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Reducing Cardiometabolic Risk: Patient Education Toolkit

Early assessment and intervention to treat risk factors associated with diabetes and cardiovascular disease can help prevent and manage these deadly diseases. Education can help your patients manage cardiometabolic risk factors and improve clinical outcomes.

Selection Includes:

- All About Carbohydrate Counting
- All About Blood Glucose
- Taking Care of Type 2 Diabetes
- Getting the Very Best Care for Your Diabetes
- My Game Plan: Food and Activity Tracker
- Blood Glucose Log

Additional Resources Available at:

<http://professional.diabetes.org/ResourcesForProfessionals.aspx?cid=77080>

Toolkit No. 14

All About Carbohydrate Counting

What is carbohydrate counting?

Carbohydrate counting is a way to plan your meals. It can help you manage your blood glucose (sugar). Carbohydrates, or carbs, are one of the three main energy sources in food. The other two are protein and fat. It's the balance between insulin in your body and the carbohydrate you eat that determines how much your blood glucose levels rise after you eat. With the right balance of carbohydrate and insulin, your blood glucose level is more likely to stay in your target range.

Counting carbohydrate can help you reach your blood glucose goals and prevent diabetes complications. You can learn to count carbs to choose what and how much to eat. If you take insulin, you can count carbs to decide how much insulin to take.

Which foods have carbohydrate?

Starchy foods, sugars, fruits, milk, and yogurt are mostly carbs. See examples in the chart below. These foods affect your blood glucose much more than other foods, such as meat and meat substitutes, vegetables, or fats.

Carbohydrate foods (Carbs)	
• bread, bagels, biscuits, chapatti, muffins, crackers, matzoh, and tortillas	• beans (such as black, garbanzo, kidney, lima, navy, or pinto beans), lentils, and peas (such as black-eyed or split peas)
• ready-to-eat cereal or cooked cereal	
• barley, bulgur, couscous, grits, kasha, pasta, and rice	• fruit (canned, dried, fresh, and frozen) and fruit juice
• starchy vegetables such as cassava, corn, peas, plantains, potatoes, and winter squash, and sweet potatoes	• buttermilk, milk, soy milk, and yogurt
• pancakes and waffles	• sweets, such as candy, cookies, cake, brownies, doughnuts, ice cream, frozen yogurt, honey, jam, jelly, pie, pudding, sugar, and syrup
• popcorn, potato chips, pretzels, and rice cakes	



Carbohydrate counting can help you choose what and how much to eat.

How many grams of carbohydrate are best for me?

The recommended number of servings is based on your weight, activity level, diabetes medicines, and goals for your blood glucose levels. Your dietitian or diabetes educator, can work with you to make a personalized plan. A general guideline is to have

- 45-60 grams of carbohydrate at each meal
- 15-20 grams of carbohydrate servings at each snack

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 meat, chicken, and fish), nonstarchy vegetables (such as salad and broccoli), and a small 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 carbs than you normally do at a meal, your blood glucose level is likely to be higher than usual several hours afterward.

The chart at the bottom of this page shows the size of 1 serving for each food listed. One serving equals 15 grams of carbs. You can check serving sizes with measuring cups and spoons or a food scale, or by using the Nutrition Facts label on a food package.

How to use the Nutrition Facts on food labels

To decide on a serving size, check the label for the number of carbohydrate grams (g). One serving is equal to 15 grams of carbohydrates.

- **If the total carbohydrate is 15 grams**, as in the box on the left, then check the top of the food label for the serving size for 1 serving.

- **If the total carbohydrate is more than 15 grams**, as in the box in the middle, 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.

- **If the total is less than 15**, as in the box on the right, then multiply the serving size so that your serving will have 15 grams of carbohydrate.

How do I get started with carbohydrate counting?

Ask your health care provider how you can learn more about carbohydrate counting. You can also get more information from the American Diabetes Association. Visit www.diabetes.org, call 1-800-DIABETES (342-2383), or email AskADA@diabetes.org.

Nutrition Facts
Serving Size: 6 crackers
Total Carbohydrate: 15g
One carbohydrate serving is 6 crackers.

