Diabetes-Cardiovascular Disease Toolkit
Patient education tools focused on reducing cardiovascular disease in people with diabetes

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Contains charts to track blood glucose results for one month.
What is pre-diabetes?
Pre-diabetes is a condition that comes before type 2 diabetes. Blood glucose (sugar) levels are higher than normal but aren’t high enough to be called diabetes. Pre-diabetes is a silent disease, meaning you can have it but not know it. The good news is that cutting back on calories and fat, being physically active, and losing weight can reverse pre-diabetes and therefore delay or prevent type 2 diabetes. **Diabetes doesn’t go away once you have it, so it’s better to prevent it in the first place.**

How can type 2 diabetes be delayed or prevented?
In a recent study, people at high risk for type 2 diabetes greatly reduced their risk of getting it by eating less than usual, increasing their physical activity, and losing weight. They
- cut down on fat
- cut back on calories
- exercised about 30 minutes a day, 5 days a week, usually by brisk walking
- lost weight—an average of 15 pounds in the first year of the study
These strategies worked equally well for men and women and particularly well for people aged 60 and older. Several other studies also have shown that type 2 diabetes can be delayed or prevented.

Am I likely to have pre-diabetes?
As you get older, especially if you’re overweight, your chances of having pre-diabetes increase. Your doctor should check your blood glucose level if you are
- 45 or older and overweight
- under age 45 and overweight and have other risk factors for diabetes
If you are 45 or older and your weight is normal, ask your doctor if you need to be checked for pre-diabetes.

Are you at increased risk for diabetes?
You’re at risk for diabetes if you
- are overweight
- are physically inactive
- have a parent, brother, or sister with diabetes
- are African American, Native American, Asian American, Pacific Islander, or Hispanic American
- have had a baby weighing more than 9 pounds or have had gestational diabetes
- have high blood pressure (over 140/90 mmHg)
- have low HDL cholesterol (35 mg/dl or lower) or high triglycerides (250 mg/dl or higher)
How can I find out whether I have pre-diabetes?

Pre-diabetes has no symptoms. You'll need a blood test to check your blood glucose level. Your doctor will use one of these two tests:

The **fasting plasma glucose test** measures your blood glucose after you have gone overnight without eating. This test is most reliable when done in the morning. Pre-diabetes is diagnosed when fasting glucose levels are between 100 and 125 mg/dl. These glucose levels are above normal but not high enough to be called diabetes. A fasting plasma glucose of 126 mg/dl or higher means diabetes.

The **oral glucose tolerance test** measures your blood glucose after an overnight fast and 2 hours after you drink a sweet liquid provided by the doctor or laboratory. Pre-diabetes is diagnosed when blood glucose is between 140 and 199 mg/dl 2 hours after drinking the liquid. These glucose levels are above normal but not high enough to be called diabetes. A 2-hour blood glucose of 200 mg/dl or higher means diabetes.

How can I reverse pre-diabetes?

To help bring your blood glucose levels back to normal, you can

- cut back on calories and fat
- increase your physical activity

Doing so will make it more likely that you’ll lose weight. If you’re overweight, losing 5 to 7 percent of your total weight can help you a lot. For example, if you weigh 200 pounds, your goal would be to lose 10 to 15 pounds.

Cutting Back on Calories and Fat

Place a check mark next to steps you’d like to try for cutting down on calories and fat.

- I’ll cut back on my usual serving sizes.
- I’ll order the smallest portion size when I’m eating out. Or I’ll share an entree.
- I’ll try calorie-free drinks or water instead of regular soft drinks and juice.
- I’ll try low-fat versions of the foods I usually eat. I’ll check the labels to make sure the calories are reduced too.
- When cooking, I’ll bake, broil, or grill and use nonstick pans and cooking sprays.
- I’ll eat more vegetables and whole grain foods.
- Other steps I’ll take to cut down on calories and fat are

Increasing Your Physical Activity

Place a check mark next to the ways you’ll try to add physical activity to your daily routine.

- I’ll take the stairs instead of the elevator.
- I’ll park at the far end of the parking lot.
- I’ll find an activity I enjoy, such as working in the yard or riding a bike.
- I’ll take a walk every day, working up to 30 minutes of brisk walking, 5 days a week. Or I’ll split the 30 minutes into two or three walks.
- I’ll try strength training by lifting light weights several times a week.
- Other ways I’ll try to add physical activity to my daily routine are

Are there any medications to treat pre-diabetes?

No drug has been approved by the U.S. Food and Drug Administration specifically for pre-diabetes. However, several medications available by prescription for diabetes or weight loss have been used in studies. Though certain drugs do seem to delay or prevent diabetes, they don’t work nearly as well as eating less, being active, and losing weight. At this time, experts recommend eating less, increasing physical activity, and losing weight as the best ways to treat pre-diabetes, instead of taking medications.
Getting the Very Best Care for Your Diabetes

Following guidelines from the American Diabetes Association (ADA) can help people with diabetes live longer, healthier lives. Called the Standards of Care, these guidelines describe basic care for people with diabetes. Getting up-to-date care for diabetes can help you prevent long-term problems such as heart disease, stroke, and eye, foot, or kidney problems.

Most of the day-to-day care of diabetes is up to you. You can make choices that will have a positive effect on your diabetes. You choose what, when, and how much to eat. You decide whether to be physically active. You take your medications and keep track of your blood glucose (sugar) levels on your own. Your health care team helps by providing information, teaching you about diabetes care, and checking on your A-1-C, blood pressure, cholesterol, and other measures.

What should happen during visits to my health care provider?
The Standards of Care describe what should happen at your health care provider visits throughout the year. You can use the following sections to make sure your health care team is up-to-date on what you need for good diabetes care.

Check at Every Office Visit

**Blood Pressure**
Your blood pressure numbers tell you the force of blood flow inside your vessels. When your blood pressure is high, your heart has to work harder. If your blood pressure is not on target, meal planning, physical activity, and medications can help. Work with your health care team to plan your strategy.

**Weight**
Preventing weight gain or losing weight may be part of your diabetes care plan. If you need to lose weight, a 10- to 15-pound loss can help you reach your blood pressure, blood glucose, and cholesterol goals. Work with your health care team to plan your strategy.

**Smoking**
If you smoke, ask your health care provider about a plan to help you quit.

Check at Least Every 3–6 Months

**A-1-C**
The A-1-C is the blood glucose check “with a memory.” It tells you your average blood glucose for the past 2 to 3 months. If your A-1-C is not on target, meal planning, physical activity, and medications can help. Work with your health care team to plan your strategy.

Check at Least Once a Year

**Cholesterol**
Your cholesterol numbers tell you the amount of fat in your blood. Some kinds, like HDL cholesterol, help protect your heart. Others, like LDL cholesterol, can clog your blood vessels and lead to heart disease. Triglycerides are another kind of blood fat that raises your risk for a heart attack or a stroke. If your cholesterol levels are not on target, meal planning, physical activity, and medications can help. Work with your health care team to plan your strategy.

**Microalbumin**
The microalbumin test is a check for small amounts of protein in the urine. The results will tell you how well your kidneys function.
Foot Exam
Your health care provider can check your feet for signs of nerve damage or other problems. Foot problems can be avoided if detected and treated early. One of the most important foot tests is to see whether you can feel the vibration of a tuning fork or the light touch of a thin wire called a monofilament.

Eye Exam
Your health care provider can refer you to an eye doctor to check the blood vessels in your eyes for early warning signs of damage. The eye doctor must put drops in your eyes that dilate your pupils in order to do a thorough exam. Treatment can help slow eye disease if it’s found early.

Flu Shot and Pneumonia Vaccine
Every year, ask for a flu shot to keep from getting sick. You should get the pneumonia vaccine at least once. When you turn 65, you should get another pneumonia vaccine, unless you have had one within the past 5 years.

Diabetes Education and Nutrition Counseling
If you need a change in your diabetes management plan, your health care provider should refer you for diabetes education and nutrition counseling.

How can I take charge of my diabetes care?
Review the following list and place a check mark next to the things you’d like to talk about with your health care team. Take this list with you to your next checkup.

- What are the best targets for my A-1-C, blood pressure, and cholesterol?
- What can help me reach my A-1-C target?
- When is my next A-1-C check?
- What can help me reach my blood pressure target?
- What can help me reach my cholesterol targets?
- How can I learn more about taking care of my diabetes?

### Tracking Your Targets
The ADA suggests these targets for most people with diabetes. You may have different targets. You can record your targets and your results in the spaces provided here.

<table>
<thead>
<tr>
<th>What to Do</th>
<th>ADA Targets</th>
<th>My Targets</th>
<th>My Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review blood glucose numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before meals</td>
<td>90–130 mg/dl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 hours after the start of a meal</td>
<td>Below 180 mg/dl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check blood pressure</td>
<td>Below 130/80 mmHg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review meal plan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review activity level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check weight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss questions or concerns</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| At Least Every 3–6 Months          |                      |            |            |
| A-1-C                              | Below 7%             |            |            |

| At Least Once a Year                |                      |            |            |
| Physical exam                       |                      |            |            |
| Cholesterol                         |                      |            |            |
| LDL cholesterol                     | Below 100 mg/dl      |            |            |
| HDL cholesterol                     | Above 40 mg/dl (for men) |      |            |
|                                   | Above 50 mg/dl (for women) |      |            |
| Triglycerides                       | Below 150 mg/dl      |            |            |
| Dilated eye exam                    |                      |            |            |
| Microalbumin                        | Below 30 µg/mg creatinine |      |            |
| Flu shot                            |                      |            |            |

| Once                                |                      |            |            |
| Pneumonia vaccine                   |                      |            |            |
What is type 2 diabetes?
Everyone's blood has some glucose (sugar) in it because your body needs glucose for energy. Normally, your body breaks food down into glucose and sends it into your bloodstream. Insulin, a hormone made by your pancreas, helps get the glucose from the blood into the cells to be used for energy. In people with type 2 diabetes, the pancreas doesn't make enough insulin or the insulin doesn't work very well, or both. Without insulin, your blood glucose rises.

How can type 2 diabetes affect me?
Type 2 diabetes sometimes leads to problems such as heart disease, stroke, nerve damage, and kidney or eye problems. But the good news is that keeping blood glucose, blood pressure, and cholesterol on target can help delay or prevent problems.

How is type 2 diabetes managed?
Most of the day-to-day care of diabetes is up to you. Your plan for taking care of your diabetes will include
- choosing what, how much, and when to eat
- including physical activity in your daily routine
- taking medications (if needed) to help you reach your blood glucose, blood pressure, and cholesterol targets

What can I do to take care of my diabetes?
- Choose targets for the ABCs of diabetes care:
  ➢ A: your A-1-C check for average blood glucose
  ➢ B: your blood pressure
  ➢ C: your cholesterol levels
- Work with your health care team to make a plan that helps you reach your targets.
- Keep track of your numbers.
- If you’re not reaching your targets, change your plan as needed to stay on target.

Your Blood Glucose
Targets established by the American Diabetes Association (ADA) are listed below. Your personal targets may differ. Talk with your health care team about the best targets for you.

You’ll check your own blood glucose using a blood glucose meter. The meter tells you what your blood glucose is at a particular moment.

<table>
<thead>
<tr>
<th>ADA Targets for Blood Glucose</th>
<th>My Usual Results</th>
<th>My Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before meals: 90 to 130 mg/dl</td>
<td>______ to ______</td>
<td>______ to ______</td>
</tr>
<tr>
<td>2 hours after the start of a meal: less than 180 mg/dl</td>
<td>less than ______</td>
<td>less than ______</td>
</tr>
</tbody>
</table>

At least twice a year, your doctor should order an A-1-C check. The results will give your average blood glucose for the past 2 to 3 months.

<table>
<thead>
<tr>
<th>ADA Target for the A-1-C</th>
<th>My Last Result</th>
<th>My Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Your Blood Pressure
At every office visit, your health care team should check your blood pressure.

<table>
<thead>
<tr>
<th>ADA Target</th>
<th>My Last Result</th>
<th>My Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 130/80 mmHg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Your Cholesterol/Triglycerides
Every year, your health care team should check your cholesterol and triglyceride levels.

<table>
<thead>
<tr>
<th>Types</th>
<th>ADA Targets</th>
<th>My Last Result</th>
<th>My Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDL cholesterol</td>
<td>Below 100 mg/dl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDL cholesterol</td>
<td>Above 40 mg/dl (for men)</td>
<td></td>
<td>Above 50 mg/dl (for women)</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>Below 150 mg/dl</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What do I need to know about meal planning, physical activity, and medications?

Meal Planning
Many people think that having diabetes means you can’t eat your favorite foods. But you can still eat the foods you like. It’s the amount that counts. Ask for a referral to a diettian who specializes in diabetes. Together, you’ll design a personalized meal plan that can help you reach your goals.

- **Count carbohydrates (also called carbs).** Carbohydrate foods—bread, tortillas, biscuits, rice, crackers, cereal, fruit, juice, milk, yogurt, potatoes, corn, peas, sweets—raise your blood glucose levels the most. Keeping the amount of carbohydrate in your meals and snacks consistent can help you reach your blood glucose targets.

- **Choose foods low in saturated fat.** Cutting down on foods that have saturated fat can help you lower your cholesterol and prevent heart disease. Foods high in saturated fat include meats, butter, whole milk, cream, cheese, lard, shortening, many baked goods, and tropical oils such as palm and coconut oil.

