“My Doctor Says Exercise Is Good for My Diabetes…”

Where Do I Start?

BD Getting Started™
Exercise and Diabetes
What will happen if I exercise every day?

Daily exercise will give you more energy and help you become stronger and healthier. It’s easier than you think, but we know how hard it can be to get started, so we designed this booklet to help you plan an exercise program and make the right choices.

You will learn:

• How to keep safe when you exercise.
• Why activity is important for your health, and for your diabetes, too.
• What kind of activity and how much you need to do to stay healthy.
• How to plan your exercise program and get started.

I. What are some safety tips for active people like me who have diabetes?

Get Your Doctor’s Okay Before You Start Exercising

This is especially important if you are older than age 35, have had diabetes for more than ten years, have any complications of diabetes, have not exercised in a long time, or have heart disease.

Exercise has the same effect on blood sugar as insulin. It lowers blood sugar, making you more sensitive to insulin. This is a benefit of exercise that can also pose a problem if it lowers your blood sugar too much. There is a
greater risk of low blood sugar if you take insulin or a diabetes pill that lowers blood sugar by making more insulin. Do not be afraid to exercise because your blood sugar might drop down to low. The tips listed below will tell you how to avoid low blood sugar reactions.

Avoid Low Blood Sugar (Blood Sugar Less Than 70)
(IF YOU HAVE ANY QUESTIONS CHECK WITH YOUR DOCTOR OR DIABETES EDUCATOR)

• Always test your blood sugar before and after exercise
  Write down your numbers in this booklet on page 18 and show them to your doctor or diabetes educator. They can help you adjust your medication if your blood sugar drops below 70. This will also tell you and your doctor or educator how your blood sugar responds to different types of exercise.

• Have at least 15 grams of fast-acting carbohydrate with you to treat low blood sugar
  Examples of carbohydrates are:
  1. Three BD™ Glucose Tablets.
  2. Snacks such as four ounces of juice, one small box of raisins, or four ounces of regular (not diet) soda.
  3. Keep more than 15 grams handy in case you need more.
• Know the symptoms of low blood sugar
  1. Sweating
  2. Rapid heart rate
  3. Dizzy
  4. Headache
  5. Trembling
  6. Hunger
  7. Blurred Vision
  8. Irritable

• If you think you have low blood sugar or feel sick, test your blood sugar right away
  If your blood sugar is below 70, here is what to do:
  1. Take 15 grams of carbohydrate right away.
  2. Rest for 15 minutes.
  3. Test again — if still below 70, have another 15 gram snack. Fifteen grams of carbohydrate will raise your blood sugar about 30 mg/dl to 40mg/dl in 10 to 15 minutes.

Know What Happens to Your Blood Sugar When You Exercise

• You must test your blood sugar before and after exercise because:
  1. Some people with diabetes can have “low blood sugar unawareness.” This is when your blood sugar drops below 70 but you don’t have symptoms of low blood sugar. Always go over your blood sugar numbers with your doctor or diabetes educator.
  2. Exercise has some of the same symptoms as low blood sugar (sweating and rapid heart beat). It is
important to know the cause of your symptoms so you can treat them if necessary.

3. Check all of your medications with your doctor — some medicines, can hide low blood sugar symptoms. That means even if you are not having symptoms you could still have low blood sugar and need to take action.

• **What if you exercise longer than 30 minutes?**
  1. Longer or harder exercise makes your blood sugar drop more than shorter, easier exercise.
  2. Blood sugar may continue to drop for several hours after a workout.

• **What time should you exercise?**
  1. Morning exercise causes your blood sugar to drop less.
  2. Afternoon or evening exercise can make your blood sugar drop more.
  3. If you are on insulin or taking pills that work by making more insulin, evening exercise may result in low blood sugar while you sleep.

• **Have you ever had low blood sugar?**
  1. If you have a history of low blood sugar you are more likely to develop symptoms of low blood sugar after exercise.
  2. You may need to take a carbohydrate snack before going to bed to prevent a low blood sugar reaction while you sleep.
  3. If you are taking insulin, you may need to take less at bedtime if you exercise at night (check with your doctor and read the next section carefully).
• Are you “sensitive to exercise?”
  1. If you and your doctor or diabetes educator feel that you are sensitive to exercise, lower your pre-exercise insulin dose with the help of one of these professionals.
  2. If you do not adjust your insulin before you exercise, eat or drink 15 grams of carbohydrate for every 30 minutes of physical activity.

