Ontario Kinesiology Association

POSITION STATEMENT

KINESIOLOGISTS AND DIABETES EDUCATION

According to the Diabetes Canada Report on Diabetes in Ontario, the number of Ontarians diagnosed with diabetes has risen by 80% over the past decade. In 2012, one million Ontarians had it; by 2016, that number had risen to 1.6 million. In fact, including undiagnosed diabetes and pre-diabetes, 30% of Ontarians – 4.6 million people – are estimated to be affected, with diagnosis rates expected to rise by another 46% by 2026.[1]

Risk factors for diabetes in Ontario remain troubling. Approximately 55% of Ontario adults and 30% of children are overweight or obese.[2] In 2012, a report from the Office of the Auditor General of Ontario noted that "hospitalization rates for heart attacks, infections, ulcers or amputations among people with diabetes have increased and did not meet targets." In 2014, the Auditor General noted that the number of Ontarians with diabetes is expected to continue to rise, to 2.2 million Ontarians in 2024. That year, the Auditor General estimated the annual cost to Ontario's health care system by diabetes treatment at $5.8 billion per year, expected to hit $7.6 billion by 2024.[3]

Beyond the patient health implications of living with diabetes are the impacts on Ontario's health care budget. An individual diabetes patient costs Ontario's health care system more than $3,000 per year. That cost rises to $5,000 if the patient experiences complications. Diabetes complications account for 69% of all limb amputations, 53% of kidney dialysis and transplants, 39% of heart attacks and 35% of strokes in Ontario.[4] The Auditor General estimates that a typical patient with diabetes costs more than twice as much to treat as an average patient.

Diabetes has significant economic ramifications. Chronic conditions such as heart disease, diabetes and arthritis are associated with an increased probability of not being able to work due to health reasons. Among the conditions posing the greatest risk of inability to work are combinations of heart disease and diabetes.[5] Nationwide, diabetes results in an incremental loss of productivity which costs the economy about $82.8 million.[6]

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[1] *Report on Diabetes in Ontario*. Canadian Diabetes Association. 2016.
[2] *Report on Diabetes in Ontario*. Canadian Diabetes Association. 2016.
[3] 2014 Annual Report of the Auditor General of Ontario.
[4] 2012 Annual Report of the Auditor General of Ontario.
[5] Smith, Peter, Cynthia Chen, Cameron Mustard, Amber Bielecky, Dorcas Beaton and Selahadin Ibrahim. *Examining the relationship between chronic conditions, multi-morbidity and labour market participation in Canada: 2000-2005*. Cambridge University Press, Vol. 34, No, 10, Nov. 2014, pp 1730-1748.
[6] Zhang W, McLeod C, Koehoorn M. *The relationship between chronic conditions and absenteeism and associated costs in Canada.* Scandinavian Journal of Work, Environment and Health, Vol. 42 No. 5, 2016, 413-422.

In 2014, the Auditor-General noted that the Province still has not re-assessed whether the 3% threshold set for spending on prevention under the Diabetes Management Strategy was the ideal ratio.

MANAGEMENT AND PREVENTION OF DIABETES

Ontario has focused on expanding diabetes programs to improve the health care services and quality of life of those living with diabetes. However, the Auditor General concluded in 2012 that "in the short term the results (of this strategy) have been mixed." The report noted that 90% of people with diabetes have Type 2 diabetes, "which can often be prevented or postponed with good nutrition and exercise to limit weight gain." The Ontario Kinesiology Association supports doing more to help postpone, prevent and manage diabetes and its symptoms.

Science has established physical inactivity as an independent causal risk factor for diabetes. According to Dr. Ian Blumer in the Province of Ontario's Stand up for Diabetes video, "Exercise helps control your blood glucose. It helps to lower your bad cholesterol. It helps to control your blood pressure. If all the ways that exercise helped you were replicated in a drug, it would be considered a miracle drug."

At least 50% of diabetes can be prevented through structured lifestyle intervention programs focused on healthy eating and physical activity.[7] Among high-risk groups, a properly structured and supported exercise program and modest weight loss have been shown to lower the risk by as much as 58% in some high-risk populations. In fact, physical activity seems to play a role in preventing Type 2 diabetes across ethnic groups and in both sexes.[8]

With benefits of exercise and physical activity clearly and fully substantiated by the scientific research, it is time for the Government of Ontario to fully fund and integrate exercise prescription delivered by regulated health professionals into primary care to help prevent Type 2 diabetes (and 25 other chronic conditions)[9] and into Diabetes Education Teams to manage the disease.

As Ontario's regulated professionals in exercise and the science of human movement, Registered Kinesiologists have the education, training, autonomy and comprehensive clinical skills needed to serve clients with complex physical needs, including the prevention and management of diabetes.

DIABETES EDUCATION TEAMS

Diabetes Education Programs (DEPs) consist of a core team of Certified Diabetes Educators who are Registered Nurses and Registered Dieticians and function to educate patients on medication management and healthy food practices as they relate to managing diabetes. DEPs may also include chiropodists, social workers, health promoters, and community

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[7] Colagiuri R, Girgis S, Gomez M, Walker K, Colagiuri S, O'Dea K. (Menzies Centre for Health Policy, University of Sydney). *Evidence based guideline for the primary prevention of type 2 diabetes.* Sydnet (AUS): 2009. 213 p.

