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## Report summary

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# Diabetes in Canada: facts and figures from a public health perspective

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### Introduction

*Diabetes in Canada: facts and figures from a public health perspective* is the first comprehensive diabetes surveillance report published by the Public Health Agency of Canada. The report aims to support public health professionals and organizations in developing effective, evidence-based public health policies and programs to prevent and manage diabetes and its complications.

The report, developed in collaboration with provincial and territorial governments, the Canadian Diabetes Association, Juvenile Diabetes Research Foundation, CNIB, Health Canada and the academic community, uses data from national health surveys and vital statistics, as well as population-based administrative data from the Canadian Chronic Disease Surveillance System (CCDSS). For the first time, the CCDSS contains data from all 13 Canadian jurisdictions.

Using CCDSS data representing cases of diagnosed diabetes among Canadians aged one year and older, *Diabetes in Canada* presents prevalence and incidence national rates from the fiscal year 2008/2009 and national trends from 1998/1999 onwards.\* The report also outlines sub-populations at higher risk, ways of reducing the risks of developing the disease and its complications, and estimates of related economic costs. In

addition, it contains sections on specific populations, including children and youth and First Nations, Inuit and Métis populations.

### Highlights

#### *Prevalence and incidence*

Nearly 2.4 million Canadians (6.8%) were living with diagnosed diabetes in 2008/2009. According to data obtained from blood samples, it is estimated that an additional 450 000 had undiagnosed diabetes at that time.

The overall age-standardized prevalence of diagnosed diabetes increased by 70% since 1998/1999. Prevalence has been consistently higher among males than females, and has increased in every age group, particularly in the 35- to 39-year and 40- to 44-year age groups, where proportions doubled. According to projections, an estimated 3.7 million Canadians will have diabetes by 2018/2019.

Over 200 000 Canadians (6.3 incident cases per 1000 population) were newly diagnosed with diabetes in 2008/2009 alone (6.8 incident cases per 1000 males, 5.7 incident cases per 1000 females), and nearly half were aged between 45 and 64 years. Age-standardized diabetes incidence rates among Canadians remained relatively stable between 1998/1999 and 2008/2009.

#### *Diabetes in children and youth*

In 2008/2009, more than 3000 incident cases of both types of diabetes were reported among Canadians aged 1 to 19 years. Type 1 diabetes remains the most prevalent form of diabetes in children and youth, but type 2 diabetes has been on the rise among youth worldwide for the last two decades.

#### *Diabetes in First Nations, Inuit and Métis populations*

The age-standardized prevalence of diabetes was 17.2% among First Nations people living on-reserve, 10.3% among those living off-reserve and 7.3% among Métis, while the prevalence among Inuit was comparable to that of the general Canadian population. Compared to non-Aboriginal individuals, Aboriginal people are generally diagnosed with diabetes at a younger age and experience higher rates of complications, and females experience higher rates of gestational diabetes.

#### *Comorbidities, complications, health care utilization and economic burden*

In 2009–2010, 36.5% of Canadian adults with diabetes reported having two or more serious chronic conditions (hypertension, heart disease, chronic obstructive pulmonary disease, mood disorder and/or arthritis). Compared to individuals without diabetes, those with the disease were

\* Specific conventions are used to distinguish between different periods of reference used by the various data sources. The following section of the report presents more information on these conventions, periods of reference, and data sources: <http://www.phac-aspc.gc.ca/cd-mc/publications/diabetes-diabete/facts-figures-faits-chiffres-2011/introduction-eng.php#bx3>

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over 3 times as likely to be hospitalized with cardiovascular disease, 12 times as likely with end-stage renal disease and almost 20 times as likely with non-traumatic lower limb amputation.

In 2008/2009, working age adults (20–49 years old) with diabetes saw a family physician twice as often as those without diabetes, and specialists two to three times as often. Annual per capita health care costs have been estimated to be three to four times greater in a population with diabetes than that without.

### **Mortality**

Diabetes itself does not typically cause death, but complications from diabetes can and do. This is reflected in decreased life expectancy and health-adjusted life expectancy. More than a quarter (29.9%) of those who died in 2008/2009 had diabetes. In every age group, individuals with diabetes have mortality rates at least double that of those without the disease.

### **Prevention**

Social, economic, environmental, lifestyle and genetic factors all have significant effects on the distribution of type 2 diabetes in the Canadian population. Advancing age, obesity, physical inactivity and ethnic background as well as a family history of diabetes (or gestational diabetes) are all important risk factors.

Obese adults are two to four times as likely to have type 2 diabetes. In 2007–2009, 23.9% of adults aged 18 years and older were obese according to measured body mass index. In 2009–2010, almost half (47.4%) of Canadians aged 12 years and older reported that they were physically inactive (leisure and transportation index); in the same period, more than half (55.9%) reported eating vegetables and fruit less than five times a day, which is used as a proxy measure of unhealthy diet.

The risk factors for type 1 diabetes are still not well understood. Studies suggest that genetic predisposition and environmental factors that trigger the auto-immune response are implicated.

## **Summary**

Although overall incidence of diabetes has been stable over the last decade, prevalence has been increasing steadily, resulting in a substantial number of Canadians living with diabetes. Our population is aging; together with increasing rates of obesity, the risk of developing diabetes is expected to increase. However, Canadians can reduce their individual risk by being physically active and by maintaining normal weight or losing excess body weight.

For those with diabetes, self-management through lifestyle modifications and/or use of blood sugar-lowering medication is key. Moreover, blood sugar, blood cholesterol, blood pressure, kidney function and the eyes should be regularly monitored to prevent or mitigate the development of complications.

The full version of this report is available on the Public Health Agency of Canada website at: <http://www.phac-aspc.gc.ca/cd-mc/publications/diabetes-diabete/facts-figures-faits-chiffres-2011/index-eng.php>