keep your food and activity fairly regular. When your schedule changes, try to think ahead about what you will do if you eat later than usual or need to be more active than usual.

Here are some tips to help you:

- Carry “portable” food (such as fruit, crackers, or even a granola bar) to eat if your meal is delayed.
- Carry glucose tablets or other emergency carbohydrates with you at all times.
- Talk to your diabetes educator (your Nurse, Dietitian, or Pharmacist) to learn how to prepare for unusual situations.

If low blood sugar episodes happen at regular intervals, schedule an appointment with your doctor to help you make the best possible adjustments to your treatment plan.

Prepare for the visit with the following written information:

1. How low does your blood sugar go? How many times a week? What time of the day?
2. What are three possible causes?
Food? Medication? Activity?
3. What are three possible solutions?
4. Which solution do you think would work best?

Low blood sugar can feel terrible and scary. As you learn more about how your body responds to your treatment plan, you will learn how to prevent most low blood sugar episodes. You will also learn how to quickly recognize and treat those that do occur.

Sometimes blood sugar can go from high to low and back to high again, all within the same day. This “roller-coaster” blood sugar pattern feels terrible and can drain your energy and worse.

Do you remember the targets?

The low end of the targets before meals is 80, and the high end of the targets is about 180 after meals. This 100 point difference is expected. When the blood sugars fluctuate more than 100 points in a day, you could begin to feel like you are on that blood sugar roller-coaster.

What causes the blood sugar to fluctuate?

- Improper timing of food, activity and medication
- Changing amounts of food, especially carbohydrates

- Over-treating both highs and lows without addressing the causes

What can you do to make your blood sugar smooth again?

Go back to the basics (or to a time when your blood sugar patterns were smooth). Pay close attention to consistent:

- Timing of meals and snacks
- Amounts of carbohydrates (measure your foods again for a while)
- Monitoring your blood sugar more often and keep records with notes
- Use the 15:15 rule to treat low blood sugar
- Use your diabetes team to help you

If this is difficult for you to maintain talk to your doctor and your diabetes team about ways to make your treatment plan more flexible to fit your lifestyle better.

If diet and exercise do not get your sugar to goal, then medication is added to help you reach it. In this section you can learn more about the medications you are taking.

Before you start, take a few minutes to answer the questions on the screen. Press pause on your DVD remote to allow time to write the answers in your workbook. When you are ready to continue with the program, press play.

Medications work in different ways to help lower your blood sugar. The first ones we will discuss are those that increase the amount of insulin released from the pancreas. They are taken by mouth. Examples of these drugs are tolazamide (also known as Tolinase), glyburide (also known as Micronase or Diabeta), and glipizide (also known as Glucotrol).

These are taken once or twice a day. Most people have no side effects from them, but possible side effects are stomach upset, skin rash, or increased sun sensitivity. Rare serious side effects are liver problems, and unusual bleeding or bruising.

Since these medications increase the insulin level, low blood sugar, or hypoglycemia, can occur. It is important to test sugars regularly and eat at scheduled times to avoid this. If you are allergic to sulfa drugs be sure to let your doctor know before starting these medications.

The other drugs that raise insulin levels are repaglinide (or Prandin), and nateglinide (or Starlix). These are shorter acting and are taken before each meal. If you skip the meal then no drug is taken.

Because most people with diabetes are insulin resistant, drugs that increase insulin action and decrease insulin resistance are often the first drug used. They can be used in combination with other oral drugs or insulin. They are also taken by mouth.

Metformin (also known as Glucophage) lowers blood sugar by lowering the amount of sugar produced by the liver and increasing the amount of sugar entering into the muscles. When used alone it does not cause low blood sugar.

If you have significant kidney, heart, lung or liver disease you will not be able to take this medication. When first starting this medication you may experience stomach upset, diarrhea, and gas. This usually improves after a few days and is not a major problem if you start with a low dose and gradually increase as instructed by your doctor. In order to avoid a serious side effect, lactic acidosis, it is important to stop the medication and call your doctor if:

- 1) You drink excessive alcohol
- 2) You become dehydrated with nausea, vomiting or diarrhea
- 3) You are hospitalized or have surgery
- 4) You are scheduled for a special Xray where dye is injected

It is important to see your doctor for regular monitoring while on this medication to be sure no problems occur. The medication is taken 1 to 3 times a day.

