

# DIABETES



## Diabetes and what you need to know

Provided as an educational  
resource by Merck



## Diabetes can affect your whole body

### What is diabetes?

Diabetes is diagnosed when you have too much sugar in your blood. Diabetes may lead to heart disease, stroke, kidney failure, new cases of blindness, and nervous system problems.

You can help reduce the risk of long-term health problems caused by diabetes. Follow your treatment plan to control your

- Blood sugar
- Blood pressure
- Cholesterol



## Major types of diabetes

- Type 2 diabetes is the most common type of diabetes. With type 2 diabetes, your body
  - Does not make enough insulin and/or
  - Cannot use insulin the right way

Most often, this type of diabetes occurs in adults. Once a person has type 2 diabetes, it does not go away.

- Type 1 diabetes
  - In type 1 diabetes, the body does not make insulin.
  - Although type 1 diabetes often occurs in children and young adults, it can happen at any age. Once a person has type 1 diabetes, it does not go away.

**Ask your health care provider to explain anything you do not understand.**

# The role of blood sugar in your body

Sugar is your body's main fuel. But, having too much sugar in your blood can be a problem. Your body's main source of energy is glucose, a type of sugar. You get this sugar from

- The food that you eat
- The sugar that is made in your liver

If you have diabetes, you have too much sugar in your blood.

Ask your health care provider when and how often you should check your blood sugar.



Your body helps lower blood sugar by releasing insulin. Insulin is a hormone that your pancreas makes. Your pancreas is a gland behind your stomach. Insulin helps move sugar from your blood into most of your body's cells where sugar is used for energy.

If you have diabetes, your body does not make enough insulin and/or use insulin the right way.

## Blood sugar control

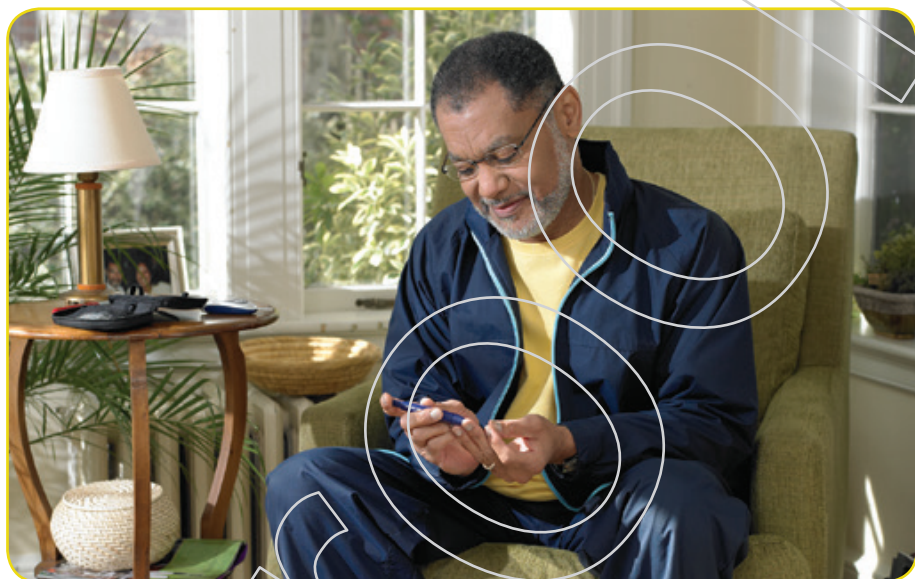
How your blood sugar levels are evaluated

- 1. Home blood sugar testing:** This is a blood test you do yourself with a blood sugar meter each day. The meter measures your blood sugar at that moment.

Write down your test results and go over them at each visit with your health care provider.

You can help control your blood sugar levels by checking your blood sugar levels and keeping track of them.

Ask your health care provider when and how often you should check your blood sugar.



- 2. The A1C test:** This test shows your average blood sugar level over the past 2 to 3 months. The staff at the lab or the health care provider's office usually perform this test.

