

# Diabetes and Physical Activity

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Physical activity plays an important part in health. This includes any movement that uses energy. Taking part in physical activity provides protection against heart disease and stroke and can help manage blood pressure.

Physical activity affects how your body uses insulin. Muscle cells can use insulin to take up glucose during and after the activity, with the effects lasting up to 24 hours after. Movement also helps muscle cells to use glucose, whether insulin is present or not. The impact on blood-glucose levels will depend on intensity of the activity, how long the activity lasts, and many other factors. Physical activity helps manage blood-glucose levels in the short term and over time can help to lower your A1C, the average measure of blood-glucose levels over the previous two to three months.

## How much physical activity should I do?

The American Diabetes Association (ADA) recommends that adults with diabetes engage in moderate- or vigorous-intensity activity for at least 150 minutes per week. This should be spread out over three days or more. To slowly add more activity, consider a 10-minute walk after each meal for five days during the week and increase that time as you feel able.

## When should I do physical activity?

Try not to let more than two days in a row pass without movement to best support blood-glucose levels. Two to three sessions per week of resistance exercise (including strength training or weight training) are also recommended for adults. This form of physical activity can be done with gym equipment, like weights, machines, or resistance bands. It can also be done with body weight, like push-ups. Resistance exercise includes some activities like rock climbing and activities around the house like yard work and carrying groceries.



## What type of physical activity should I do?

Movement of any variety provides health benefits. The ADA recommends moderate or vigorous activity and resistance exercise for the most benefits to blood-glucose management. Some examples are listed in Table 1.

Older adults can also benefit from balance exercises and flexibility training, or stretching, to reduce the risk of falls. Some activities, like yoga and tai chi, may also help with blood-glucose management. As with any movement, the intensity and duration will play a role in the effect.

**Table 1. Moderate, vigorous, and resistance exercise activities.**

Moderate	Vigorous	Strength Training
Walking	Climbing stairs or hills	Exercises using exercise bands, weight machines, hand-held weights
Dancing	Shoveling snow	Calisthenics/ body-weight exercises (body weight provides resistance to movement) like push-ups or squats
Swimming	Brisk bicycling uphill	Digging, lifting, and carrying as part of gardening, yard work, or farming
Water aerobics	Digging holes	Carrying groceries
Jogging	Running	Some yoga exercises
Gardening (raking and pushing a lawn mower)	Aerobic exercise classes	Some tai chi exercises
Tennis	Intense cycling	
Golf (without a cart)		

## Safety tips

- Be mindful about the effects of activity on blood sugar levels. Increasing physical activity levels can impact your insulin for diabetes management. Let your health-care providers know if you plan to add more movement into your day.
- Check your blood glucose before, during, and after exercising. Do not exercise when your blood glucose is over 240 milligrams per deciliter (mg/dL) or if you have ketones in your urine.
- Carry glucose tablets or a carbohydrate snack with you in case blood sugar levels drop. Wear or carry an identification tag or card saying that you have diabetes.

- Drink plenty of water before, during, and after the activity.
- Avoid exercise before bedtime, because it could cause hypoglycemia during the night.
- Have a discussion with your health-care provider about your diabetes management before jumping into a rigorous activity plan.

Engaging in regular physical activity a few days per week can improve your heart health while supporting blood-glucose management. Some activities provide additional benefits, like helping to protect against falls. Ideas for gradually incorporating more activity into your lifestyle can be found in the Nine-Week Plan to Increase Physical Activity Level in this publication.

<b>Nine-Week Plan to Increase Physical Activity Level</b>	
<b>Weeks 1 and 2: Walk 30 minutes</b>	<b>Week 6: Walk 90 minutes</b>
Walk 10 minutes a day for three days each week. <ul style="list-style-type: none"> <li>• Start small!</li> <li>• Divide activity into two sessions (e.g., five-minute morning and evening walks).</li> <li>• Rest every other day (e.g., walk on Monday, Wednesday, and Friday, and then stretch on Sunday).</li> </ul>	Walk 30 minutes a day on three days. <ul style="list-style-type: none"> <li>• Add five more minutes of exercise per day this week.</li> <li>• Break it into two or three sessions (e.g., 15-minute morning and evening walks, or 10-minute walks after meals.)</li> <li>• Walk on Monday, Wednesday, and Friday.</li> </ul>
<b>Week 3: Walk 45 minutes</b>	<b>Week 7: Walk 105 minutes</b>
Walk 15 minutes a day on three days. <ul style="list-style-type: none"> <li>• Add five more minutes of exercise per day this week.</li> <li>• Break it into two or three sessions per day (e.g., a seven-minute morning walk and an eight-minute evening walk, or a five-minute walk after each meal.)</li> <li>• Walk on Monday, Wednesday, and Friday.</li> </ul>	Walk 35 minutes a day on three days. <ul style="list-style-type: none"> <li>• Add five more minutes of exercise per day this week.</li> <li>• Break it into two or three sessions (e.g., a 15-minute morning walk followed by 10-minute afternoon and evening walks.)</li> <li>• Walk on Monday, Wednesday, and Friday.</li> </ul>
<b>Week 4: Walk 60 minutes</b>	<b>Week 8: Walk 120 minutes</b>
Walk 20 minutes a day on three days. <ul style="list-style-type: none"> <li>• Add five more minutes of exercise per day this week.</li> <li>• Break it into two sessions, if preferred (e.g., 10-minute morning and evening walks.)</li> <li>• Walk on Monday, Wednesday, and Friday.</li> </ul>	Walk 40 minutes a day on three days. <ul style="list-style-type: none"> <li>• Add five more minutes of exercise per day this week.</li> <li>• Break it into two or three sessions (e.g., 20-minute morning and evening walks.)</li> <li>• Walk on Monday, Wednesday, and Friday.</li> </ul>
<b>Week 5: Walk 75 minutes</b>	<b>Week 9: Walk 150 minutes</b>
Walk 25 minutes a day on three days. <ul style="list-style-type: none"> <li>• Add five more minutes of exercise per day this week.</li> <li>• Break it into two or three sessions (e.g., a 15-minute morning walk and a 10-minute evening walk.)</li> <li>• Walk on Monday, Wednesday, and Friday.</li> </ul>	Walk 40 minutes a day on three weekdays and 30 minutes on the weekend. <ul style="list-style-type: none"> <li>• Add another 30 minutes of weekend activity this week. It can take place on one day or throughout the weekend..</li> <li>• Gradually include activities such as hiking, biking, or an aerobics class.</li> </ul>

Adapted from: <http://www.health.gov/paguidelines/>

## Reference

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