

# getting regular



# exercise

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Exercise isn't a cure-all for your diabetes—but it may be the next best thing. When you combine regular exercise with the other aspects of your treatment, you can expect to feel better, have fewer complications, and live a longer and healthier life.

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## MYTH

“People with diabetes can’t play sports.”

## TRUTH

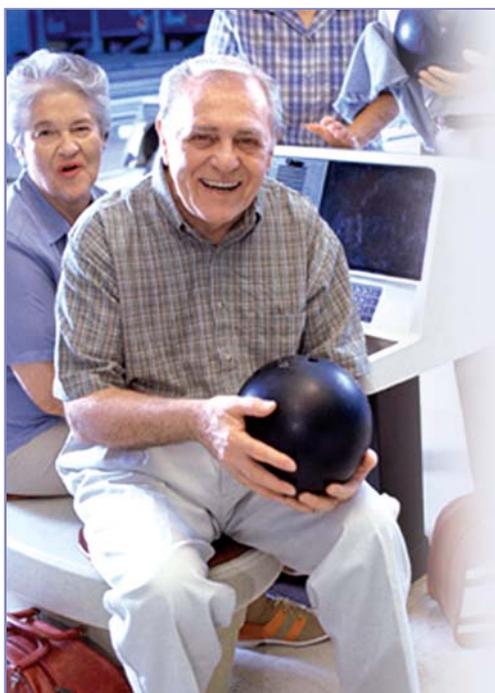
Actually, people with diabetes SHOULD be physically active. Many top athletes have diabetes. The key is balancing physical activity with other aspects of your treatment, such as meal planning and taking medications. This helps to make sure your blood glucose stays in your target range.

## Why exercise?

Exercise has a real—and powerful—effect on your diabetes. Here’s what it does for you:

- **Lowers your blood glucose and improves your body’s ability to use glucose.** You’re burning more fuel, in a more efficient way.
- **Helps reverse the resistance to insulin that comes from being overweight.** As you lose excess body fat, you can actually increase the number of insulin receptors on your cells—and improve your body’s ability to use insulin.
- **Helps control your blood pressure and cholesterol.** This will lower your chance of developing atherosclerosis and other problems that can cause heart attacks and strokes.

Besides helping you manage your diabetes, exercise can also make you stronger, give you more energy, and help you cope with daily stress. It can give you a spring in your step and a boost in your mood.



## *It all adds up!*

According to the American Heart Association and other experts, not all activity needs to come from formal exercise sessions. ALL activity adds up to better health. Here are some tips for adding more activity to your lifestyle:

- Take the stairs instead of the elevator.
- Walk whenever you can, instead of driving.
- Get off the bus a stop early.
- Park farther away and walk.
- Stand up while talking on the phone.
- Lose your TV remote control—get up to change channels.
- At work, use lunch hours and coffee breaks to take a walk around the building.
- Make social occasions more active—instead of dining out, go dancing, bowling, or window-shopping!

## What is exercise—and how much is enough?

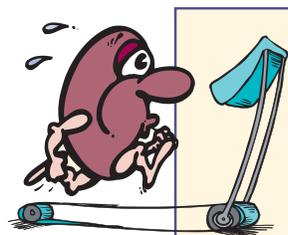
Exercise is physical activity. It includes anything that gets you moving, such as walking, dancing, or working in the yard.

How much exercise is enough? Although any amount of exercise is better than nothing, you should aim for at least **30 minutes of moderate aerobic activity on most days**. If you need to lose weight, you may need to exercise **60 minutes or more each day**.

Aerobic activity is any rhythmic activity that “revs you up”—gets your heart pumping a little faster and a little stronger. Examples include:

- Fast walking
- Jogging or running
- Bicycling
- Swimming
- Dancing
- Aerobic fitness classes or videotapes
- Hiking or snowshoeing
- Jumping rope
- Racquet sports
- Cross-country or downhill skiing
- Using aerobic equipment such as a treadmill, stationary bike, stair climber, or rowing machine

If you’ve been inactive for some time, you may not be able to exercise much at first. You’ll need to build up gradually. See the next section for ideas on getting started.



### NEED ANOTHER REASON?

If you have type 2 diabetes, exercise—when combined with a meal plan—may allow you to control your diabetes without medication.



### A FEELING OF FITNESS

Wondering whether you’re exercising too hard, or not hard enough? Pay attention to your body. Here’s what moderate aerobic activity feels like:

- You’re breathing a little harder, but you’re not out of breath.
- You can carry on a conversation, but you can’t sing a song without pausing for breath.
- You might be perspiring lightly, but you’re probably not dripping with sweat.
- Your muscles may feel a little tired, but they’re not burning with pain.
- You feel invigorated, not exhausted.

### THE BIGGEST RISK

What's the biggest risk of exercising? Not starting.