[8] *Exercise and Type 2 diabetes*. The American College of Sports Medicine and the American Diabetes Association, joint statement. Colberg, Sheri R. et al. Diabetes Care, Dec. 2010, Volume 33 Issue 12, e147-e167.

[9] Public Health Agency of Canada

health workers that collectively provide a multidisciplinary approach to both clinical and lifestyle related needs of diabetics.

While many diabetes educators feel ill-equipped counsel patients on exercise[10], efforts have been made to improve non-exercise specialist confidence in providing exercise counseling for diabetic patients in the form of exercise prescription tool-kits.[11] While these efforts make substantial gains for exercise literacy, given the often comorbid nature of chronic diseases with Type 2 diabetes, it remains advantageous to have qualified exercise specialists specifically trained to provide fitness assessments and exercise prescriptions in clinical settings.[12] With other forms of behavioural change, this need for active guidance has been demonstrated. For instance, with smoking cessation interventions for those with COPD, positive effects on behavioural change were found in efforts which included facilitating action planning, prompting self-recording, and offering advice on weight control and the use of support.[13]

A recent environmental scan in Ontario found only 57 of 102 FHTs (55.8%) offered any physical activity programs for the prevention or management of chronic diseases. Seventy-six of the 117 physical activity services reported by responding FHTs were limited to rostered FHT patients, not open to anyone in the community. This study also reported only 10 of the 95 staff delivering physical activity programming were regulated exercise professionals i.e. Registered Kinesiologists. Similarly, of 30 health promoters employed at these Family Health Teams, 10 were Kinesiologists. Only five FHTs reported offering a one-on-one physical activity counseling service.[14]

Some Diabetes Education Centres, like the Guelph Family Health team and North Hamilton Community Health Centre, are already making strides in integrating Kinesiology into their diabetes management and treatment routines. At the Guelph FHT two Registered Kinesiologists are also Certified Diabetes Educators who support patients through their diabetes management. These Kinesiologists work one-on-one with patients with diabetes and prediabetes to set exercise goals and prescribe individualized exercise programs to be completed at the clinic's fitness room or in the community while also delivering supervised group exercise classes and community educational sessions. The North Hamilton CHC has a Registered Kinesiologist on staff who sees about 25 to 30 patients per day, many of them patients who have received knee or hip replacements from diabetes complications or who are preparing to do so. The Kinesiologist provides custom-tailored, personalized, supervised exercise programs to these patients. This program should serve as a positive example of how Registered Kinesiologists can be integrated into diabetes education in Ontario.

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[10] Dillman CJ, Shields CA, Fowles JR, Perry A, Murphy RJL, Dunbar P. *Including Physical Activity Exercise in Diabetes Management: Diabetes Educators' Perceptions of Their Own Abilities the Abilities of Their Patients*. Can J Diabetes 2010;34:218–26. doi:10.1016/S1499-2671(10)43010-5.

[11] Shields C a, Fowles JR, Dunbar P, Barron B, McQuaid S, Dillman CJ. *Increasing diabetes educators' confidence in physical activity and exercise counselling: the effectiveness of the "physical activity and exercise toolkit" training intervention*. Can J Diabetes 2013;37:381–7. doi:10.1016/j.jcjd.2013.08.265.

[12] Warburton DER, Charlesworth SA, Foulds HJA, McKenzie DC, Shephard RJ, Bredin SSD. *Qualified exercise professionals: Best practice for work with clinical populations*. Can Fam Physician 2013;59:759–61

[13] Bartlett, Yvonne K., P. Sheeran and M.S. Hawley. *Effective behaviour change techniques in smoking cessation interventions for people with chronic obstructive pulmonary disease: A meta-analysis.* Br J Health Psychol. 2014 Feb; 19(1): 181-203.

[14] Moore C, Lee J, Milligan J, Giangregorio L. *Physical activity as medicine among family health teams: an environmental scan of physical activity services in an interdisciplinary primary care setting*. Appl Physiol Nutr Metab 2015;40:302–5. doi:10.1139/apnm-2014-0387.

POLICY POSITION

The Ontario Kinesiology Association recommends integrating Registered Kinesiologists into all of Ontario's Diabetes Education Teams to provide physical fitness and, personalized exercise programs to help manage type 2 diabetes.

BUDGETARY CONSIDERATIONS

OKA estimates that the cost of this initiative would be approximately $20 million for one FTE Kinesiologist per Diabetes Education Team.

ABOUT KINESIOLOGY IN ONTARIO

Ontario is the world's first jurisdiction to regulate the profession of Kinesiology. This is a clear recognition of the health and economic evidence for the benefits of physical activity programs designed and implemented by a qualified professional. Registered Kinesiologists, like other self-governing regulated providers, have a responsibility to ensure residents are protected. They are obligated to abide by strict rules of professional conduct, to pursue regular professional development to enhance their knowledge and skills, and are mandated to always work within their scope of practice – namely, "the assessment of human movement and performance and its rehabilitation and management to maintain, rehabilitate or enhance movement and performance."