Examples of Thiazolidinediones are pioglitazone (also known as Actos), and rosiglitazone (also known as Avandia). These are also taken by mouth. The major effect of these drugs is increased entry of sugar into the muscle. They can also be used with other oral medications or insulin. They take a few weeks to have full effect and are taken once or twice a day. You should not take these drugs if you have significant heart failure or liver disease. Because of rare liver reactions you will need regular liver tests while you are on these drugs.

You may notice some ankle swelling when starting these medications. If it continues to increase notify your doctor. If you develop dark urine, yellow skin or eyes (that is jaundice), unusual bleeding or bruising, or if you lose your appetite while on this drug, stop the medication and call your doctor. When used alone these drugs do not cause low blood sugar.

Precose and Glyset are medications in the alpha-glucosidase inhibitors group. These drugs keep your body from absorbing the starches (or carbohydrates) that you eat. Their major effect is on blood sugars in the hours after you eat. They are taken by mouth before each meal. When used alone they do not cause low blood sugar. When used with medications that lower sugar they can increase the risk of low blood sugar. If you have significant liver, kidney or bowel problems you cannot take this medication. Since these drugs keep starches from being absorbed, it is important to treat any low blood sugar with pure glucose and NOT table sugar, fruit juices etc. Glucose tablets are available in any pharmacy. Common side effects from these drugs are diarrhea, gas and stomach discomfort.

You may or may not be using insulin. The following section contains useful information about insulin, but you may wish to visit this section later if you are not using insulin.

Insulin is given by injection and is the hormone your pancreas makes to control blood sugar. All people with Type 1 diabetes and many with Type 2 require insulin treatment. In some cases it is combined with oral medications to get the best results. Insulin is taken one or more times a day. Some people need an insulin pump to adequately control their blood sugar. Timing is very important and doses can be tailored to your changes in activity, diet or blood sugars.

Unopened insulin should be stored in the refrigerator. Avoid exposing the insulin to freezing or high temperatures. The bottle(s) you are using should be stored away from direct sunlight and extremes of hot or cold.

Since insulin can cause low blood sugar you need something with you at all times to treat this.

Before reviewing the types of insulin take a moment to answer these questions about your insulin treatment:

What type of insulin do you take?

When do you take it?

Do you adjust your dose based on your blood sugar or what you are going to eat?

How do you determine the dose?

What do you carry with you for low blood sugar?

We will now cover different types of insulin.

Rapid acting insulins include Humalog, Apidra, and NovoLog. These insulins are clear in appearance. Rapid-acting insulins start working in 0-15 minutes. Their major effect occurs in 1-3 hours, and their effect is over in 3-5 hours. Rapid acting insulins are usually taken right before or with the meal. They can be used in the insulin pump and can be mixed with NPH.

Short-acting or regular insulin is clear. It starts working in 15-30 minutes, its major effect occurs in 2-4 hours, and the effect is over in 6-8 hours. Short-acting insulin is usually taken 15-30 minutes before the meal. It can be mixed with NPH.

Intermediate acting insulin, or NPH, is cloudy in appearance. It starts working within 1-2 hours, its major effect occurs within 6-12 hours, and its effect is over in 12-20 hours. Intermediate-acting insulin is usually taken twice a day before breakfast and then before dinner or bedtime.

Long-acting insulin, Lantus or Levemir, is clear in appearance. It starts working within 1-2 hours. Its major effect has no definite peak. Long-acting insulin provides a stable background insulin level. The effect is over in 24 hours. It is not mixed with other insulins. Most people take it once a day, although some require two doses.

Mixed insulins are usually taken once a day before breakfast or the evening meal. Some people require twice a day dosing. They are not mixed with other insulins. Mixed insulins are mixtures of NPH and either regular or rapid-acting insulins. The first number refers to the percentage of NPH and the second to the percentage of regular or rapid acting insulin in the mixture. For example, 70/30 means 70% of the mixture is NPH and 30% is regular or short acting insulin. The rapid-acting mixture starts working in 0-15 minutes. The regular mixture starts working in 15-30 minutes. The major effect of the rapid-acting mixture occurs in 1-3 hours; the major effect of the regular mixture occurs in 2-4 hours; and the major effect of the NPH occurs in 6-12 hours. The effect is complete in 12-20 hours due to NPH.