• Be Prepared!
  1. Always carry money (especially quarters) or a cell phone in case you need to call for help.
  2. Carry identification or wear a bracelet or necklace with your medical information and doctor’s phone number.

More Exercise Safety Tips

• Warm up and cool down
  1. Always warm up first and cool down after exercise.
  2. Move slowly and stretch for five to ten minutes.

• Not used to exercise?
  1. Start slowly (five to ten minutes).
  2. Build up to one to three sessions per week.

• Check your feet
  1. Wear shoes that fit properly.
  2. Always inspect your feet after activity for blisters or sores.
• Drink lots of water
  1. Drink especially in hot weather, even if you are not thirsty.
  2. Have 15 to 20 ounces of water 30-60 minutes before a workout and then 12-15 ounces every 15 minutes during exercise.

• Other hot weather reminders
  1. Avoid exercising in hot, humid weather.
  2. Exercise in early morning or late evening during summer months.
  3. Wear lightweight, comfortable clothing and a hat to keep the sun off your head.

A Few Exercise Alerts

• Have a sore throat, fever or chest cold? Postpone exercise until you feel better.

• Have blood sugar over 250 and ketones? Avoid exercise. (To learn about ketone testing read the BD Picture Page: Urine Testing for Ketones).

• Have blood sugar over 300 and no ketones? Use caution during exercise.

• Is your diabetes in poor control? Do not exercise at all.

• Do you have diabetes eye disease (retinopathy)? Talk to your doctor about the kind of exercise you can do. Resistance exercise (exercise that is done with weight machines, free weights or rubber exercise bands), can raise your blood pressure in the short term. This can cause bleeding in your eye if you have certain kinds of eye problems.
II. How Does Exercise Help My Diabetes and My Health?

Whenever you move, your muscles burn blood sugar (glucose) for fuel. The more you move the more glucose you burn! That means better blood sugar control for most people and better health for everyone.

- **Exercise makes you healthier because physical activity:**
  1. Gives you more energy and strength.
  2. Lowers your cholesterol.
  3. Improves your circulation.
  4. Helps manage your weight.
  5. Strengthens your muscles, bones and joints.
  7. Improves your posture, balance and independent living.
  8. Improves your well-being.
  9. Helps you sleep better.

- **When you don’t exercise, your health risk is similar to the risk of smoking a pack of cigarettes a day — you are more likely to develop:**
  1. Heart disease.
  2. High blood pressure.
  3. Osteoporosis.
  4. Depression.
  5. Obesity.
  6. Colon cancer.
  7. Stroke.
8. Poor circulation.

• Don’t Become One of the Many Out of Shape Americans Because You Are Not Active
1. Despite the importance of physical activity, less than 27 percent of adults in the United States are active enough to gain any health benefit from exercise.
2. It’s easier than you think to be an exercise success!

III. How Do I Choose the Best Exercise Plan for Me?

Know How Much Exercise You Should Do

• Experts agree you need 30 minutes of “moderate-intensity” physical activity each day
  1. This should be done on most — preferably all — days of the week to stay in good health.
  2. If you’re out of shape or short of time, start slowly and add it up in 10-minute periods throughout the day.

Know How Hard You Should Work

• How to tell if you’re doing enough (moderate intensity) to stay healthy
  TAKE THE “TALK TEST” – if you are moving and all of the following things happen, then your activity is just right:
  1. Your breathing increases (but you’re not gasping).
  2. You feel a little warm.
3. You break into a light sweat.
4. All of the above and you can carry on a conversation.

Check to see if you are within your target heart zone. The target heart zone tells you if you are working your heart too much or not enough. If your heart rate does not reach your target heart zone, you are not working hard enough to get any benefit from exercise. If your heart rate is faster than your target heart zone, you are exercising too hard, and must slow down. To learn how to check your heart rate and see a list of target heart zones for your age, go to page 15 and 16.

**Lifestyle Activity**

Getting started is the important thing – any exercise is better than no activity!

- **Add More Daily Activity**
  1. Plan active weekends.
  2. Take the stairs instead of the elevator.
  3. Park at the far end of the parking lot and walk to the office or store.
  4. Walk a few blocks before getting on the bus, and get off a few blocks before your stop.
  5. Pace when waiting for a bus or subway.
  6. Get up from your desk during the day to stretch and walk around.
  7. Carry your own groceries.
8. Take a brisk walk for 10 minutes before lunch.
9. Walk your dog.
10. Trade in your electric mower for a push model, rake your leaves, wash your car by hand.
11. Reduce your TV and computer time.
12. Get up from the sofa and stretch for a few minutes every hour.