Ask your health care provider to explain anything you do not understand.

## Blood sugar highs

People with diabetes may have high or low blood sugar at times. Both can be serious if untreated. So learn about high and low blood sugar.

### **What is high blood sugar?**

High blood sugar is also called hyperglycemia [hy-per-gly-SEE-mee-uh]. High blood sugar can occur when you

- Eat too much
- Are less active than usual
- Are sick or under stress
- Need a change in diabetes medicine

### **What to do if you have high blood sugar**

- Regularly check your blood sugar according to your health care provider's instructions.
- If your blood sugar is too high, talk to your health care provider about what to do.



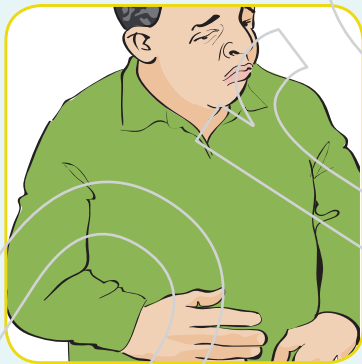
Common symptoms of high blood sugar include:



Feeling thirsty



Having to urinate  
more often



Feeling hungry, even  
though you are eating



Blurred vision

Ask your health care provider to explain anything  
you do not understand.

## Blood sugar lows

### What is low blood sugar?

Low blood sugar is also called hypoglycemia (hy-po-gly-SEE-mee-uh).

Low blood sugar can occur when you

- Eat less or later than usual
- Miss a meal or snack
- Do more physical activity than usual
- Take some types of diabetes medicines

### Common symptoms of low blood sugar include:



Nervousness  
or anxiety



Shakiness



Sweating,  
chills, or  
clamminess



Confusion

See page 12 for a list of additional symptoms of low blood sugar (hypoglycemia).

## **Take action quickly if you have low blood sugar**

- Low blood sugar can happen even when you're doing all you can to manage your diabetes.
- Symptoms may be mild at first. They may worsen quickly if you do not treat them. If you have symptoms of low blood sugar, test your blood sugar right away.

## Blood sugar lows



Check any symptoms that you experience and bring this booklet with you to your next visit with your health care provider.



☐ Dizzy



☐ Shaky



☐ Anxiety



☐ Nervous



☐ Sleepiness



☐ Irritability



☐ Light-headed



☐ Sweating



☐ Hunger



☐ Confusion



☐ Weakness

Symptoms may be mild at first, but may worsen quickly if not treated.

## What to do if you have low blood sugar

1. If your blood sugar is below 70 mg/dL, or if you have any of the symptoms of low blood sugar, eat or drink 15 to 20 grams of glucose or simple carbohydrates. The items below are commonly used:
  - ½ cup of fruit juice or regular soda (not diet)
  - 1 tablespoon of sugar, honey, or corn syrup
  - 2 tablespoons of raisins
  - 1 cup of low-fat (1%) or fat-free milk
  - glucose tablets (follow package instructions)
2. Wait 15 minutes. Then check your blood sugar again.
3. If your blood sugar is still below 70 mg/dL, or if you do not feel better, repeat step 1 every 15 or 20 minutes until your blood sugar is 70 mg/dL or above.
4. If your next meal is 1 hour or more away, eat a snack once your blood sugar is 70 mg/dL or above.
5. If you still do not feel better, or if your blood sugar stays below 70 mg/dL, call your health care provider right away.

Ask your health care provider to explain anything you do not understand.

# Diabetes and smoking

One of the most important changes you can make in your life is to stop using tobacco. Quitting can be hard, but it is worth it.

It is hard to quit smoking. But the good news is that some people quit for the rest of their lives.

- They feel in charge.
- They smell better.
- They may feel more relaxed.
- They may look and feel better.
- They may find it easier to exercise.

Ask your health care provider about the ways smoking can affect your health and your reasons to quit. Together, you can make a plan to help you quit smoking for good.