Inhaled insulin (also known as Exubera) is another way of taking insulin for people using rapid-acting or regular insulin. It is taken within ten minutes of eating using an inhaler, similar to what people use for asthma medication. Its effect is similar to that of the rapid-acting insulin. If you are on an intermediate or long-acting insulin you will continue

to take that by injection. If you smoke or have lung disease you cannot use this insulin. Cough is a potential side effect, but not usually a major problem.

Two other injectable medications have been developed to help control blood sugars after a meal, Pramlintide & Exenatide (also known as Symlin & Byetta). Symlin, for type 1 and type 2 diabetes is injected before meals. Byetta, for type 2 diabetes, is used along with oral medications and injected before breakfast and the evening meal. It improves insulin release after the meal. Both of these medications slow the absorption of food and improve sugar levels after eating. When used with other medications, Byetta can cause low blood sugar. Side effects of these drugs include nausea, vomiting and decreased appetite. If you are taking injectable medication, discuss the proper technique with your healthcare team.

Sitagliptin (also known as Januvia) is a diabetes treatment in a class of drugs known as DDP-4 inhibitors. This medicine improves your body's ability to make insulin and also lowers the liver's production of sugar. It works by keeping the body from breaking down the natural chemicals, similar to Byetta, which are normally produced when you eat. It is taken by mouth once a day and can be used alone or in combination with metformin or the thiazolidinediones for Type 2 Diabetes. When used in this way, it does not cause increased low blood sugars. The side effects are mild and most commonly are headache or upper respiratory infections. If you have significant kidney disease the dose will need to be lowered.

As you can see, there are many medications to help control your blood sugar. All of them need a good program of diet and exercise to succeed. The best regimen for you will be found by regular sugar testing and close follow-up with your doctor. No one regimen is best for everyone. These medications work best as part of a regular plan. It is very important to take them as directed. If you have questions about the directions be sure to write them down and discuss them with your doctor. Before you leave this chapter, take a couple minutes to think about and answer these questions.

What is your sugar goal or Hemoglobin A1c?

Are you at goal?

What changes can you make to reach your goal?

Do you take your medications (if any) regularly and as prescribed?

If not write down why this happens and discuss possible solutions with your doctor.

Make a list of your medications with the current doses. Have this available whenever you contact your doctor.

High blood sugar affects your health in many ways. It can affect your ability to heal wounds, recover from surgery or illnesses and just make you feel tired and not function very well. These are short term changes that can be corrected with lowering of the blood sugar. In this section you will learn about the long-term effects of high blood sugar and other factors that increase your risk for complications of diabetes.

High blood pressure, smoking, high cholesterol or triglycerides, obesity, and inactivity can all increase your risk of complications. Fortunately, these risks can all be decreased or eliminated. Family history also plays a role, and while you can't change it, it also gives you information about your risk.

What concerns you most about diabetes?

Have you had any complications from diabetes?

Do you know someone who has complications from diabetes? What were they?

Pause the program now to answer these questions in your workbook. Press play when you are ready to continue.

In this chapter we will cover several common complications of diabetes including:

- Macrovascular disease
- Heart attacks or coronary artery disease
- Metabolic syndrome
- Stroke
- Peripheral vascular disease
- Microvascular problems
- Eye changes
- Kidney changes
- Nerve changes, and
- Sexual function

You can reduce your risk for complications by controlling your blood pressure and cholesterol.

Blood pressure control, the B of the ABCs of diabetes management, is important for controlling your diabetes and minimizing the risk of complications. The goal for blood pressure is below 130/80. Ways to control blood pressure include decreasing your weight, decreasing your salt intake, increasing your exercise, and taking medication to lower your blood pressure. What is your blood pressure? When was it last checked?

Controlling your cholesterol, the C of the ABCs of diabetes management, is also important to reduce your risk for complications. The goal level for LDL, the bad cholesterol, is less than 100 if you have not had a heart attack and less than 70 if you have had a heart attack. The goal level for HDL, the good cholesterol, is greater than 40 for a man and greater than 50 for a woman. Most people with diabetes can decrease their risk of circulation problems by taking medications called statins, which lower cholesterol

levels. Taking baby aspirin every day can also lower your risk of a heart attack. Ask your provider if statins and /or aspirin are appropriate for you. What is your LDL and HDL cholesterol? When was it last checked?