- **Lose weight if needed.** Try to lose weight by cutting back on food portions and increasing your daily activity.

- **Increase the fiber in your diet.** Include high-fiber foods, such as fruits, vegetables, dried beans and peas, oatmeal, and whole grain breads and cereals, in your diet.

Physical Activity
Regular physical activity helps lower your blood glucose, blood pressure, and cholesterol levels. It also keeps your joints flexible, strengthens your heart and bones, tones your muscles, and helps you deal with stress. Your health care team may want to check your heart function before you start doing new activities. They can help you plan what kinds of physical activities are best for you. The different kinds of activities include

- **Being active throughout the day**
  Examples: gardening, taking the stairs instead of the elevator, or walking around while you talk on the phone—working up to about 30 minutes of activity a day

- **Aerobic exercise**
  Examples: walking, dancing, rowing, swimming, or riding a bicycle—working up to about 30 minutes a day, 5 days a week

- **Strength training**
  Example: lifting light weights several times a week

- **Stretching**
  Example: stretching your whole body, especially your arms and legs

Medications
Many people need medications along with meal planning and physical activity to reach their blood glucose, blood pressure, and cholesterol targets. If you’ve had type 2 diabetes for a while, you may need a change in your diabetes pills to reach your blood glucose targets. If you need insulin shots, it doesn't mean that your diabetes is getting worse. It just means that you need a change in how you reach your target numbers. If it’s difficult for you to reach your target numbers, talk with your health care team about whether medications can help.
Keeping your blood glucose (sugar) in the recommended target range can prevent or delay the long-term health problems caused by diabetes. Most of the steps needed to take care of diabetes are things you do yourself:

- using a meal plan
- being physically active
- taking medications
- trying to reach your blood glucose targets most of the time
- keeping track of your blood glucose numbers using a blood glucose meter and the results of your A-1-C checks

Why should I try to keep my blood glucose on target?
The closer your blood glucose stays to your target range, the more you’ll lower your risk of blindness or diabetic eye disease, kidney disease, foot problems, nerve damage, tooth and gum disease, and skin problems. You may also lower your risk for heart attack or stroke.

What makes my blood glucose levels rise or fall?
Blood glucose levels rise and fall throughout the day. One key to taking care of your diabetes is understanding why they rise or fall. If you know the reasons, you can take steps to help keep your blood glucose on target.

What can make blood glucose rise?
- a meal or snack with more food or more carbohydrates (carbs) than usual
- inactivity
- not enough diabetes medication
- side effects of other medications
- infection or other illness
- changes in hormone levels, such as during menstrual periods
- stress

What can make blood glucose fall?
- a meal or snack with less food or fewer carbs than usual
- drinking alcoholic beverages, especially on an empty stomach
- missing a meal or snack
- extra activity
- too much diabetes medication
- side effects of other medications

What are the blood glucose targets for people with diabetes?
The targets recommended by the American Diabetes Association (ADA) are listed below. Talk with your health care team about your personal targets.

<table>
<thead>
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<th>My Targets</th>
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<tr>
<td>2 hours after the start of a meal: less than 180 mg/dl</td>
<td>less than _____</td>
<td>less than _____</td>
</tr>
</tbody>
</table>
What’s the best way to keep track of my blood glucose levels?

Checking your blood glucose will tell you whether you’re reaching your blood glucose targets. There are two ways to do it:

- **using a blood glucose meter** to learn what your blood glucose is at a particular moment
- **getting a blood glucose check called an A-1-C** at least twice a year

Both ways can be useful to you.

**Using a blood glucose meter**

Many people use their meter to check their blood glucose several times a day. Talk with your health care team about when and how often to check your blood glucose. They can give you a record book where you can write down your blood glucose numbers. You can learn how to use this information to make decisions about food, physical activity, and medications.

Your results tell you how well your diabetes care plan is working. You’ll be able to look at your record book and see patterns—similar results over and over. Looking at these patterns can help you and your health care team fine-tune your diabetes care plan in order to reach your targets.

**Getting an A-1-C blood glucose check**

The A-1-C check is the blood glucose check “with a memory.” It tells you what your average blood glucose level has been for the past 2 to 3 months. If your number is 7% or higher, you may need a change in your diabetes care plan.

**Translate your A-1-C**

Find your A-1-C number on the left. Then, check the chart to learn your average blood glucose for the past 2 to 3 months.

<table>
<thead>
<tr>
<th>A-1-C</th>
<th>Average blood glucose</th>
</tr>
</thead>
<tbody>
<tr>
<td>6%</td>
<td>135</td>
</tr>
<tr>
<td>7%</td>
<td>170</td>
</tr>
<tr>
<td>8%</td>
<td>205</td>
</tr>
<tr>
<td>9%</td>
<td>240</td>
</tr>
<tr>
<td>10%</td>
<td>275</td>
</tr>
<tr>
<td>11%</td>
<td>310</td>
</tr>
<tr>
<td>12%</td>
<td>345</td>
</tr>
</tbody>
</table>

**My A-1-C**

My last A-1-C was _____.
My target for my A-1-C is _____.
My next A-1-C check will be _________.

What if my blood glucose is frequently too high?

Call your health care provider for an early appointment if your blood glucose numbers are often higher than your targets. Talk with your health care team about recommended changes in your meal plan, your physical activity, or your diabetes medications when high blood glucose occurs.

**What if my blood glucose is too low?**

Low blood glucose, also called hypoglycemia, occurs when your blood glucose level drops below 70 mg/dl. Symptoms include hunger, shakiness and nervousness, sweating, light-headedness, sleepiness, confusion, and anxiety.

If you think your blood glucose is too low, use your meter to check it. If the result is 70 mg/dl or below, follow these treatment guidelines to bring it back up to a safer range. Have one of the items in this list right away to raise your blood glucose:

- 2 to 5 glucose tablets
- ½ cup (4 ounces) of fruit juice
- ½ cup (4 ounces) of a regular (not diet) soft drink
- 8 ounces of milk
- 5 to 7 pieces of hard candy
- 2 teaspoons of sugar or honey

After 15 minutes, check your blood glucose again. If it’s still below 70 mg/dl, have another serving. Repeat these steps until your blood glucose is at least 70 mg/dl.

**What should I do about frequent low blood glucose?**

If your blood glucose is often low, you may need a change in your meal plan, physical activity, or diabetes medications. Keep track of low blood glucose episodes in your record book and note possible causes, such as unexpected physical activity. Then talk it over with your health care team.
Insulin resistance is a condition that increases your chances of developing type 2 diabetes and heart disease. When you have insulin resistance, your body has problems responding to insulin. Eventually, your blood glucose (sugar) levels rise above normal. The good news is that cutting calories, adding physical activity to your daily routine, and losing weight can reverse insulin resistance and lessen your chances of getting type 2 diabetes and heart disease.

**What does insulin do?**

Insulin's job is to help the body use glucose for energy. It's a hormone, one of the chemicals your body makes to help trigger or regulate processes in the body. Insulin is made by the pancreas, an organ located behind the lower part of the stomach. Your pancreas usually makes just the right amount of insulin to match the food you eat.

Insulin acts as the doorman at the entrance to your cell. Food arrives at the door of a cell in the form of blood glucose. When your insulin is working effectively, it opens the door, just like a doorman. Then blood glucose enters the cell where it is used for energy.

When you have insulin resistance, your cells don't respond to insulin—they resist insulin's commands—and insulin can't do its job. Blood glucose still arrives at the cell door, but insulin can't work effectively and the door to the cell won't open. Your pancreas tries to keep blood glucose levels normal by making extra insulin. At first, the extra insulin helps. But after a while, even extra insulin can't open the cell doors and your blood glucose can rise. If your blood glucose is high, you may have either pre-diabetes or even diabetes.

**What are the risk factors for insulin resistance?**

You're more likely to have insulin resistance if you

- are overweight
- are physically inactive
- are a woman with a waist measurement at your belly button over 35 inches or a man with a waist measure over 40 inches
- have a parent, brother, or sister with type 2 diabetes
- have polycystic ovary syndrome
- are over age 45
- have a blood pressure over 140/90 mmHg
- have low HDL (good) cholesterol levels (35 mg/dl or lower)
- have high levels of a fat called triglycerides in the blood (250 mg/dl or higher)

All of these risk factors put you at risk for heart disease.
How is insulin resistance diagnosed?
At this time, there is no commonly used test to diagnose insulin resistance. People with insulin resistance usually have no symptoms. Your doctor can review your risk factors and then consider whether you’re likely to be insulin-resistant. If you have a risk factor for insulin resistance, your doctor should check your fasting blood glucose levels to see whether you have pre-diabetes or even diabetes.

How can I prevent or reverse insulin resistance?
You can cut calories and be physically active. If you do, it’s more likely you’ll lose weight. Remember, you don’t have to lose a lot; even a loss of 10 pounds can help.

Cut calories
Place a check mark next to the steps you’d like to try for cutting down on calories every day. A dietitian can help you find other ways to cut calories and plan healthy meals.

☐ I’ll cut back on my usual serving sizes.
☐ I’ll order the smallest portion size when I’m eating out. Or I’ll share an entree.
☐ I’ll try calorie-free drinks or water instead of regular soft drinks and juice.
☐ I’ll try low-fat versions of the foods I usually eat. I’ll check the labels to make sure the calories are reduced too.
☐ I’ll choose baked, grilled, and steamed foods instead of fried.
☐ I’ll eat more vegetables and whole grain foods.
☐ I’ll ask for salad dressings and sauces “on the side” and then use as little as possible.
☐ I’ll use nonstick pans or cooking sprays.
☐ I’ll cut back on high-fat toppings, such as butter, margarine, sour cream, regular salad dressing, mayonnaise, and gravy. Instead, I’ll season my food with barbecue sauce, salsa, lemon juice, or other low-fat choices.
☐ I’ll stock my kitchen with low-calorie, low-fat snacks. I’ll keep serving sizes small.
☐ Another way I’ll try to cut calories is______________________________

Be physically active
Place a check mark next to the ways you’ll try to add physical activity to your routine.

☐ I’ll take the stairs instead of the elevator.
☐ I’ll walk around while I talk on the phone.
☐ I’ll find an activity I enjoy, such as dancing, gardening, or playing with the kids.
☐ I’ll be active around the house by working in the garden and washing the car.
☐ I’ll get up to change the TV channel.
☐ I’ll take the dog for a walk.
☐ I’ll park at the far end of the shopping center lot and walk to the store.
☐ At the grocery store, I’ll walk down every aisle.
☐ I’ll take a walk every day after lunch, working up to 30 minutes of brisk walking, 5 days a week. Or I’ll split the 30 minutes into two or three walks.
☐ I’ll try strength training by lifting light weights several times a week.
☐ Another way I’ll try to add physical activity to my day is ______________________________

_______________________________________

Does insulin resistance affect people who already have type 2 diabetes?
Yes, insulin resistance usually starts before type 2 diabetes is diagnosed and then continues, making it more difficult for you to reach your blood glucose targets. If you have type 2 diabetes, you can fight insulin resistance by cutting calories, being physically active, and losing weight if you need to. Talk with your health care team about ways to achieve your goals using meal planning, physical activity, and medications.

American Diabetes Association
1–800–DIABETES (342–2383)  www.diabetes.org
©2004 by the American Diabetes Association, Inc. 03/04
How can food choices help keep my heart and blood vessels healthy?

Diabetes increases your chances of having a heart attack or a stroke. But you can protect your heart and blood vessels by

- eating less of the foods that raise your blood cholesterol and your chances of heart disease
- eating more of the foods that lower your cholesterol and your chances of heart disease

Choosing foods wisely can also help you lose weight and keep your blood glucose (sugar) levels on target.

How can I make wise food choices?

Try these steps to help protect your heart and blood vessels:

- **Eat less fat, especially saturated fat and trans fats, and fewer high-cholesterol foods.** Saturated fat is found in meat, poultry skin, butter, 2% or whole milk, ice cream, cheese, lard, and shortening. You’ll also want to cut back on foods that contain palm oil or coconut oil.

  *Trans* fats are produced when liquid oils are turned into solids. This process is called hydrogenation. Cut back on foods that list hydrogenated or partially hydrogenated oils on the labels. This type of fat is found in crackers and snack foods, baked goods like cookies and donuts, french fries, and stick margarine. Use a soft margarine in place of butter or stick margarine. Look for soft margarine in a tub that lists a liquid oil such as corn, safflower, soybean, or canola oil as the first ingredient.

  Egg yolks and organ meats such as liver are high in cholesterol. Check the Nutrition Facts and the list of ingredients on food labels.

- **Choose the kinds of fat that can help lower your cholesterol.** If you use cooking oil, choose olive oil or canola oil. Nuts have a healthy type of fat as well. Corn oil, sunflower oil, and safflower oil also protect your heart. However, all oils, nuts, and fats are high in calories. If you’re trying to lose weight, you’ll want to keep servings small.

- **Have fish 2 or 3 times a week.** Albacore tuna, herring, mackerel, rainbow trout, sardines, and salmon are high in omega-3 fatty acids, a type of fat that may help lower blood fat levels and prevent clogging of the arteries.

