Diabetes Canada clinical practice guidelines:
What’s new in the physical activity chapter

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We have known for many years that physical activity or exercise is important for people with diabetes to reduce the risk of health problems and disability, as well as to improve their overall well-being. For people with type 2 diabetes, physical activity can also improve glucose control and may reduce the need for insulin and other medications. The Diabetes Canada 2018 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada incorporated several important new research findings related to physical activity.1

New evidence on the profound benefits of physical activity and modest weight loss

The Action for Health in Diabetes (Look-AHEAD) trial was, by far, the largest randomized trial evaluating the effects of physical activity and modest weight loss in people with diabetes.2 In this study, over 5,000 people with type 2 diabetes were randomly assigned either to usual care or intensive lifestyle intervention. The intensive lifestyle intervention group received structured coaching with goals to exercise 175 minutes per week (mainly by walking) and reduce their food intake enough to lose about seven per cent of their body weight. The intervention lasted four years, and participants were followed for up to seven more years after the intervention ended.

Surprisingly, there was no significant difference between the two groups in the risk of developing heart problems, perhaps because the usual care group was prescribed more medications that lowered cholesterol and blood pressure. However, for many other health outcomes, the intensive lifestyle group did much better than the usual care group.3 Compared with the usual care group, the intensive intervention group lost more weight, had greater improvements in physical fitness, glucose control, blood pressure, and cholesterol (with less medication), and fewer of them developed sleep apnea, kidney disease, eye disease, depression, sexual problems, urinary incontinence, and knee pain.
They also had lower healthcare costs and less physical disability than the group randomly assigned to receive usual care. This large study provided strong evidence for the value of increasing physical activity and reducing body weight in people with diabetes.

**How much physical activity should people do?**

People with (and without) diabetes should try to accumulate at least 150 minutes per week of aerobic activity, like brisk walking, spread over at least three days of the week, with no more than two consecutive days without activity. It is not necessary for people to do all their activity for the day in a single session. It is fine, for example, to walk 10 minutes three times a day or 15 minutes twice a day.4

**Alternate between higher-intensity and lower-intensity (“interval training”)**

By alternating between higher-intensity and lower-intensity exercise in the same session, people can increase their physical fitness even more, and lose more abdominal fat, compared with exercising at the same moderate pace continuously for a similar amount of time. There are several ways to do this. People could, for example, alternate between walking very briskly for three minutes and walking more slowly for three minutes. As people become more physically fit, they could try alternating between running as quickly as they can for 30 seconds and walking slowly for 90 seconds.

**Strength training (“resistance training”)**

In addition to aerobic exercise, like walking, people should also try to do strength training at least twice per week. People with diabetes tend to lose more muscle mass and strength over time than people without diabetes. Regular strength training can help prevent or reverse this deterioration, and it reduces the chance of developing a disability or heart problems. If people want to start strength training, it is best to have a qualified trainer teach them how to do the exercises properly. The trainer should then review the program periodically to ensure they are doing the exercises in a way that will maximize the benefits while keeping the risk of injury low.
What if arthritis makes it difficult to walk?

Many people with diabetes have arthritis, especially if they are older and/or overweight. People with joint pain often have difficulty walking as long, or as briskly, as they would like to. For people with joint pain, exercise in water is often an excellent option. This does not have to be swimming; you could walk in a swimming pool or take “aquacise” classes. New research shows that exercise in water can provide benefits similar to those from walking.

Minimize the time spent sitting without interruption

People who spend more time sitting down without interruption have higher risks of dying prematurely, and tend to have higher blood pressure, more abdominal fat, higher blood glucose, and higher triglycerides than people who spend less time sitting. This is true even after taking into consideration the amount of physical exercise. People can interrupt the time they spend sitting; get up briefly at least every 20 to 30 minutes; take a short walk; or even just stand in place. People might consider programming their cell phones or other electronic devices to remind them to stand up when they have been sitting for 30 minutes.

Use an accelerometer or pedometer to monitor physical activity and achieve goals

Many people are not as physically active as they think. Pedometers (devices that count steps) and accelerometers (devices that count steps and movement through space) are more widely available and more sophisticated than a few years ago. Using one of these devices can help increase the likelihood that people will reach their physical activity goals. A new device might not need to be purchased; most smartphones have built-in accelerometers and apps to track the user’s activity.

A goal of 10,000 steps per day is often mentioned. One study has shown that people who are successful at maintaining significant weight loss tend to average about 10,000 steps per day. However, not everyone finds it realistic to reach this goal, and it is possible to achieve health benefits with lower amounts of activity. Several studies have found that people with type 2 diabetes tend to average about 5,000 steps per day, which is less than ideal. Increasing the level to 7,500 or 8,000 steps per day is a worthwhile, and usually achievable, goal. People might consider wearing a pedometer for a week without changing their usual activities, to obtain their starting step count. Whatever this number is, people should try to increase it by at least 2,000 steps per day over a period of a few weeks.

Helpful resources

Diabetes Canada
Resources for people with diabetes
(http://guidelines.diabetes.ca/patientresources)

These include handouts on the benefits of physical activity, maintaining aerobic exercise, and planning for regular physical activity. Plus there is an introductory strength training program and videos illustrating strength training exercises.

Resources for healthcare providers
(http://guidelines.diabetes.ca/healthcareproviderresources):

These include tools, slides, videos, webinars, and case studies.

Alberta Centre for Active Living
Physical Activity Counselling Toolkit
(www.centre4activeliving.ca/our-work/physical-activity-counselling-toolkit/)

Designed to help facilitate the physical activity counselling process with patients and discuss how to stay safe when active.

What is Physical Activity?

This infographic is designed to be used when counselling clients or patients about daily physical activity, or to assist the public in understanding the wide variety of ways to integrate physical activity into daily life.
What if time is a barrier to exercise?

Although it is ideal to do at least 150 minutes of aerobic exercise per week, doing smaller amounts of physical activity still has some health benefits.

Even a smaller amount of physical activity is better than none.

References


About the Author

Ron Sigal, MD, MPH, FRCPC, is Professor of Medicine, Kinesiology, Cardiac Sciences, and Community Health Sciences at the Cumming School of Medicine, University of Calgary and a practising endocrinologist.

Dr. Sigal has been conducting research on exercise and diabetes for over 20 years, and he was the lead author of the 2018 Physical Activity Chapter in the Diabetes Canada Clinical Practice Guidelines.