One of the complications of diabetes is macrovascular disease, the narrowing of large blood vessels. This is the leading cause of disability and death in people with diabetes. By changing your risks factors, you can lower your risk.

Diabetes increases your risk of a heart attack to the same as someone without diabetes who's already had a heart attack. Factors that increase the risk include smoking, obesity, high blood pressure, cholesterol levels, and inactivity. Symptoms of a heart attack may include unexplained chest pain, shortness of breath, nausea, vomiting, or indigestion. Sometimes there are no symptoms and the person having the attack just develops fatigue, ankle swelling etc. Others have it discovered on an EKG when they have a physical. If you think you're having a heart attack call 911 to get help. Ways to prevent coronary artery disease or a heart attack include stopping smoking, controlling weight, and treating high blood pressure.

You, or your family members, without abnormal blood sugar, may have Metabolic syndrome. This is a combination of high blood pressure, abnormal lipids, abnormal sugars and obesity. People with this have an increased risk of macrovascular disease. Encourage your family members to get checked for high fats, blood pressure and sugar as part of their regular medical care information

Blockage of blood vessels in your brain can cause a stroke. Symptoms may include sudden weakness or numbness in part of the body, trouble talking or understanding words, dizziness, falling, trouble seeing, or severe headache. Sometimes symptoms come and go in a few hours; this is called a Transient Ischemic Attack or TIA. If you experience these symptoms, seek medical attention immediately. Prompt treatment for a stroke or TIA can minimize or prevent any loss of function. The risk factors for stroke are the same as for heart attack. In some cases surgery is needed to correct blockage of blood vessels.

Blood flow to your legs and feet is decreased when large or small blood vessels become blocked. This, along with nerve damage, which we will discuss later, can lead to serious infections. Diabetes is a leading cause of leg and foot amputations. Symptoms of circulation problems include pain in your feet or legs with exercise that gets better with rest, and foot sores that you do not feel. Risk factors are the same as for stroke and heart attack. Stopping smoking is very important, and physical exercise may improve your circulation.

To prevent problems with your feet, check them every day and follow some simple rules:

1. Bathe using mild soap and lukewarm water
2. Trim toenails after bathing when they are softer
3. Never go barefoot
4. Walk daily to help circulation
5. Always wear socks with shoes

6. Avoid tight socks or hose that prevent good circulation
7. Get proper fitting shoes
8. Break in new shoes gradually

Check the top and bottom of your feet and between the toes for any breaks in the skin, irritated areas, blisters etc. If you cannot see your feet well, ask someone to check for you or use a mirror. If you see a problem area or have chronic problems with large callouses, or thickened nails, ask your doctor for help. Make sure your shoes fit correctly. If you have foot problems, ask your doctor for the names of people who specialize in shoes for people with diabetes.

Microvascular problems associated with high blood sugar for long periods, causes changes in the small vessels of the eyes, kidneys and nerves. The hemoglobin A1c is a measure of the average sugar level for the last 2-3 months. The lower your A1c level is, the less chance you have of getting these complications. Discuss a goal for your hemoglobin A1c with your doctor. What is your hemoglobin A1c? When was it last done? What is your goal for your A1c?

Many changes in the eye cause no symptoms, so regular exams by someone trained in diabetic eye exams are very important. Your eye care provider will advise you on how often you need rechecks, usually once a year. Laser therapy for lesions is effective in preventing vision loss. Contact your eye care provider immediately if you experience blind spots, flashing lights, or double vision. Changes in the blood sugar (rising or falling) can cause blurred vision. This usually resolves within a few weeks once the sugars are stable. When was your last eye exam? How often are you supposed to see the eye care provider?

As with eye problems, kidney problems do not cause symptoms until significant changes have occurred. The early changes are detected by a yearly examination of the urine for protein, called microalbumin.

Since diabetes is the leading cause of kidney failure, regular monitoring and early treatment are important. Control of blood pressure and blood sugar help prevent kidney damage. If early changes are detected, further injury to your kidneys can be prevented or delayed with medications called ACE inhibitors or ARB's.