- **Use special cholesterol-lowering margarine.** Having 2 to 3 tablespoons of a cholesterol-lowering margarine every day can lower your cholesterol. These margarines contain plant stanols or plant sterols, ingredients that keep cholesterol from being absorbed. You’ll find several types at the grocery store in the margarine section.
• **Cook with less fat.** You can cut down on total fat by broiling, microwaving, baking, roasting, steaming, or grilling foods. Using nonstick pans and cooking sprays instead of cooking with fat also helps.

• **Eat more foods that are high in fiber.** Foods high in fiber may help lower blood cholesterol. Fiber also can prevent problems with the digestive system such as constipation. Oatmeal, oat bran, dried beans and peas (such as kidney beans, pinto beans, and black-eyed peas), fruits, and vegetables are good sources of fiber.

• **Include more soy protein in your meals and snacks.** Replacing foods high in saturated fat with soy-containing foods may help lower your cholesterol. Foods with soy protein include soybeans, tofu, miso, tempeh, soy nuts, soy milk, textured soy protein, soy protein powder, and items that are made from soybeans, such as burgers.

• **Limit your alcoholic beverage consumption.** Drinking light to moderate amounts of alcohol is associated with a low risk of heart disease, perhaps by raising HDL (good) cholesterol levels. There isn't enough information to recommend that people who don’t drink should start drinking alcohol to reduce heart risk. But, for those who do drink alcohol, 1 serving daily for women and up to 2 servings daily for men have been associated with good health. Drinking more than 1 to 2 drinks per day isn’t helpful; it contributes unnecessary calories and may actually raise your blood pressure and triglycerides. In addition, it can cause other health problems. It’s best to discuss drinking alcohol with your health care provider to find out whether it may be helpful for you.

### A day of heart-healthy meals

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Between-meal snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>fresh orange sections</td>
<td>sliced turkey on whole wheat bread with lettuce and mustard</td>
<td>baked chicken</td>
<td>dried fruit</td>
</tr>
<tr>
<td>oatmeal with 1% milk and raisins</td>
<td>carrot sticks</td>
<td>baked potato with cholesterol-lowering margarine and low-fat sour cream</td>
<td>air-popped popcorn</td>
</tr>
<tr>
<td>toast with cholesterol-lowering margarine</td>
<td>cherry tomatoes</td>
<td>steamed green beans</td>
<td>rice cakes with peanut butter</td>
</tr>
<tr>
<td>coffee with 1% milk</td>
<td>fresh apple</td>
<td>tossed salad with low-fat salad dressing</td>
<td>low-fat frozen yogurt</td>
</tr>
</tbody>
</table>

For more help, ask your health care team for copies of these brochures:

• Toolkit No. 7: *Protect Your Heart: Choose Fats Wisely*

• Toolkit No. 8: *Protect Your Heart: Cook with Heart-Healthy Foods*

• Toolkit No. 9: *Protect Your Heart: Check Food Labels to Make Heart-Healthy Choices*
Why should I choose fats wisely?
Diabetes increases your chances of having a heart attack or a stroke. But you can protect your heart and blood vessels by choosing fats wisely. Some kinds of fat, such as butter and shortening, can increase your cholesterol and your chances of heart disease. Other kinds, such as olive oil and canola oil, protect your heart by lowering your cholesterol levels.

All fats are high in calories. If you’re trying to lose weight, you’ll still want to limit the amount of fat you eat. The types and amounts of fat appear in the Nutrition Facts area of food labels.

How can I choose fats wisely?
Try these steps to protect your heart and blood vessels:

- Eat less total fat, especially less saturated fat and trans fat.
- Cut back on foods that are high in cholesterol.
- Choose the kinds of fat that can help lower your cholesterol levels.

Fats that increase your chances of heart disease and stroke
Saturated fat, trans fat, and cholesterol increase your blood cholesterol and can cause a buildup of materials that can clog your blood vessels. The blood supply to your heart can be blocked, leading to a heart attack. A blockage in the blood vessels going to your brain can result in a stroke.

Sources of saturated fat
- bacon and bacon grease
- butter
- chocolate
- coconut and coconut oil
- cream sauce
- high-fat dairy products, such as cheese, cream, ice cream, whole milk, 2% milk, and sour cream
- fatback and salt pork
- gravy made with meat drippings
- lard and shortening
- high-fat meats like regular ground beef, bologna, hot dogs, sausage, and spareribs
- palm oil and palm kernel oil
- poultry skin

Trans-unsaturated fatty acids (trans fats)
Trans fats can also raise your cholesterol level.

Sources of trans fat
- processed foods like snacks and baked goods with hydrogenated oil or partially hydrogenated oil
- stick margarines
- shortening
- some fast food items such as french fries
Cholesterol
Your body makes some of the cholesterol in your blood. The rest comes from the foods you eat. Foods from animals are the main sources of dietary cholesterol.

### Sources of cholesterol
- high-fat dairy products
- egg yolks
- liver and other organ meats
- high-fat meat and poultry

Fats that can protect your heart
Monounsaturated fats, polyunsaturated fats, and special cholesterol-lowering margarines can actually protect your heart by lowering your blood cholesterol. That’s why it’s better to use them instead of saturated fat. Another kind of protective fat, called omega-3 fatty acids, is found in some types of fish.

#### Monounsaturated fat
Monounsaturated fat, one type of unsaturated fat, can lower your blood cholesterol.

### Sources of monounsaturated fat
- avocado
- canola oil
- nuts like almonds, cashews, pecans, and peanuts
- olive oil and olives
- peanut butter and peanut oil
- sesame seeds

#### Polyunsaturated fat
Polyunsaturated fat, another type of unsaturated fat, protects your heart.

### Sources of polyunsaturated fat
- corn oil
- cottonseed oil
- safflower oil
- soybean oil
- sunflower oil
- walnuts
- pumpkin or sunflower seeds
- soft (tub) margarine
- mayonnaise
- salad dressings

### Omega-3 fatty acids
This type of fat helps prevent clogging of the arteries. Some types of fish are high in omega-3 fatty acids. Eat fish, prepared a low-fat way, 2 or 3 times a week. Choose broiling, baking, grilling, or steaming. You can also buy tuna packed in water and make tuna fish salad with low-fat or fat-free mayonnaise.

### Sources of omega-3 fatty acids
- albacore tuna
- herring
- mackerel
- rainbow trout
- sardines
- salmon

#### Special cholesterol-lowering margarine
Having 2 to 3 tablespoons of a cholesterol-lowering margarine every day can lower your cholesterol. These margarines contain plant stanols or plant sterols, ingredients that keep cholesterol from being absorbed. You’ll find several types at the grocery store in the margarine section.

For more help, ask your health care team for copies of these brochures:
- Toolkit No. 6: *Protect Your Heart: Make Wise Food Choices*
- Toolkit No. 8: *Protect Your Heart: Cook with Heart-Healthy Foods*
- Toolkit No. 9: *Protect Your Heart: Check Food Labels to Make Heart-Healthy Choices*
You can protect your heart and blood vessels by eating less saturated fat and by choosing the types of fats that help your cholesterol levels. The ingredients you use and the way you cook can make a big difference. Try these tips:

- Cook with less fat.
- Choose lean meats, poultry, and pork.
- Choose low-fat dairy foods.
- Substitute lower-fat ingredients in recipes.

**Cook with less fat**

**Use a low-fat or fat-free way to cook.** You can cut down on total fat by broiling, microwaving, baking, roasting, steaming, or grilling foods. Nonstick pans and cooking sprays also work well.

**Boost the flavor with seasonings and sauces instead of fats.** Look for recipes that use herbs and spices for flavor instead of fat. Try these ways to season food:

- Squeeze fresh lemon juice on steamed vegetables, broiled fish, rice, or pasta.
- Try lemon pepper or mesquite seasoning on chicken.
- Use onion and garlic to liven up meats and vegetables.
- Try baking chicken or pork with barbecue sauce or low-fat Italian dressing.

**Trim the fat when possible.** Cut away visible fat from meat and poultry. Roast food on a rack to let the fat drip off. Make soups a day ahead so you can chill them and then remove the fat that has risen to the top.

**Choose lean cuts of beef, poultry, and pork**

To help keep your cholesterol on target, choose lean cuts of meat and poultry. Try some of your favorite recipes with these lean choices:

- When selecting beef, choose lean cuts such as round, sirloin, and flank steak; tenderloin; rib, chuck, or rump roast; T-bone, porterhouse, or cubed steak.
- Choose poultry such as chicken, turkey, or Cornish hen without the skin. The white breast meat is lower in fat than the darker meat in the thigh and leg pieces.
- Lean types of pork include ham, Canadian bacon, pork loin, and center loin chops.

**Choose low-fat dairy products**

Dairy products can be part of your meal plan. To cut back on saturated fat, choose items made with non-fat or low-fat milk. Some low-fat choices are listed below.

- Milk: Fat-free (skim), 1/2%, and 1% milk and low-fat buttermilk
- Yogurt: low-fat or fat-free yogurt
- Cheese: cottage cheese, grated Parmesan, and any cheese with 3 grams of fat or less per ounce
- For a frozen treat, try low-fat ice cream or frozen yogurt instead of ice cream. You can also freeze regular yogurt for a treat.
Substitute lower-fat ingredients in your favorite recipes

Try extra-lean ground beef or ground turkey instead of ground beef. Use low-fat mayonnaise and salad dressings instead of the regular types. Try plain yogurt in place of sour cream or mayonnaise. You can substitute up to half the margarine or butter in some recipes with applesauce.

<table>
<thead>
<tr>
<th>Wise food choices: What to try and why</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instead of...</td>
</tr>
<tr>
<td>whole milk or 2% milk</td>
</tr>
<tr>
<td>regular cheese</td>
</tr>
<tr>
<td>snack foods with hydrogenated oil, palm oil, or coconut oil</td>
</tr>
<tr>
<td>regular mayonnaise</td>
</tr>
<tr>
<td>sour cream</td>
</tr>
<tr>
<td>regular stick margarine</td>
</tr>
<tr>
<td>fried chicken</td>
</tr>
<tr>
<td>bologna, salami, or pastrami</td>
</tr>
<tr>
<td>cookies with hydrogenated oil, palm oil, or coconut oil</td>
</tr>
<tr>
<td>pork chop</td>
</tr>
<tr>
<td>short ribs</td>
</tr>
</tbody>
</table>

A day of heart-healthy meals

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Between-meal snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>bran cereal with skim milk</td>
<td>split pea soup</td>
<td>grilled chicken breast without skin marinated in low-fat Italian dressing</td>
<td>raw vegetables with low-fat dip</td>
</tr>
<tr>
<td>rye toast with cholesterol-lowering margarine</td>
<td>tuna salad made with low-fat mayonnaise</td>
<td>rice</td>
<td>fresh fruit</td>
</tr>
<tr>
<td>orange juice</td>
<td>whole-grain crackers</td>
<td>steamed broccoli</td>
<td>oat bran muffin</td>
</tr>
<tr>
<td>coffee with skim milk</td>
<td>celery and carrot sticks</td>
<td>tossed salad with low-fat salad dressing</td>
<td>whole-grain crackers with low-fat cheese</td>
</tr>
<tr>
<td></td>
<td>fresh orange</td>
<td>fresh pear</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>oatmeal cookie</td>
<td></td>
</tr>
</tbody>
</table>

For more help, ask your health care team for copies of these brochures:

- Toolkit No. 6: *Protect Your Heart: Make Wise Food Choices*
- Toolkit No. 7: *Protect Your Heart: Choose Fats Wisely*
- Toolkit No. 9: *Protect Your Heart: Check Food Labels to Make Heart-Healthy Choices*
You can make heart-healthy choices by checking food labels.

- The **Nutrition Facts** tell you the serving size and the amount of various nutrients such as total fat, saturated fat, cholesterol, sodium, and fiber per serving.
- **Nutrient content claims** such as “low-fat” provide a reliable description of the product.
- The **list of ingredients** shows the ingredients in descending order by weight.

**The Nutrition Facts**

Here's an example of a Nutrition Facts section. At the top, you'll see the serving size and the number of servings per container. How does the serving size compare to your usual serving? For example, if you usually eat 2 cups of chili with beans, you'll need to double all of the numbers in this Nutrition Facts section.

### Nutrition Facts

**Chili with Beans**

<table>
<thead>
<tr>
<th>Serving Size: 1 cup (253 g)</th>
<th>Servings per container: 2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Amount per Serving:</th>
<th>Calories 260</th>
<th>Calories from Fat 72</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Daily Value</td>
<td>13%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Total Fat</strong></td>
<td>8g</td>
<td>13%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>3g</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Cholesterol</strong></td>
<td>130mg</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Sodium</strong></td>
<td>1010mg</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Total Carbohydrate</strong></td>
<td>22g</td>
<td>7%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>9g</td>
<td>36%</td>
</tr>
<tr>
<td>Sugars</td>
<td>4g</td>
<td></td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>25g</td>
<td></td>
</tr>
</tbody>
</table>

**Total Amounts**

To make heart-healthy food choices, check the total amounts so you can cut back on:

- total fat
- saturated fat
- cholesterol
- sodium

You'll also see information on fiber. To lower your risk of heart disease, choose foods with more fiber.