**Exercise**

If you are already active but want to increase your endurance, strength and flexibility, choose from any or all of the following 3 activity groups.

1. **Endurance Activities (3 – 5 days a week)**
   Strengthen your heart and lungs, and improve circulation
   Here are some examples of endurance activities:
   - **Walk briskly**
     1. 1-3/4 miles in 35 minutes (20 min./mile) or
     2. 2 miles in 30 minutes (15 min./mile) or
     3. Check the walking program on page 14 if you need help getting started.
   - **Join a mall-walking program**
   - **Cycle**
     1. 5 miles in 30 minutes or
     2. 4 miles in 15 minutes.
   - **Swim laps for 20 minutes**
   - **Jump rope for 15 minutes**
   - **Run 1-1/2 miles in 15 minutes (10 min./mile)**
• Play basketball
  1. Shoot baskets for 30 minutes or
  2. Play a game for 15-20 minutes.
• Dance fast (social) for 30 minutes
• Push a stroller 1-1/2 miles in 30 minutes
• Skate for 30-40 minutes
• Try an exercise video you can do at home
• Check exercise classes at your local Y, recreation or senior center (Observe first to see if you want to try the class)

2. Strength Activities (2-3 days a week)
   Build your muscles and bones, improve posture and balance, and prevent osteoporosis
   Here are some examples of strength activities:
   • Weight lifting
   • Sit-ups and Push-ups
   • Raking and carrying leaves
   • Climbing stairs
   • Wearing a backpack
   • Lifting and carrying groceries

3. Flexibility Activities
   (5-7 days a week)
   Keep your muscles and joints relaxed and mobile so you can move easily and maintain your independence as you get older
   Here are some examples of flexibility activities:
   • Stretching exercises
   • Yoga and T’ai Chi
IV. How Do I Take the First Step?

Failing to plan is planning to fail! Experts recommend that you write down your weekly goals and immediately reschedule any sessions that you miss. Check with your doctor before you begin exercising. Here’s a sample plan.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time of Day</th>
<th># of Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk at lunch</td>
<td>Noon</td>
<td>20</td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sit-ups</td>
<td>Before Dinner</td>
<td>10 each</td>
</tr>
<tr>
<td>Leg lifts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stretch Class</td>
<td>12:30 PM</td>
<td>45</td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sit-ups</td>
<td>Before Bed</td>
<td>15 each</td>
</tr>
<tr>
<td>Push ups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk home</td>
<td>5:00 PM</td>
<td>45</td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk to Grocery Store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wash Car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk in park</td>
<td>9:30 AM</td>
<td>30</td>
</tr>
</tbody>
</table>

Fill in your own Activity Chart on pages 17 and 18.
Once you start you'll need some strategies for sticking with it. Here are some of the best.

• Keep records of your progress.
• Reward yourself (with a movie, massage, book, or new clothes).
• Listen to music or books on tape while you exercise so you don’t get bored.
• Exercise with a partner to keep you motivated (or alone if you prefer some time to yourself).
• Imagine yourself exercising and “rehearse” it in your mind every day.
• Set realistic goals.
• Seek out positive social support and avoid those who discourage you.
• Don’t get discouraged if you don’t see immediate results.
• Don’t give up if you miss a day; just get back on track the next day.
• Build some rest days into your exercise schedule.
• Keep it simple.
• If you have trouble preventing low blood sugars, contact your Diabetes Health Care Team.

So there you have it ... everything you need to know to increase your physical activity and improve your health. **The next step is up to you!** Remember that everyone can share the joy of movement. You’ll feel more alive when you’re physically active. You will have more energy, a brighter outlook, and be healthier. You owe it to yourself. It’s never too late to start!
V. A Sample Walking Program**

<table>
<thead>
<tr>
<th>Warm Up</th>
<th>Target Zone Exercising*</th>
<th>Cool Down Time</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session A</td>
<td>Walk normally. 5 min.</td>
<td>Then walk briskly. 5 min.</td>
<td>Then walk normally. 5 min.</td>
</tr>
<tr>
<td>Session B</td>
<td>Repeat above pattern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session C</td>
<td>Repeat above pattern</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continue with at least three exercise sessions during each week of the program. If you find a particular week’s pattern tiring, repeat it before going on to the next pattern. You do not have to complete the walking program in 12 weeks.