Neuropathy, or nerve changes, is the most common problem associated with diabetes. Symptoms include numbness, tingling, burning, or pain, which may come and go. The areas of the body most commonly affected are your feet and legs, but nerve damage may occur anywhere. To prevent foot problems, check your feet daily. In addition, your doctor can do a simple test each year to see if your feet have normal sensation.

Changes in the nerves to the stomach, bowels, and heart can cause symptoms such as nausea, diarrhea, constipation, dizziness or fainting and "silent" heart attacks. All of these are less likely if you have good blood sugar control. When was the sensation in your feet tested last? Do you check your feet daily?

The most common sexual problem for men with diabetes is impotence—an inability to maintain an erection—due to nerve or circulation problems. Talk to your doctor if you have this problem; in many cases, it can be corrected with medication. Sexual problems can also have other physical and psychological causes; your doctor can do the appropriate evaluation.

In women, nerve changes associated with diabetes can lead to less sensation with sexual activity. High blood sugars are associated with more vaginal infections, which can lead to painful intercourse. Control of blood sugar will help these problems.

People with diabetes can have successful pregnancies. If you are planning a pregnancy, it is important to be evaluated for any complications, and have good sugar control before you get pregnant, and maintain good sugar control during the pregnancy. Be sure to talk to your doctor if you are considering pregnancy.

As you can see, taking care of your diabetes really makes a difference. So you need to pay attention to your ABC's. A is your hemoglobin A1c; B is your blood pressure, and C is your cholesterol. Keep a log of your values and talk with your doctor about your personal goals. If you smoke, make a plan to stop. If you are inactive, find ways to increase your activity. Review the exercise section for ways to begin or increase your activity plan.

Making changes now can prevent future problems. Take a moment to write down 2 or 3 changes you want to make and discuss them with your doctor at your next visit. Use your workbook to keep track of the ABC targets, tips to stay healthy, and chart your progress.

We know you're working hard to find the balance in your Personal Plan that:

- you can live with
- will result in target or near-target blood sugars
- will help you feel good and
- will give you the flexibility to do the things that are important to you.

You may be discouraged by the many situations that can upset this balance, even when you are doing all the right things. Your blood sugar balance can be upset by stress, depression, infection, other illnesses, injury, and even some medications.

Recognizing these situations early will let you correct the impact on your blood sugar levels as soon as possible. You may be able to re-balance your blood sugars yourself or call your doctor to help you before your blood sugars are seriously out of control.

This section will focus on managing these unusual situations.

Stress is a part of life. It is the result of our reactions to demands and changes in our lives.

Both positive and negative events or changes can cause stress. Some examples are:

- fear and worry
- financial pressure
- life changes such as marriage, childbirth, divorce, or a death
- reaction to the unknown
- life events like winning a race, work pressure, traffic, or being a crime victim.

We can't always control the events that cause the stress. But we can choose how to respond, and we learn how to manage it!

What types of events do you find stressful? How do you rate your current stress level?

Normal: what you would expect from life

Moderate: occasional stressful periods

High: feel stressed much of the time

Very high: feel stress almost all of the time

As we said earlier, both positive and negative events can trigger the stress response. The results may include:

- Rise in blood sugar
- Rise in blood pressure
- Rapid heart beat
- Stiffness in neck and shoulders
- Nausea, diarrhea
- Lightheaded, dizziness

Negative ways we cope with this stress include:

- Smoking

Final Scripts

- Drinking
- Overeating
- Isolation
- Depression

Ongoing negative stress has been linked to health problems.

There are many positive ways to reduce the health effects of stress. For example:

- Talk to someone about your concerns
- Exercise regularly and moderately
- Maintain a healthy, balanced meal plan
- Decide to adopt a “glass half full” attitude
- Learn and practice muscle and breathing relaxation
- Develop a sense of humor-laugh a lot
- Volunteer to help others
- Listen to music
- Know your limits, learn to say “NO”
- Keep a journal about your feelings. What works or doesn’t work for you?

Is there a connection between diabetes and depression? Yes, depression is common in people with any chronic disease, including diabetes. It is more common in women than men.

The good news is that treatment can help.