**How to use information on total amounts**

Total amounts are shown in grams, abbreviated as g, or in milligrams, shown as mg. A gram is a very small amount and a milligram is one-thousandth of that. For example, a nickel weighs about 5 grams. So does a teaspoonful of margarine. Here are ways to use the information on total amounts:

- Compare labels of similar foods. Choose the product with a smaller amount of saturated fat, cholesterol, and sodium. Try to select foods with more fiber.
- Keep in mind that a low-fat food has 3 grams of fat per serving.
- Choose food with the least amount of saturated fat. Look for foods with ½ or less of the total fat as saturated fat.
- Another practical way of choosing lower-fat foods is to select foods that have 3 grams of fat or less for every 100 calories, every 15 grams of carbohydrate, or every 7 to 8 grams of protein.

**How much fat should I eat in a day?**

A general guideline is 40 to 60 grams of fat per day for many women or for people on lower calorie diets and 60 to 80 grams of fat per day for most men. Talk with your health care team about how many grams of fat would be right for you. Some people may need more or less fat.
depending on their targets for blood glucose (sugar) and cholesterol.

Check food labels to see how much fat you’re getting. You can also ask your health care team for saturated fat, cholesterol, sodium, and dietary fiber targets. Write your daily targets here:

- Total fat (grams): ____________
- Saturated fat (grams): ____________
- Cholesterol (milligrams): ____________
- Sodium (milligrams): ____________
- Dietary fiber (grams): ____________

### Nutrient Content Claims

A quick way to find heart-healthy foods is to check the nutrient content claims on the label. For example, you’ll see the claim “less sodium” on some brands of chili with beans. This means the product has at least 25% less sodium than the regular version. You can rely on claims such as “low fat” because the government has defined those terms, as shown here. It’s against the law for food manufacturers to make false claims.

#### Claims for fat

<table>
<thead>
<tr>
<th>Claim</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat free</td>
<td>less than 0.5 g of fat or saturated fat per serving</td>
</tr>
<tr>
<td>Saturated fat free</td>
<td>less than 0.5 g of saturated fat and less than 0.5 g of trans fatty acids</td>
</tr>
<tr>
<td>Low fat</td>
<td>3 g or less of total fat</td>
</tr>
<tr>
<td>Low saturated fat</td>
<td>1 g or less</td>
</tr>
<tr>
<td>Reduced fat or less fat</td>
<td>at least 25% less fat than the regular version</td>
</tr>
</tbody>
</table>

#### Claims for cholesterol

<table>
<thead>
<tr>
<th>Claim</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholesterol free</td>
<td>less than 2 mg per serving</td>
</tr>
<tr>
<td>Low cholesterol</td>
<td>20 mg or less</td>
</tr>
<tr>
<td>Reduced cholesterol or less cholesterol</td>
<td>at least 25% less cholesterol than the regular version</td>
</tr>
</tbody>
</table>

#### Claims for sodium

<table>
<thead>
<tr>
<th>Claim</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium free or salt free</td>
<td>less than 5 mg per serving</td>
</tr>
<tr>
<td>Very low sodium</td>
<td>35 mg or less</td>
</tr>
<tr>
<td>Low sodium</td>
<td>140 mg or less</td>
</tr>
<tr>
<td>Reduced sodium or less sodium</td>
<td>at least 25% less sodium than the regular version</td>
</tr>
</tbody>
</table>

#### Claims for fiber

<table>
<thead>
<tr>
<th>Claim</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High fiber</td>
<td>5 g or more per serving</td>
</tr>
<tr>
<td>Good source of fiber</td>
<td>2.5 g to 4.9 g per serving</td>
</tr>
</tbody>
</table>

### List of Ingredients

**Chili with Beans**

Ingredients: water, beef, beans, tomatoes, modified food starch, chili powder, salt, sugar, flavoring.

#### Chili with Beans

For more help, ask your health care team for copies of these brochures:

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- Toolkit No. 7: *Protect Your Heart: Choose Fats Wisely*
- Toolkit No. 8: *Protect Your Heart: Cook with Heart-Healthy Foods*
What is carbohydrate counting?
Counting carbohydrates is one way to plan your meals and keep your blood glucose (sugar) on target. Carbohydrates are one of the three main energy sources in food, along with protein and fat. It's the balance between the carbohydrates you eat and insulin that determines how much your blood glucose levels rise after you eat. With the right balance of carbohydrates and insulin, your blood glucose level will usually stay in your target range. Counting carbohydrate servings can help you reach your blood glucose goals and prevent diabetes complications. You can learn to use carbohydrate counting to choose what and how much to eat. Carbohydrate counting can be easier to use than other meal planning methods. If you take insulin, you can use carbohydrate counting to decide how much insulin to take.

Which foods have carbohydrate?
The foods listed in the chart below are mostly carbohydrate. These foods affect your blood glucose much more than other foods such as meat and meat substitutes, vegetables, or fats.

<table>
<thead>
<tr>
<th>Carbohydrate foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>• bagels, biscuits, bread, crackers, taco shells, and</td>
</tr>
<tr>
<td>tortillas</td>
</tr>
<tr>
<td>• dried beans (such as kidney or pinto beans) and</td>
</tr>
<tr>
<td>peas (such as black-eyed or split peas)</td>
</tr>
<tr>
<td>• ready-to-eat or cooked cereal</td>
</tr>
<tr>
<td>• fruit (canned, dried, and fresh) and fruit juice</td>
</tr>
<tr>
<td>• pasta and rice</td>
</tr>
<tr>
<td>• milk, soy milk, and yogurt</td>
</tr>
<tr>
<td>• starchy vegetables such as corn, peas, potatoes,</td>
</tr>
<tr>
<td>and sweet potatoes</td>
</tr>
<tr>
<td>• sweets such as cake, cookies, ice cream, jam, jelly,</td>
</tr>
<tr>
<td>and sugar</td>
</tr>
<tr>
<td>• pancakes and waffles</td>
</tr>
<tr>
<td>• popcorn, potato chips, and pretzels</td>
</tr>
</tbody>
</table>

Large servings of salads or cooked vegetables (such as 1½ cups of cooked carrots) are counted as carbohydrate servings too. Some foods, such as pizza, casseroles, and soups, are a combination of carbohydrate, protein, and fat.

How many servings of carbohydrate foods are best for me at each meal and snack?
The recommended number of servings is based on your weight, activity level, diabetes medications, and goals for your blood glucose levels. A member of your health care team, such as a dietitian, can work with you to make a personalized plan. For many people, having 3 or 4 servings of carbohydrate foods at each meal and 1 or 2 servings for snacks works well.

What about other foods such as meats, vegetables, and fats?
To have a balanced meal plan, you'll want to include protein foods, such as beef, chicken, and fish, as well as vegetables and a moderate amount of healthy fats, such as olive oil and nuts. Talk with your health care team about what to eat for your meals and snacks.
Why should I pay attention to serving sizes for carbohydrate foods?

The amount of carbohydrate you eat can make a big difference in your blood glucose. If you eat more carbohydrate than usual at a meal, your blood glucose level is likely to be higher than usual several hours afterward.

The chart below shows the size of one serving for each food. One carbohydrate serving equals 15 grams of carbohydrate. You can check serving sizes with measuring cups and spoons or a food scale, or by using the Nutrition Facts section on the package.

How to use the Nutrition Facts on food labels

To determine your serving size, check the label for the number of carbohydrate grams (g), remembering that one carbohydrate serving is equal to 15 grams of carbohydrate.

- If the total carbohydrate is 15 grams, then check the top of the food label for the serving size for one serving.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving Size: 6 crackers</td>
</tr>
<tr>
<td>Total Carbohydrate: 15g</td>
</tr>
</tbody>
</table>

One carbohydrate serving: 6 crackers

- If the total is more than 15, then divide the total by 15. For example, a food with 30 grams of carbohydrate contains 2 carbohydrate servings, because 30 divided by 15 equals 2.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving Size: 4 cookies</td>
</tr>
<tr>
<td>Total Carbohydrate: 30g</td>
</tr>
</tbody>
</table>

One carbohydrate serving: 2 cookies

- If the total is less than 15, then multiply the serving size so that your serving will have 15 grams of carbohydrate.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving Size: 1 piece</td>
</tr>
<tr>
<td>Total Carbohydrate: 5g</td>
</tr>
</tbody>
</table>

One carbohydrate serving: 3 pieces

How do I get started with carbohydrate counting?

Ask your health care provider how you can learn more about carbohydrate counting. A dietitian can help you make a plan.

<table>
<thead>
<tr>
<th>Serving sizes for some carbohydrate foods (approximately 15 grams of carbohydrate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>apple: 1 small (4 ounces)</td>
</tr>
<tr>
<td>bagel: 1/4 large (1 ounce)</td>
</tr>
<tr>
<td>banana: 1 small (4 ounces)</td>
</tr>
<tr>
<td>biscuit: 1</td>
</tr>
<tr>
<td>bread: 1 slice</td>
</tr>
<tr>
<td>cake (unfrosted): 2-inch square</td>
</tr>
<tr>
<td>cereal (ready-to-eat): 3/4 cup</td>
</tr>
<tr>
<td>cereal (cooked): 1/2 cup</td>
</tr>
<tr>
<td>cookies: 2 small (about 2/3 ounce)</td>
</tr>
<tr>
<td>corn: 1/2 cup</td>
</tr>
<tr>
<td>crackers (saltines): 6</td>
</tr>
<tr>
<td>fruit, canned: 1/2 cup</td>
</tr>
<tr>
<td>hamburger bun: 1/2 bun</td>
</tr>
<tr>
<td>ice cream (light): 1/2 cup</td>
</tr>
<tr>
<td>jam or jelly: 1 tablespoon</td>
</tr>
</tbody>
</table>
Losing weight lowers your risk of heart disease and stroke because it helps you control blood glucose (sugar), blood pressure, and cholesterol levels. You don’t have to lose a lot of weight to see the benefits—even a loss of 10 to 15 pounds can help a lot.

Weight loss can be a struggle because it means making changes in the way you eat and in your level of physical activity. The older we get, the harder it is for us to lose weight because we burn fewer calories. We also tend to be less active. Losing weight takes time—and that can be frustrating. The good news is that you can lose weight and keep it off, even if you’ve never done it before.

What strategies can help me lose weight?

Here’s what works for people who have lost weight and kept it off:

• They cut back on calories and fat.
• They’re physically active most days of the week.
• They eat breakfast every day.
• They keep a record of their weight, what they eat and drink, and what they do for physical activity.

Some people attend weight-loss programs; others use these strategies on their own. Think about which approach will work best for you. Just remember that studies show it’s much easier to lose weight when you use a combination of meal planning and physical activity.

What’s the secret to changing habits?

Understanding the process for changing habits can make it easier for you to change the way you eat and increase your activity. Every change involves several stages, and each stage is important. Here’s an example. Sue used to have ice cream almost every night for her snack. But she wanted to lose weight.

At first, she wasn’t interested in making a change. She wasn’t ready to give up her ice cream. She thought it would be too hard to do.

Then she thought about ways she could cut calories to lose weight. She decided that one way might be to eat something instead of ice cream. She wasn’t ready to try it but thought she might be ready in the future.

After a while, she decided that soon she’d be ready to make a change in her snack, even within the month. She made a realistic plan—she’d have fruit instead of ice cream several times a week.

Then she took action. She bought her favorite fruit and started eating it four times a week instead of ice cream.

Now, after more than 6 months of her new habit, it’s part of her routine.

Think about what stage you’re in for changes you’d like to make. Are you in the early stages—not ready for a change yet? Or maybe you’re interested in losing weight but you haven’t taken
action. The next step is to decide what you’re willing and able to do. Then plan exactly how and when you’ll do it.

**Strategies for Losing Weight**

Choose things to do that will help you lose weight. Put a check mark next to the things you’re willing and able to do. Or write down your own ideas. Remember that every step you take helps move you toward your goal.

**How to cut back on calories and fat**

- Eat smaller servings of high-calorie favorites.
- When you eat out, split a main dish with a friend or family member. Or take some home for tomorrow.
- Ask for salad dressings and sauces “on the side” and then use as little as possible.
- Include a fruit or a vegetable with every meal or snack.
- Cook in low-fat ways: roast, broil, grill, microwave, steam, or bake. Use nonstick pans or cooking sprays.
- Substitute low-fat ingredients in your favorite recipes. For example, try low-fat cheese instead of the regular kind.
- Cut back on high-fat toppings, such as butter, margarine, sour cream, regular salad dressing, mayonnaise, or gravy. Instead, season your food with herbs, spices, salsa, lemon juice, or other low-fat choices.
- Check food labels. Choose the products with fewer calories and less fat.
- Stock your kitchen with low-calorie, low-fat snacks, such as air-popped popcorn, pretzels, and fruit. Keep serving sizes small.

**How to be more physically active**

- Take a 30-minute walk every day. Or split up your daily activity—try a 10-minute walk after each meal. If you haven’t been very active recently, check with your health care team first. Start off with a 10- to 15-minute walk every other day, then little by little walk farther and walk more often.
- Find a physical activity you enjoy, like swimming, dancing, bicycling, or doing the exercises on TV programs.

- Be active around the house: work in the yard, play with the kids, get up to change the TV channel, and walk around while you talk on the phone.
- Take the stairs instead of the elevator.
- Take the dog for regular walks.
- Walk instead of drive whenever you can.
- Park at the far end of the shopping center lot and walk to the store.
- Other things I can do: _____________________

**How to keep a record of your progress**

Keep track of your weight loss efforts. Many people find that writing everything down helps keep them on target. Use a small notebook and keep it with you all day.

