



CANADIAN *diabetes*

Diabetes Is Worth Sweating For

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EDITORS' NOTE

The prevalence and healthcare costs associated with type 2 diabetes are increasing worldwide. The main reason for the increase is changes in lifestyles in our society—specifically, less exercise being performed and excessive calories being consumed. Although there have been many improvements in the therapeutic options available, studies continue to show that half of people with diabetes fail to achieve the glycemic target of glycated hemoglobin (A1C) <7% (1). Just as the main reason for the increased prevalence of type 2 diabetes is lifestyle changes, the cornerstones of treatment must also incorporate lifestyle changes. Of these changes, the need for increased exercise is paramount.

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In this issue of *Canadian Diabetes*, we take a closer look at exercise as a treatment or adjunct to treatment for type 2 diabetes. Most people with diabetes have insulin resistance, and one of the most effective ways to improve insulin sensitivity is exercise. The 2008 Canadian Diabetes Association (CDA) clinical practice guidelines emphasize exercise as an essential part of treatment (2). The guidelines recommend a minimum of 150 minutes of moderate- to vigorous-intensity aerobic exercise a week—essentially 30 minutes per day of activity equivalent to brisk walking. The guidelines also recommended resistance exercise 3 times per week, with the benefits of both types of exercise being additive. A meta-analysis cited in the guidelines indicates that either type of exercise (aerobic or resistance) improves glycemic control (3). Another recent meta-analysis (4) supports this finding, showing that structured exercise—aerobic or resistance or a combination of both—of more than 150 minutes per week reduced A1C levels by 0.89%. This reduction is equivalent to that associated with

some oral diabetes agents (5), and so exercise can be an attractive option for some individuals who are reluctant to add to or increase their medications. Considering that 80% of people with diabetes die of cardiovascular disease, another reason to encourage regular physical activity is that it may reduce the toll of cardiovascular complications by 39% to 70% over 15 to 20 years (6).

The CDA guidelines state: “Despite a strong body of evidence supporting the health benefits of lifestyle modifications in people with type 2 diabetes, application in medical care settings remains a challenge” (2). An article in this issue of *Canadian Diabetes* provides a reminder of key points to address with patients in order to help address this challenge. Drs. Shields and Fowles point out that most Canadians with diabetes are not active enough to reap the benefits, and so physical activity promotion must form part of every visit. They remind us that we need to consider the following key points:

1. Make physical activity a counselling priority.
2. One size does not fit all.
3. Acknowledge patients' realities.
4. Evaluate your own position.

The second article in this issue deals with pre-exercise screening in patients with diabetes. Dr. Ronald Sigal is a renowned exercise physiologist who has served on the guideline committees of the CDA and American Diabetes Association. Dr. Sigal and Ms. Marni J. Armstrong point out the possible risks associated with exercise in the diabetes population. People with diabetes frequently have undiagnosed coronary artery disease, and diabetes is a risk equivalent of known coronary artery disease in a person without diabetes. We know that people with diabetes are at increased risk of sudden cardiac death, arrhythmias and acute myocardial infarction. Does this mean

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that our patients with diabetes should be screened with a stress test before starting an exercise program? Armstrong and Sigal point out that while an electrocardiogram (ECG) stress test should be considered for previously sedentary individuals with diabetes who wish to undertake exercise *more vigorous* than brisk walking, it is rare that previously sedentary individuals want to start with a vigorous, intensive aerobics program. For most patients a stress test is not needed, although a baseline resting ECG is recommended for those ≥ 40 years and for those who have had diabetes >15 years, hypertension, proteinuria, reduced pulses or vascular bruits. Pre-exercise screening is not needed in people undertaking resistance training.

The CDA guidelines recommend 150 minutes per week of moderate-intensity exercise and resistance training 3 times per week for people with type 2 diabetes. It has been shown that the benefits of physical activity and exercise far outweigh the risks of a sedentary lifestyle. At the intensity of exercise that most patients will undertake, ECG stress testing is not required prior to starting an exercise program. It should be recognized that physical activity and exercise are cornerstones of diabetes care that need to be reinforced by all members of the diabetes care team at every patient appointment.

REFERENCES

1. Harris SB, Ekoe JM, Zdanowicz Y, et al. Glycemic control and morbidity in the Canadian primary care setting (results of the Diabetes In Canada Evaluation study). *Diabetes Res Clin Pract.* 2005;70:90-97.
2. Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Canadian Diabetes Association 2008 clinical practice guidelines for the prevention and management of diabetes in Canada: Physical activity and diabetes. *Can J Diabetes.* 2008;32(suppl 1): S37-S39.
3. Snowling NJ, Hopkins WG. Effects of different modes of exercise training on glucose control and risk factors for complications in type 2 diabetic patients: a meta-analysis. *Diabetes Care.* 2006;29:2518-2527.
4. Umpierre D, Ribeiro PA, Kramer CK, et al. Physical activity advice only or structured exercise training and association with HbA1c levels in type 2 diabetes. *JAMA.* 2011;305:1790-1799.
5. Hanna A. Attaining glycemic targets through combinations of anti-hyperglycemic agents. *Can Diabetes.* 2009;22:3-8.
6. Sigal RJ, Kenny GP, Wasserman DH, et al. Physical activity/exercise and type 2 diabetes: a consensus statement from the American Diabetes Association. *Diabetes Care.* 2006;29:1433-1438.

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