Depression is a medical condition that is more than feeling sad or blue once in awhile. The symptoms are present most of the time for at least 2-3 weeks. These symptoms are normal after a major loss, but should begin to decrease after a few weeks.

Symptoms include:

- Feeling down, “blue” or depressed
- Losing interest in activities that were once enjoyable
- Weight gain (or loss)
- Changes in sleep patterns
- Feeling anxious, nervous, or sluggish
- Unusually emotional, crying easily
- Feeling tired or having no energy
- Having difficulty making decisions
- Having thoughts of death or suicide

Depression is not a sign of failure or weakness.

Depression usually results from a combination of physical, emotional, and inherited factors. So how a person’s brain works, how they respond to stressful situations, and a family history of depression can all increase your risk.

Taking good care of yourself can be harder if you’re depressed. For example:

- You might not have enough energy to maintain or increase physical activity
- Checking your blood sugar may also seem like too much trouble

Final Scripts

- Planning healthy meals may seem like too much work
- Feelings of hopelessness may interfere with your ability to solve problems or make healthy choices

If you stop taking care of yourself, your blood sugars can rise. In the short term, this can further sap your energy. In the long term, it can increase your risk for diabetes-related complications.

If you have some of the symptoms of depression, get help as soon as you can so that you can begin to feel better! See your doctor and explain how you have been feeling; ask questions about depression. Your doctor may recommend some health checks and discuss treatment options.

Some people use both medication and counseling to treat their depression. Others may find a single option works well. Your doctor can explain both kinds of treatment to help you choose what is best for you.

Medications for depression can help to change the way your brain works. There are several different kinds of medication. Discuss with your doctor which one might work best for you.

While it may take several weeks for you to notice an improvement in your mood, medication can help restore your sense of well-being.

Counseling can help you learn new skills to cope with stress, and help you look at situations differently so you are less likely to get “stuck” in negative feelings and actions.

Diabetes can make it harder for your body to fight infections. Any type of infection can act as a stress that raises your blood sugar, slowing your body’s response to the infection, and making it harder to treat. Worsening infection can raise your blood sugar higher and lead to dehydration. This spiral can go out of control unless you know what to do.

Infection can be of almost any type: respiratory, bladder, skin, even dental origin. Infections that cause dehydration, such as nausea, vomiting, diarrhea, and fever, are of special concern. When you have an infection, expect your blood sugar to go up. It is important that you check your blood sugar more often than usual. Keep careful records of:

- your blood sugars,
- your symptoms including your temperature,
- the amount of fluid you are able to take,
- your medications.

Call your doctor if you think you have an infection. Be sure to have the above information available. A bacterial infection may require antibiotics. Drink fluids and stay well hydrated. In addition to infections, just about any illness can affect your blood sugar balance, especially if it causes you to change your eating and/or activity patterns.

For instance, let's suppose that you have a stomach ulcer. If you are having stomach pain, you might eat less and different foods than usual. At first, your blood sugar might go low because you are eating less. But the stress of this illness might later raise your blood sugar, even if you are eating less. Pain and decreased activity can also raise your blood sugar.

In situations like these, it is important to see your doctor to treat the illness. It is also important to monitor your blood sugar carefully and discuss this with your doctor. Your doctor may advise you to adjust your diabetes treatment while you are ill to keep your blood sugars as close as possible during the illness.

Your blood sugar balance will probably return to usual when the illness subsides and your eating and activity patterns return to normal.

Injury, like infection and other illness, can raise your blood sugar. Let's say you sprain your ankle. The pain can cause your body to recognize this injury as a stress and raise your blood sugar. Also, your daily activity is likely to be decreased. Your eating patterns might not be disrupted, but the higher blood sugar may need to be treated until the injury heals and you can resume your usual activity level.

Remember: any illness or injury can upset your blood sugar balance. Checking your blood sugar more often and keeping complete notes will help you and your doctor decide the best ways to keep your blood sugar in target during these times.

Medications other than those used for diabetes can also affect your blood sugar. Many are prescribed for other chronic conditions, such as asthma, arthritis, and hypothyroid disease. Steroids, such as prednisone, can raise your blood sugar by making you more insulin resistant. Other medications like cough medicines have significant amounts of sugar in them. Whenever a new medication is prescribed for you, be sure to ask your doctor and your pharmacist not just about the expected and unexpected results of the drug, but also the effect it might have on your diabetes. If the medication is temporary, like the cough medicine, the effect is also likely to be temporary. If the medication is one that you might need to take consistently, check your blood sugars frequently, discuss the results with your doctor, and expect that your diabetes medication may need to be adjusted to keep your blood sugar in balance.