- Write down everything you eat and drink. Include the serving size. Some people set target levels of calories or grams of fat and keep track of their daily totals.
- Make a note of what kind of physical activity you’ve done and for how long.
- You may want to check your weight once a week and write it down or use your clothes as a measure of weight loss. Are your pants a bit loose around the waist? Can you fit into the blouse you haven’t worn for years?

**How a support system can help**

Many people find it motivating to meet on a regular basis with people who are also trying to lose weight. You may want to consider joining a group for weight loss, exercise, or general support. Or create your own support system by talking with friends and family about your successes and your struggles. Find a walking buddy or friends who also want to improve their health and work together to set goals for success.
All About Physical Activity for People with Diabetes

Toolkit No. 12

Why is physical activity important for people with diabetes?
Here’s what physical activity can do for you:
• It lowers your blood glucose (sugar), blood pressure, and cholesterol.
• It lowers your risk for heart disease and stroke.
• It relieves stress.
• It helps insulin work better.
• It strengthens your heart, muscles, and bones.
• It improves your blood circulation and tones your muscles.
• It keeps your body and your joints flexible.

Even if you’ve never exercised before, you can find ways to add physical activity to your day. You’ll experience benefits even if your activities aren’t strenuous. Once physical activity is a part of your routine, you’ll wonder how you did without it.

If I haven’t been very active lately, what should I do first?
Start with a checkup—your health care provider will check your heart, blood vessels, eyes, kidneys, feet, and nervous system. If the tests show signs of disease, your provider can recommend physical activities that will help you but won’t make your condition worse.

For more information about making physical activity a part of your routine, ask your health care team for a copy of Toolkit No. 14: Learning How to Change Habits.

What kinds of physical activity are best?
A comprehensive physical activity routine includes four kinds of activities:
• being active throughout the day
• aerobic exercise, such as brisk walking, swimming, or dancing
• strength training, such as lifting light weights
• flexibility exercises, such as stretching

Being active throughout the day
Being active helps burn calories. Place a check mark next to the things you’d like to try:
☐ Walk instead of drive whenever possible.
☐ Take the stairs instead of the elevator.
☐ Walk around while I talk on the phone.
☐ Work in the garden, rake leaves, or wash the car.
☐ Play with the kids.
☐ Carry things upstairs in two trips instead of one.
☐ Park at the far end of the shopping center lot and walk to the store.

☐ Others things I can do: ____________________
________________________________________
________________________________________

**Aerobic exercise**
Aerobic exercise makes your heart and bones strong, relieves stress, helps your insulin work better, and improves blood circulation. In addition, it cuts your risk for heart disease by lowering your blood glucose, blood pressure, and cholesterol levels. For most people, it’s best to aim for a total of about 30 minutes a day, at least 5 days a week. If you haven’t been very active recently, you can start out with 5 or 10 minutes a day and work up to more time each week. Or split up your activity for the day—try a brisk 10-minute walk after each meal. Your health care team can show you how to warm up and stretch before aerobic exercise and how to cool down afterward.

Here are some examples of aerobic exercise:
• Take a brisk walk every day.
• Go dancing or take a dance aerobics class.
• Swim or do water aerobic exercises.
• Take a bicycle ride outdoors or use a stationary bicycle indoors.

**My plan for aerobic exercise:**
What I'll do: ______________________________
________________________________________
What I need to get ready: ____________________
________________________________________
Which days and times: _______________________
How long each session will be: _______________
How I'll warm up and cool down for each session: __________________________________________
________________________________________

**Strength training**
Strength training helps build strong bones and muscles and makes everyday chores like carrying groceries easier for you. With more muscle, you burn more calories, even at rest. Do your strengthening routine several times a week. Here are some ways to do strength training:
• Lift light weights at home.
• Join a class to do strength training with weights, elastic bands, or plastic tubes.

**My plan for strength training:**
What I'll do: ______________________________
________________________________________
What I need to get ready: ____________________
________________________________________
Which days and times: _______________________
How long each session will be: _______________

**Flexibility exercises**
Flexibility exercises, also called stretching, help keep your joints flexible and reduce your chances of injury during activities. Gentle stretching for 5 to 10 minutes helps your body warm up and get ready for aerobic activities and cool down after your activity. Your health care team can provide information on how to stretch.

**My plan for flexibility exercises:**
What I'll do: ______________________________
________________________________________
What I need to get ready: ____________________
________________________________________
Which days and times: _______________________
How long each session will be: _______________

To learn more about how to get started with a physical activity routine, ask your health care team for a copy of Toolkit No. 13: *Getting Started with Physical Activity.*

American Diabetes Association
1–800–DIABETES (342–2383)  www.diabetes.org
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Getting Started with Physical Activity

No matter how old you are or what kind of shape you’re in, physical activity can do a lot for you. If you’re interested in becoming more active, these steps will help you get ready for a routine that’s safe and enjoyable.

- Have a checkup and find out which activities will be safe for you.
- Choose what you’ll do for your routine and make detailed plans.
- Find out how physical activity can affect your blood glucose (sugar) levels.
- Learn how to avoid low blood glucose and what to do if it happens.
- Plan how to have water, snacks, and treatment for low blood glucose available.
- Arrange a way to carry medical identification.

Use the checklist on page 2 to check off each step after you’ve done it. Then you’ll be ready to start your new, active lifestyle.

Have a checkup
Start by seeing your health care provider for a check of your heart, blood vessels, eyes, kidneys, feet, and nervous system. If the tests show signs of disease, your health care provider can recommend physical activities that will help you but won’t make your conditions worse. For example, if your feet are numb, you might not notice blisters or other injuries. In that case, swimming may be better for you than walking because you’ll be less likely to injure your feet.

Choose what you’ll do and make plans
After you talk with your health care team about activities that are best for you, think about what you’d like to do. First think of ways to be more active throughout the day. For example, you could take the stairs instead of the elevator. You’ll also benefit by including these kinds of activities:

- aerobic exercise, such as brisk walking, swimming, or dancing
- strength training, such as lifting light weights
- flexibility exercises, such as stretching

Choose things you enjoy, such as walking with a friend or a dance aerobics class. Try to make your plans realistic and achievable. For example, if you don’t have time to walk for 30 minutes at a time, plan on walking for 10 minutes after each meal. If you haven’t been very active recently, start slowly and add more activity gradually. Your health care team can show you how to warm up before your workout and cool down and stretch afterward.

Write down what you’ll do, where and when you’ll do it, how often, and for how long. Think about what you’ll do if you can’t carry out your usual plan. For more information about each kind of activity, talk with your health care team or request a copy of Toolkit No. 12: *All About Physical Activity for People with Diabetes.*
Find out how activity affects blood glucose levels

Physical activity usually lowers blood glucose levels. That’s why you’ll want to check your glucose levels before you exercise. If your blood glucose is below 100 mg/dl, have a small carbohydrate snack such as fruit or crackers.

However, if your blood glucose is high (above 300 mg/dl) even before you exercise, physical activity can make it go even higher. That’s when you’ll want to be cautious about doing something active. For those with type 1 diabetes, if your fasting glucose level is above 250 mg/dl and you have ketones in your urine, it’s best to avoid physical activity. Talk with your health care team about whether to exercise when your blood glucose is high.

You can get to know how various activities affect your blood glucose by checking your levels before and after exercise and keeping track of your results.

Learn all about low blood glucose

Low blood glucose, also called hypoglycemia, can occur during or after physical activity, even chores like shoveling snow or raking the leaves. If your blood glucose is below 100 mg/dl before physical activity, have a snack. During activity, check your blood glucose if you notice symptoms of low blood glucose such as hunger, nervousness, shakiness, or sweating. If it’s 70 mg/dl or below, follow these treatment guidelines to bring it back up to a safer range:

- Have one of these items right away to raise your blood glucose:
  - 2 to 5 glucose tablets
  - ½ cup (4 ounces) of fruit juice
  - ½ cup (4 ounces) of a regular (not diet) soft drink
  - 8 ounces of milk
  - 5 to 7 pieces of hard candy
  - 2 teaspoons of sugar or honey
- After 15 minutes, check your blood glucose again. If it’s still below 70 mg/dl, have another serving.
- Repeat these steps until your blood glucose is at least 70 mg/dl.

Plan what things to take with you

You’ll be ready for anything by having water and snacks handy during activity. Make sure you drink plenty of water before, during, and after physical activity to keep hydrated. And always carry a source of carbohydrate, such as glucose tablets, to treat low blood glucose if it happens.

Have a medical ID with you

You’ll want to protect yourself in case of emergency by wearing a medical identification bracelet or necklace or attaching a medical ID tag to your shoes or clothes. You also may want to carry another form of identification during exercise, such as a wallet card.

What I need to do to get started with physical activity

Get started by choosing something to do today. Place a check mark next to each step after you’ve done it. If you have a question for your doctor about something, place a question mark next to it and take this list to your next office visit.

❒ I’ve had a checkup with my doctor.
❒ I’ve learned which activities will be safe for me.
❒ I’ve thought of ways to be more active during the day.
❒ I’ve chosen ways to do aerobic exercise, strength training, and flexibility exercises.
❒ I’ve made a specific, realistic plan for each type of activity.
❒ I know how physical activity can affect my blood glucose levels.
❒ I know how to avoid low blood glucose and what to do if it happens.
❒ I know when to avoid exercise.
❒ I’m prepared to carry glucose tablets or other sources of sugar to treat low blood glucose.
❒ I have a form of medical ID to wear or carry.
Learning How to Change Habits

Toolkit No. 14

A lot of your diabetes care is up to you. You may have already changed some habits to take better care of yourself. Perhaps you exercise more now than you did before you were diagnosed with diabetes. Maybe you’d like to change other habits but you’re stuck—you feel like you just can’t get started. **Changing habits can be hard to do. But you can learn a step-by-step approach that will help you reach your goals.**

What happens when you change a habit?

Every change involves several stages:

- **Precontemplation.** Maybe you think that a change would help but you’re not ready or interested. You feel the change would be too hard to make.

- **Contemplation.** You’re thinking about making a change, but not right away. At this stage, the costs of making the change still outweigh the benefits.

- **Preparation.** You’re ready to make the change within the month. You’ve made a realistic plan and you’ve gathered what you need to carry out your plan.

- **Action.** You’ve taken action and started your new routine. But sometimes you’re tempted to go back to your previous habits.

- **Maintenance.** After more than 6 months of your new routine, you’re used to doing it. It’s now a habit.

Think about what stage you’re in for changes you’d like to make. Are you in the early stages—not yet ready for a change? Or maybe you’d like to make a change but you don’t know how. Knowing what stage you’re in can help you choose the best approach to changing habits and attaining your goals.

You can make it easier to eat low-fat foods by stocking up on fruits and vegetables.

**Changing Habits: Getting Started**

Think about your diabetes care. Then fill in your answers.

**What’s my goal?**

**What change would help me reach my goal?**

**What stage am I in for this change?**

- ☐ I’m not ready to change right now.
- ☐ I’m thinking about doing it sometime.
- ☐ I might do it in the next month.
- ☐ I’m doing it now.
- ☐ I’ve been doing it for more than 6 months.
Not quite ready to take action?

Here’s what to do next.
To move from the “not-ready” stage to the action stage:

• Consider the benefits of the change. For example, if you took a half-hour walk every morning, how would that help your health? What effect would it have on your weight?

• Answer these questions: What part of this change would be hard for me? ____________________________________

Why haven’t I made this change before? ____________________________________

How can I work around these problems? ____________________________________

Ready to make a change?

Here’s what to do next.
To change a habit, you’ll need a realistic, achievable plan. Your plan should be as specific as possible. Your health care team can provide information to help you. Write your plan here:

• Here’s what I’ll do:

  Example: I’ll take a brisk walk 5 days a week for half an hour.

• Here’s when I’ll do it:

  Example: I’ll walk after breakfast.

• Here’s what I need to get ready:

  Example: I’ll need comfortable walking shoes.

• This might get in the way of my plan:

  Example: If it’s raining, I won’t be able to walk outside.

• If that happens, I’ll do this instead:

  Example: I’ll go to the recreation center and walk around inside.

• Here’s when I’ll start:

  Example: I’ll start my walks on Monday.

Ready to take action or already taking action?

Here’s what to do next.
Once you’ve started your new habit, you’ll want to take steps to keep doing what you’re doing. These steps can help:

• Set up things around you so it’ll be easier to stick with your new habit. For example, stock up on vegetables and fruit instead of high-fat snacks.

• Make it easy to find time for your new habit by changing your schedule or your routine. If you prefer to walk in the morning before work, get up a little earlier so you'll have time.

• Think about roadblocks that might come up and plan ways to get around them.

• Ask for support from family, friends, and your health care team. For example, ask a family member to watch the kids while you go for a walk.

• If you sometimes slip up and go back to your old habit, don’t despair. You can start fresh tomorrow.

• Keep track of your efforts by writing down what you’re doing.

• Vary your routine to keep it interesting. For example, if you’re tired of walking around your neighborhood, walk inside the shopping mall instead.

• Reward yourself for sticking with your plan.