Studies show that being physically fit improves your health in a number of important ways—including lowering your heart disease risk.



## Getting started, staying safe

Take some time up front to plan your exercise program with your care team. Since they know your medical history and current level of fitness, they can help you set reasonable goals. They can also teach you to balance increased physical activity with changes in food choices, and medication timing or doses.

Once you've set up your program—get started! As you do, be sure to follow the guidelines below.



#### Monitor your blood glucose before, during, and after exercise.

Monitoring can help you learn how exercise affects your blood glucose—and help you avoid problems. Once you get a sense of how exercise works with your food choices, medication, and other factors that affect your blood glucose, **you probably won't need to check your levels as often.** Here's what you're looking for when you monitor—and how to respond to your readings:

- **Before.** If blood glucose is below your recommended range, eat a carbohydrate snack before starting to exercise.



*See the table on page 72 for ideas on how much you should eat before you start off.*

- **During.** Check blood glucose levels every 30 to 45 minutes while exercising. If you're exercising strenuously, you may want to check your levels more often. Eat quick energy, low-fat snacks as needed to keep your blood glucose within your target range.
- **After.** Your blood glucose levels may continue to drop for several hours after activity. That's why you might want to continue monitoring at two-hour intervals, for up to 18 hours after exercise. Snack as needed to keep your levels where you want them.



#### Carry water and a carbohydrate source.

While you exercise, make sure you drink enough water—it's easy to get dehydrated. You should also carry glucose tablets or some other quick energy source, such as a package of Lifesavers candies. Use them to prevent or treat low blood glucose.



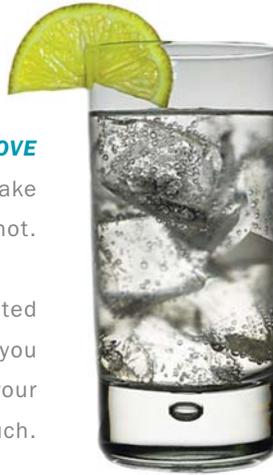
#### Carry diabetes identification.

Always carry some sort of diabetes identification, such as a medical alert bracelet or a wallet card that can explain how you should be treated if you pass out from low blood glucose.

**THE BEST DRINK FOR PEOPLE ON THE MOVE**

Do you need a special sports drink to take along when you exercise? Probably not.

Water is the best thing to keep you hydrated during exercise. You don't run the risk (as you might with a sugary drink) of raising your blood glucose too high by drinking too much.




## exercise safely

**Warm up and stretch.**

Begin each session at a gentle pace, then go on to more vigorous activity after you've warmed up. Stretch a bit afterwards. This will help you avoid injury and stiffness.

**Be consistent from day to day.**

If you exercise all week and sleep all weekend, you may find that the sudden lack of activity causes unused glucose to build up in your blood. Being a "weekend warrior" can also cause problems like hypoglycemia. Just like with eating, consistency with exercise helps you control blood glucose.

**Be careful of your feet.**

To help avoid problems with your feet, always do these things:

- Wear clean, smooth-fitting socks made of natural fibers such as cotton or wool.
- Make sure your shoes fit well, and are appropriate for the kind of exercise you're doing.
- After you exercise, check your feet for blisters, cuts, and scrapes—and look for redness or signs of infection.



See pages 80-81 for more information on foot care.

**If you take insulin, follow these extra guidelines:**

**Ask your care team if you should reduce your pre-exercise dose of insulin.** If you exercise strenuously, eating extra carbohydrates may not be enough to maintain healthy blood glucose levels. Ask your care team about taking less insulin before exercise.

**Time it right.** Try to time your workouts so that they don't happen during the peak time for insulin absorption. The best time to exercise is usually 1-2 hours after a meal, when your blood glucose is still relatively high.

**Inject insulin into non-working muscles.** When you inject insulin into a muscle that you're using heavily for your exercise (a working muscle), the insulin is absorbed faster than usual. This can lead to hypoglycemia.

**Sit it out when you need to.** If your blood glucose is over 300 mg/dL—or if you have ketones in your urine—don't exercise. When blood glucose is that high, exercise may make it go even higher!

## Balancing activity and food intake

### TOO LOW? TOO HIGH? WHY?

Exercise has a powerful, positive effect on your health. But from day to day, the effect of exercise on your blood glucose may not always be quite what you expect. So as you take up a more active lifestyle, watch out for low or high blood glucose. Here's what can happen:

#### ■ You go too low (hypoglycemia).

Exercise usually lowers blood glucose. That's because it increases the amount of glucose used by the working muscles. But if there's not enough glucose available, your blood glucose may drop too low. This is a particular risk if you take insulin to control your diabetes, or if you're exercising longer than 30 minutes.

#### ■ You go too high (hyperglycemia).

Occasionally, very strenuous exercise can make your blood glucose rise too high. That's because the activity has caused your liver to increase the amount of glucose it releases into your bloodstream.

