Physical activity and exercise

Key elements from the Canadian Diabetes Association 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada

Author: Paul Oh, MD MSc FRCPC.

The power of lifestyle... for the prevention and treatment of diabetes

Low physical fitness is as strong a risk factor for mortality as smoking.1

The power to improve your patients’ blood glucose control is in their hands...and feet! Physical activity can be as powerful as glucose-lowering medication... with fewer side effects.2

Regular physical activity can:
• Improve fitness
• Increase vigour
• Improve blood glucose control
• Decrease insulin resistance
• Improve lipid profile and blood pressure
• Help maintain weight loss
• Reduce morbidity and mortality

The Canadian Diabetes Association CPGs recommend 150 minutes of aerobic exercise and 3 sessions of resistance exercise per week. Most people living with diabetes currently do not meet these targets.

As a diabetes healthcare professional, you can substantially improve the adoption of regular physical activity (PA):
• Ask about PA at every diabetes-focused visit
• Use the new Canadian Diabetes Association Physical Activity and Exercise tools here diabetes.ca/physicalactivityprofessionals
• Advise inactive patients to get started
• Encourage and guide those who are active to maintain or progress further with their PA

Across the country, the Canadian Diabetes Association is leading the fight against diabetes by helping people with diabetes live healthy lives while we work to find a cure. We are supported in our efforts by a community-based network of volunteers, members, employees, healthcare professionals, researchers and partners. By providing education and services, advocating on behalf of people with diabetes, supporting research and translating research into practical applications – we are delivering on our mission.

diabetes.ca | 1-800-BANTING (226-8464)

The Canadian Diabetes Association 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada can be found at diabetes.ca/2008CGs.
Getting going – the 5 “A”s of PA promotion

Assess: establish current PA level and readiness
Determine frequency, intensity, time and type of PA
• Not active, not thinking about PA
• Not active, ready for PA
• Active and ready to maintain or progress

Advise: strongly encourage all patients to get more active
Review health risks, benefits of PA, appropriate amount and type of PA.

Agree: collaboratively develop goals and a personalized action plan
Provide individually relevant exercise prescriptions, time frames and monitoring strategies to meet the goals.

Assist: identify personal barriers and strategies to overcome barriers
Identify connections and resources for exercise and PA in the community.
• Regional Canadian Diabetes Association offices
• Canadian Society for Exercise Physiology (CSEP)
  – Find an exercise professional (www.csep.ca)
• Canadian Physical Activity Guidelines
• Canadian Association of Cardiac Rehab
  – Find a local program (www.cacr.ca)
• Canadian Centre for Activity and Aging (www.caa-outreach.com)
• YMCA and local fitness facilities
• Municipal / Community programs
• Canadian Kinesiology Alliance (www.cka.ca)

Arrange: specify plan for follow-up at diabetes focused visits with telephone calls or email reminders
Review PA level at subsequent visits and provide advice to achieve the next level of activity.

Successful PA counselling includes:
• Discussion of decisional balance (pros and cons), barriers, opportunities and supports
• Development of specific action plans and goals

Table 1. Aerobic exercise

<table>
<thead>
<tr>
<th>Definition and recommended frequency</th>
<th>Intensity</th>
<th>Examples</th>
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| Rhythmic, repeated and continuous movements of the same large muscle groups for at least 10 minutes at a time | Moderate: 50 – 70% of person’s maximum heart rate | • Biking
• Brisk walking
• Continuous swimming
• Dancing
• Raking leaves
• Water aerobics |
| | Vigorous: >70% of person’s maximum heart rate | • Brisk walking up an incline
• Jogging
• Aerobics
• Hockey
• Basketball
• Fast swimming
• Fast dancing |

Table 2. Resistance exercise

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| Activities that use muscular strength to move a weight or work against a resistant load* | 3 times per week | • Exercise with weight machines
• Weight lifting |
| | • Start with 1 set of 10 – 15 repetitions at moderate weight
• Progress to 2 sets of 10 – 15 repetitions
• Progress to 3 sets of 8 repetitions at heavier weight |

*Initial instruction and periodic supervision are recommended.

CPG chapters of interest
• Physical Activity and Diabetes
• Nutrition Therapy
• Management of Obesity in Diabetes
• Hypoglycemia
• Identification of Individuals at High Risk of Coronary Events

Physical activity and exercise is safe – cardiovascular complications occur in about 1/100,000 hours of exercise.

Structured counselling by healthcare professionals effectively increases PA adoption.
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• Brisk walking  
• Continuous swimming  
• Dancing  
• Raking leaves  
• Water aerobics |
| Recommended for a minimum of 150 minutes per week (moderate intensity) | Vigorous: >70% of person’s maximum heart rate | • Brisk walking up an incline  
• Jogging  
• Aerobics  
• Hockey  
• Basketball  
• Fast swimming  
• Fast dancing |

### Table 2. Resistance exercise

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• Progress to 3 sets of 8 repetitions at heavier weight | • Exercise with weight machines  
• Weight lifting |
| 3 days per week | 10 minutes at a time |

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- Nutrition Therapy
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