Remember: it takes time to make new habits, but your patience and persistence will pay off in the long run.
What does depression have to do with diabetes?
Serious depression is common in people with diabetes. In fact, diabetes doubles the risk for depression. As many as one of every three people with diabetes experiences symptoms of depression. It’s especially common in women. Men experience it too but may be less likely to seek treatment. The good news is that treatment can help.

What are the symptoms of depression?
Depression is a medical condition that’s more than just feeling sad, stressed, or irritable once in a while. Most people with depression will have several of the following symptoms for most of the day, almost every day, for at least 2 weeks:

- feeling down and depressed
- losing interest in their usual activities
- feeling that things that used to make them happy no longer bring pleasure
- experiencing weight loss or gain
- having trouble sleeping (insomnia) or sleeping too much
- feeling agitated and nervous or feeling sluggish, like they’re moving slowly
- having crying spells or being very emotional
- feeling very tired and having no energy
- having trouble focusing or making decisions
- thinking about death or suicide

Symptoms like these are normal after major losses, such as the death of a loved one, diagnosis of a new medical problem, or losing a job, but people should start feeling better after a few weeks. People with depression can’t trace their symptoms directly to medications, medical conditions, or loss of a loved one.

Contrary to what many people used to believe, depression is not a sign of personal weakness or failure. Telling someone “Pull yourself out of it!” can’t cure depression.

What causes depression?
Researchers believe that depression is caused by a combination of physical, psychological, and genetic factors. Differences in how the brain works, how a person reacts to stressful events such as chronic illness or divorce, and a history of depression in the family can all make someone more likely to get depression.

It isn’t clear whether diabetes causes depression or exactly how depression is related to diabetes. But we do know that diabetes can cause people to feel overwhelmed by the demands of day-to-day care. It’s common for people with diabetes to worry about possible long-term complications, the cost of diabetes care, and the effects of diabetes on family and work life. As with any chronic illness, people wonder, “Why did I have to be the one to get diabetes?”
How does depression affect diabetes?

Depression can make it hard for you to focus on taking care of yourself. You might feel that it’s too much trouble to check your blood glucose (sugar) or try to choose healthy foods. Things can seem hopeless. When you don’t take care of yourself, blood glucose levels can rise. Frequent high blood glucose levels over time raise your risk for diabetes-related complications. Studies have shown that depression can even make aches and pains seem worse.

What should I do if I think I have depression?

If you have symptoms of depression, it’s important to get help as soon as you can. The sooner you get treatment, the sooner you’ll feel better. Make an appointment to see your health care provider. Explain how you’ve been feeling and ask whether you might have serious depression. After asking about your symptoms and doing other checks as needed, your health care provider will discuss treatment options with you, such as starting treatment right away or seeing a specialist.

What is the treatment for depression?

Depression is treated with medication and counseling (also called psychotherapy). Some people use both treatments; others find that either medication or counseling alone helps them. Your health care provider can explain both kinds of treatments to help you choose what to do.

Antidepressant medications help change the way your brain works. There are several different types of medications. Your health care provider can prescribe the best type of medication for you. You’ll want to keep in mind that some antidepressants take several weeks to improve your mood. But eventually medication can help you feel back to normal and can restore your sense of well-being.

Counseling can teach you the skills you need to cope with the stresses in your life. Sometimes it helps to talk about problems with someone who is objective. A counselor can offer a fresh perspective on what’s going on in your life.

Other ways to cope with depression

Many people find that having the support of family and friends can be a comfort. Find someone to talk with about what’s going on. Or if it’s hard for you to talk about your feelings, sometimes just spending time with family and friends can help you feel better.

Physical activity can also help you feel better both when you’re depressed and once you’re feeling better. Take a walk every day, play with the kids, or find another activity you enjoy, like dancing, walking, or swimming. Activity can lift your spirits and provide other health benefits as well.

Remember your risk for depression

Depression can come and go throughout life, especially if you have diabetes and are at high risk for depression. Knowing the symptoms and taking action to get help when depression occurs will help you return to “your old self” as soon as possible.
An important part of taking care of yourself is keeping your blood pressure under control. High blood pressure—also called hypertension—raises your risk for heart attack, stroke, eye problems, and kidney disease. As many as 2 out of 3 adults with diabetes have high blood pressure. **Having your blood pressure checked regularly and taking action to reach your blood pressure target can prevent or delay diabetes problems.**

**What is high blood pressure?**

Blood pressure is the force of blood flow inside your blood vessels. When your health care team checks your blood pressure, they record two numbers, such as 130/80 mmHg. You’ll hear them say this as “130 over 80.” Both numbers are important:

- The first number is the pressure as your heart beats and pushes blood through the blood vessels. Health care providers call this the “systolic” pressure.
- The second number is the pressure when the vessels relax between heartbeats. It’s called the “diastolic” pressure.

When your blood moves through your vessels with too much force, you have high blood pressure. Your heart has to work harder when blood pressure is high, and your risk for diabetes problems goes up. High blood pressure is a problem that won’t go away without treatment.

**What is the recommended target for blood pressure?**

Both diabetes and high blood pressure increase your risk of heart attack, stroke, and eye and kidney disease. Because of this, people with diabetes have a lower blood pressure target than the general public. The American Diabetes Association (ADA) and the National Institutes of Health recommend a target blood pressure of less than 130/80 mmHg for people with diabetes. When you keep your blood pressure below 130/80 mmHg, you’ll be lowering your risk for diabetes problems.

**How will I know if I have high blood pressure?**

High blood pressure is a silent problem—you won’t know you have it unless your health care provider checks your blood pressure. The ADA recommends that you have your blood pressure checked at every office visit, or at least two to four times a year. Keep track of your blood pressure by recording the results of your checkups here.

<table>
<thead>
<tr>
<th>ADA blood pressure target: Below 130/80 mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office Visit</strong></td>
</tr>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
</tbody>
</table>
What treatments are recommended?

Both lifestyle changes and medication help control blood pressure. Treatment differs from one person to the next. Work with your health care provider to find a treatment that’s right for you.

Lifestyle changes
Lifestyle changes can help control your blood pressure as well as your blood glucose (sugar) and blood lipid (cholesterol and triglyceride) levels. Place a check mark next to steps you’re willing to try.

Make wise food choices
☐ I’ll eat a serving of fruit at each meal.
☐ I’ll eat one or two servings of vegetables at lunch and at dinner.
☐ I’ll switch to low-fat or fat-free dairy products (such as low-fat cheese and skim milk).
☐ I’ll eat whole-grain breads (such as whole-wheat bread) and cereals.
☐ I’ll eat nuts or peanut butter sometimes.
☐ I’ll choose lean meats and meat substitutes (such as chicken without the skin, fish, lean beef such as flank steak or chuck roast, boiled ham, or pork tenderloin).
☐ I’ll cook using low-fat methods such as baking, roasting, broiling, or grilling.
☐ I’ll add little or no salt to my food at the table and during cooking.
☐ I’ll try herbs and spices instead of salt.
☐ I’ll check food labels and choose foods with less than 400 mg of sodium per serving.

Lose weight or take steps to prevent weight gain
☐ I’ll cut down on calories and fat.
☐ I’ll try to be more physically active than I am now.

Be physically active
☐ Before I start a new routine, I’ll check with my doctor to find out which activities will be safe for me.
☐ I’ll try to do a total of about 30 minutes of aerobic exercise, such as brisk walking, most days of the week. If I’m just starting out, I’ll begin with 5 minutes a day and gradually add more time.

Be careful with alcohol
☐ I’ll talk with my health care team about whether it’s wise for me to have alcoholic beverages.
☐ If and when I drink alcoholic beverages, I’ll limit myself to 1 serving a day (for women) or 2 servings a day (for men).

Quit smoking
☐ I’ll talk with my health care team about methods that can help.

Medications
Several types of medications are available. Not everyone takes the same blood pressure medication, and many people take more than one kind. Which ones you take will depend on your blood pressure readings and other factors such as cost.

- **ACE inhibitors**—These medications lower blood pressure by keeping your blood vessels relaxed. ACE inhibitors prevent a hormone called angiotensin from forming in your body and narrowing your blood vessels. These medications also help protect your kidneys and reduce your risk of heart attack and stroke.

- **ARBs**—These medications keep the blood vessels open and relaxed to help lower blood pressure. Like ACE inhibitors, ARBs also protect your kidneys.

- **Beta blockers**—These medications help lower blood pressure and relax your heart by allowing it to beat slower and less forcefully. Beta blockers help prevent heart attack and stroke.

- **Calcium channel blockers**—These medications help the blood vessels relax by keeping calcium out of your blood vessels and heart.

- **Diuretics**—These medications, sometimes called “water pills,” help rid your body of extra water and sodium through urine.
Keeping your cholesterol and other blood lipids (fats) under control can help you prevent diabetes problems. Diabetic dyslipidemia, a condition in which your blood lipids are off target, can lead to heart attack and stroke. For most people, treatment for off-target blood lipids includes both lifestyle changes, such as choosing foods wisely, and medication. You can take steps to keep your blood lipids on target.

What are the different kinds of blood lipids and what do they do?

There are several kinds of lipids in your blood, and each type affects your health differently.

• **LDL cholesterol** is sometimes called bad cholesterol. This lipid can narrow or block your blood vessels. Blocked vessels can lead to a heart attack or a stroke. **Reaching your LDL target is the most effective way to protect your heart and blood vessels.**

• **HDL cholesterol** is sometimes called good cholesterol or “helpful” cholesterol. This lipid helps remove deposits from the insides of your blood vessels and keeps them from getting blocked.

• **Triglycerides** are another kind of lipid. High triglyceride levels increase your risk of a heart attack or stroke.

How does diabetes affect my blood lipids?

Many people with diabetes have problems with their blood lipid levels—HDL (good cholesterol) levels that are too low and triglyceride levels that are too high. Also, in people with diabetes, LDL (bad cholesterol) particles are unusually small and dense, which can be especially harmful to blood vessels. This combination of factors means an increased risk of heart attack and stroke. But the good news is that taking steps to keep your lipids within the target range will lower your risk for these problems.

How will I know if my blood lipid levels are off target?

You won’t know that your lipids are at dangerous levels unless you have a blood test to check your blood lipid levels. The American Diabetes Association (ADA) recommends that you have your levels checked at least once a year. Some people may need to be checked more often.

What are the recommended targets for blood lipids?

See the chart below for targets suggested by the ADA. You can also record the results of your latest blood lipid check here.

<table>
<thead>
<tr>
<th>Type of Blood Lipid</th>
<th>My Results</th>
<th>ADA Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDL cholesterol</td>
<td></td>
<td>below 100 mg/dl</td>
</tr>
<tr>
<td>HDL cholesterol</td>
<td></td>
<td>above 40 mg/dl (for men)</td>
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<tr>
<td></td>
<td></td>
<td>above 50 mg/dl (for women)</td>
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<tr>
<td>Triglycerides</td>
<td></td>
<td>below 150 mg/dl</td>
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</tbody>
</table>

Have your blood lipids checked at least once a year to help prevent or delay a heart attack or a stroke.
What treatments are recommended?

Both lifestyle changes and medication help control blood lipids. Treatment differs from one person to the next. Work with your health care provider to find a treatment that’s right for you.

Lifestyle changes

Lifestyle changes can help control your blood lipids as well as your blood glucose and blood pressure levels. If your blood lipid levels are off target, you’ll want to consider making lifestyle changes right away. Place a check mark next to steps you’re willing to try.

Make wise food choices

- I’ll eat less fat, especially saturated fat (found in fatty meats, poultry skin, butter, 2% or whole milk, ice cream, cheese, palm oil, coconut oil, trans fats, hydrogenated oils, lard, and shortening).
- I’ll choose lean meats and meat substitutes (such as chicken without the skin, lean beef such as flank steak or chuck roast, boiled ham, or pork tenderloin).
- I’ll switch to low-fat or fat-free dairy products (such as low-fat cheese and skim milk).
- I’ll cut back on foods that are high in cholesterol (such as egg yolks, high-fat meat and poultry, liver and other organ meats, and high-fat dairy products like whole milk).
- I’ll choose the kinds of fat that can protect my heart, such as olive oil, canola oil, corn oil, sunflower oil, and safflower oil. Nuts also have a healthy type of fat.
- I’ll eat fish 2 or 3 times a week, choosing those high in heart-protective fat (such as albacore tuna, herring, mackerel, rainbow trout, sardines, and salmon).

Lose weight or take steps to prevent weight gain

- I’ll cut down on calories and fat.
- I’ll try to be more physically active than I am now.

Be physically active

- Before I start a new routine, I’ll talk with my doctor about safe activities for me.
- I’ll try to do a total of about 30 minutes of aerobic exercise, such as brisk walking, most days of the week. If I’m just starting out, I’ll begin with 5 minutes a day and gradually add more time.

Be careful with alcohol

- I’ll talk with my health care team about whether it’s wise for me to drink alcohol.
- If and when I drink alcoholic beverages, I’ll limit myself to no more than 1 serving (for women) or 2 servings (for men) daily.

Quit smoking

- I’ll talk with my health care team about methods that can help.

Stay on target with your blood glucose (sugar)

- I’ll help lower my LDL cholesterol and triglycerides by keeping my blood glucose under control with meal planning, physical activity, and medication (if needed).

