

Diabetes and Physical Activity

Ingrid Adams, Dietetics and Human Nutrition

Physical activity plays an important part in the life of a person with diabetes. Being physically active helps you control your blood glucose and blood pressure. Taking part in physical activity provides protection against heart disease and stroke. Research shows that physical activity can even improve a person's mood and self esteem. In addition, physical activity is an excellent way to control excess weight.

Types of physical activity

There are several types of exercise.

- Endurance exercise—moderate or vigorous aerobic movement
- Strength exercises
- Balance exercises
- Stretching exercises

How much physical activity should I do?

The American Diabetes Association (ADA) developed a consensus statement with recommendations regarding exercise for patients with type 2 diabetes.

- Do 150 minutes per week or more of moderate-intensity aerobic physical activity (brisk walk, jog, swim, bike)
- Do 75 minutes per week or more of vigorous aerobic exercise
- Distribute physical activity over three days per week or more
- Do resistance exercise three times per week. Target all major muscle groups (unless your health provider advises against it)
- Try not to go more than two days in a row without exercising

Guidelines on Starting an Individualized Exercise Program

Avoid strenuous activity if:

- Blood pressure is higher than 180/100
- Active eye damage-proliferative retinopathy or recent laser therapy
- Recent foot problems or no feeling in extremities (hands and/or feet)
- Heart problems
- Over age 40
- Over age 30 and have had diabetes for more than 10 years

Exercise plan

Start with a little. If you haven't been doing any physical activity, talk to your health care team before you begin. Walking, working in the yard, and dancing are good ways to start. As you become stronger, you can add a few extra minutes to your physical activity. If you feel pain, slow down or stop and wait until it goes away. If the pain comes back, talk with your health care team right away.

Goals of an exercise plan include:

- Consistent exercise schedule
- Aerobic (jog, swim, bike) and anaerobic (weight lifting, push-ups) exercises
- Duration of 20 minutes/session or per day
- Intensity of 50-75 percent maximum heart capacity (220 - age = 100 percent capacity)
- If obese, burn or work off 700 to 2000 calories/week

*Being physically active helps
you control your blood glucose
and blood pressure.*

The ideal exercise plan is:

- Individualized, based on:
 - Fitness level
 - Age
 - Weight
 - Personal goals
 - Medical history
- Cleared with your doctor

Record the following details of your activities:

- Blood-glucose values before and after 20 minutes of exercise
- Type, duration, intensity of exercise
- Any symptoms, such as pain dizziness, shortness of breath, low blood glucose or hypoglycemia.

Have your doctor explain to you which symptoms should be reported immediately and what to do about others that may occur.

Physical activities		
Moderate	Vigorous	Strength Training
Walking	Climbing stairs or hills	Exercises using exercise bands, weight machines, hand-held weights
Dancing	Shoveling snow	Callisthenic exercises (body weight provides resistance to movement)
Swimming	Brisk bicycling up hill	Digging, lifting, and carrying as part of gardening
Water aerobics	Digging holes	Carrying groceries
Jogging		Some yoga exercises
Aerobic exercise classes		Some Tai Chi exercises
Bicycle riding (stationary or on a path)		
Gardening (raking and pushing a lawn mower)		
Tennis		
Golf (without a cart)		

Remember

- Some physical activity is better than no physical activity.
- Get some physical activity every day. It's better to walk 10 or 20 minutes each day than one hour once a week.
- Physical activity may be broken into 10-minute segments.
- Always check with your physician before you get involved in physical activity.
- Choose an activity you enjoy. The more fun it is, the more likely you will do it each day. It's also good to exercise with a family member or friend.
- If you have a chronic condition and cannot do 150 minutes of moderate physical activity a week then, be as physically active as you can.

Safety Tips

- Receive medical clearance before starting a physical activity program.
- Understand whether and how your diabetes affects your ability to do regular physical activity safely.
- Carry glucose tablets or a carbohydrate snack with you in case you get hypoglycemia. Wear or carry an identification tag or card saying that you have diabetes.
- Drink plenty of water before, during, and after the activity.
- Check your blood glucose before, during, and after exercising. Don't exercise when your blood glucose is over 240 mg/dl or if you have ketones in your urine.
- Don't exercise right before you go to sleep because it could cause hypoglycemia during the night.

Walking is a moderate type of activity with low risk of injury. If you have been inactive for many years set as your goal: 3 hours to 3 hours and 30 minutes of walking a week. This is about 180 to 210 minutes. Start slowly and gradually work your way up to your goal.