Here are a few tips to help you get ready to quit smoking:

- Find your own reasons to quit.
- Build support.
- Throw your cigarettes away.
- Find a buddy.

Your plan to quit smoking:

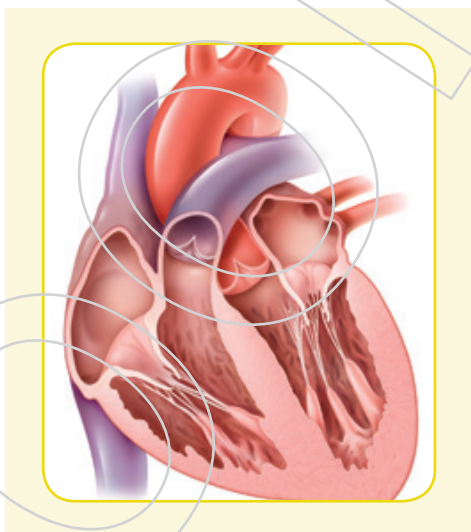
**Target quit date**

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## Diabetes and your heart

Diabetes raises your risk of heart disease.

For people with diabetes, heart disease is the leading cause of death. Major causes of heart disease are high blood sugar, high blood pressure, and high cholesterol, which are common in people with diabetes.





**You can help lower your risk of heart disease by doing the following:**

**(Check your areas for focus)**

- ☐ Control your blood sugar, blood pressure, and cholesterol.
- ☐ Be physically active for at least 30 minutes on most days of the week.
- ☐ Reach and stay at a healthy weight.
- ☐ Eat food high in fiber and low in fat.
- ☐ Stop smoking.
- ☐ Take your medicines as directed by your health care provider.

**Ask your health care provider to explain anything you do not understand.**

## Diabetes and the brain

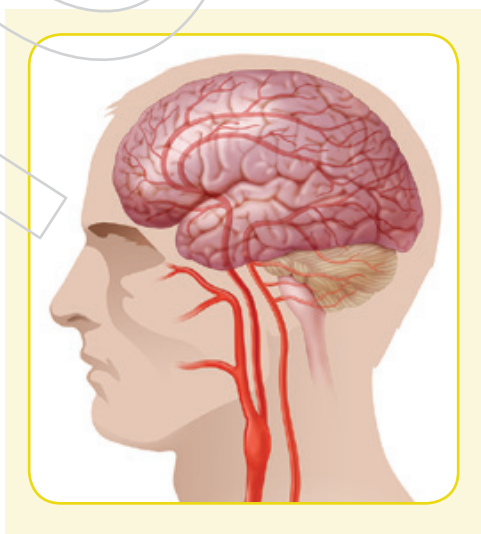
A stroke occurs when blood supply to part of your brain is stopped and brain tissue is damaged.

If you have diabetes, you are more likely to have a stroke. Your risk is even greater if you have high blood pressure or cholesterol levels. You are also at higher risk if you smoke, have a history of stroke or mini-stroke, or have family members who have had a stroke or transient ischemic attack (TIA).

### How can you help lower your risk of having a stroke?

You can help lower your risk by keeping your blood sugar, blood pressure, and cholesterol in control.

You can do this with meal planning, physical activity, and, if needed, medicine. Quitting smoking is also important.



## What are the warning signs of a stroke?

Typical warning signs of a stroke develop suddenly and can include

- Weakness or numbness on 1 side of your body
- Sudden confusion or trouble understanding
- Trouble talking, walking or seeing

If you have warning signs of a stroke, call 911 right away. Getting treatment can help prevent permanent damage to your brain.

**Ask your health care provider to explain anything you do not understand.**

# How diabetes affects your eyes

Diabetes can damage your eyes and is the leading cause of blindness among adults.