Nutrition Facts
Serving Size: 4 cookies
Total Carbohydrate: 30g
One carbohydrate serving is 2 cookies.

Nutrition Facts
Serving Size: 1 graham cracker square
Total Carbohydrate: 5g
One carbohydrate serving is 3 graham cracker squares.

Serving sizes for some carbohydrate foods (each has about 15 grams of carbs)	
apple: 1 small (4 ounces)	milk, fat-free or reduced-fat: 1 cup
bagel: ¼ large (1 ounce)	orange juice: ½ cup
banana: 1 extra small (4 ounces)	pasta or rice (cooked): ⅓ cup
bread: 1 slice (1 ounce) or 2 slices reduced calorie bread (1½ ounces)	green peas: ½ cup
cake (unfrosted): 2-inch square	pinto beans or kidney beans (cooked): ½ cup
cereal, unsweetened (ready-to-eat): ¾ cup	popcorn (popped): 3 cups
cereal, cooked: ½ cup	potato, mashed: ½ cup
cookies: 2 small (2¼ inches across)	potato chips: ¾ ounce (about 9 to 13)
corn: ½ cup	pretzels: ¾ ounce
crackers (saltines): 6	rice: ⅓ cup
fruit, canned: ½ cup	sugar: 1 tablespoon
hamburger bun: ½ bun (1 ounce)	sweet potato: ½ cup
ice cream (light): ½ cup	taco shells: 2 (5 inches across)
jam or jelly: 1 tablespoon	tortilla, corn or flour: 1 (6 inches across)



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Toolkit No. 15

All About Blood Glucose

Keeping your blood glucose (sugar) in your target range can prevent or delay the health problems caused by diabetes. Most of the steps needed to take care of diabetes are things you do yourself.

- Use a meal plan.
- Be physically active.
- Take your medicines.
- Try to reach your blood glucose targets most of the time.
- Keep track of your blood glucose numbers using the results from your daily blood glucose testing and your A1C check.

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 it rises and falls. 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
- physical inactivity
- not enough diabetes medicine
- side effects of other medicines
- infection or other illness
- changes in hormone levels, such as during menstrual periods
- stress

What can make blood glucose fall?

- missing a meal or snack, or having a meal or snack with less food or fewer carbs than planned
- alcoholic drinks, especially on an empty stomach
- more activity than planned
- too much diabetes medicine
- side effects of other medicines



You can use a meter to check your own blood glucose levels.

What are the blood glucose targets for people with diabetes?

Targets set by the American Diabetes Association (ADA) are listed below. Talk with your health care team about your personal goals.

ADA Targets for Blood Glucose	My Usual Results	My Goals
Before meals: 70 to 130 mg/dl	_____ to _____	_____ to _____
2 hours after the start of a meal: below 180 mg/dl	below _____	below _____

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 2 ways to do it.

- Use a blood glucose meter to learn what your blood glucose is at the moment.
- Get an A1C check at least twice a year.

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 your numbers to make choices about food, physical activity, and medicines.

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—look for 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 A1C check

The A1C tells you your average blood glucose level over the past 2 to 3 months. Your results will be reported in two ways:

- A1C as a percentage
- estimated Average Glucose (eAG), in the same kind of numbers as your day-to-day blood glucose readings

Ask your health care team for this test at least twice a year. If your average blood glucose is too high, you may need a change in your diabetes care plan.

Association's Targets	My Last Result	My Goal
A1C: below 7%		
eAG: below 154 mg/dl		

What does my A1C number mean?

Find your A1C number on the left. Then, look at the number on the right under eAG to see your estimated Average Glucose for the past 2 to 3 months.

A1C (%)	eAG (mg/dl)
5	97
6	126
7	154
8	183
9	212
10	240
11	269
12	298



What if my blood glucose is often too high?

See your health care provider soon if your blood glucose numbers are often higher than your goals. Talk with your health care team about changes in your meal plan, your physical activity, or your diabetes medicines.

