



# DIABETES IN CANADA

## HIGHLIGHTS FROM THE CANADIAN CHRONIC DISEASE SURVEILLANCE SYSTEM

Diabetes is a chronic condition that affects Canadians of all ages. If left uncontrolled, diabetes results in consistently high blood sugar levels (hyperglycemia), which can lead to serious complications such as cardiovascular disease, vision loss, kidney failure, nerve damage, and amputation. Fortunately, it is possible to remain healthy with diabetes through appropriate management and care.

The Public Health Agency of Canada (PHAC), in collaboration with all provinces and territories, conducts national surveillance of diabetes to support the planning and evaluation of related policies and programs. This fact sheet presents an overview of diagnosed diabetes data (type 1 or type 2 combined) from the Canadian Chronic Disease Surveillance System (CCDSS, **Box 1**).

### WHAT IS DIABETES?

Diabetes is a chronic condition that occurs when the body loses its ability to produce or properly use insulin, a hormone that controls sugar levels in the blood. There are three main types of diabetes: type 1, type 2 and gestational diabetes. Other types are uncommon.<sup>1</sup>

- **Type 1 diabetes** is an autoimmune disease. The immune system destroys the insulin-producing cells of the pancreas, leaving the individual dependent on an external source of insulin for life. It typically develops in children and youth, but it can also occur in adults.
- **Type 2 diabetes** is a metabolic disorder. It occurs when the pancreas does not produce enough insulin and/or when the body does not properly use the insulin produced. Individuals who are overweight or obese, physically inactive, or of certain ethnic

origins, and those who have a family history of diabetes are more likely to develop type 2 diabetes. It typically appears in adults older than 40 years, but it can also occur at a younger age.

- **Gestational diabetes** occurs in pregnant women, if high blood sugar levels develop during pregnancy. Although it usually disappears after the delivery, it increases the risk of developing type 2 diabetes later.

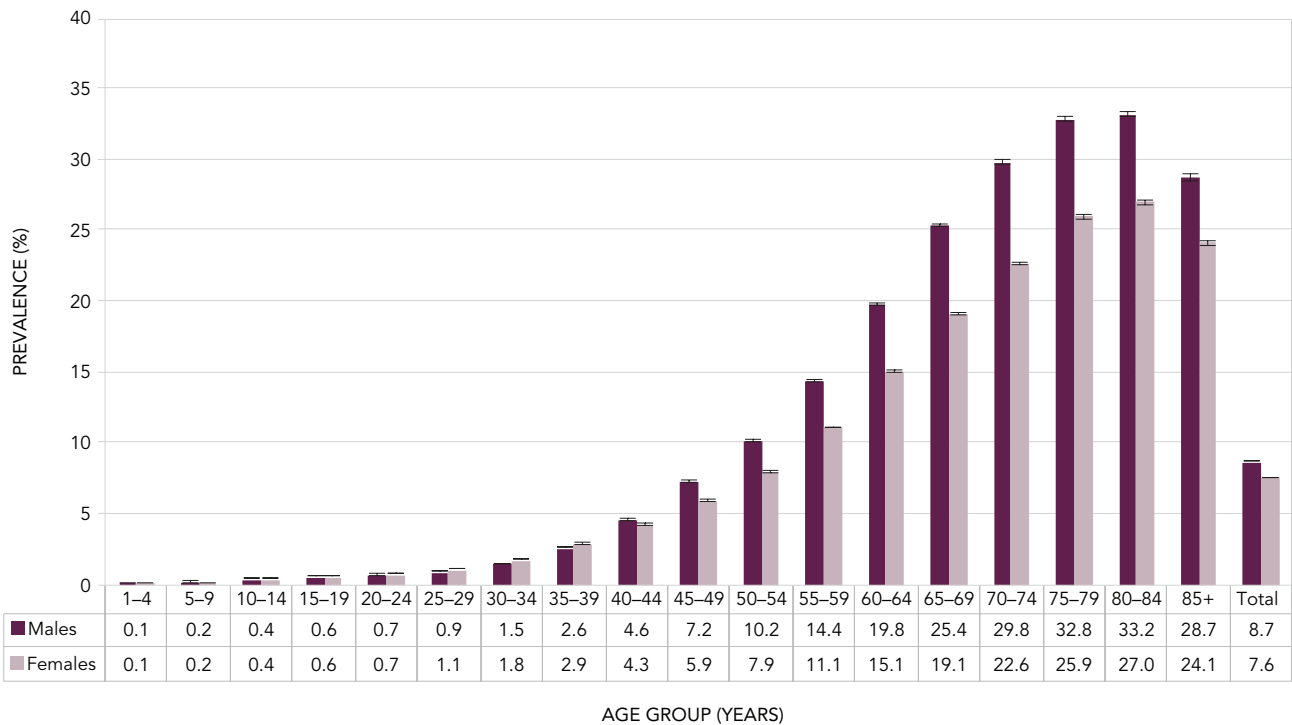
It has been estimated that 90% of diabetes cases among Canadian adults are type 2, 9% type 1, and less than 1% of a different type,<sup>2</sup> while the large majority of diabetes cases among children and youth are type 1.<sup>1</sup> Moreover, gestational diabetes is reported in about 5.5% of births.<sup>3</sup>