Diabetes may cause these common eye problems:

- Diabetes can damage the retina. This is called diabetic eye disease (retinopathy). The retina is a thin layer of tissue covering the back of the eye.
- Cataracts. These make your vision foggy or cloudy.
- Glaucoma. This is high pressure in your eye, which can damage your vision.

Ask your health care provider to explain anything you do not understand.

## Retinopathy



Normal vision



Blurry vision



Vision with retinopathy\*

\*You may be able to see clearly and still have retinopathy.

## How to help protect your eyes from problems:

- Keep your blood sugar under control.
- Keep your blood pressure under control.
- Have a dilated eye exam every year.
- Stop smoking.

## When is my next appointment with an eye doctor?

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Results/Notes:

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# How diabetes affects your mouth

Diabetes increases your risk of gum disease. Gum disease can damage your gums and the bone around your teeth leading to tooth loss.

## Prevent plaque build-up in your teeth

Everyone gets plaque on their teeth. Plaque is a sticky film that comes from chewing food. It is the main risk factor for cavities and gum disease.

Plaque is filled with germs. High blood sugar in your saliva helps these germs grow and leads to gum disease.

**Ask your health care provider to explain anything you do not understand.**

When is my next dentist appointment?

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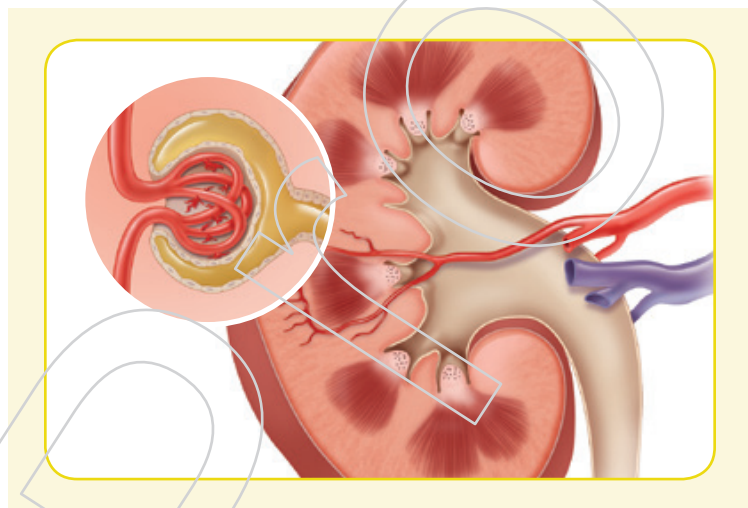


Things you can do to help keep your gums and teeth healthy:

- Brush at least twice a day and floss at least once a day.
- Have your teeth cleaned at a dentist office at least 2 times a year.
- If you smoke, quit.
- Keep your blood sugar under control.

## Diabetes and your kidneys

Diabetes can increase your risk for kidney disease. Your risk is much higher if you are Hispanic/Latino, African American, or Native American. There are things you can do to help prevent kidney disease.



Ask your health care provider to explain anything you do not understand.



## Things you can do to help protect your kidneys:

- Visit your health care provider regularly. Get screened for kidney disease to catch problems early.
- Follow your health care provider's advice. This may include ways to
  - Keep your blood sugar under control
  - Keep your blood pressure and cholesterol under control
  - Lose weight, if you are overweight
  - Be active every day. Talk to your health care provider before starting any physical activity
- Take medicine as directed by your health care provider.

# Diabetes and your nervous system

Diabetes is a leading cause of nerve damage.

Nerve damage can cause you to

- Have numbness, tingling or pain in the toes, feet, legs, hands, arms, or fingers
- Feel like you have a full stomach or throw up a lot
- Have trouble going to the bathroom (urinating)
- Lose the desire or ability to have sex

Ways to help protect yourself against nerve damage:

- Keep your blood sugar, blood pressure, and cholesterol in control.
- Have healthy habits.

Note any symptoms you have experienced related to your nervous system:

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Talk to your health care provider who can diagnose nerve damage based on your symptoms and physical exam.