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. Low blood glucose can make you feel hungry, shaky, nervous, sweaty, light-headed, sleepy, anxious, or confused. If you think your blood glucose is too low, use your meter to check it. If the result is below 70 mg/dl, follow these guidelines to bring it back up to a safer range. Have one of the carb choices in this list (which each have about 15 grams carbohydrate) right away to raise your blood glucose:

- 3 or 4 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
- 1 tablespoon of sugar or honey

After 15 minutes, check your blood glucose again. If it's still below 70 mg/dl, eat another carb choice. 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 medicines. Keep track of when you've had low blood glucose events. Note possible causes, such as unplanned physical activity. Then talk it over with your health care team.

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Toolkit No. 16

Taking Care of Type 2 Diabetes

What is type 2 diabetes?

Everyone's blood has some glucose (sugar) in it. Your body needs glucose for energy. Normally, your body breaks food down into glucose and sends it into your blood. Insulin, a hormone made by your pancreas, helps glucose go from the blood into the cells so it can be used for energy.

If you have type 2 diabetes, your body doesn't use insulin properly. This is called insulin resistance. At first, your pancreas makes extra insulin to make up for it. But, over time it isn't able to keep up and can't make enough insulin to keep your blood glucose at normal levels.

How can type 2 diabetes affect me?

Type 2 diabetes can lead to other problems like 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 prevent or delay problems.

How is type 2 diabetes managed?

Most of the daily care of diabetes is up to you. Your plan for taking care of your diabetes includes

- choosing what, how much, and when to eat
- maintaining a healthy weight
- including physical activity in your day
- taking medicines (if needed) to help you reach your blood glucose, blood pressure, and cholesterol goals

What can I do to take care of my diabetes?

- Lose weight, if needed.
- Choose goals for your diabetes ABCs:
 - A:** A1C (average blood glucose)
 - B:** blood pressure
 - C:** cholesterol
- Work with your health care team. Make a plan that helps you reach your goals.
- Keep track of your numbers.
- If you're not reaching your goals, change your plan to stay on track. Ask your health care provider for tools that can help you log your numbers.



Physical activity can help you stay healthy.

Your blood glucose

American Diabetes Association targets are listed below. Your goals may be different. Talk with your health care team about the best goals for you. You'll check your own blood glucose using a blood glucose meter. The meter tells you what your blood glucose is at that moment.

Blood Glucose Targets	My Usual Results	My Goals
Before meals: 70 to 130 mg/dL	_____ to _____	_____ to _____
2 hours after the start of a meal: below 180 mg/dL	below _____	below _____

Have an A1C test at least twice a year. It tells you your average blood glucose for the past 2 to 3 months. Your average blood glucose may be reported in 2 ways, A1C and estimated Average Glucose (eAG). The eAG will be reported in the same kind of numbers as your day-to-day blood glucose readings.

A1C or eAG Targets	My Last Result	My Goal
A1C: below 7%		
eAG: below 154 mg/dL		

Your blood pressure

You should have your blood pressure checked at every office visit.

Target	My Last Result	My Goal
Below 140/80 mmHg		

Your blood fats

Your health care team should check your blood fat levels every year.

Type of Blood Fat	Target	My Last Result	My Goal
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		

What do I need to know about healthy eating, physical activity, and medicines?

Healthy eating

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 dietitian who specializes in diabetes. Together, you'll design a personal meal plan that can help you reach your goals. These steps can help you manage your diabetes:

- **Count carbohydrates (also called carbs).** Carbs—bread, tortillas, rice, crackers, cereal, fruit, juice, milk, yogurt, potatoes, corn, peas, sweets—raise your blood glucose levels the most. Keep the amount of carbs in your meals and snacks about the same from day to day to help you reach your blood glucose targets.
- **Choose foods low in saturated fat.** Cut down on foods with saturated fat to 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.

- **Lower portion sizes.** Cutting back on food portions at meals and snacks can help with weight loss.
- **Eat more fiber.** Eat more high-fiber foods such as fruits, vegetables, dried beans and peas, oatmeal, and whole grain breads and cereals.

Physical Activity

Regular physical activity helps lower your blood glucose, blood pressure, and cholesterol. It also keeps your joints flexible, strengthens your heart and bones, and tones your muscles. Physical activity can also help lower stress. Your health care team can help you plan what activities are best for you. Try to include

• Being active throughout the day

Examples: Gardening, taking the stairs instead of the elevator, or walking around while you talk on the phone or watch TV. Work up to about 30 minutes each day.