# HOW MANY CANADIANS LIVE WITH DIABETES? (PREVALENCE)

According to the most recent data (**Box 1**), about 3.0 million Canadians (8.1%) were living with diagnosed diabetes in 2013–2014, representing 1 in 300 children and youth (1–19 years), and 1 in 10 adults (20 years and older). The prevalence of diagnosed diabetes generally increases with age and is higher among males (8.7%) than among females (7.6%), both overall and in most age groups (**Figure 1**).

**FIGURE 1:** Prevalence of diagnosed diabetes (%), by age group and sex, Canada, 2013–2014



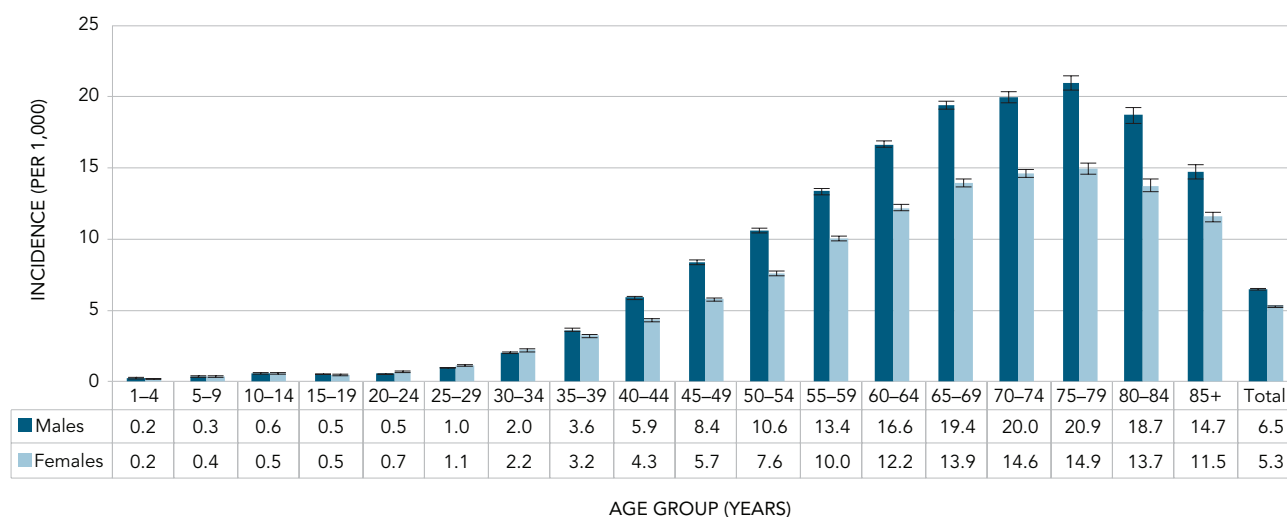
**NOTE:** The 95% confidence interval shows an estimated range of values which is likely to include the true value 19 times out of 20.  
**DATA SOURCE:** Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, May 2017.