Ask your health care provider to explain anything you do not understand.

# Diabetes and your legs and feet

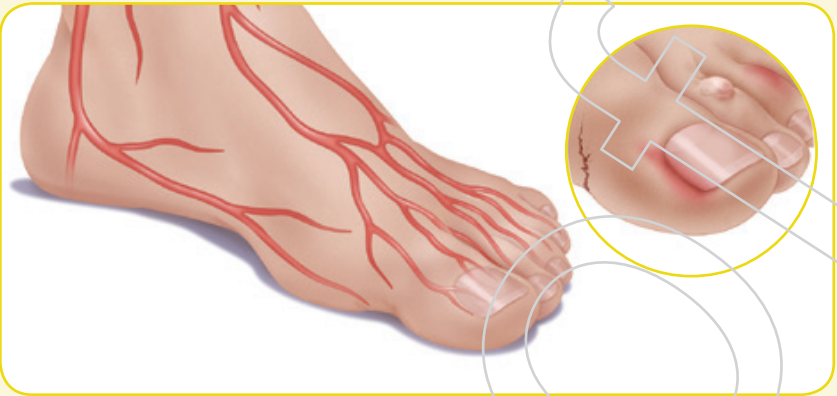
If you have diabetes, it is very important to take care of your feet. In severe cases, diabetes can lead to the loss of a foot or leg. This is why it is best to try to prevent problems before they happen.

Diabetes can cause problems in your feet and legs due to

- Nerve damage
- Poor blood flow

Things you can do to help protect your feet from problems:

- Keep your feet clean and protect them from injury.
- Check your feet every day.
- Do not go barefoot, and always wear clean socks and comfortable shoes that protect your feet.
- Have your health care provider check your feet at every visit.



**Call your health care provider right away if you have any of these:**

- Cuts or breaks in the skin of your foot
- A change in the color or shape of your foot
- Pain or numbness
- An ingrown toenail
- Athlete's foot, blisters, or plantar warts, which can become infected

**Foot examination dates by my health care provider:**

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**Findings from self-checks:**

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# Diabetes and your emotional health

People with diabetes often have extra stress in their lives.

Learn about common signs and ways to help you deal with it. Everyone has different ways of dealing with stress. Here are some ways to help you cope:

- Start a new exercise program or play a sport.
- Start a new hobby or learn a new craft.
- Stay busy. Volunteer at a hospital or a charity.

List activities that you plan on initiating:

_____	_____
_____	_____
_____	_____
_____	_____

**Ask your health care provider to explain anything you do not understand.**

Getting support can help.  
Here are some tips:

- Find a support group.
- Find people with diabetes who are dealing with similar issues.
- Ask your health care provider about seeing a therapist or counselor.



# Make a plan to manage your diabetes

You can help lower your risk for complications of diabetes by doing the following:

- Control your blood sugar, blood pressure, and cholesterol.
- Be physically active for at least 30 minutes on most days of the week.
- Reach and stay at a healthy weight.
- Make healthy food choices, eat foods high in fiber and low in fat.
- Stop smoking.
- Take medications as directed by your health care provider.
- Keep stress in check.
- Get recommended tests, and schedule visits with your health care team.
- Get recommended immunizations.
- Make sure you have a sick-day plan.





Select the number that shows how confident you feel that you can make changes to reach your health goals.

Not confident		Somewhat confident		Very confident	
1	2	3	4	5	
I do not feel confident that I can make the changes to reach my goal.		I feel somewhat confident that I can make the changes to reach my goal.		I am confident that I can make the changes to reach my goal. I know how, and I will start today.	

Ask your health care provider what else you need to do to keep your diabetes under control.

## Diabetes check-ups and testing

What are the regular check-ups and tests needed when you have diabetes?