Medications

Several types of medication are available. Not everyone takes the same blood lipid medication, and many people take more than one kind. The medications you take will depend on your blood lipid levels and other factors such as cost. Lifestyle changes along with medications can help you reach your targets. Some medications can help prevent heart attacks and strokes.

- Statins—These medications lower LDL cholesterol, boost HDL levels, and lower triglyceride levels. Studies have shown that they are the most effective medication for lowering LDL cholesterol.
- Fibric acid derivatives, also called fibrates—These medications lower triglycerides and raise HDL levels. They may either lower, raise, or not change LDL cholesterol.
- Nicotinic acid, also called niacin—This medication lowers triglycerides, raises HDL levels, and lowers LDL cholesterol.
- Cholesterol absorption inhibitors—This type of medication lowers LDL cholesterol and triglycerides and raises HDL levels.
- Bile acid sequestrants—These medications lower LDL cholesterol and can raise HDL levels. They either have no effect on triglycerides or, in some cases, they can raise triglyceride levels.
Taking Care of Your Heart

Maybe your health care provider has told you that you are at high risk for heart disease. Or, perhaps you have already had a heart attack. Having diabetes means that you are much more likely to have coronary artery (heart) disease, a heart attack, or a stroke. The good news is that you can take steps to prevent heart disease or reduce your chances of having another heart attack. Lifestyle changes, such as choosing foods wisely and being physically active, as well as taking medication, can help.

What is coronary artery disease?
Coronary artery disease is caused by a narrowing or blocking of the blood vessels that go to your heart. It’s the most common form of heart disease. Your blood carries oxygen and other needed materials to your heart. Blood vessels to your heart can become partially or totally blocked by fatty deposits. A heart attack occurs when the blood supply to your heart is reduced or cut off.

What steps can I take to prevent coronary artery disease?
You can lower your risk by keeping your ABCs of diabetes on target with wise food choices, physical activity, and medication. Losing weight can also help you manage your ABCs and prevent heart disease. Every step you take will help. The closer your numbers are to your targets, the better your chances of preventing heart disease or cutting your risk for another heart attack. If you smoke, get help to quit.

A is for A-1-C
An A-1-C is the blood glucose (sugar) check “with a memory.” It tells you your average blood glucose for the past 2 to 3 months. The American Diabetes Association (ADA) recommends that people aim for an A-1-C below 7%. Talk with your health care team about the best target for you and fill in the chart.

<table>
<thead>
<tr>
<th>ADA Target</th>
<th>My Results</th>
<th>My Target</th>
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<tbody>
<tr>
<td>Below 7%</td>
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B is for blood pressure
Your blood pressure numbers tell you the force of blood inside your blood vessels. When your blood pressure is high, your heart has to work harder than it should. The ADA recommends that you keep your blood pressure below 130/80 mmHg (said as “130 over 80”).

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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C is for cholesterol
Your cholesterol numbers tell you the amount of fat in your blood. Some kinds, like HDL cholesterol, help protect your heart. Other kinds, like LDL cholesterol, can clog your blood vessels and lead to heart disease. Triglycerides are another kind of blood fat that raises your risk for heart disease. The following chart gives the targets suggested by the ADA. You can also
record the results of your latest blood lipid (fat) check here.

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</table>

**What can I do to reach my ABC targets?**

Making wise food choices, being physically active, and taking medications can help you reach your targets.

**Make wise food choices**

Many people find that changing what they eat can make a big difference in their blood glucose, blood pressure, and cholesterol levels. Below are several strategies for making wise food choices. Place a check mark next to steps you’re willing to try. For more information about how to make these changes, talk with your health care team.

- I’ll eat less fat, especially saturated fat (found in fatty meats, poultry skin, butter, 2% or whole milk, ice cream, cheese, palm oil, coconut oil, trans fats, hydrogenated oils, lard, and shortening).
- I’ll choose lean meats and meat substitutes.
- I’ll switch to low-fat or fat-free dairy products.
- I’ll eat at least 5 servings of fruits and vegetables each day.
- I’ll cut back on foods that are high in cholesterol (such as egg yolks, high-fat meat and poultry, and high-fat dairy products).
- I’ll choose the kinds of fat that can help lower my cholesterol, such as olive oil or canola oil. Nuts also have a healthy type of fat.
- I’ll eat fish 2 or 3 times a week, choosing kinds that are high in heart-protective fat (such as albacore tuna, herring, mackerel, rainbow trout, sardines, and salmon).
- I’ll cook using low-fat methods (such as baking, roasting, or grilling foods or by using nonstick pans and cooking sprays).
- I’ll eat less salt and sodium.

**Lose weight or take steps to prevent weight gain**

- I’ll cut down on calories and fat.
- I’ll try to be more physically active than I am now.

**Be physically active**

Before you start a new routine, check with your health care team to find out which activities will be safe for you. Then think about how you can add more activity to your routine. If you’re just starting out, begin with 5 minutes a day and gradually add more time. Then work up to doing a total of about 30 minutes of aerobic exercise, such as brisk walking, most days of the week.

**Take medications**

Medications are available to help you reach your ABC targets and lower your risk of a heart attack. You may need several medications to stay on track.

Some types of blood pressure and cholesterol-lowering medications can protect your heart. Your health care provider can provide information about which medications are best for you.

Aspirin can also help lower your risk of heart disease. Ask your provider whether taking a low-dose aspirin every day would be wise.

**What can help me quit smoking?**

If you’re ready to quit, talk with your health care team. They can help you find ways to quit. Joining a support group or smoking-cessation program can also help.

**Real-Life Stories from People with Diabetes**

After my heart attack last year, I finally started taking my health seriously. Before that, I hadn’t paid much attention to my diabetes. But now I try to eat right and exercise, and I take several pills a day to keep my blood glucose, blood pressure, and cholesterol on target. I want to be around for a long time!

Roberto H., age 70 • type 2 diabetes
What is a heart attack?
A heart attack occurs when the blood vessels that go to your heart become partially or totally blocked by fatty deposits and the blood supply is reduced or cut off. Then oxygen and other needed materials aren’t carried to the heart and heart muscle dies. Another name for a heart attack is myocardial infarction, or MI. If you have diabetes, you’re at risk for a heart attack.

What are the warning signs of a heart attack?
Become familiar with these signs and call 911 right away if they occur:
- chest pain or discomfort
- pain or discomfort in your arms, back, jaw, neck, or stomach
- shortness of breath
- sweating or light-headedness
- indigestion or nausea
- tiredness
You may not experience all of these signs, and they may come and go. Chest pain that doesn’t go away after resting a few minutes may signal a heart attack.

Why is it important to call 911 right away if I’m having warning signs of a heart attack?
After a heart attack, early intervention such as getting clot-busting drugs is imperative—doing so can save your life. Health care providers can also use special procedures that open up blood vessels, preventing further damage to the heart. These steps work best within an hour of the first symptoms of a heart attack. It’s wise to review the symptoms of a heart attack with family and friends and to tell them about the importance of calling 911.

Are the signs of a heart attack different for people with diabetes?
Diabetes can affect your nerves and, therefore, make heart attacks painless or “silent.” A silent heart attack means that you may not have any warning signs, or they may be very mild. Special tests may be needed to help your doctor make a diagnosis.

Real-Life Stories from People with Diabetes
When I had my heart attack, I felt sick to my stomach and had some pain in my neck and my arms—those were the only warning signs. I thought it might be a heart attack, so I called 911 right away and soon I was at the hospital. They did some tests and gave me medication that broke up the blood clot that was blocking a blood vessel to my heart.

Carol Y., age 68 • type 2 diabetes
What are the benefits of taking aspirin?
Studies have shown that taking a low-dose aspirin every day significantly lowers the risk of heart attack and stroke. Aspirin can benefit people at high risk of a heart attack, such as those with diabetes and other risk factors such as high blood pressure. It can also help people with diabetes who have had a heart attack or a stroke, or who have heart disease. However, aspirin’s effects have not been studied in people under age 30.

How does aspirin lower my risk for a heart attack?
Exactly why aspirin works is not completely understood, but it may be because it helps keep red blood cells from clumping together. These cells seem to clump together more readily in people with diabetes. When blood cells clump, a blood clot can form and narrow or block a blood vessel. This can lead to a heart attack or stroke.

Is aspirin safe for everyone?
Taking a daily low-dose aspirin isn’t safe for everyone—it’s best to ask your health care provider whether you should take aspirin. In some people, aspirin can irritate the lining of the stomach, resulting in pain, nausea, vomiting, or bleeding. You should avoid taking aspirin if you’re allergic to it, you have a tendency to bleed, you’ve recently had bleeding from your digestive tract, you have liver disease that’s currently active, or you’re under 21 years of age.
Check with your health care provider to see whether aspirin therapy is right for you.

How much aspirin should I take every day?
Your health care provider can suggest the lowest possible dosage for you. Most people take a pill containing a dosage between 75 and 162 milligrams every day. The low-dose version may be labeled “baby aspirin.”

What form of aspirin is recommended?
Some health care providers recommend the enteric-coated form of aspirin. This form of aspirin is coated with a substance that allows it to pass through the stomach without dissolving. Instead, the aspirin is absorbed in the intestine, decreasing the risk of side effects.

Real-Life Stories from People with Diabetes
I take an aspirin every day to protect my heart—it’s one of the easiest things I do to stay healthy. To help me remember to take the aspirin and all my other pills, I use a pillbox that has a compartment for each day of the week.

Thomas D., age 80 • type 2 diabetes
What is a stroke?
A stroke, sometimes called a “brain attack,” occurs when the blood supply to part of your brain is interrupted and brain tissue is damaged. The most common cause is a blocked blood vessel. Stroke can cause physical problems such as paralysis, problems with thinking or speaking, and emotional problems.

What does diabetes have to do with strokes?
If you have diabetes, you’re much more likely to have a stroke, heart disease, or a heart attack. In fact, 2 out of 3 people with diabetes die from stroke or heart disease. But you can cut your chances of having these problems by taking special care of your heart and blood vessels.

How do I know whether I’m at high risk for a stroke?
Just having diabetes puts you at risk, but your risk is even greater if
• you have high blood pressure
• you have abnormal blood cholesterol levels
• you smoke
• you’ve already had a stroke or a transient ischemic attack (TIA), also called a mini-stroke
• you have a family history of stroke or TIAs
You can’t change your family history, but taking care of your diabetes and the conditions that come with it can lower your chances of having a stroke. It’s up to you.

How can I lower my risk of having a stroke?
You can lower your risk by keeping your blood glucose (sugar), blood pressure, and cholesterol on target with meal planning, physical activity, and medication. Quitting smoking is important too. Every step you take will help. The closer your numbers are to your targets, the better your chances of preventing a stroke.

What are the warning signs of a stroke?
Typical warning signs of a stroke develop suddenly and can include
• weakness or numbness on one side of your body
• sudden confusion or trouble understanding
• trouble talking
• dizziness, loss of balance, or trouble walking
• trouble seeing out of one or both eyes
• double vision
• severe headache
Sometimes one or more of these warning signs occur but then disappear. That condition, called a TIA, occurs when blood flow is temporarily blocked. It means you may be at risk for a future stroke.

If you have warning signs of a stroke, call 911 right away. Getting treatment can help prevent permanent damage to your brain. It’s wise to review the symptoms of a stroke with family and friends and to tell them about the importance of calling 911.
How is a stroke diagnosed?

A number of tests may be done if a stroke is suspected:

- **Your doctor will examine you** to check for any changes in body function. For example, the doctor can check your ability to move your arms and legs. The doctor also will check brain functions such as your ability to read or to describe a picture.

- A **CT** or MRI (magnetic resonance imaging) uses special scanning techniques to provide images of the brain.

- An **ECG** (electrocardiogram) provides information on heart rate and rhythm.

- An **ultrasound examination** can show problems in the carotid (ca-RAH-tid) arteries, which carry blood from the heart to the brain.

- A **cerebral** (seh-REEB-rahl) **arteriogram** is a test in which a catheter is inserted into an artery and positioned in the neck. Dye is injected and X rays show whether arteries are narrowed or blocked.

What are the treatments for stroke?

**Treatment you need right away**

“Clot-busting” drugs must be given within hours after a stroke to minimize damage. That’s why it’s important to call 911 if you’re having symptoms.

**Surgical treatments you may need**

Several options for surgical treatment of blocked blood vessels are available. These include

- **Carotid artery surgery**, also called **carotid endarterectomy** (en-dar-teh-REK-teh-mee) is used to remove buildups of fat inside the artery and to restore blood flow to the brain.

- **Carotid stenting** is a procedure used to remove a blockage in a blood vessel to the brain. A small tube with a balloon attached is threaded into the narrowed or blocked blood vessel. Then the balloon is inflated, opening the narrowed artery. A wire tube, or stent, may be left in place to help keep the artery open.

**Other treatments**

Treatment following a stroke includes rehabilitation therapies to restore function or help people relearn skills. Physical, occupational, and speech therapy may be included, as well as psychological counseling. Steps to prevent future problems should include smoking cessation, meal planning, physical activity, and medications to manage blood glucose, blood pressure, and cholesterol levels.

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Real-Life Stories from People with Diabetes

I never knew I was at risk for a stroke. But after I had my stroke, I learned that having diabetes puts you at high risk for both a stroke and a heart attack, because diabetes can damage your blood vessels. Now I’m getting my blood glucose, blood pressure, and cholesterol under control so I can avoid another stroke.