## HOW MANY CANADIANS ARE NEWLY DIAGNOSED WITH DIABETES EACH YEAR? (INCIDENCE)

In 2013–2014, close to 200,000 Canadians were newly diagnosed with diabetes (5.9 per 1,000 population). This represented 0.4 new cases per 1,000 population among children and youth and 7.6 new cases per 1,000 population among adults. Following a pattern similar to the prevalence of diagnosed diabetes, incidence generally increases with age and is higher among males (6.5 per 1,000 population) than among females (5.3 per 1,000 population), both overall and in most age groups (**Figure 2**).

**FIGURE 2:** Incidence of diagnosed diabetes (per 1,000 population), by age group and sex, Canada, 2013–2014



**NOTE:** The 95% confidence interval shows an estimated range of values which is likely to include the true value 19 times out of 20.

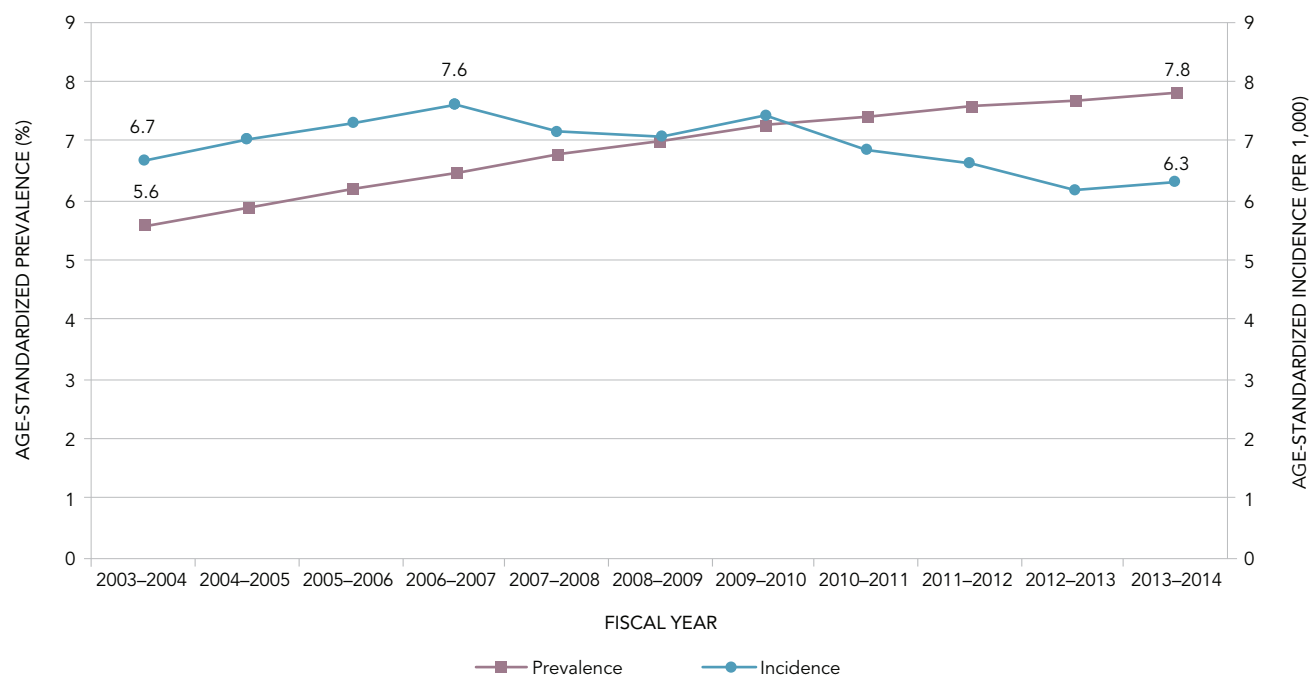
**DATA SOURCE:** Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, May 2017.