### IF LOW BLOOD GLUCOSE GETS IN THE WAY

If low blood glucose is interfering with your exercise routine, talk to your healthcare team. They may suggest eating a snack before you exercise, or adjusting your medication. They WON'T suggest you give up exercise!

Once you settle into a regular exercise routine, you probably won't have much trouble maintaining healthy blood glucose levels before, during, and after physical activity. But some people may continue to find it tricky—particularly if they take insulin. In this case, follow the additional guidelines below to balance activity with food intake:

Type of exercise	If your blood glucose before exercise is...	...then eat:
<b>low to moderate intensity</b> <ul style="list-style-type: none"> <li>walking half a mile</li> <li>leisurely bicycling for less than 30 minutes</li> </ul>	less than 100 mg/dL	<ul style="list-style-type: none"> <li>During exercise: 10-15 grams of carbohydrate every hour</li> </ul>
	more than 100 mg/dL	<ul style="list-style-type: none"> <li>No food necessary</li> </ul>
<b>moderate intensity</b> <ul style="list-style-type: none"> <li>tennis</li> <li>swimming</li> <li>jogging</li> <li>bicycling</li> <li>gardening</li> <li>golfing</li> </ul>	less than 100 mg/dL	<ul style="list-style-type: none"> <li>Before exercise: 35-50 grams of carbohydrate</li> <li>During exercise: 10-15 grams of carbohydrate every hour</li> </ul>
	100-180 mg/dL	<ul style="list-style-type: none"> <li>During exercise: 10-15 grams of carbohydrate every hour</li> </ul>
	180-300 mg/dL	<ul style="list-style-type: none"> <li>No food necessary</li> </ul>
	300 mg/dL	<ul style="list-style-type: none"> <li>Don't begin exercise until blood glucose is under better control</li> </ul>
<b>strenuous exercise</b> <ul style="list-style-type: none"> <li>long-distance running</li> <li>aerobic dancing</li> <li>racquetball</li> <li>basketball</li> <li>strenuous bicycling</li> <li>swimming</li> <li>shoveling heavy snow</li> </ul>	less than 100 mg/dL	<ul style="list-style-type: none"> <li>Before exercise: 50 grams of carbohydrate</li> <li>During exercise: monitor blood glucose closely</li> </ul>
	100-180 mg/dL	<ul style="list-style-type: none"> <li>Before exercise: 25-50 grams of carbohydrate, depending on intensity and duration of activity</li> <li>During exercise: monitor blood glucose closely</li> </ul>
	180-300 mg/dL	<ul style="list-style-type: none"> <li>During exercise: 10-15 grams of carbohydrate every hour</li> </ul>

## Staying motivated

If you find it hard to stay motivated for exercise, try these tips:

- **Consider your interests.** You're more likely to take up—and keep up—a new habit if it reflects who you are. Do you like competition or contemplation? Bursts of speed or long, steady efforts? Going solo or being guided through the moves? Choose things you enjoy, and mix up your routine occasionally to keep things interesting.
- **Schedule it.** Decide on a specific time for activity every day. Then keep this appointment! Remember, you won't "find" time for exercise. You have to make it.
- **Find a buddy.** Having someone to exercise with can help you stay on a regular schedule, and make fitness more fun. Exercising with family or friends is a great way to build your relationships AND your health.
- **Set short- and long-term goals.** For example, if your long-term goal is to exercise half an hour every day, set a short-term goal of exercising for 10 minutes every day this week. The following week, try for 12 minutes a day, and so on until you reach your long-term goal. (And don't forget to treat yourself to something special when you reach a goal!)
- **Track your progress.** Write down how much you exercise every day in your logbook, or simply put an "X" on the calendar. You might also use a pedometer (a step counter). When your progress is plain to see, you'll probably feel more motivated to keep up the good work.



### WHAT IF YOU MISS A SESSION?

A day off—or two days off—usually isn't cause for concern. But you do need to get back into your exercise routine as soon as you can.

- If you've only skipped a day or two, pick back up where you left off.
- If you've missed more than a week, start back at a lower level than before.
- If you missed exercise because of a short-term, minor illness (like a cold), wait until you feel better before you start exercising again.
- If you've missed sessions because you have a minor injury, wait until your pain disappears. Start back to exercise at two-thirds of your normal intensity, just to make sure you don't re-injure yourself.

Don't waste energy feeling guilty about not exercising—after all, nobody's perfect! Instead, use that energy to get back on track.



### Walking programs

Public health organizations across the country are encouraging people to participate in step-counting programs like the **Utah Walks** program, sponsored by the Utah Department of Health.

This program encourages activity by tracking participants' mileage. Together, Utahns have already walked past the moon. For more information on the program—and some ideas about where to walk in Utah—go to [www.utahwalks.org](http://www.utahwalks.org).