Nine-week plan for physical activity

Weeks 1 and 2	
Start at a low level. Walk 10 minutes a day 3 days a week.	Walk 30 minutes a week.
Divide the 10 minutes a day into two sessions. For example, walk 5 minutes in the morning and 5 minutes in the evening.	
Walk one day and rest the next. For example, walk on Monday, rest on Tuesday; walk on Wednesday, rest on Thursday; walk on Friday; rest on Saturday.	
Week 3	
Add 5 more minutes of exercise a day. You will now be walking 15 minutes a day.	Walk 45 minutes a week.
Your 15 minutes may be broken up into two sessions. For example, walk for 7 minutes in the morning and 8 minutes in the evening.	
Walk for 15 minutes on Monday, Wednesday, and Friday	
Week 4	
Add 5 more minutes of exercise a day. You will now be walking for 20 minutes a day.	Walk 60 minutes a week.
Your 20 minutes may be broken up into two sessions. Walk for 10 minutes in the morning and 10 minutes in the evening	
Walk for 20 minutes on Monday, Wednesday, and Friday	
Week 5	
Add 5 more minutes of exercise a day. You will now be walking for 25 minutes a day.	Walk 75 minutes a week.
Your 25 minutes may be broken up into two or even three sessions. Walk for 15 minutes in the morning and 10 minutes in the afternoon or vice versa.	
Walk for 25 minutes on Monday, Wednesday, and Friday	
Week 6	
Add 5 more minutes of exercise a day. You will now be walking for 30 minutes a day.	Walk 90 minutes a week.
Your 30 minutes may be broken up into two or even three sessions. Walk for 10 minutes in the morning, 10 minutes in the afternoon, and 10 minutes in the evening. OR walk 15 minutes in the morning and 15 minutes in the evening.	
Walk for 30 minutes on Monday, Wednesday, and Friday	
Week 7	
Add 5 more minutes of exercise a day. You will now be walking for 35 minutes a day.	Walk 105 minutes a week
Your 35 minutes may be broken up into two or even three sessions. Walk for 15 minutes in the morning, 10 minutes in the afternoon, and 10 minutes in the evening, OR walk for 20 minutes in the morning and 15 minutes in the evening.	
Walk for 35 minutes on Monday, Wednesday, and Friday	
Week 8	
Add 5 more minutes of exercise a day. You will now be walking for 40 minutes a day.	Walk 120 minutes a week
Your 40 minutes may be broken up into two or even three sessions. Walk for 20 minutes in the morning and 20 minutes in the evening.	
Walk for 20 minutes on Monday, Wednesday, and Friday	
Week 9	
Add another day of activity on the weekend. Walk for 40 minutes on or throughout the weekend.	Walk 160 minutes a week
Your 40 minutes may be broken up into smaller activity times.	
Gradually include activities such as hiking, biking, or an aerobic class.	

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

Reference

- American Diabetes Association. Fitness. Accessed April 21, 2015, at: <http://www.diabetes.org/food-and-fitness/fitness/>.
- National Diabetes Information Clearinghouse. What I need to know about physical activity and diabetes. Accessed April 21, 2015, at: <http://www.diabetes.niddk.nih.gov/dm/topics/physical.aspx>.
- Sigal, R.J., G.P. Kenny, D.H. Wasserman, C. Castaneda-Sceppa, and R.D. White. (2006). Diabetes. A consensus statement from the American Diabetes Association. *Diabetes Care*. 29:1433-1438.
- U.S. Department of Health and Human Services. 2008 physical activity guidelines for Americans. Accessed April 21, 2015, at: <http://www.health.gov/paguidelines/>

Contributor: Margaret E. Cook-Newell, R.D., L.D., CDE

Image from the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health.

Educational programs of Kentucky Cooperative Extension serve all people regardless of race, color, age, sex, religion, disability, or national origin. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Nancy M. Cox, Director, Land Grant Programs, University of Kentucky College of Agriculture, Food and Environment, Lexington, and Kentucky State University, Frankfort. Copyright © 2015 for materials developed by University of Kentucky Cooperative Extension. This publication may be reproduced in portions or its entirety for educational or nonprofit purposes only. Permitted users shall give credit to the author(s) and include this copyright notice. Publications are also available on the World Wide Web at www.ca.uky.edu.

Revised 12-2015