Luis Z., age 75 • type 2 diabetes
What is peripheral arterial disease?
Peripheral (puh-RIF-uh-rul) arterial (ar-TEER-ree-ul) disease, also called PAD, occurs when blood vessels in the legs are narrowed or blocked by fatty deposits. Blood flow to your feet and legs decreases. If you have PAD, you have an increased risk for heart attack and stroke. An estimated 1 out of every 3 people who have diabetes and are over the age of 50 has this condition. However, many of those with warning signs don’t realize that they have PAD and therefore don’t get treatment.

What does diabetes have to do with PAD?
If you have diabetes, you’re much more likely to have PAD, a heart attack, or a stroke. But you can cut your chances of having those problems by taking special care of your blood vessels.

How do I know whether I’m at high risk for PAD?
Just having diabetes puts you at risk, but your risk is even greater if
• you smoke
• you have high blood pressure
• you have abnormal blood cholesterol levels
• you already have heart disease, or have had a heart attack or a stroke
• you’re overweight
• you’re not physically active
• you’re over age 50
• you have a family history of heart disease, heart attacks, or strokes

You can’t change your age or your family history, but taking care of your diabetes and the conditions that come with it can lower your chances of having PAD. It’s up to you.

What are the warning signs of PAD?
Many people with diabetes and PAD don’t have any symptoms. Some people may experience mild leg pain or trouble walking and believe that it’s just a sign of getting older. Others may have the following symptoms:
• leg pain, particularly when walking or exercising, which disappears after a few minutes of rest
• numbness, tingling, or coldness in the lower legs or feet
• sores or infections on your feet or legs that heal slowly
How is PAD diagnosed?
The ankle brachial (BRAY-kee-al) index (ABI) is one test used to diagnose PAD. This test compares the blood pressure in your ankle to the blood pressure in your arm. If the blood pressure in the lower part of your leg is lower than the pressure in your arm, you may have PAD. An expert panel brought together by the American Diabetes Association recommends that people who have diabetes and are over the age of 50 have an ABI to test for PAD. People who have diabetes and are younger than 50 may benefit from testing if they have other risk factors for PAD.

These other tests can also be used to diagnosis PAD:
- **Angiogram** (AN-gee-oh-gram): a test in which dye is injected into the blood vessels using a catheter and X rays are taken to show whether arteries are narrowed or blocked
- **Ultrasound**: a test using sound waves to produce images of the blood vessels on a viewing screen
- **MRI** (magnetic resonance imaging): a test using special scanning techniques to detect blockages within blood vessels

How is PAD treated?
People with PAD are at very high risk for heart attacks and stroke; therefore, it is very important that cardiovascular risk factors be managed. Follow these steps:
- Get help to quit smoking. Your health care provider can help you.
- Aim for an A-1-C below 7%. The A-1-C test measures your average blood glucose (sugar) over the past 2 to 3 months.
- Lower your blood pressure to less than 130/80 mmHg.
- Get your LDL cholesterol below 100 mg/dl.
- Talk to your health care provider about taking aspirin or other antiplatelet medicines. These medicines have been shown to reduce heart attacks and stroke in people with PAD.

Studies have found that exercise, such as walking, can be used both to treat PAD and to prevent it. Medications may help relieve symptoms.

In some cases, surgical procedures are used to treat PAD:
- **Angioplasty, also called balloon angioplasty**: a procedure in which a small tube with a balloon attached is inserted and threaded into an artery; then the balloon is inflated, opening the narrowed artery. A wire tube, called a stent, may be left in place to help keep the artery open.
- **Artery bypass graft**: a procedure in which a blood vessel is taken from another part of the body and is attached to bypass a blocked artery.

Real-Life Stories from People with Diabetes
Last summer my leg muscles had been hurting, even when I walked a short distance. The pain would stop when I rested, but then it would come back. At first, I thought it was just old age. I told my health care team about the pain and also mentioned that there was a sore on my foot that wasn’t healing. They did some tests and said I had PAD. Now the pain is gone—I’m taking pills for the PAD and I go for a walk almost every day.

Sylvia P., age 60 • type 2 diabetes
What does diabetes have to do with heart and blood vessel disease?

If you have diabetes, you’re much more likely to have

• heart disease, also called coronary artery disease
• blood vessel disease, such as atherosclerosis (hardening of the arteries) or peripheral arterial disease (PAD)
• a heart attack
• a stroke

You can cut your chances of having these problems by taking special care of your heart and blood vessels. In addition to regular checkups, your health care team can do special tests to check the condition of your heart and blood vessels. If you already have heart or blood vessel problems, your health care team can use special procedures to open up or bypass narrowed or blocked blood vessels. Choosing foods wisely, being physically active, and taking medications can also help you stay healthy.

This toolkit defines some of the medical tests and procedures used for finding and treating heart and blood vessel disease. Terms are listed in alphabetical order.

**Angiogram or arteriogram**

In an angiogram (AN-gee-oh-gram) or arteriogram (ar-TEER-ee-oh-gram), dye is injected into the blood vessels using a catheter (small tube) and X rays are taken. This test shows whether arteries are narrowed or blocked. A coronary angiogram checks for narrowing or blockages in the blood vessels that go to the heart. A cerebral arteriogram checks the blood vessels that go to the brain.

**Angioplasty**

Angioplasty (AN-gee-oh-plas-tee), also called balloon angioplasty, is a procedure used to remove a blockage in a blood vessel to the heart

**Ankle brachial index**

A test called an ankle brachial index (BRAY-kee-al) or ABI is used to diagnose PAD. The health care provider compares the blood pressure in the ankle with that in the arm. Lower blood pressure in the lower part of the leg compared with the pressure in the arm may indicate PAD.

**CABG**

See the definition for coronary artery bypass graft.

**Cardiac catheterization**

Cardiac catheterization (CATH-ih-ter-ize-A-shun) is used in conjunction with other tests. A small tube is inserted into an artery and guided into the blood vessel of the heart.

**Carotid artery surgery**

Carotid artery surgery, also called carotid endarterectomy (en-dar-teh-REK-teh-mee), is used to remove buildups of fat inside the artery and to restore blood flow to the brain.
Chest X ray
A chest X ray shows the size and shape of the heart and can also show congestion in the lungs.

Coronary artery bypass graft
During a coronary artery bypass graft, also called a bypass or CABG (pronounced “cabbage”), a blood vessel taken from the leg, wrist, or chest is attached to the coronary artery to bypass a blockage and restore blood flow to the heart. A bypass graft can also be used for blood vessels leading to the brain.

CT scan
A CT (computed tomography), also called a CAT scan, uses special scanning techniques to provide images of organs such as the brain.

ECG
See the definition for electrocardiogram.

Echocardiogram
An echocardiogram (EK-oh-CAR-dee-oh-gram) uses very-high-frequency sound waves (ultrasound) to produce images of the heart and blood vessels on a screen. Results indicate whether the heart is pumping blood correctly. A stress echocardiogram uses either exercise or medication and ultrasound to provide images of the heart and blood vessels under stress.

EKG
See the definition for electrocardiogram.

Electrocardiogram
An electrocardiogram (ee-LEC-tro-CAR-dee-oh-gram), also called an ECG or EKG, provides information on heart rate and rhythm and shows whether there has been damage or injury to the heart muscle.

Exercise perfusion test
An exercise perfusion (per-FYOO-shun) test, also called a stress nuclear perfusion test, uses small amounts of radioactive material to produce images of blood flow to the heart as you exercise.

Exercise stress test
Exercise stress tests are used to find heart disease that is evident only during physical activity. These tests can also be used to help a patient choose the most appropriate physical activity program. Also called a treadmill test, a stress test uses an ECG to measure how the heart performs during activity, such as walking on a moving treadmill. A medication stress test uses medication instead of exercise to increase the heart rate.

Holter monitoring
A Holter monitor is a small, portable machine that records the heart's electrical activity. The person wearing the monitor keeps track of symptoms and activities for the evaluation period. Readings on the machine are compared with the symptoms.

MRI
MRI (magnetic resonance imaging) uses special scanning techniques to provide images of body tissues. MRA (magnetic resonance angiography) uses MRI to examine blood vessels.

Nuclear ventriculography
Nuclear ventriculography (ven-trick-yu-LAH-gree-fee), also called radionuclide (ray-dee-oh-NEW-clyde) ventriculography, uses small amounts of radioactive material to check heart function either while the body is at rest or during exercise. This test can also be used to check the blood vessels that go to the brain.

PET scan
A PET (positron emission tomography) scan uses special scanning techniques to provide images of body tissues.

Stress test
See the definition for exercise stress test.
Managing Your Medicines

When you’re taking several medicines, it can be hard to keep track of them. But you’ll feel better if you take steps to manage your medicines. These tips can help you stay healthy:

• Know the basics about your medicines, such as what they’re for and when to take them.
• Take your medicines as recommended.
• Tell your health care providers which medicines (prescription and nonprescription) and dietary supplements (such as vitamins) you use.

Knowing the basics
Ask your health care provider or your pharmacist these questions about your medicines. Write the information on the “My Medicines” chart.

☐ What are the names of my medicines (brand and generic names)?
☐ What’s the strength? (for example, the number of milligrams, abbreviated as mg)
☐ What’s this medicine for?
☐ How long will it take this medicine to work?
☐ How much should I take for one dose?
☐ When should I take it? How many times a day? At what times?
☐ Should I take it on an empty stomach?
☐ Should I avoid any foods or medicines when I take it?
☐ Should I avoid alcoholic beverages when I’m taking this medicine?
☐ How does this medicine affect my blood glucose (sugar) level?
☐ Do I need to avoid driving when I take this medicine?
☐ What side effects might happen with this medicine?
☐ What should I do if I experience side effects?
☐ What should I do if I miss a dose?
☐ How should this medicine be stored?
☐ How long will this supply last? What about refills?

Taking your medicines as recommended
When you don’t take a medicine as prescribed, the effect on your health can be unpredictable—or even dangerous. If you’re not taking your medicine, think about the reasons. Are there unpleasant side effects? Is the medicine too expensive? Is it hard to remember to take it? Tell your health care providers. They may be able to help.

Tips to help you remember to take your medicines
• Try using a pill organizer with a compartment for each day of the week.
• Link your pill-taking to something in your daily routine. For example, take your morning medicine right after you brush your teeth.
• Use a chart to check off when you’ve taken your medicines.

Telling your health care providers about your medicines
Some combinations of prescription medicines, nonprescription medicines, and dietary supplements can be harmful. Each of your health care providers should be aware of all of the medicines you take, including nonprescription medicines (such as aspirin and laxatives) and dietary supplements (vitamins, minerals, herbs, and other substances). Use the “My Medicines” chart to list all of your medicines. Take a copy with you when you see each of your health care providers. You can also give a copy to a friend or a family member.

Real-Life Stories from People with Diabetes
The herbal supplement from the health food store was all natural so I didn’t think it could do any harm. I told my doctor about it and then I learned that it could keep my blood pressure medicine from working.

Bernice L., age 75 • type 2 diabetes
### My Medicines

<table>
<thead>
<tr>
<th>Name and strength* of medicine</th>
<th>Used for</th>
<th>How much to take</th>
<th>When to take</th>
<th>Notes**</th>
<th>Date started</th>
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*Strength means the number of milligrams (mg) or other units. You can find this information on the label.

**Foods or other medicines that should not be taken with this medicine, side effects, and other notes.
Tips for Heart-Healthy Eating
• Eat smaller portions.
• Choose non-fat or low-fat dairy products.
• Choose lean meats.
• Remove skin from chicken and other poultry.
• Eat at least 5 servings of vegetables and fruits every day.
• Split entrees and desserts with a friend when eating out.
• Ask for dressings, sour cream, and sauces on the side.

Tips to Increase Your Activity
• Take the stairs instead of the elevator.
• Park your car at the far end of the parking lot.
• Take a 5- to 10-minute walk after each meal.
• Play with a child.
• Work in the yard or garden.
• Take an exercise class.
• Go dancing with friends.

For more information on diabetes, meal planning, or exercise, contact the American Diabetes Association at 1–800–DIABETES (342–2383) or visit diabetes.org.

<table>
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<th>DAILY FOOD AND DRINK TRACKER</th>
<th>TIME</th>
<th>AMOUNT/NAME/DESCRIPTION</th>
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If you have **high blood glucose**, make notes in your log and talk with your health care team about possible changes to your meal plan, physical activity, or diabetes medications.

**Low blood glucose** occurs when your blood glucose level drops below 70 mg/dl. Symptoms include:
- hunger
- nervousness and shakiness
- sweating
- light-headedness or confusion
- sleepiness

If you think your blood glucose is too low, check it. If it’s 70 mg/dl or less, have one of these items right away:
- 2 to 5 glucose tablets
- 1/2 cup (4 ounces) of fruit juice
- 1/2 cup (4 ounces) of a regular (not diet) soft drink
- 8 ounces of milk
- 5 to 7 pieces of hard candy
- 2 teaspoons of sugar or honey

After 15 minutes, check your blood glucose again. If it’s still below 70 mg/dl, have another serving. Repeat these steps until your blood glucose is at least 70 mg/dl.

### Blood Glucose Log

**Toolkit No. 26**

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<th>Time</th>
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