## WHAT IS THE TREND OF DIAGNOSED DIABETES OVER TIME?

Between 2003–2004 and 2013–2014, there was a relative increase of 37.3%<sup>i</sup> in the age-standardized prevalence of diagnosed diabetes, from 5.6% to 7.8%. During the same period, the age-standardized incidence rate fluctuated. It increased until 2006–2007, from 6.7 to 7.6 per 1,000 population, but then it decreased to 6.3 per 1,000 population by 2013–2014, slightly below its original level (**Figure 3**). This implies that factors other than an increase in new diabetes diagnoses contributed to this rise in prevalence, including the fact that Canadians with diabetes now live longer. With the growth and aging of the Canadian population, the number of Canadians living with diabetes is also expected to increase in the coming years.

<sup>i</sup> Estimates in this fact sheet are rounded at one decimal place. However, this relative increase was calculated based on all decimals available.

**FIGURE 3:** Age-standardized prevalence (%) and incidence (per 1,000 population) of diagnosed diabetes among Canadians aged 1 year and older, 2003–2004 to 2013–2014



**NOTES:** Age-standardized estimates to the 2011 Canadian population. The 95% confidence intervals are not shown as they were too small to be illustrated.

**DATA SOURCE:** Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, May 2017.

## HOW CAN DIABETES BE PREVENTED AND MANAGED?

It is possible to control certain risk factors for type 2 diabetes, including making healthy lifestyle choices like eating well, exercising, and reaching/maintaining a healthy weight. For individuals with pre-diabetes, medication can also help prevent the development of type 2 diabetes.<sup>4</sup> Since all the causes of type 1 diabetes are not well understood, no measures are currently recommended to prevent this disease.

It is also possible to remain healthy with diabetes through appropriate management and care. Treatment plans and targets are based on each individual's profile, but they all aim to avoid short-term risks of high or low blood sugar levels and to prevent or delay long-term complications. Maintaining a healthy lifestyle and a healthy weight, together with medication to control blood sugar levels and vascular risk factors, are common cornerstones of diabetes management.<sup>1</sup>



## BOX 1: WHAT'S IN THE DATA?

The data used in this publication are from the Canadian Chronic Disease Surveillance System (CCDSS), a collaborative network of provincial and territorial chronic disease surveillance systems, led by the Public Health Agency of Canada (PHAC).

The CCDSS identifies chronic disease cases from provincial and territorial administrative health databases, including physician billing claims and hospital discharge abstract records, linked to provincial and territorial health insurance registry records using a unique personal identifier. Data on all residents eligible for provincial or territorial health insurance (about 97% of the Canadian population) are captured in health insurance registries.

While CCDSS data reflect the health status of the Canadian population, they may also reflect changes in data collection methods, coding and classification

systems, or clinical guidelines (e.g. screening and diagnostic) and billing practices. These factors must also be taken into consideration when interpreting time trends.

### Definition of diagnosed diabetes in the CCDSS

Canadians aged 1 year and older are identified as having diagnosed diabetes (type 1 or type 2 combined) if they have: at least one hospitalization record or at least two physician claims in a two-year period with an International Classification of Diseases (ICD-9 or ICD-10) code for diabetes. Females aged 10 to 54 years diagnosed with diabetes 120 days preceding or 180 days following a pregnancy-related visit are removed, to exclude possible cases of gestational diabetes.

## HOW TO LEARN MORE ABOUT DIABETES IN CANADA

VISIT	<a href="http://Canada.ca">Canada.ca</a> and <b>SEARCH Diabetes</b>
GET DATA	<a href="http://infobase.phac-aspc.gc.ca/CCDSS-SCSMC">infobase.phac-aspc.gc.ca/CCDSS-SCSMC</a>
FOLLOW US	@PHAC_GC
LIKE US	PHAC's Facebook page
MORE	<a href="http://www.diabetes.ca">www.diabetes.ca</a> <a href="http://www.jdrf.ca">www.jdrf.ca</a>

### ACKNOWLEDGEMENTS

This work was made possible through collaboration between PHAC and all Canadian provincial and territorial governments. This fact sheet was developed by PHAC; no endorsement by the provinces and territories is intended or should be inferred.

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