• Aerobic exercise

Examples: Brisk walking, dancing, rowing, swimming, or riding a bicycle. Work up to about 30 minutes a day, 5 days a week.

• Strength training

Example: Lifting light weights a few times a week.

Medicines

Some people with diabetes can manage their diabetes with healthy eating and exercise. However, your doctor may need to also give you diabetes pills and/or insulin to help you meet your target blood glucose levels. Diabetes is a progressive disease—even if you don't need to treat your diabetes with diabetes pills at first, you may need to over time. If it's difficult for you to reach your target numbers, talk with your health care team about whether changes to your treatment plan can help.



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Toolkit No. 17

Getting the Very Best Care for Your Diabetes

Regular diabetes care can help you prevent heart disease, stroke, and eye, foot, or kidney problems. This guide describes basic care for people with diabetes.

Most of the day-to-day care of diabetes is up to you:

- You choose what, when, and how much to eat.
- You decide whether to be physically active.
- You take your medicines.
- You keep track of your blood glucose (sugar) levels.

Your health care team helps by teaching you about diabetes care and checking your A1C (average blood glucose), blood pressure, cholesterol, and other measures.

What should happen during visits to my health care provider?

Use the following list to make sure you and your health care team are up-to-date on what you need for good diabetes care.

Check at every office visit

Blood pressure: If your blood pressure is not on target, meal planning, physical activity, and medicines can help. Work with your health care team to plan your strategy.

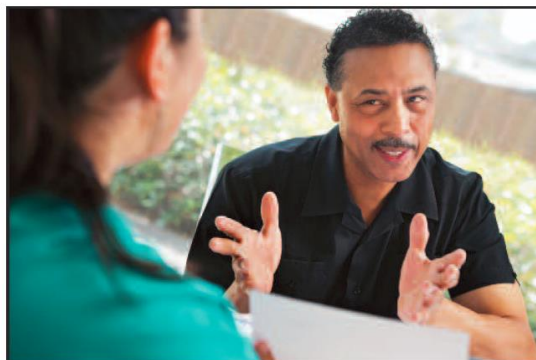
Weight: Preventing weight gain or losing weight may be part of your diabetes care plan. If you need to lose weight, a 10- to 15-pound loss can help you reach your blood pressure, blood glucose, and cholesterol goals. Work with your health care team to plan your goals.

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

Feet: Ask your health care provider to check your feet. Report any changes in how your feet look or feel. Foot problems can be avoided if detected and treated early.

Check at least every 3 to 6 months

A1C: The A1C is the blood glucose check “with a memory.” It tells you your average blood glucose for the past 2 to 3 months. Your average blood glucose may be reported in 2 ways, A1C and estimated Average Glucose (eAG). The eAG will be reported in the same kind of numbers as your day-to-day blood glucose readings. If your average blood glucose is too high, you may need a change in your diabetes care plan. Talk with your health care team.



Your health care team can teach you about diabetes care.

Check at least once a year

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

Foot and eye exams: Once a year, your health care provider can check your feet more thoroughly for signs of nerve damage or other problems. An eye doctor should check your eyes for early warning signs of damage.

Flu shot: Ask for a flu shot every year to keep from getting sick.

Other things to do

Pneumonia vaccine: Get the pneumonia vaccine at least once.

Diabetes education and nutrition counseling: If you need a change in your diabetes management plan, ask your health care provider to refer you for diabetes education and nutrition counseling.

Pregnancy: Talk to your health care provider if you plan to become pregnant. Work to get to a healthy weight before and during pregnancy.

Tracking your targets

The ADA suggests these targets for most people with diabetes. You may have different targets from your health care provider. You can record your targets and your results in the spaces provided here.