<table>
<thead>
<tr>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk 5 min.</td>
<td>Walk briskly 7 min.</td>
<td>Walk 5 min.</td>
<td>17 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 9 min.</td>
<td>Walk 5 min.</td>
<td>19 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 11 min.</td>
<td>Walk 5 min.</td>
</tr>
<tr>
<td>Walk 5 min.</td>
<td>Walk briskly 9 min.</td>
<td>Walk 5 min.</td>
<td>21 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 13 min.</td>
<td>Walk 5 min.</td>
<td>23 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 15 min.</td>
<td>Walk 5 min.</td>
</tr>
<tr>
<td>Walk 5 min.</td>
<td>Walk briskly 11 min.</td>
<td>Walk 5 min.</td>
<td>25 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 18 min</td>
<td>Walk 5 min.</td>
<td>28 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 20 min.</td>
<td>Walk 5 min.</td>
</tr>
<tr>
<td>Walk 5 min.</td>
<td>Walk briskly 13 min.</td>
<td>Walk 5 min.</td>
<td>30 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 23 min.</td>
<td>Walk 5 min.</td>
<td>33 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 26 min.</td>
<td>Walk 5 min.</td>
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<tr>
<td>Walk 5 min.</td>
<td>Walk briskly 15 min.</td>
<td>Walk 5 min.</td>
<td>36 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 28 min.</td>
<td>Walk 5 min.</td>
<td>38 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 30 min.</td>
<td>Walk 5 min.</td>
</tr>
<tr>
<td>Walk 5 min.</td>
<td>Walk briskly 18 min</td>
<td>Walk 5 min.</td>
<td>40 min.</td>
<td>Walk 5 min.</td>
<td>Walk briskly 30 min.</td>
<td>Walk 5 min.</td>
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</tr>
</tbody>
</table>

**Check with your doctor before you begin exercising.
**Here’s how to check if you are within your target heart rate zone:**

1. Right after you stop exercising, take your pulse: Place the tips of your first two fingers lightly over one of the blood vessels on your neck, just to the left or right of your Adam’s apple. Or try the pulse spot inside your wrist just below the base of your thumb.

2. Count your pulse for 10 seconds and multiply the number by 6.

3. Compare the number to the right grouping below: Look for the age grouping that is closest to your age and read the line across. For example, if you are 43, the closest age on the chart is 45; the target zone is 88-131 beats per minute.

**Check with your doctor before you begin exercising.**
<table>
<thead>
<tr>
<th>Age</th>
<th>Target Heart Range Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 years</td>
<td>100-150 beats per minute</td>
</tr>
<tr>
<td>25 years</td>
<td>98-146 beats per minute</td>
</tr>
<tr>
<td>30 years</td>
<td>95-142 beats per minute</td>
</tr>
<tr>
<td>35 years</td>
<td>93-138 beats per minute</td>
</tr>
<tr>
<td>40 years</td>
<td>90-135 beats per minute</td>
</tr>
<tr>
<td>45 years</td>
<td>88-131 beats per minute</td>
</tr>
<tr>
<td>50 years</td>
<td>85-127 beats per minute</td>
</tr>
<tr>
<td>55 years</td>
<td>83-123 beats per minute</td>
</tr>
<tr>
<td>60 years</td>
<td>80-120 beats per minute</td>
</tr>
<tr>
<td>65 years</td>
<td>78-116 beats per minute</td>
</tr>
<tr>
<td>70 years</td>
<td>75-113 beats per minute</td>
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</tbody>
</table>

Source: Exercise and Your Heart, National Heart, Lung, and Blood Institute/American Heart Association, NIH Publication No. 93-1677.
Now it’s your turn — go ahead, give it a try! Be realistic — it’s not how much you do when you’re just beginning, but that you simply do something. Every journey begins with a single step.

Check with your doctor before you begin exercising.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>TIME OF DAY</th>
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<tbody>
<tr>
<td>Monday</td>
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<td>Tuesday</td>
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<td>Saturday</td>
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<td>Sunday</td>
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</table>
MY TARGET HEART RANGE ZONE IS____________________

<table>
<thead>
<tr>
<th># OF MINUTES</th>
<th>BLOOD SUGAR</th>
<th>HEART RATE</th>
<th>NOTES</th>
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<tbody>
<tr>
<td></td>
<td>Before Exercise</td>
<td>After Exercise</td>
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Written by:
New York, NY

We wish to acknowledge the following health professional for reviewing this publication and providing valuable insight:

Ann Fittante, R.D., M.S., C.D.E.
Swedish Medical Center
Seattle, WA

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