Test/Exam	How Often It Is Done
A1C	2 to 4 times a year
Blood pressure	Blood pressure should be checked at every visit with your health care provider
Cholesterol and triglycerides	In adults, a screening lipid profile is reasonable at the time of first diagnosis, at the initial medical evaluation, and/or at age 40 years and periodically (eg, every 1–2 years) thereafter
Comprehensive foot exam	Once a year
Kidney function test: Urinary albumin	Urinary albumin should be checked at least once a year
Kidney function test: Creatinine (which is used to estimate glomerular filtration rate [GFR])	Creatinine and GFR should be checked at least once a year
Dilated eye exam	Most people with diabetes should have a dilated eye exam once a year

Measurement		Visit Date	Your Goal	Your Results	ADA Goal for Many Adults With Diabetes*
A1C					<7%
Blood pressure					<140/90 mmHg
Lipids	Total cholesterol				Ask your health care provider about the cholesterol and triglyceride goals that are right for you
	LDL				
	HDL				
	Triglycerides				
Urinary albumin (protein)					<30 g/mg creatinine
Weight					

\*Note: Your goals may be different from those recommended by the American Diabetes Association (ADA). Talk to your health care provider about what your individualized goals should be.

Ask your health care provider about this test and write down your results.

# Diabetes-friendly eating: Create a meal plan

A diabetes-friendly meal plan is a guide that tells you how much and what kinds of food you can choose to eat at meals and snack times. It is designed just for you with your health care provider and/or dietician. The right meal plan may help you control

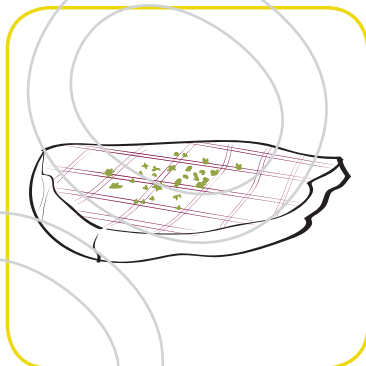
- Your blood sugar
- Your blood pressure
- Your cholesterol numbers
- Your weight

Ask your health care provider about some diabetes-friendly foods that you can start to include in your meals.

## What to eat:



Use low-fat or fat-free milk, yogurt, and cheese.



Grill, bake, or broil lean meat and fish.



Eat more whole-grain breads and cereals.



Add fruits and vegetables into every meal.

# Diabetes-friendly eating: Use the 'Plate Method'

## The "Plate Method"

One way to change your diet is to change the amount of food you eat. The "Plate Method" changes the portion sizes, so you are getting larger portions of nonstarchy vegetables and a smaller portion of starchy foods.

Here's how the Plate Method works:

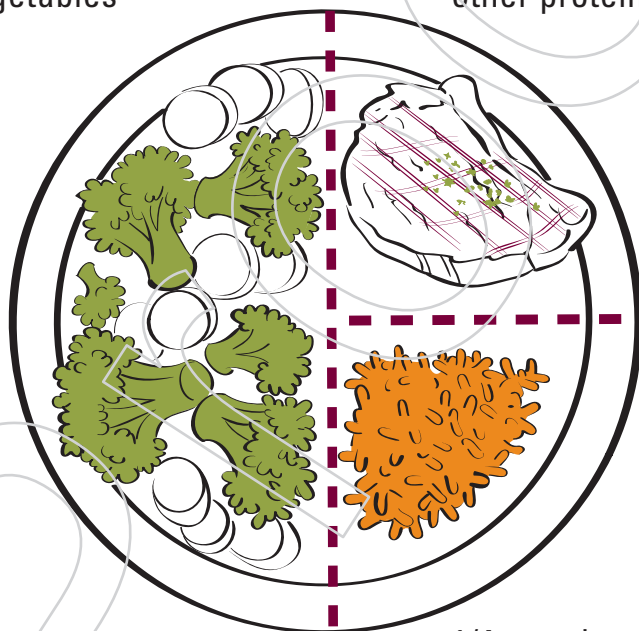
1. Fill the largest section of the plate with nonstarchy vegetables.
2. Fill the small sections of the plate with a starchy food.
3. Fill the other small section of the plate with meat or other proteins, such as
  - chicken or turkey without the skin
  - fish, such as tuna, salmon, or cod
  - lean cuts of beef and pork

## Foods to avoid:

- Sugary drinks, such as soda and juice.
- Avoid foods high in saturated fats, trans fats, and cholesterol.