Have you been ill since you have had diabetes? What effect did the illness have on you? On your blood sugar balance? What did you do to take care of yourself? How did it work? Did you have someone to help you?

Chances are that you won't remember the following details about taking care of yourself and your diabetes when you're ill. Take a few moments to make a copy of the "Self-care Reminders" and review them with a family member so that you both will know where to find the information when you are ill, even if it is a year or more from now.

Self-Care Reminders during illness

- Check your blood sugar at least every 4 hours and record results. If you go to bed and go to sleep, ask the family member to wake you up to check your blood sugar and drink fluids.
- Check your temperature every 4 hours and record results
- Watch for dehydration: dry mouth, thirst, decreased urination, dry skin
- Drink at least 8 ounces of calorie-free and caffeine-free liquids every hour. If you are nauseated, sip these fluids throughout the hour.
- If you are unable to eat your usual foods, changing to soft foods or liquids can take the place of fruits, starches and milk. Try to match the amount of carbohydrates you would eat at that time. See your Registered Dietitian or refer to your “Sick day meal plans” to learn more.

Call your doctor if:

- You have 2 low blood sugar readings in a row (be sure to treat using the 15:15 rule)
- Your blood sugars are over 400 for more than 8 hours
- Illness does not improve in 1-2 days (earlier if you have other conditions, such as heart disease)
- You are unable to hold down fluids and are becoming dehydrated
- Temperature is over 101 degrees for 24-48 hours
- You have abdominal pain, shortness of breath, or any unusual symptoms.

Create an “Illness Care Box”

Take a few minutes now, before you become ill, to assemble the supplies you will need if you become ill. You may not feel like going to the store at that time.

The contents of your “Illness Care Box” should include both information and supplies.

Information includes:

- Telephone numbers of your doctor, diabetes educator, pharmacy, emergency care etc.
- Medication instructions
- Written instructions from your doctor or diabetes educator for your illness care
- Sick day menu of liquids or soft foods
- A log for your blood sugars and other information your doctor will need

Supplies include:

- Blood glucose strips and lancets
- Thermometer
- Over-the-counter diarrhea medicine such as Immodium tablets, or liquid, or Kaopectate
- Anti-nausea suppositories. (This is a prescription medication-talk to your doctor)
- Your usual medications for colds, including Tylenol or aspirin
- Non-perishable sick day menu items: can of broth, juice, regular soda

You may not be able to prevent all illnesses, but with a little bit of thought and a few minutes of preparation, you can manage illnesses with minimal upset to your blood sugar balance.

By now you have probably watched the sections of this program that are important to you.

All of the topics are important at some point for most people. We hope that you have watched all of them at least once and some of them perhaps more than once. You should now have information about:

- What diabetes is and the ABC targets
- Coping information
- Healthy eating
- Living an active lifestyle
- Your medications
- Monitoring your blood sugar and your diabetes health
- Managing blood sugar highs and lows
- Reducing risk of complications of diabetes
- Managing your diabetes during unusual situations

We hope that these topics have been helpful. Which ones were the most helpful for you?

You may now be wondering, “what’s next?” Throughout the various sections of this program, you have been asked to pause and identify goals or action steps that are important to you. Let’s go back and pull some of these key action steps together into a personal action plan. First, write down one or two reasons why it is important for you to learn to manage your diabetes. Then answer these questions:

What will I look like in 10 years if I do this?

What will I look like in 10 years if I don’t do this?

Have you made the decision to take charge of your diabetes? How will you do this?
Who will you ask for help to accomplish this?

Other items in your personal action plan should include a plan for:

Healthy eating: What is one change in your eating patterns?

Being active: What is one change you will make in your daily routine to become more active?

Think about how you will do this and who you can call to help you accomplish this (and enjoy it).

Remember that monitoring your blood sugar is important. How many times a day and at what times will you check your blood sugar? During unusual times or when you don’t feel “right,” how often and at what times will you check your blood sugar?