What to Do	ADA Targets	My Targets	My Results Date _____	My Results Date _____
At Every Office Visit				
Review blood glucose numbers				
• Before meals	70 to 130 mg/dL			
• 2 hours after the start of a meal	Below 180 mg/dL			
Check blood pressure	Below 140/80 mmHg			
Review meal plan				
Review activity level				
Check weight				
Discuss questions or concerns				
Check your feet				
At Least Every 3 to 6 Months				
A1C, also reported as eAG	Below 7% or below 154 mg/dL			
At Least Once a Year				
Physical exam				
LDL cholesterol	Below 100 mg/dL			
HDL cholesterol	Men: above 40 mg/dL			
	Women: above 50 mg/dL			
Triglycerides	Below 150 mg/dL			
Dilated eye exam				
Flu shot				
Thorough Foot Exam				
Once				
Pneumonia vaccine				



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- Eat more whole grains, vegetables, and fruit.
- Eat fish 2 to 3 times a week.
- Choose healthy fats (in small amounts)
- Cut back on foods with saturated fat
- Cut back on serving sizes.
- Eat less salt and fewer high-sodium foods.

- Take the stairs instead of the elevator.
- Park your car at the far end of the parking lot.
- Take a 30-minute walk, most days of the week.
- Work in the yard, do some housework, or wash the car.

Adapted from “Small Steps. Big Rewards. Prevent Type 2 Diabetes,”
a campaign of the National Diabetes Education Program.
Visit www.ndep.nih.gov for more information.

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My Game Plan: Food & Activity Tracker

Date: From _____ to _____

For making smart food choices:

For getting more physical activity:

DAY: Monday	DAILY FOOD AND DRINK TRACKER
TIME	AMOUNT/NAME/DESCRIPTION
8:00 AM	½ cup oatmeal
	1 cup 1% milk

TO MAKE MORE WEEKLY TRACKERS: Make one (1) copy of this page and three (3) copies of the next page. Cut the pages in half, placing this page on top. Staple in the upper left-hand corner and fold to fit in your pocket or purse. ©2012 by the American Diabetes Association, Inc. 3/14

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DAILY PHYSICAL ACTIVITY

TYPE OF ACTIVITY	MINUTES
TOTAL	



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DAILY PHYSICAL ACTIVITY	
TYPE OF ACTIVITY	MINUTES
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DAILY PHYSICAL ACTIVITY	
TYPE OF ACTIVITY	MINUTES
TOTAL	

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If you have **high blood glucose**, make notes in your log and talk with your health care team about whether you need to change your meal plan, physical activity, or diabetes medicines.

Having low blood glucose means that your blood glucose level is too low (below 70 mg/dl). Low blood glucose can be dangerous. Symptoms include being:

- hungry
- light-headed or confused
- nervous and shaky
- sleepy
- sweaty

If you think your blood glucose is too low, check it. If it's below 70 mg/dl, have 1 of these items right away to raise your blood glucose level:

- 3 or 4 glucose tablets
- 1 serving of glucose gel (the amount equal to 15 grams of carbohydrate)
- ½ cup (4 ounces) of fruit juice
- ½ cup (4 ounces) of a regular (not diet) soft drink
- 8 ounces of milk
- 5 or 6 pieces of hard candy
- 1 tablespoon 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.

Toolkit No. 29

Blood Glucose Log

Name: _____

Date: From _____ to _____

My Doctor

Name: _____

Phone: _____

My Diabetes Educator

Name: _____

Phone: _____

ADA Targets for Blood Glucose	My Usual Results	My Targets
Before meals: 70 to 130 mg/dl	_____ to _____	_____ to _____
2 hours after the start of a meal: below 180 mg/dl	below _____	below _____

TO MAKE MORE MONTHLY LOGS: Make one (1) copy of this page and two (2) copies of the next page. Cut the pages in half, placing this page on top. Staple in the upper left-hand corner and fold to fit in your pocket or purse.
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Date	Time	Breakfast	Medicine/Comment	Time	Lunch	Medicine/Comment	Time	Dinner	Medicine/Comment	Time	Snack/Other	Medicine/Comment

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Date	Time	Breakfast	Medicine/Comment	Time	Lunch	Medicine/Comment	Time	Dinner	Medicine/Comment	Time	Snack/Other	Medicine/Comment

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Date	Time	Breakfast	Medicine/Comment	Time	Lunch	Medicine/Comment	Time	Dinner	Medicine/Comment	Time	Snack/Other	Medicine/Comment