1/2 nonstarchy  
vegetables

1/4 meat and  
other proteins



1/4 starches

Ask your health care provider for more examples  
of healthy food options.

## Make a plan: Physical activity

Exercise is an important part of your diabetes treatment plan. Being more active each day may help you better manage your diabetes. It may help you

- Lose or maintain your weight
- Lower blood sugar, blood pressure, and cholesterol
- Lower your chance of getting heart disease
- Relieve stress
- Keep joints healthy
- Feel better overall



Playing with  
children

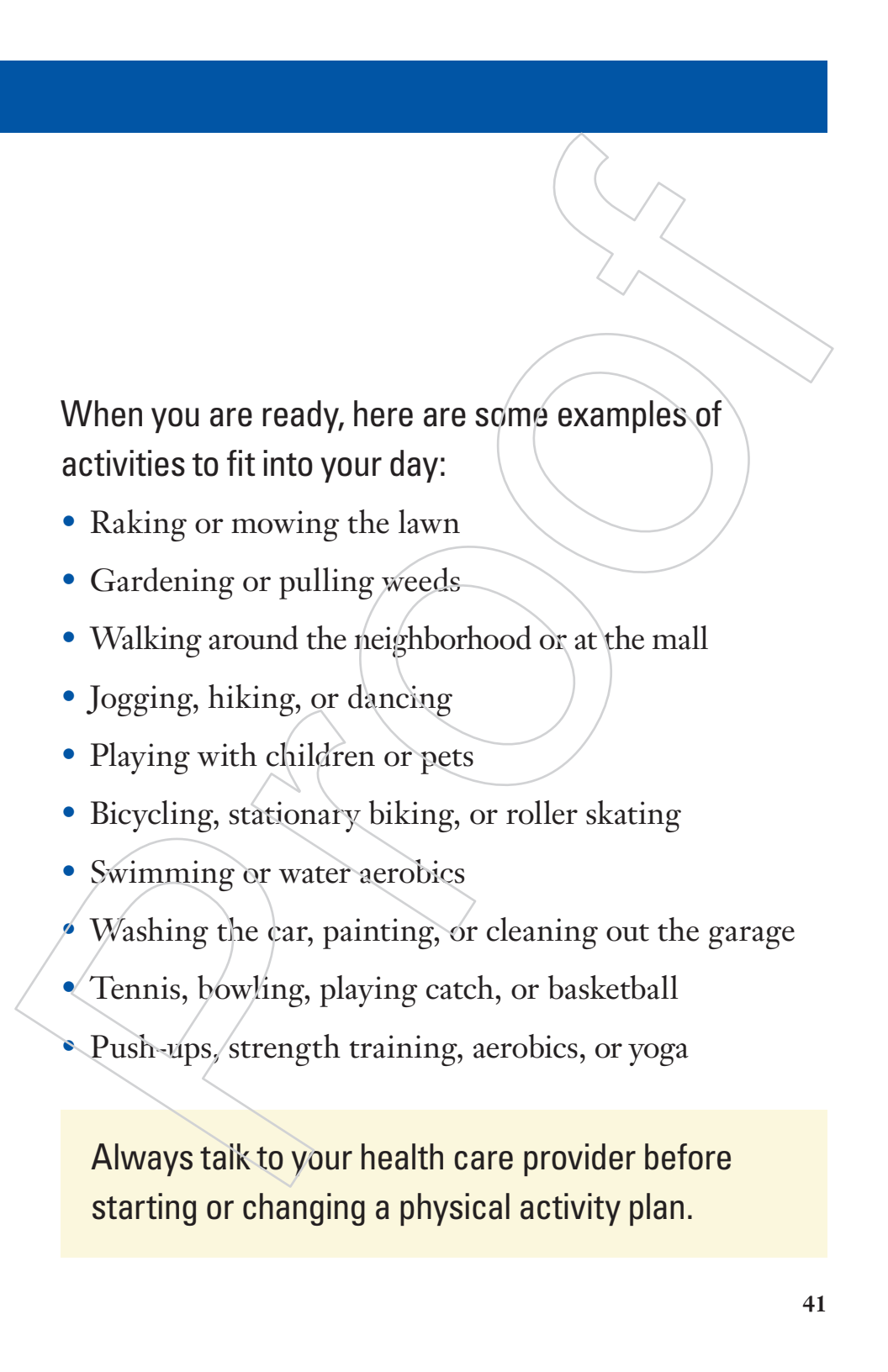


Gardening



Strength training





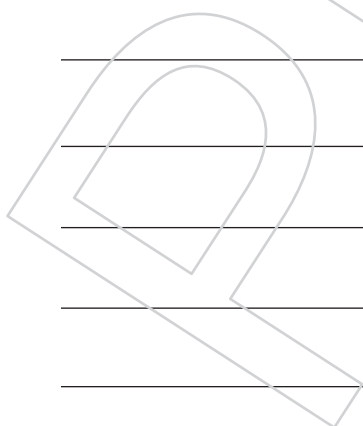
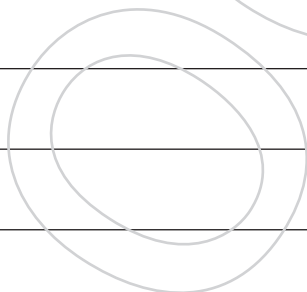
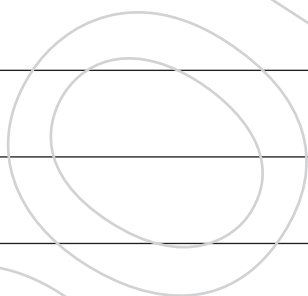