A plan for doctor visits will look something like:

I will schedule a “Diabetes Visit” with my doctor every 6 months if I am doing well
My next visit is due...

How will I remember when to do this?

I will schedule a “Diabetes Visit” with my doctor every 3 months if I have not yet hit my targets.

There is a lot to remember if you have diabetes. Many people find that using a chart helps them remember the different parts of their care. This chart also helps you see how well you have done through the months and even years. Charts like this can be found in many diabetes books or you can make your own in a journal or on your computer.

Some things to track:

Your ABCs:

A1c

Blood Pressure

Cholesterol

Diabetes visits with your doctor

Foot exam

Kidney tests: Urine microalbumin and blood creatinine

Your weight

When you attended classes

Your immunizations

Your other important exams such as mammogram or prostate

If you see your doctor regularly for your diabetes “tune-ups,” and have your lab tests and exams done as scheduled, you and your doctor will truly become partners in assuring your diabetes balance and your long-term health.

What if you “mess up”? First of all, no one in the history of mankind has ever managed their diabetes perfectly! That is not the expectation. Nor is it even possible with the tools we have today.

You may have already encountered those well-meaning, but uninformed people around you who observe what you’re doing or eating and tell you, wagging their finger, “You can’t eat that. You’re a diabetic!”

Many things have changed in our understanding of good diabetes care in recent years. Nothing is more important for the person with diabetes than knowing how to manage their diabetes plan themselves!

Most people with diabetes go through periods when other things assume more importance than the day-to-day aspects of diabetes self-management. Some of these situations might be family stress, work demands, even natural disasters. Sometimes people just get tired of all the work and “ease up” a bit. When you see this happening, recognize that it is normal. Find a positive spin on the situation and return to your program.

For instance, if you were trying to teach a child how to ride a bike, would you scold her if she fell, and then put the bike away for good? Of course not. You would say something encouraging to her and try again. Give yourself the same courtesy by getting back with your program.

When you experience a period of time when all aspects of your diabetes care are going so well that you seem to be on “cruise control”, save your records from that time and review them to help you get back on track after a lapse.

Remember: Diabetes management is fluid. Neither success nor “failure” is permanent!

There are many places you can look for more information about diabetes in general and finding your best plan in particular.

People include:

- Your doctor:
 - Plan for your visits in advance.
 - If possible have the lab tests done before the visit
 - Write your questions.
 - Take your blood sugar records and tracking records with you.
- Your Registered Dietitian
- Your Diabetes Nurse (Certified Diabetes Educator)
- Your Pharmacist

Diabetes Classes can be helpful:

- Check your local hospital or health plan for Diabetes Classes in your area.
- Call your local Affiliate of the American Diabetes Association

There are a number of advantages to attending diabetes classes:

- You get support to help you manage your diabetes as well as learning the “big picture” view.
- You can ask questions.
- Others may ask questions you didn’t think about.
- You can get support from others in the group to see that you are not alone.
- You meet your resources face-to-face.
- You will get written information to take with you.

Written materials include those from:

- Libraries: be sure to read books that have a current copyright.
- Book stores: there are many books about diabetes and food in bookstores. It would be good to get recommendations from your healthcare team first.

Internet Information

Check the website of your health care organization or health plan. You can also visit these web sites for information:

diabetes.org: American Diabetes Association

diabeteseducator.org: American Association of Diabetes Educators

eatright.org: American Dietetic Association

cdc.gov/diabetes: Centers for Disease Control

Congratulations! You have finished the program!

Can't remember it all? Pick one or two things that you will do now or this week.

Remember, it has been said that most of us need to hear something 6 times to remember it and try it for 21 days for it to become a pattern of behavior.

Plan for small steps and set yourself up to succeed.

Don't forget to celebrate your successes!

Treat yourself to something special, such as:

- A manicure
- A walk on a beautiful trail
- A relaxation tape
- A massage
- A new golf club
- An exuberant note in your journal
- A phone call to your children or grandchildren
- Call a supportive friend and invite them to cheer with you

Go back and review different sections at regular intervals in the future. Even if the information is the same, your circumstances or understanding may change. Plan to be an ongoing learner, and give yourself the opportunity to celebrate again and again.

Use the last few pages of your workbook to create your personal action plan and track your progress.