When you are ready, here are some examples of activities to fit into your day:

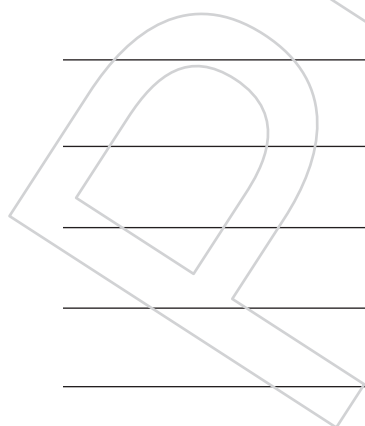
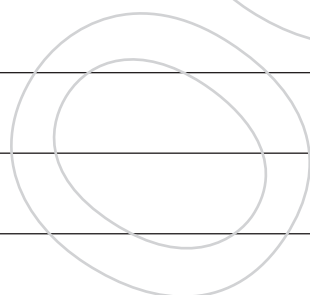
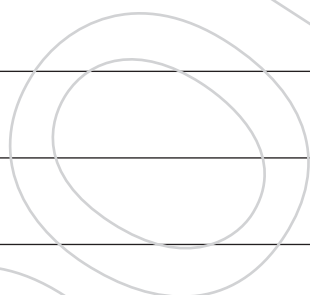
- Raking or mowing the lawn
- Gardening or pulling weeds
- Walking around the neighborhood or at the mall
- Jogging, hiking, or dancing
- Playing with children or pets
- Bicycling, stationary biking, or roller skating
- Swimming or water aerobics
- Washing the car, painting, or cleaning out the garage
- Tennis, bowling, playing catch, or basketball
- Push-ups, strength training, aerobics, or yoga

**Always talk to your health care provider before starting or changing a physical activity plan.**

# DIABETES

Notes:





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